

**New Jersey Department of Environmental Protection
Reason for Application**

Permit Being Modified

Permit Class: **Number:** 0

Description To operate 2-1.25 MMBTU/hr natural gas boilers, connected to a common stack at Bldg.
of Modifications: 106, EWR. Capping natural gas fuel usage to 2.5 million SCF/yr. per unit.

**New Jersey Department of Environmental Protection
Facility Profile (General)**

Facility Name (AIMS): Newark Liberty International Airport

Facility ID (AIMS): 05392

Street NEWARK LIBERTY INTERNATIONAL
Address: AIRPORT
1 CONRAD RD
NEWARK, NJ 07114

Mailing NEWARK LIBERTY INTERNATIONAL
Address: AIRPORT
1 CONRAD RD BLDG 80
NEWARK, NJ 07114

County: Essex
Location Bldg. 106
Description:

State Plane Coordinates:	
X-Coordinate:	569
Y-Coordinate:	4,505
Units:	Other
Datum:	Unknown
Source Org.:	Other/Unknown
Source Type:	Other/Unknown

Industry:	
Primary SIC:	
Secondary SIC:	
NAICS:	488119

**New Jersey Department of Environmental Protection
Facility Profile (General)**

Contact Type: Air Permit Information Contact**Organization:** Port Authority of New York and New Jersey**Org. Type:** Multi-State Agency**Name:** Steven Dochniak**NJ EIN:** 13640065400**Title:** Princ. Env Prog Sp.**Phone:** (973) 961-6093 x**Mailing Address:** NEWARK LIBERTY INTERNATIONAL
AIRPORT**Fax:** () - x1 CONRAD ROAD, BUILDING 80
NEWARK, NJ 07114**Other:** (732) 215-6071 x**Type:** Mobile**Email:** sdochnia@panynj.gov

Contact Type: Fees/Billing Contact**Organization:** Port Authority of New York and New Jersey**Org. Type:** Multi-State Agency**Name:** Steven Dochniak**NJ EIN:** 13640065400**Title:** Pr. Environmental Programs Specialist**Phone:** (973) 961-6093 x**Mailing Address:** NEWARK LIBERTY INTERNATIONAL
AIRPORT**Fax:** () - x1 CONRAD ROAD, BUILDING 80
NEWARK, NJ 07114**Other:** (732) 215-6071 x**Type:** Mobile**Email:** sdochnia@panynj.gov

Contact Type: General Contact**Organization:** Port Authority of New York and New Jersey**Org. Type:** Multi-State Agency**Name:** Steven Dochniak**NJ EIN:** 13640065400**Title:** Pr. Environmental Programs Specialist**Phone:** (973) 961-6093 x**Mailing Address:** NEWARK LIBERTY INTERNATIONAL
AIRPORT**Fax:** () - x1 CONRAD ROAD, BUILDING 80
NEWARK, NJ 07114**Other:** (732) 215-6071 x**Type:** Mobile**Email:** sdochnia@panynj.gov

**New Jersey Department of Environmental Protection
Facility Profile (General)**

Contact Type: Responsible Official

Organization: Port Authority of New York and New Jersey

Org. Type: Multi-State Agency

Name: Morys Guzman

NJ EIN: 13640065400

Title: Manager, Airport Maintenance

Phone: (973) 961-6220 x

Mailing Address: NEWARK LIBERTY INTERNATIONAL
AIRPORT

Fax: () - x

1 Conrad Road, Building 80

Other: () - x

Newark, NJ 07114

Type:

Email: moguzman@panynj.gov

**New Jersey Department of Environmental Protection
Facility Profile (Permitting)**

- | | |
|---|----|
| 1. Is this facility classified as a small business by the USEPA? | No |
| 2. Is this facility subject to N.J.A.C. 7:27-22? | No |
| 3. Are you voluntarily subjecting this facility to the requirements of Subchapter 22? | No |
| 4. Has a copy of this application been sent to the USEPA? | No |
| 5. If not, has the EPA waived the requirement? | |
| 6. Are you claiming any portion of this application to be confidential? | No |
| 7. Is the facility an existing major facility? | No |
| 8. Have you submitted a netting analysis? | No |
| 9. Are emissions of any pollutant above the SOTA threshold? | No |
| 10. Have you submitted a SOTA analysis? | No |
| 11. If you answered "Yes" to Question 9 and "No" to Question 10, explain why a SOTA analysis was not required | |
| | |
| 12. Have you provided, or are you planning to provide air contaminant modeling? | No |

**New Jersey Department of Environmental Protection
Equipment Inventory**

Equip. NJID	Facility's Designation	Equipment Description	Equipment Type	Certificate Number	Install Date	Grand- Fathered	Last Mod. (Since 1968)	Equip. Set ID
E122223	Bldg. 106	1.25 MMBTU/Hr Natural Gas Boiler	Boiler		5/1/2012	No		
E122224	Bldg. 106	1,25 MMBTU/HR Natural gas boiler	Boiler		5/1/2012	No		

**New Jersey Department of Environmental Protection
Emission Points Inventory**

PT NJID	Facility's Designation	Description	Config.	Equiv. Diam. (in.)	Height (ft.)	Dist. to Prop. Line (ft)	Exhaust Temp. (deg. F)			Exhaust Vol. (acfm)			Discharge Direction	PT Set ID
							Avg.	Min.	Max.	Avg.	Min.	Max.		
PT122223	Bldg. 106	2 Boilers conected to a common stack	Round	12	18	810	300.0	0.0	300.0	1,100.0	0.0	1,100.0	Up	

**New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory**

U 43 Bldg. 106 2-1.25 MMBTU/hr natural gas boiler 1

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours		VOC Range	Flow (acfm)		Temp. (deg F)	
								Min.	Max.		Min.	Max.	Min.	Max.
OS1	Bldg. 106	1.25 MMBTU/hr natural gas boiler 1	Normal - Steady State	E122223		PT122223	1-03-006-03	0.0	8,760.0		0.0	1,100.0	0.0	300.0
OS2	Bldg. 106	1.25 MMBTU/hr natural gas boiler 2	Normal - Steady State	E122224		PT122223	1-03-006-03	0.0	8,760.0		0.0	1,100.0	0.0	300.0

**New Jersey Department of Environmental Protection
Potential to Emit**

Subject Item: FC

Operating Scenario:

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
Arsenic Emissions	0.00000000	0.00000050	0.00000050	0.00000050	tons/yr	No
Cadmium Emissions	0.00000000	0.00000275	0.00000275	0.00000275	tons/yr	No
CO	0.00000000	0.20100000	0.20100000	0.20100000	tons/yr	No
Formaldehyde	0.00000000	0.00018750	0.00018750	0.00018750	tons/yr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
Nickel Emissions	0.00000000	0.00000525	0.00000525	0.00000525	tons/yr	No
NOx (Total)	0.00000000	0.25000000	0.25000000	0.25000000	tons/yr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
PM-10 (Total)	0.00000000	0.01900000	0.01900000	0.01900000	tons/yr	No
SO2	0.00000000	0.00150000	0.00150000	0.00150000	tons/yr	No
TSP	0.00000000	0.01900000	0.01900000	0.01900000	tons/yr	No
VOC (Total)	0.00000000	0.01375000	0.01375000	0.01375000	tons/yr	No

Subject Item: U43 Bldg. 106

Operating Scenario: OS1

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
Arsenic Emissions	0.00000000	0.00000006	0.00000006	0.00000006	lb/hr	No
Cadmium Emissions	0.00000000	0.00000031	0.00000031	0.00000031	lb/hr	No
CO	0.00000000	0.02397000	0.02397000	0.02397000	lb/hr	No
Formaldehyde	0.00000000	0.00002140	0.00002140	0.00002140	lb/hr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
Nickel Emissions	0.00000000	0.00000060	0.00000060	0.00000060	lb/hr	No

**New Jersey Department of Environmental Protection
Potential to Emit**

Subject Item: U43 Bldg. 106

Operating Scenario: OS1

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
NOx (Total)	0.00000000	0.02845000	0.02845000	0.02845000	lb/hr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
PM-10 (Total)	0.00000000	0.00217000	0.00217000	0.00217000	lb/hr	No
SO2	0.00000000	0.00017000	0.00017000	0.00017000	lb/hr	No
TSP	0.00000000	0.00217000	0.00217000	0.00217000	lb/hr	No
VOC (Total)	0.00000000	0.00157000	0.00157000	0.00157000	lb/hr	No

Subject Item: U43 Bldg. 106

Operating Scenario: OS2

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
Arsenic Emissions	0.00000000	0.00000006	0.00000006	0.00000006	lb/hr	No
Cadmium Emissions	0.00000000	0.00000031	0.00000031	0.00000031	lb/hr	No
CO	0.00000000	0.02397000	0.02397000	0.02397000	lb/hr	No
Formaldehyde	0.00000000	0.00002140	0.00002140	0.00002140	lb/hr	No
HAPs (Total)	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
Nickel Emissions	0.00000000	0.00000060	0.00000060	0.00000060	lb/hr	No
NOx (Total)	0.00000000	0.02845000	0.02845000	0.02845000	lb/hr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
PM-10 (Total)	0.00000000	0.00217000	0.00217000	0.00217000	lb/hr	No
SO2	0.00000000	0.00017000	0.00017000	0.00017000	lb/hr	No
TSP	0.00000000	0.00217000	0.00217000	0.00217000	lb/hr	No
VOC (Total)	0.00000000	0.00157000	0.00157000	0.00157000	lb/hr	No

000000 E122223 (Boiler)
Print Date: 6/28/2023

Make:	Hot Water Boiler
Manufacturer:	RAYPAK Inc
Model:	H7-1253
Maximum Rated Gross Heat Input (MMBtu/hr - HHV):	1.25
Boiler Type:	Water Tube
Utility Type:	Non-Utility
Output Type:	Water Only
Steam Output (lb/hr):	
Fuel Firing Method:	
Description (if other):	
Draft Type:	
Heat Exchange Type:	Direct

Is the boiler using? (check all that apply):

☐ Low NOx Burner: ☐ Type:

☐ Staged Air Combustion: ☐

☐ Flue Gas Recirculation (FGR): ☐ Amount (%):

Have you attached a diagram showing the location and/or the configuration of this equipment?

Yes

Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?

Yes

Comments: Capping natural gas fuel usage to 2.5 MMSCF/yr

000000 E122224 (Boiler)
Print Date: 6/28/2023

Make:	Hot Water Boiler
Manufacturer:	RAYPAK Inc
Model:	H7-1253
Maximum Rated Gross Heat Input (MMBtu/hr - HHV):	1.25
Boiler Type:	Water Tube
Utility Type:	Non-Utility
Output Type:	Water Only
Steam Output (lb/hr):	
Fuel Firing Method:	
Description (if other):	
Draft Type:	
Heat Exchange Type:	Direct

Is the boiler using? (check all that apply):

Low NOx Burner:	☐ Type:	
Staged Air Combustion:	☐	
Flue Gas Recirculation (FGR):	☐ Amount (%):	

Have you attached a diagram showing the location and/or the configuration of this equipment?

Yes

Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application?

Yes

Comments: Capping natural gas fuel usage to 2.5 MMSCF/yr

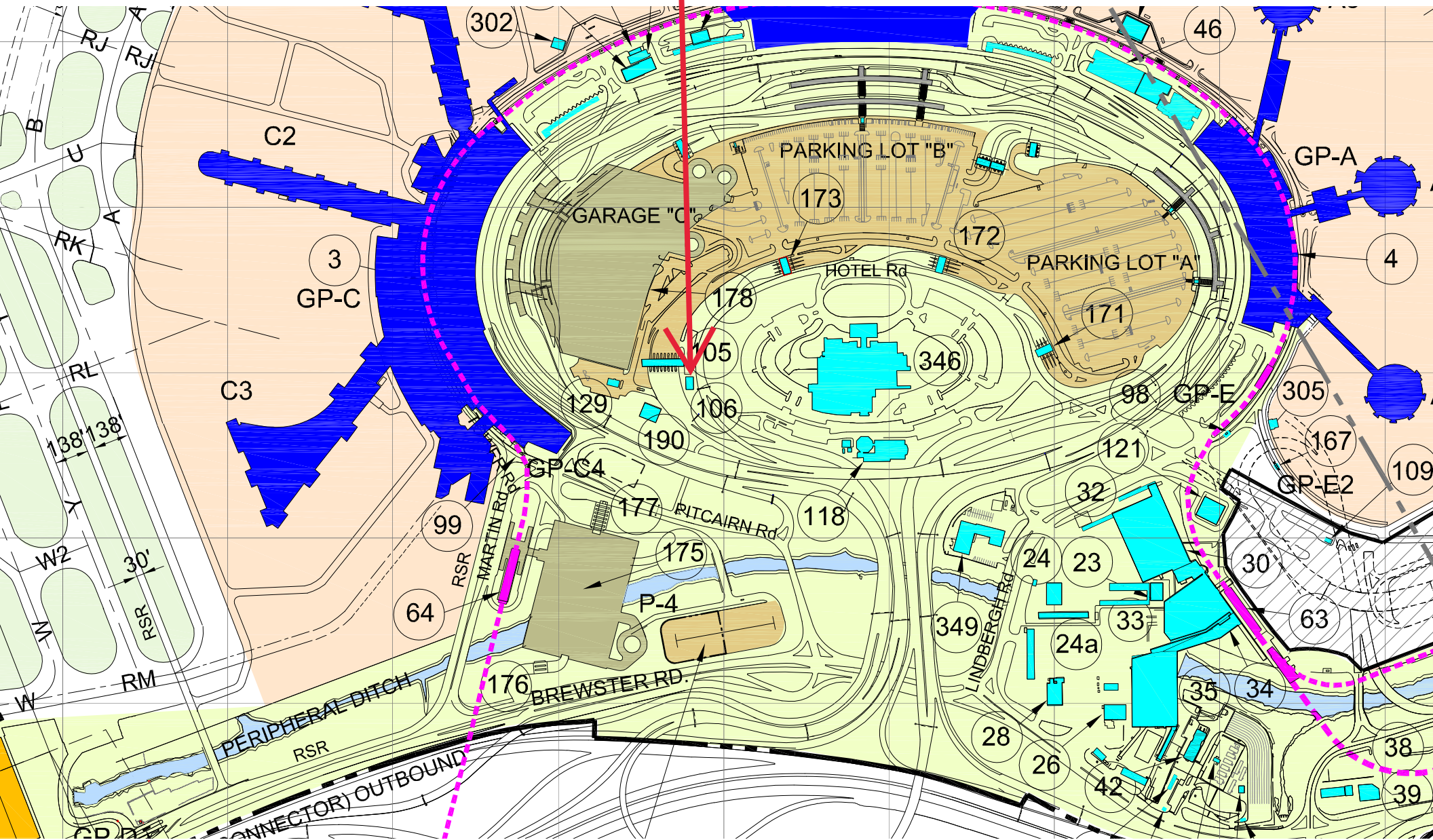
05392 Newark Liberty International Airport PCP000000 U43 OS1 (Primary Fuel)
Print Date: 6/28/2023

Is this fuel a blend?	No
Fuel Category:	Commercial
Fuel Type:	Natural gas
Description (if other):	
Amount of Sulfur in Fuel (%):	0.0500
Amount of Ash in Fuel (%):	0.01
Fuel Heating Value:	1,035.00
Units:	BTU/scf
Estimated Maximum Amount of Fuel Burned Annually:	2.50
Units:	MMft^3/yr
Estimated Actual Amount of Fuel Burned Annually:	1.50
Units:	MMft^3/yr
Amount of Oxygen in Flue Gas (%):	3.00
Amount of Moisture in Flue Gas (%):	10.00
Comments:	Maximum amount burned per year is 2.5 MMSCF of natural gas.

05392 Newark Liberty International Airport PCP000000 U43 OS2 (Primary Fuel)
Print Date: 6/28/2023

Is this fuel a blend?	No
Fuel Category:	Commercial
Fuel Type:	Natural gas
Description (if other):	
Amount of Sulfur in Fuel (%):	0.0500
Amount of Ash in Fuel (%):	0.01
Fuel Heating Value:	1,035.00
Units:	BTU/scf
Estimated Maximum Amount of Fuel Burned Annually:	2.50
Units:	MMft^3/yr
Estimated Actual Amount of Fuel Burned Annually:	1.50
Units:	MMft^3/yr
Amount of Oxygen in Flue Gas (%):	3.00
Amount of Moisture in Flue Gas (%):	10.00
Comments:	Maximum amount burned per year is 2.5 MMSCF of natural gas.

Site Location Bldg. 106





R.G. VANDERWEIL ENGINEERS, LLP

VAL LEVIN
N.J. Professional Engineer # 24GE04679600

No.	Date	Revision	Approved
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ENGINEERING DEPARTMENT

NEWARK
LIBERTY
INTERNATIONAL
AIRPORT

MECHANICAL
Title
MECHANICAL AND ELECTRICAL
UPGRADES OF THE CTA TOLL PLAZA

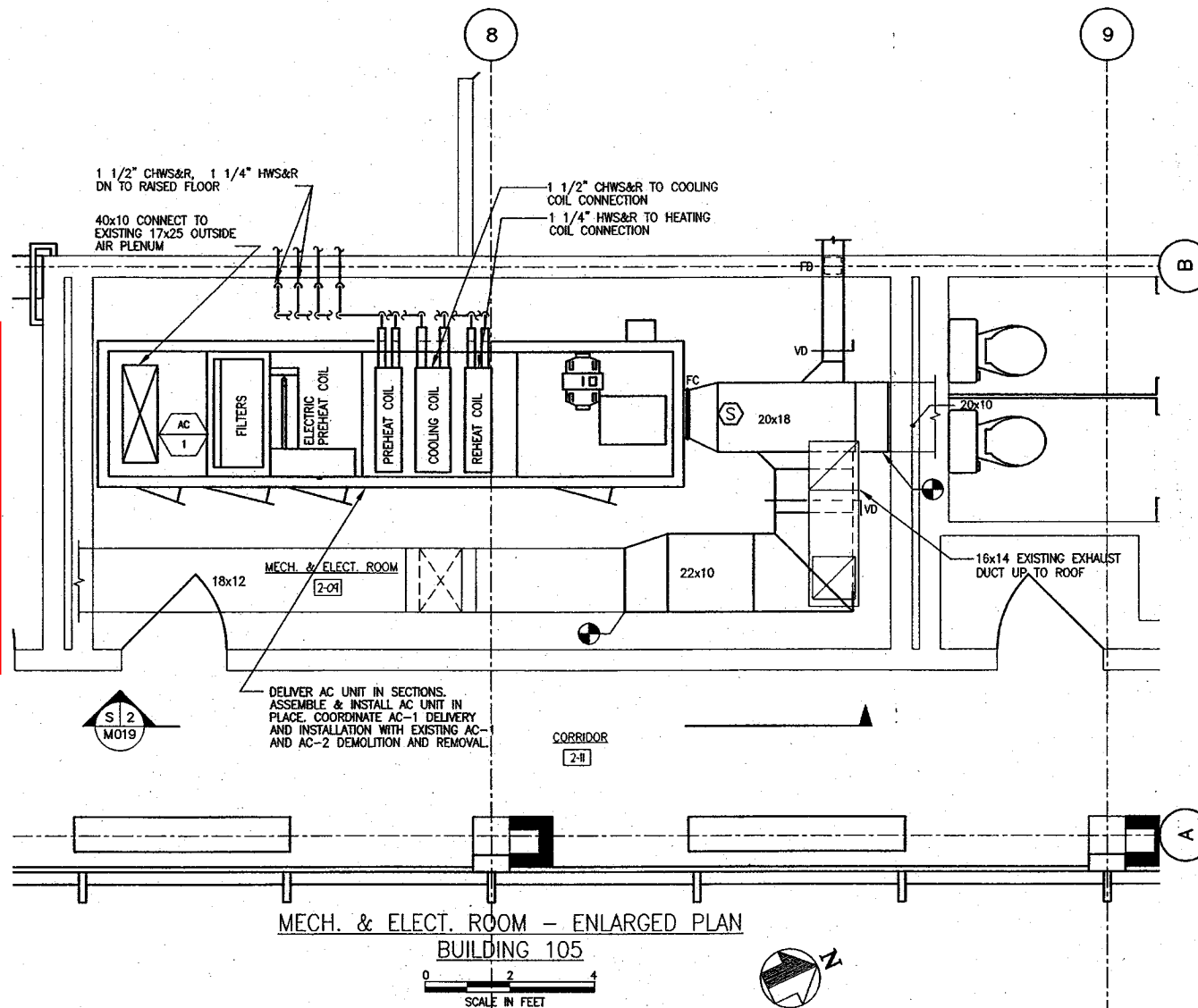
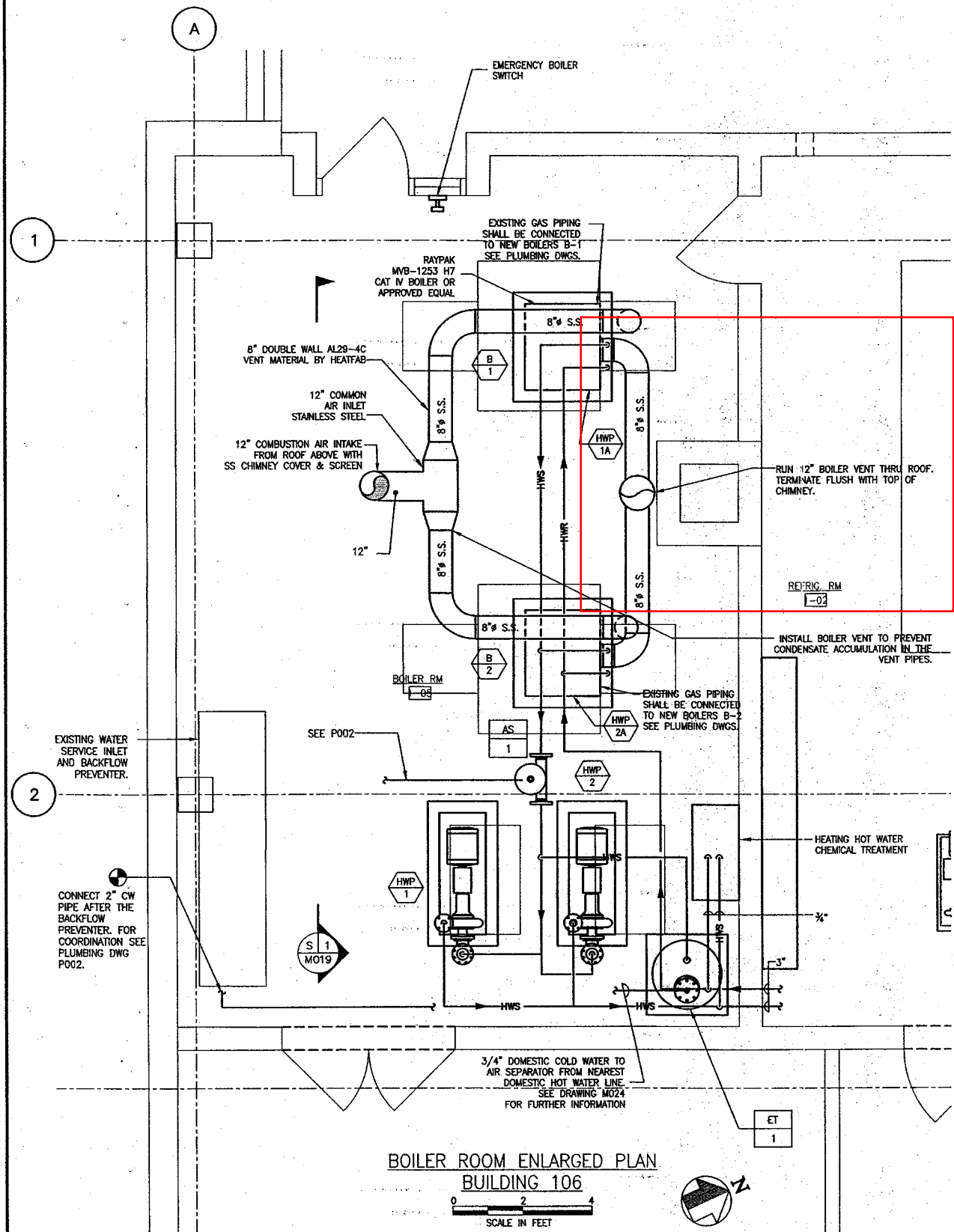
ENLARGED PLANS

This drawing is subject to conditions in contract. All dimensions, lines, design and methods herein are reserved to Port Authority and may not be used without its written consent.
At recipient of Contract documents, including bidders and those who do not bid and their prospective subcontractors and suppliers who may receive all or a part of the Contract documents or copies thereof, shall make every effort to ensure the secure and appropriate disposal of the Contract documents to prevent further disclosure of the information contained in the documents. Secure and appropriate disposal includes methods of document destruction such as shredding or arrangements with release handlers that ensure that third persons will not have access to the documents' contents either before, during, or after disposal. Documents may also be returned for disposal purposes to the Contract Desk on the 1st Floor, 3 Gateway Center, Newark, NJ 07102 or the office of the Director of Procurement, One Madison Avenue, 7th Floor, New York, NY 10010.

Y. EPSTEIN M. ADONIS C. WESCOTT
Designed by Drawn by Checked by
Date 08/01/2008

Contract Number EWR-154.347

Drawing Number M017
PID# 05381000



Job: CTA - TOLL PLAZA

Engineer: R.G. VANDERWEIL ENGINEERS

Contractor: J. MOORE & COMPANY

Prepared By: KEN STANTON Date: APRIL 8, 2009

Model: H7-1253 Indoor/Outdoor: INDOOR

MVB® - Type H

Heating Boilers
Models 503-2003

87% Thermal Efficiency at Full Rate; Up to 88.4% at Part Load

100% Factory Fire Tested

Maximum Outlet Water Temperature: 220°F

Minimum Acceptable Inlet Water Temperature: 120°F

Full Safety Diagnostics with History

Footprint: Less Than 5-1/2 ft²

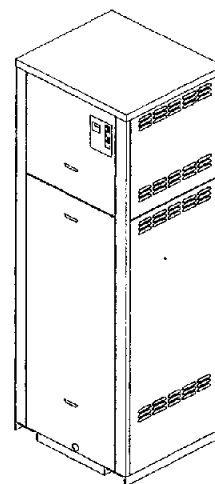
Limited Twenty-Year Thermal Shock Warranty

Limited Ten-Year Heat Exchanger Warranty

Full Electronic Modulation, Constant Ratio 4:1 Turndown

Soft-Start Modulating Controller with LCD Display

Status Display Lights



Heat Exchanger

- Headers
 - ☐ Cast Iron - Standard
 - ☒ Bronze - Option A-1
- ASME H Stamped
160 PSIG Working Pressure
- National Board Approved
- Fin Tubing
 - ☒ Copper - Standard
 - ☐ Cupro Nickel - Option A-3
- ASME Powder-Coated Tube Sheet
- Silicone High Temp O-Rings
- ASME Pressure Relief Valve
 - ☒ 60 PSIG - Standard
 - ☐ ____ PSIG - Optional
- Temperature and Pressure Gauge, Shipped Loose
- Stainless Steel Evaporator Plate

Control

- 120V, 60Hz, 1Ø, Power Supply
- 120/24V 60Hz Transformer
- Ignition Module
 - ☐ 3-Try - Standard
 - ☐ Single-Try - Option C-6
- Hot Surface Ignition (HSI)
- Remote Flame Sensor
- High Limit, Manual Reset, Fixed, 240°F
- On/Off Power Switch
- Flow Switch
- Blocked Vent Pressure Switch
- Combustion Air Proving Switch

Control (cont.)

- Pump Switch
- Pump Time Delay
- Diagnostics Panel
- Modulating Temperature Control
- Water Temperature Sensors (3)

Burner

- Ultra-Low NOx: Less than 20 PPM

Gas Train

- Fuel
 - ☒ Natural Gas
 - ☐ Propane
- Zero Governor Regulator
- Dual-Seat Combination Valve
- Electronic Modulating Firing Mode (H7)

Construction

- Indoor/Outdoor Construction
- Front Controls Enclosed
- PolyTuf Powder Coat Finish
- Rear Connections (Water, Electrical, Gas, Vent, Combustion Air)
- Design Certified ANSI Z21.13/ CSA 4.9

Venting

- Vent Termination
 - ☐ Outdoor or Indoor, Vertical - Option D-11
 - ☐ Indoor, Horizontal - Option D-15
- Extractor - Optional
 - ☐ By others
 - ☐ Not required

Temperature Controllers

- ☒ B-36 TempTracker Mod+ Digital Controller, 2-4 Boilers, OA Reset
- ☐ B-37 TempTracker Mod+ Digital Controller, 5-10 Boilers, OA Reset
- ☐ B-38 TempTracker Mod+ Digital Controller, 11-16 Boilers, OA Reset
- ☐ Y-241 Electronic Sequencer, 2-4 Boilers
- ☐ Y-281 Electronic Sequencer, 5-8 Boilers

Options

- ☐ A-30 Air Vent, Auto, 150 PSI
- ☒ F-10 Low Water Cut-Off, Remote Probe
- ☐ I-1 High Limit, Auto Reset, Adj., 100-240°F
- ☒ I-2 High Limit, Manual Reset, Adj., 100-240°F
- ☒ P-10 Pump: ____ HP, 120V, 1Ø, 60Hz
Water Hardness: ____ GPG
 - ☐ Cast Iron ☐ Bronze
 - ☐ Loose ☐ Mounted
- ☒ P50 Cold Water Start
- ☐ P- Cold Water Run
- ☒ S-1 Low Gas Pressure Switch, Manual Reset
- ☒ S-2 High Gas Pressure Switch, Manual Reset

Regulatory Agency Requirements

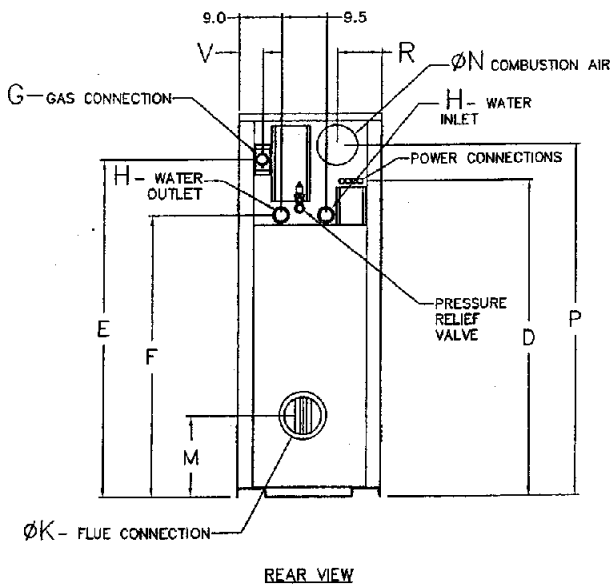
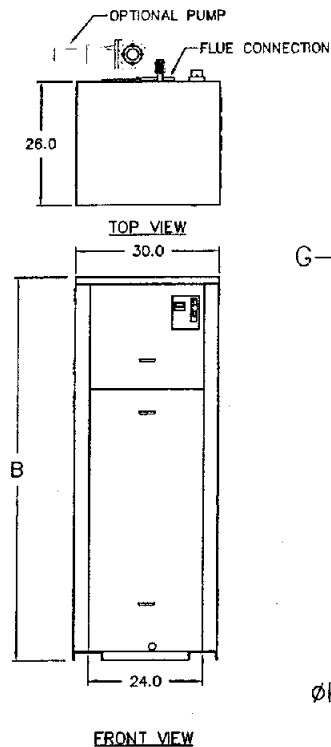
☐



Raundal®

MVB – Type H Models 503-2003

Model H7-1253



CLEARANCES

	Certified Minimum	Recomm. Service
Front	24"	24"
Rear	12"	24"
Right	1"	--
Left	1"	--
Top	0"	10"
Floor	0"	--
Vent	1"	--

PUMP HP – AMPS*

Model (H7-)	Water Hardness		
	Soft	Medium	Hard
503	1/4 - 6	1/4 - 6	3/4 - 11
753	1/4 - 6	1/2 - 7	3/4 - 11
1003	1/4 - 6	1/2 - 7	1 - 14
1253	1/2 - 7	1 - 14	1 - 14
1503	3/4 - 11	1 - 14	1 - 14
1753	1 - 14	1 1/2 - 15	1 1/2 - 15
2003	1 - 14	1 1/2 - 15	1 1/2 - 15

* Current draw is for pump only

Model (H7-)	MBTUH		Dimensions (in.)												Ship Weight (Lbs.)	Foot- print (Ft²)	Amps*
	Input	Output	B Height	D	E	F	G NPT	H NPT	K Flue Ø	M	N C/A Ø	P	R	V			
503	500	435	43	32	35	23-3/4	1	2	6	14-1/2	6	35	8	2	600	5.4	12
753	750	653	49	38	41	29-3/4	1	2	6	14-1/2	6	41	8	2	670	5.4	12
1003	999	869	55	44	47	35-3/4	1-1/4	2-1/2	6	14-1/2	6	47	8	2	720	5.4	12
1253	1250	1088	61	50	53	41-3/4	1-1/4	2-1/2	8	17-3/4	8	53	8	2	780	5.4	12
1503	1500	1305	67	56	59	47-3/4	1-1/4	2-1/2	8	17-3/4	8	59	8	2	840	5.4	12
1753	1750	1523	75	62	65	53-3/4	2	2-1/2	8	17-3/4	8	68	9	5	940	5.4	18
2003	1999	1739	81	68	71	59-3/4	2	2-1/2	8	17-3/4	8	74	9	5	1000	5.4	18

- Ratings shown are for elevations up to 4,500 feet. For installations at elevations above 4,500 feet, please consult the factory for additional instructions.
- For direct vent applications, please contact the factory about relocating the pump.

* Current draw is for heater only.
(Supply breaker must have delayed trip.)

RATES OF FLOW AND PRESSURE DROPS

Model (H7-)	20°F ΔT		30°F ΔT		40°F ΔT*		Maximum Flow			Minimum Flow*		
	GPM	ΔP (ft.)	GPM	ΔP (ft.)	GPM	ΔP (ft.)	GPM	ΔP (ft.)	ΔT (°F)	GPM	ΔP (ft.)	ΔT (°F)
503	43	2.8	29	1.4	N/A	N/A	100	11.3	9	25	1.1	35
753	65	6.4	43	3.1	33	1.9	100	13.8	13	33	1.9	40
1003	87	12.0	58	6.0	43	3.7	113	18.6	15	43	3.7	40
1253	109	20.9	73	10.2	54	6.2	113	22.2	19	54	6.2	40
1503	N/A	N/A	87	16.0	65	9.5	113	25.5	23	65	9.5	40
1753	N/A	N/A	102	22.5	76	13.4	113	27.2	27	76	13.4	40
2003	N/A	N/A	116	31.9	87	18.9	116	30.2	30	87	18.9	40

* Closed systems only

Raypak, Inc. ▪ 2151 Eastman Avenue, Oxnard, CA 93030 ▪ (805) 278-5300 ▪ Fax (800) 872-9725 ▪ www.raypak.com

Model No: H7-1253
Mfg Serial No: 0907299167
**COMPLETE RATING PLATE IS LOCATED
ON THE REAR JACKET PANEL**

P/N 901812 REV 1

RAYPAK ON-BOARD DIAGNOSTIC CENTER

System Normal
Standby



Sh
po
se
Hig
To



NATL. BD. 299167
CERTIFIED BY RAYPAK, INC.
OXNARD, CALIFORNIA

MAWP WATER 160 PSI
MFR. SERIAL NO. 0907299167
MIN RELIEF VALVE CAP 1,170 LBS/HR

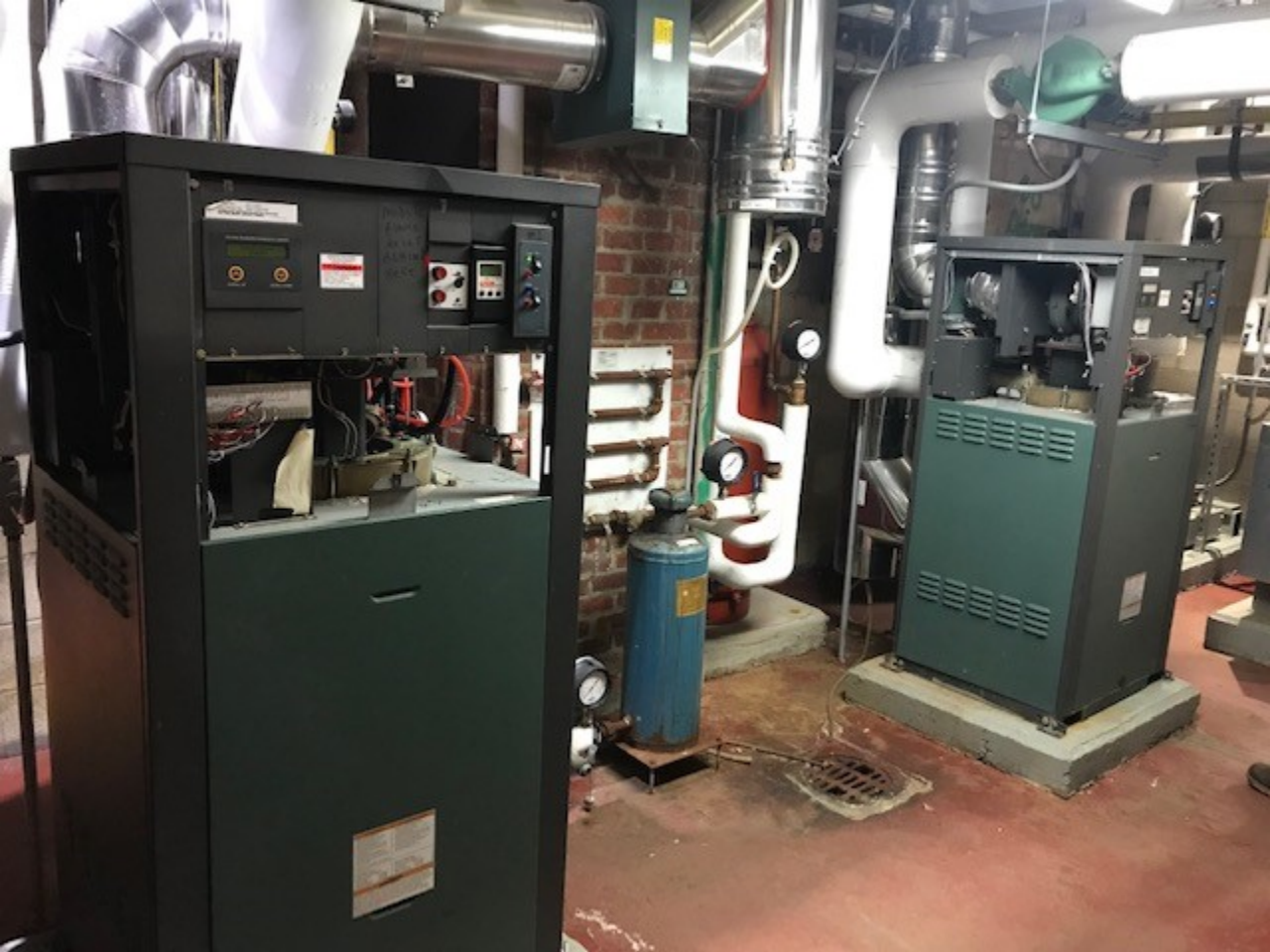
CAPACITÉ MINIMALE DE LA SOUPAPE DE SÉCURITÉ 170 LB/
HEATING SURFACE 117 SQ. FT. BOILER
HEATING SURFACE SQ. FT. EXTENDED
HEATING SURFACE 1145 SQ. FT. WATERWALL

HOT WATER BOILER

FOR EITHER DIRECT VENT INSTALLATION OR FOR
INSTALLATION USING INDOOR COMBUSTION AIR
POUR INSTALLATION AVEC ÉVACUATION DIRECTE
OU AVEC AIR COMBURANT

FOR EITHER INDOOR OR OUTDOOR INSTALLATION
INSTALLER À L'INTÉRIEUR OU À L'EXTÉRIEUR

MIN. CLEARANCES FROM COMBUSTIBLE CONSTRUCTION
INDOOR ALCOVE OUTDOOR





High-performance chimneys and vents

912GUY

12"- GUY SUPPORT



4897
Special Gas Vent
550 Degrees F Max
Category I, II, III, IV
Gas Vent Type B1
Class I/Class II
285 Degrees C Max

UNENCLOSED; REQUIRES ONE SIDE OPEN

Vent Size	Max Temp	Unenclosed Horiz/Vert	Minimum Framing (thru Wall/Roof)
6-10"	300°	1"	ID +5" x ID +5"
6-12"	550°	2"	ID +5" x ID +5"
14"	550°	3"	ID +5" x ID +5"
16"	550°	4"	ID +5" x ID +5"

DO NOT ENCLOSE WITH COMBUSTIBLE MATERIALS

When Connected to Category III, or IV Gas Appliances
Saf-T Vent System Must Be Used From Flue Collar To Termination
Install in Accordance With Installation Instructions

Heatfab Division, Selkirk Corp., Turners Falls, MA 01376



U.S. Patent No. 4,874,191

www.heat-fab.com

11-09-071768

Canadian Patent No. 1,322,017



1188456385

VRH Construction Corp.

**SUBMITTAL
NO. 15890-002
PACKAGE NO: 15890**

TITLE: Intake/Exhaust Layout - New Boilers
PROJECT: PANY/NJ EWR-154.347 CTA Toll Plaza
DRAWING:
STATUS: 3
BIC: PANYNJ

REQUIRED START: 1/20/2010
REQUIRED FINISH: 2/3/2010
DAYS HELD: 0
DAYS ELAPSED: 0
DAYS OVERDUE: -15

RECEIVED FROM		SENT TO		RETURNED BY		FORWARDED TO	
JMOORE	JW	PANYNJ	JAL	PANYNJ	JAL	JMOORE	JW

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status	Sepias	Prints	Drawing Date	Held	Elapsed
001	Intake/Exhaust Layout - New Boilers	1/19/2010	1/19/2010			3	0	0		0	0

R.G. VANDERWEIL ENGINEERS, LLP

JAN 28 2010

RECEIVED

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

☐ APPROVED
☒ APPROVED AS CORRECTED
☐ NOT APPROVED

APPROVAL IS ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL DIMENSIONS AT THE JOB SITE FOR OPERATIONS THAT PERTAIN TO THE FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND FOR COORDINATION OF THE WORK OF ALL TRADES.

THE PORT AUTHORITY OF NY & NJ
ENGINEERING DEPARTMENT
ENGINEERING IN CHARGE MANAGER

DATE: 02/09/2010 BY: [Signature]
SENIOR ENGINEER/ARCHITECT

OPTION A

INTAKE AL294C SINGLE WALL



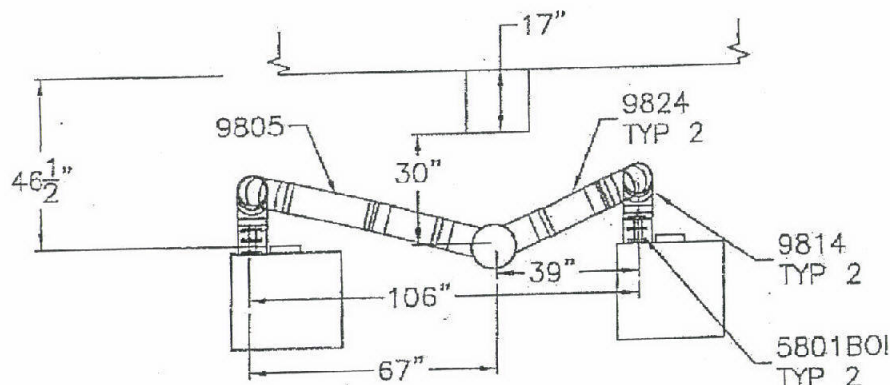
heatfab
High-performance Chimneys and Vents
Hart & Cooley, Commercial Products Group

REV

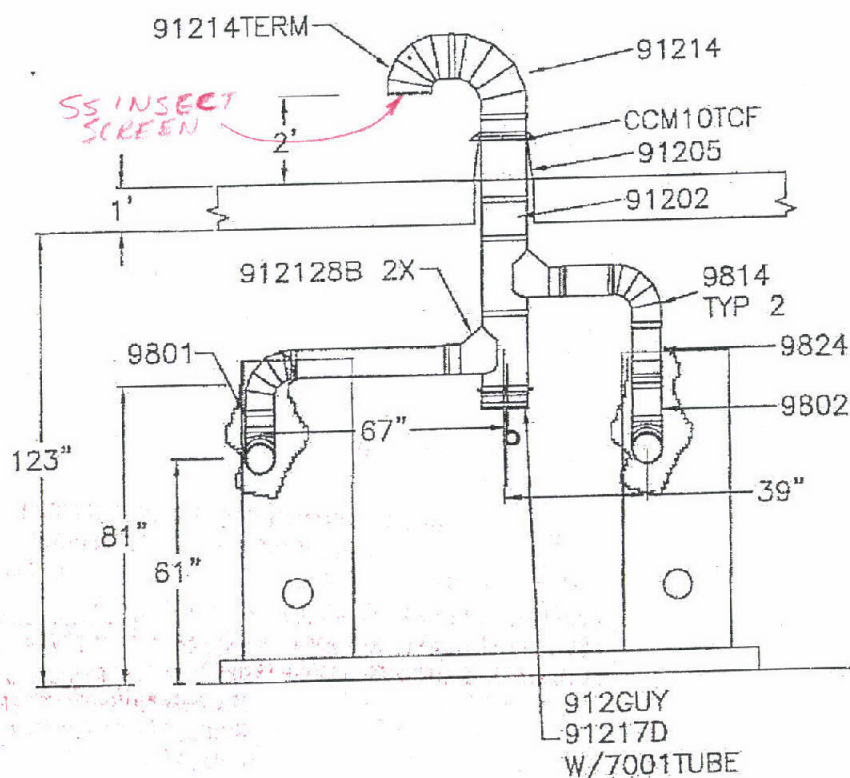
REVISION NOTE

DATE

BY



PLAN VIEW



ELEVATION AIR INTAKE

NOTE:

4827SS 10" SUPPORT CLAMP 2X
NOT SHOWN

1/4"=1'-0"

1 OF 1

NOTES:
1. ALL HORIZONTAL RUNS MUST BE INSTALLED WITH A MINIMUM OF 1/4-INCH PER FOOT SLOPE TOWARD A CONDENSATE DRAIN.
2. HORIZONTAL SUPPORTS ARE REQUIRED EVERY 6 (SIX) FEET, AT EACH TRANSITION FROM VERTICAL, AND AT EACH ADJUSTABLE SECTION.
3. INSTALLER IS TO FIELD VERIFY ALL DIMENSIONS AND PARTS ON THE PARTS LIST BEFORE ORDERING FROM THIS DRAWING.
4. ALL APPLIANCE MANUFACTURER AND HEAT-FAB INSTALLATION INSTRUCTIONS, AS WELL AS ANY LOCAL OR NATIONAL CODES, SHOULD BE FOLLOWED WHEN INSTALLING THIS SYSTEM.

LIBERTY AIRPORT

MCC010710-1

MILLER & CHITTY

Drw. By
P.HUSTON

Date
1/8/10

Exhaust

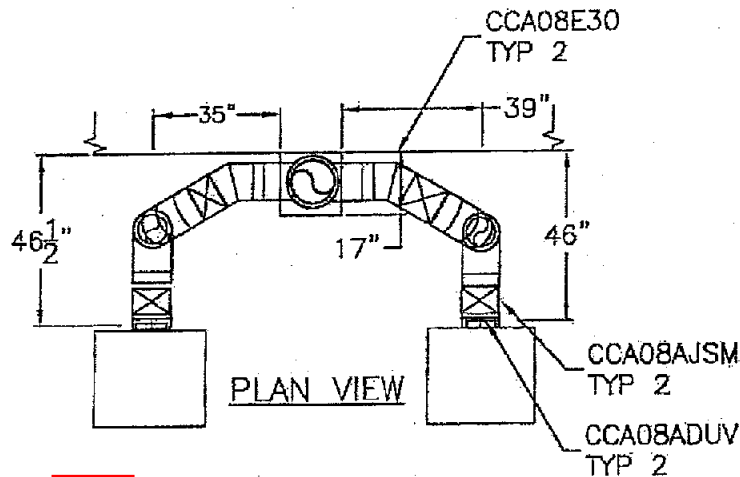
heatfab
High-performance Chimneys and Vents
Hart & Cooley, Commercial Products Group

REV	REVISION NOTE	DATE	BY
A	RAISED ON RISER	1/15/10	PVH

SUBMITTAL No.

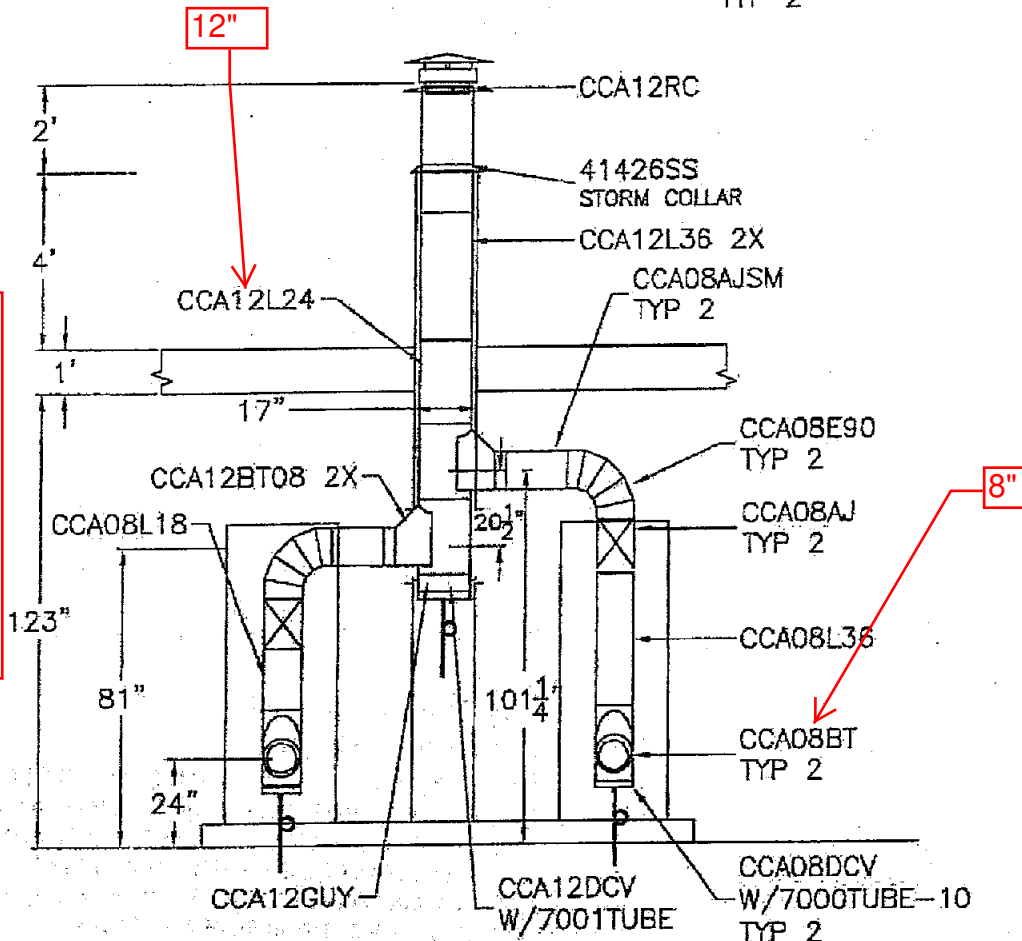
15890-002

VRH CONSTRUCTION CORP.



PLAN VIEW

stack height =
123" + 6" =
16.25 feet
Boilers each
have own
stack, but
exhausts into
one combined
stack



BACK VIEW

NOTE:
41027SS 10" SUPPORT CLAMP 2X
NOT SHOWN

1/4"=1'-0"

1 OF 1

NOTES:
1. ALL HORIZONTAL RUNS MUST BE INSTALLED WITH A MINIMUM OF 1/4-INCH PER FOOT SLOPE TOWARD A CONDENSATE DRAIN.
2. HORIZONTAL SUPPORTS ARE REQUIRED EVERY 6 (SIX) FEET, AT EACH TRANSITION FROM VERTICAL, AND AT EACH ADJUSTABLE SECTION.
3. INSTALLER IS TO FIELD VERIFY ALL DIMENSIONS, AND PARTS ON THE PARTS LIST BEFORE ORDERING FROM THIS DRAWING.
4. ALL APPLIANCE MANUFACTURER AND HEAT-FAB INSTALLATION INSTRUCTIONS, AS WELL AS ANY LOCAL OR NATIONAL CODES, SHOULD BE FOLLOWED WHEN INSTALLING THIS SYSTEM.

LIBERTY AIRPORT

MCC010710A

MILLER & CHITTY

Drw. By
P. HUSTON

Date
1/8/10

BUILDING 106

NEWARK LIBERTY INTERNATIONAL AIRPORT PORT AUTHORITY OF NY & NJ

Building 106 Two Boilers Connected to a common Stack

<u>Pollutants</u>	<u>Natural Gas (lb/MMSCF)</u>	<u>(AP-42 Emission Factors)</u>
Nitrogen Oxides	100	
Carbon Monoxide	84	
Sulfur Dioxide	0.6	
Particulates (Total)	7.6	
Particulates (10u)	7.6	
Volatile Organics	5.5	
Arsenic	0.0002	
Cadmium	0.0011	
Formaldehyde	0.075	
Nickel	0.0021	

Heating Value (Gas):	1,035 BTU/ft ³
Fuel Consumption (per unit)	2.50 MMSCF/yr
Hours per year (Per Unit):	8,760 hr/yr
Boiler rating (per unit)	1.25 MMBTU/hr

Emission Rates (lbs/hr) - Based on EPA's AP-42 (Per unit)

Nitrogen Oxides =	0.02854	lbs/hr
Carbon Monoxide =	0.02397	lbs/hr
Sulfur Dioxide =	0.00017	lbs/hr
Particulates (Total) =	0.00217	lbs/hr
Particulates (10u) =	0.00217	lbs/hr
Volatile Organics (Total) =	0.00157	lbs/hr
Arsenic	0.00000006	lbs/hr
Cadmium	0.00000031	lbs/hr
Formaldehyde	0.00002140	lbs/hr
Nickel	0.00000060	lbs/hr

<u>Emission rates Per Unit (tpy) = Emission Factor x Fuel Consumption / 2000 (lb/ton)</u>						<u>Per Unit</u>	<u>FC total</u>
Nitrogen Oxides =	100 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.125 tpy	0.25000 tpy
Carbon Monoxide =	84 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.105 tpy	0.21000 tpy
Sulfur Dioxide =	0.6 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.00075 tpy	0.00150 tpy
Particulates (Total) =	7.6 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.0095 tpy	0.01900 tpy
Particulates (10u) =	7.6 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.0095 tpy	0.01900 tpy
Volatile Organics (Total) =	5.5 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.0069 tpy	0.01375 tpy
Arsenic =	0.00020 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.000002500 tpy	0.000005000 tpy
Cadmium =	0.00110 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.0000013750 tpy	0.0000027500 tpy
Formaldehyde =	0.07500 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.0000937500 tpy	0.0001875000 tpy
Nickel =	0.00210 (lb/MMSCF)	x	2.50	MMSCF/yr	/ 2000 (lb/ton) =	0.0000026250 tpy	0.0000052500 tpy