

**City of Portland, Maine - Building or Use Permit Application**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 09-0301	Issue Date: 4/17/09	CBL: 027 C011001
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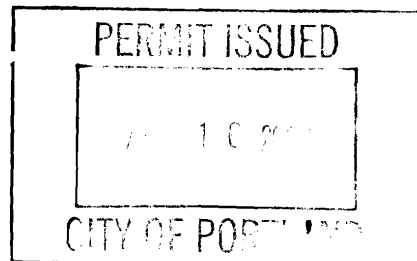
Location of Construction: 17 CHESTNUT ST	Owner Name: BOODILLY LLC	Owner Address: 158 WOODVILLE RD	Phone:
Business Name:	Contractor Name: Titan Mechanical Inc.	Contractor Address: PO Box 3927 Portland	Phone
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	Zone: B-3

Past Use: Commercial - Restaurant (permit 08-1687)	Proposed Use: Commercial - Restaurant - install HVAC System through out building	Permit Fee: \$700.00	Cost of Work: \$67,400.00	CEO District: 1
		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied *see Conditions	INSPECTION: Use Group: A2 Type: 3 IBC-2003 IMC-2003 Signature: [Signature]	

Proposed Project Description: install HVAC System through out building	Signature: [Signature]	Signature: [Signature]
PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)		
Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied		
Signature: _____ Date: _____		

Permit Taken By: Ldobson	Date Applied For: 04/10/2009	<b>Zoning Approval</b>
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<ol style="list-style-type: none"> <li>This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</li> <li>Building permits do not include plumbing, septic or electrical work.</li> <li>Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..</li> </ol>	<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: 4/16/09 [Signature]	<b>Zoning Appeal</b> <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	<b>Historic Preservation</b> Landmark. <input type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input checked="" type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: 4/17/09 [Signature]
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**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

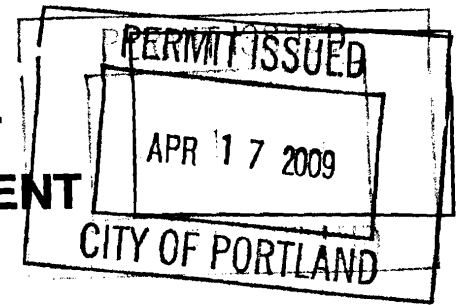
\_\_\_\_\_  
SIGNATURE OF APPLICANT ADDRESS DATE PHONE

\_\_\_\_\_  
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE



FILL IN AND SIGN WITH INK

# APPLICATION FOR PERMIT HEATING OR POWER EQUIPMENT



To the INSPECTOR OF BUILDINGS, PORTLAND, ME.

The undersigned hereby applies for a permit to install the following heating, cooking or power equipment in accordance with the Laws of Maine, the Building Code of the City of Portland, and the following specifications:

Location / CBL 27C-11 17 Chestnut Use of Building Restaurant Date 4.9.09  
Name and address of owner of appliance \_\_\_\_\_

Installer's name and address TITAN MECHANICAL INC P.O. Box 3227 PORTLAND  
MAINE 04104 Telephone 207 878 5223

### Location of appliance:

- Basement  Floor  
 Attic  Roof

### Type of Fuel:

- Gas  Oil  Solid

Appliance Name: TRANE / LOCKINVAR

U.L. Approved  Yes  No

Will appliance be installed in accordance with the manufacture's installation instructions?  Yes  No

IF NO Explain: \_\_\_\_\_

### The Type of License of Installer:

- Master Plumber # 2090010511  
 Solid Fuel # \_\_\_\_\_  
 Oil # \_\_\_\_\_  
 Gas # PLM 1063  
 Other \_\_\_\_\_

### Type of Chimney:

- Masonry Lined  
 Factory built \_\_\_\_\_

- Metal  
 Factory Built U.L. Listing # \_\_\_\_\_

- Direct Vent  
 Type \_\_\_\_\_ UL# \_\_\_\_\_

### Type of Fuel Tank

- Oil  
 Gas

Size of Tank \_\_\_\_\_

Number of Tanks \_\_\_\_\_

Distance from Tank to Center of Flame \_\_\_\_\_ feet.

Cost of Work: \$ 67,400.00

Permit Fee: \$ 700

### Approved

Fire: \_\_\_\_\_

Ele.: \_\_\_\_\_

Bldg.: \_\_\_\_\_

### Approved with Conditions

- See attached letter or requirement

[Signature]  
Inspector's Signature

4/17/09  
Date Approved

Signature of Installer [Signature]

**City of Portland, Maine - Building or Use Permit**

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 09-0301	Date Applied For: 04/10/2009	CBL: 027 C011001
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Location of Construction: 17 CHESTNUT ST	Owner Name: BOODILLY LLC	Owner Address: 158 WOODVILLE RD	Phone:
Business Name:	Contractor Name: Titan Mechanical Inc.	Contractor Address: PO Box 3927 Portland	Phone:
Lessee/Buyer's Name	Phone:	Permit Type: HVAC	

Proposed Use: Commercial - Restaurant - install HVAC System through out building	Proposed Project Description: install HVAC System through out building
---	---

**Dept:** Historic      **Status:** Approved with Conditions      **Reviewer:** Deborah Andrews      **Approval Date:** 04/13/2009

**Note:** **Ok to Issue:**

1) \* All exterior vents to be painted to match color of brick.

\* Rooftop mechanicals must be screened. Screen to be metal; final details, finish and color for metal screen to be reviewed and approved by HP staff

**Dept:** Zoning      **Status:** Approved with Conditions      **Reviewer:** Ann Machado      **Approval Date:** 04/10/2009

**Note:** **Ok to Issue:**

1) ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.

2) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.

**Dept:** Building      **Status:** Approved with Conditions      **Reviewer:** Chris Hanson      **Approval Date:** 04/17/2009

**Note:** **Ok to Issue:**

1) Equipment must be installed in compliance with the manufacturer's specifications

2) All penetrations through rated assemblies must be protected by an approved firestop system installed in accordance with ASTM 814 or UL 1479, per IBC 2003 Section 712.

3) The Hood shall be installed per IMC 2003 and NFPA 96

This permit is approved based on the plans submitted and updated for reductions in the clearances based on the application of a UL approved fire wrap or equivalent assembly per code.

4) Maintain proper setback(s) from property lines/buildings and proper clearances from verticle openings when direct venting.

5) The appliance shall be installed in accordance with the IMC 2003 and NFPA 211.

6) The installation must comply with the State of Maine Gas Regulations.

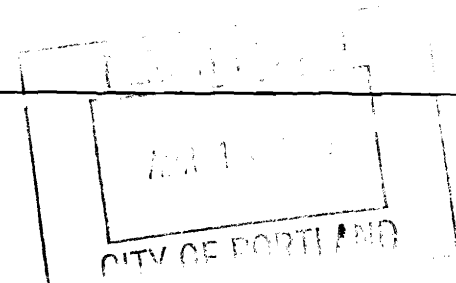
7) ANY exterior work requires separate review and approval thru Historic Preservation

**Dept:** Fire      **Status:** Approved with Conditions      **Reviewer:** Capt Keith Gautreau      **Approval Date:** 04/15/2009

**Note:** **Ok to Issue:**

1) Install shall comply with NFPA 90A and 90B.

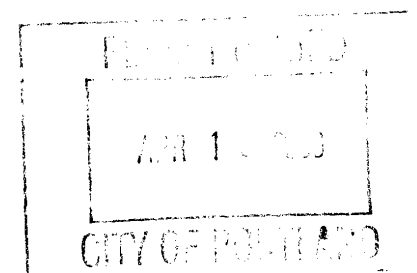
2) Install shall comply with all manufacture's specifications.



<b>Location of Construction:</b> 17 CHESTNUT ST	<b>Owner Name:</b> BOODILLY LLC	<b>Owner Address:</b> 158 WOODVILLE RD	<b>Phone:</b>
<b>Business Name:</b>	<b>Contractor Name:</b> Titan Mechanical Inc.	<b>Contractor Address:</b> PO Box 3927 Portland	<b>Phone</b>
<b>Lessee/Buyer's Name</b>	<b>Phone:</b>	<b>Permit Type:</b> HVAC	

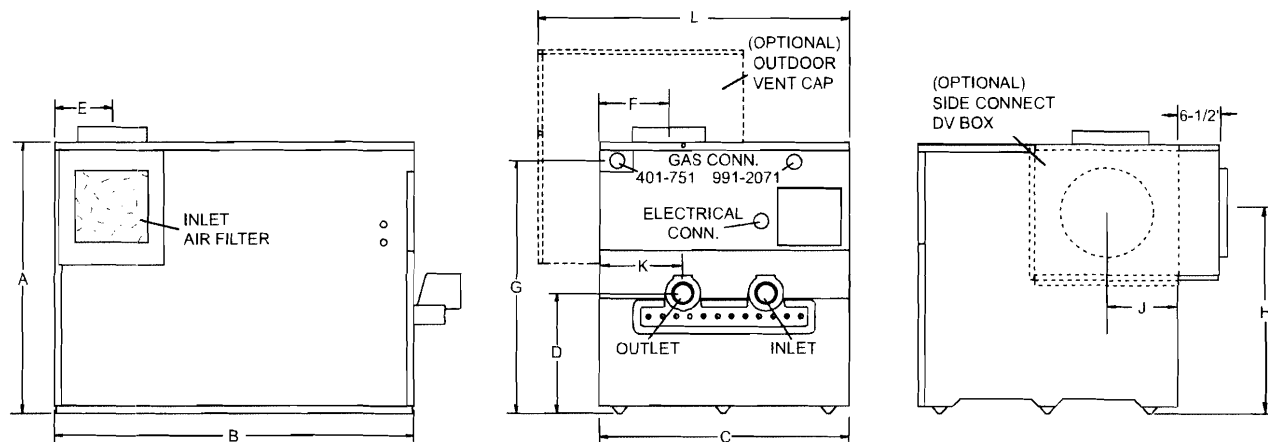
**Comments:**

4/13/2009-gg: Received from historic on 4/13/09. /gg



Boiler BT

## Copper-Fin II® Gas Boiler Dimensions & Specifications



Model	Firing Number	Btu/hr Input	Btu/hr Output	A	B	C	D	E	F	G	H	J	K	L	Vent Size	Air Inlet	Gas Conn	Shipping Weight
CHN401	2	399,999	340,000	31-1/2"	37-3/4"	22-1/4"	12-1/2"	7"	7"	29"	23-1/2"	8"	6-1/2"	30-3/4"	6"	6"	1-1/4"	390
CHN501	2	500,000	425,000	31-1/2"	45-1/2"	22-1/4"	12-1/2"	7"	7"	29"	23-1/2"	8"	6-1/2"	30-3/4"	6"	6"	1-1/4"	440
CHN651	3	650,000	552,500	31-1/2"	56-3/4"	22-1/4"	12-1/2"	8-1/2"	8-1/4"	29"	23-1/2"	8"	6-1/2"	30-3/4"	8"	8"	1-1/4"	500
CHN751	3	750,000	637,500	31-1/2"	64"	22-1/4"	12-1/2"	8-1/2"	8-1/4"	29"	23-1/2"	8"	6-1/2"	30-3/4"	8"	8"	1-1/4"	555
CHN0991	3	990,000	841,500	36"	48-1/4"	33-1/2"	15-3/4"	8"	9-1/4"	33-3/4"	27"	9-1/4"	9"	41-3/4"	10"	10"	2"	880
CHN1261	4	1,260,000	1,071,000	36"	58-1/2"	33-1/2"	15-3/4"	10-1/4"	10"	33-3/4"	27"	9-1/4"	9"	41-3/4"	12"	12"	2"	945
CHN1441	4	1,440,000	1,224,000	36"	68-3/4"	33-1/2"	15-3/4"	10-1/4"	10-1/2"	33-3/4"	27"	9-1/4"	9"	41-3/4"	12"	12"	2"	1,080
CHN1801	4	1,800,000	1,530,000	36"	82-1/4"	33-1/2"	15-3/4"	10"	11-1/2"	33-3/4"	27"	9-1/4"	9"	41-3/4"	14"	12"	2"	1,235
CHN2071	4	2,070,000	1,759,500	36"	92-1/2"	33-1/2"	15-3/4"	10"	11-1/2"	33-3/4"	27"	9-1/4"	9"	41-3/4"	14"	12"	2"	1,350

Notes: Change "N" to "L" for LP gas models.

Water connections for models CH 401-751 are 2" NPT on 6-1/2" centers.

Header increases "B" dimension 3-1/2" for models CH 401-751 and 6-1/4" for models CH 0991-2071. Performance data is based on manufacturer test results.

No deration on LP models.

Water connections for models CH 0991-2071 are 2-1/2" NPT on 11-1/4" centers.

### Venting Options

- Aire-Lock™ Direct Vent Sealed Combustion
- DirectAire® Vertical
- DirectAire® Vertical w/ Sidewall Inlet
- Outdoor Installation
- Power DirectAire® Horizontal
- Powered Side Wall
- Sidewall (CH 401-751)
- Intelligent Venting Solutions

### Amp Draw Data

Model No.	Fans	Controls	Approx. Total Amps
401-501	3.6	2.7	6.3
651-751	5.4	3.4	8.8
991-1261	3.2	7.2	10.4
1441-2071	6.7	7.2	13.9



**Lochinvar®**  
High Efficiency Water Heaters, Boilers and Pool Heaters



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www.Lochinvar.com

**EXHAUST FAN INFORMATION**

FAN UNIT NO.	FAN UNIT MODEL #	MODEL	TAG	CFM	S.P.	RPM	H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)
1	<i>EF-6</i> HRE-24	HRE-24		5400	2.750	1209	5.000	3	208	14.1	441.80
2	<i>EF-8</i> DU30HFA	DU30HFA		700	0.500	1301	0.250	1	115	4.0	65.20
3	<i>EF-9</i> DU50HFA	DU50HFA		1200	0.500	1210	0.500	1	115	8.1	75.56
4	<i>EF-7</i> HRE-20	HRE-20		3905	2.500	1471	5.000	3	208	14.1	367.80

*500#*
*500#*
**HEATER/MUA FAN INFORMATION**

FAN UNIT NO.	FAN UNIT MODEL #	BLOWER	HOUSING	TAG	CFM	S.P.	RPM	H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)
5	<i>MUA-1</i> A3-D.750-G18	G18	A3-D.750		4860	1.250	906	5.000	3	208	14.1	1082.24
6	<i>MUA-2</i> A2-D.500-G15	G15	A2-D.500		3514	1.150	1119	3.000	3	208	9.5	902.59

**GAS FIRED MAKE-UP AIR UNIT(S)**

FAN UNIT NO.	BTU'S	TEMP. RISE	GAS TYPE
5	431276	85 deg F	LP
6	311832	85 deg F	LP

**CURB ASSEMBLIES**

NO.	ON FAN	ITEM	SIZE
1	# 1	Curb	32.375"W x 32.375"L x 20.000"H Insulated Vented Hinged
4	# 4	Curb	28.000"W x 28.000"L x 20.000"H Insulated Vented Hinged

**FAN ACCESSORIES**

FAN UNIT NO.	FAN UNIT TAG	EXHAUST			EXHAUST			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1		YES						
2			YES	YES				
3			YES	YES				
4		YES						
5					YES		YES	
6					YES		YES	

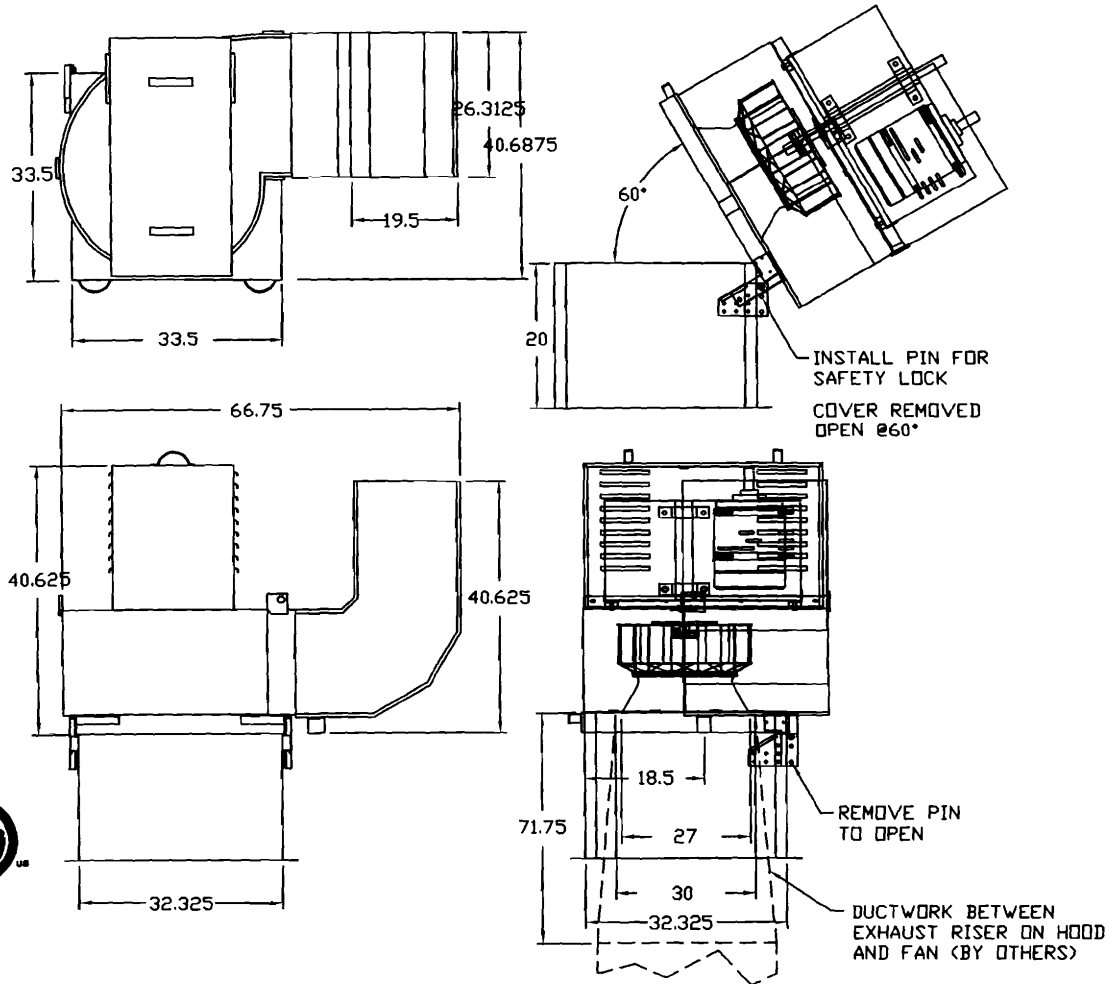
**\*FOR QUESTIONS AND PRICING\***  
 CALL OR FAX: BART CHANDLER  
 MAINE REGIONAL OFFICE  
 124 OHIO HILL ROAD, FAIRFIELD, ME 04937  
 PHONE: (207) 238-9213  
 FAX:(207) 238-9238

**CUSTOMER APPROVAL TO MANUFACTURE:**

Approved as Noted   
 Approved with NO Exception Taken   
 Revise and Resubmit   
 SIGNATURE \_\_\_\_\_  
 Your Title \_\_\_\_\_ Date \_\_\_\_\_

**JOB** Grace Restaurant Fans  
**LOCATION** PORTLAND, ME  
**DATE** 10/22/2009 **JOB #** 002003  
**DWG #** GraceRestauran **DRAWN BY** BFC  
**REV.** 1.00 **SCALE** 8.5' x 11'

Utility Set (Restaurant. Duty) (Fan #1 HRE-24)



**FEATURES:**

- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL762
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

**NORMAL TEMPERATURE TEST**

EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

**ABNORMAL FLARE-UP TEST**

EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

**OPTIONS:**

- GREASE BDX
- INSULATED CURB

**\*FOR QUESTIONS AND PRICING\***  
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**CUSTOMER APPROVAL TO MANUFACTURE:**

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

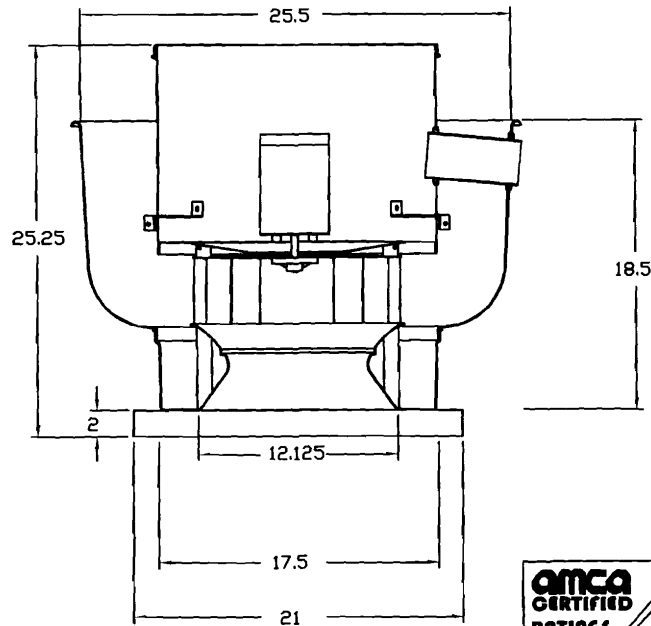
SIGNATURE \_\_\_\_\_

Your Title \_\_\_\_\_ Date \_\_\_\_\_

**CAPTIVE AIRE**

<b>JOB</b> Grace Restaurant Fans	
<b>LOCATION</b> PORTLAND, ME	
<b>DATE</b> 10/28/2008	<b>JOB #</b> 863683
<b>DWG #</b> GraceRestaurant	<b>DRAWN BY</b> BFC
<b>REV.</b> 1.00	<b>SCALE</b> 8.5' x 11'

# Centrifugal Upblast Direct (Fan #2 DU30HFA)



## FEATURES:

- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL762 - UL705
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

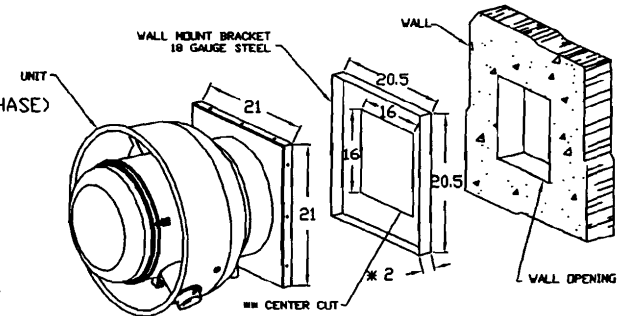
## NORMAL TEMPERATURE TEST

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## WALL MOUNT BRACKET

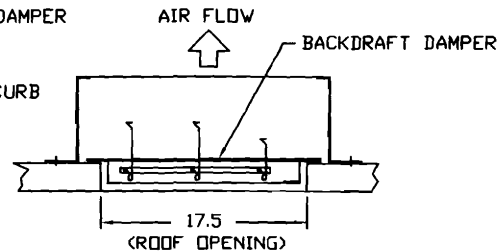


- WALL BRACKET FITS INTO BASE OF FAN
- SELF DRILLING SCREWS SHOULD BE USED FOR UNIT ATTACHMENT TO WALL MOUNT BRACKET
- \* DIMENSION = 5" WHEN USED WITH DAMPER
- \*\* CENTERED IN WALL MOUNT

## BACKDRAFT DAMPER INSTALLATION

### OPTIONS:

- BACKDRAFT DAMPER
- HINGED FAN
- INSULATED CURB



### CUSTOMER APPROVAL TO MANUFACTURE:

- Approved as Noted
- Approved with NO Exception Taken
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- SIGNATURE \_\_\_\_\_
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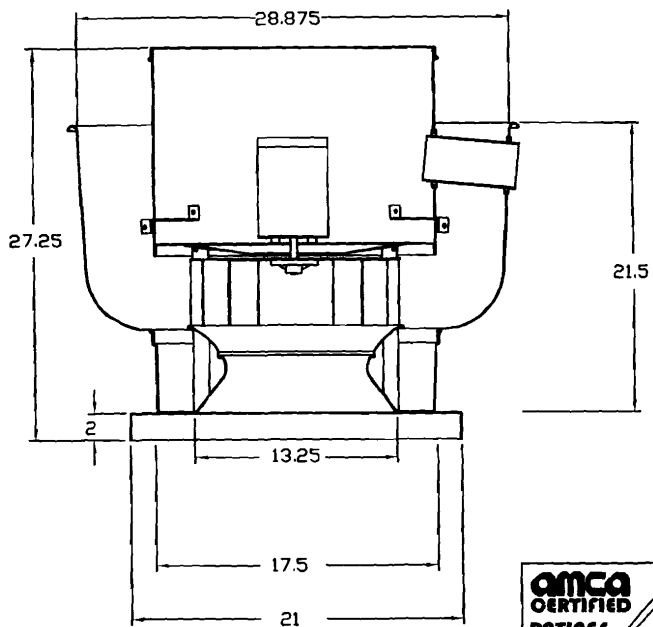
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# CAPTIVE AIR

JOB Grace Restaurant Fans	
LOCATION PORTLAND, ME	
DATE 10/28/2008	JOB # 863683
DWG # GraceRestaurant	DRAWN BY BFC
REV. 1.00	SCALE 8.5' x 11'



# Centrifugal Upblast Direct (Fan #3 DU50HFA)



## FEATURES:

- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL762 - UL705
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

### NORMAL TEMPERATURE TEST

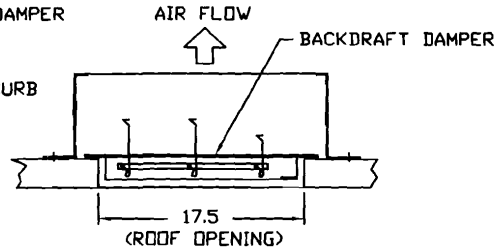
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### ABNORMAL FLARE-UP TEST

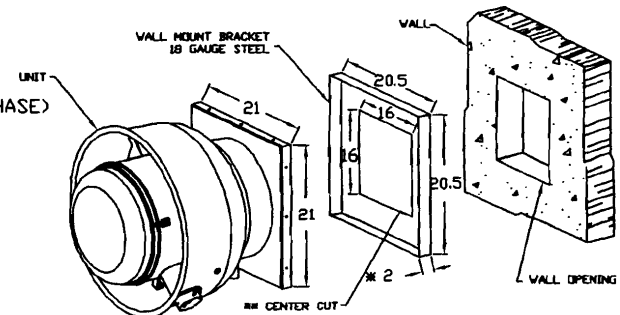
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## OPTIONS: BACKDRAFT DAMPER INSTALLATION

- BACKDRAFT DAMPER
- HINGED FAN
- INSULATED CURB



## WALL MOUNT BRACKET



- WALL BRACKET FITS INTO BASE OF FAN
- SELF DRILLING SCREWS SHOULD BE USED FOR UNIT ATTACHMENT TO WALL MOUNT BRACKET
- \* DIMENSION = 5" WHEN USED WITH DAMPER
- \*\* CENTERED IN WALL MOUNT

### CUSTOMER APPROVAL TO MANUFACTURE:

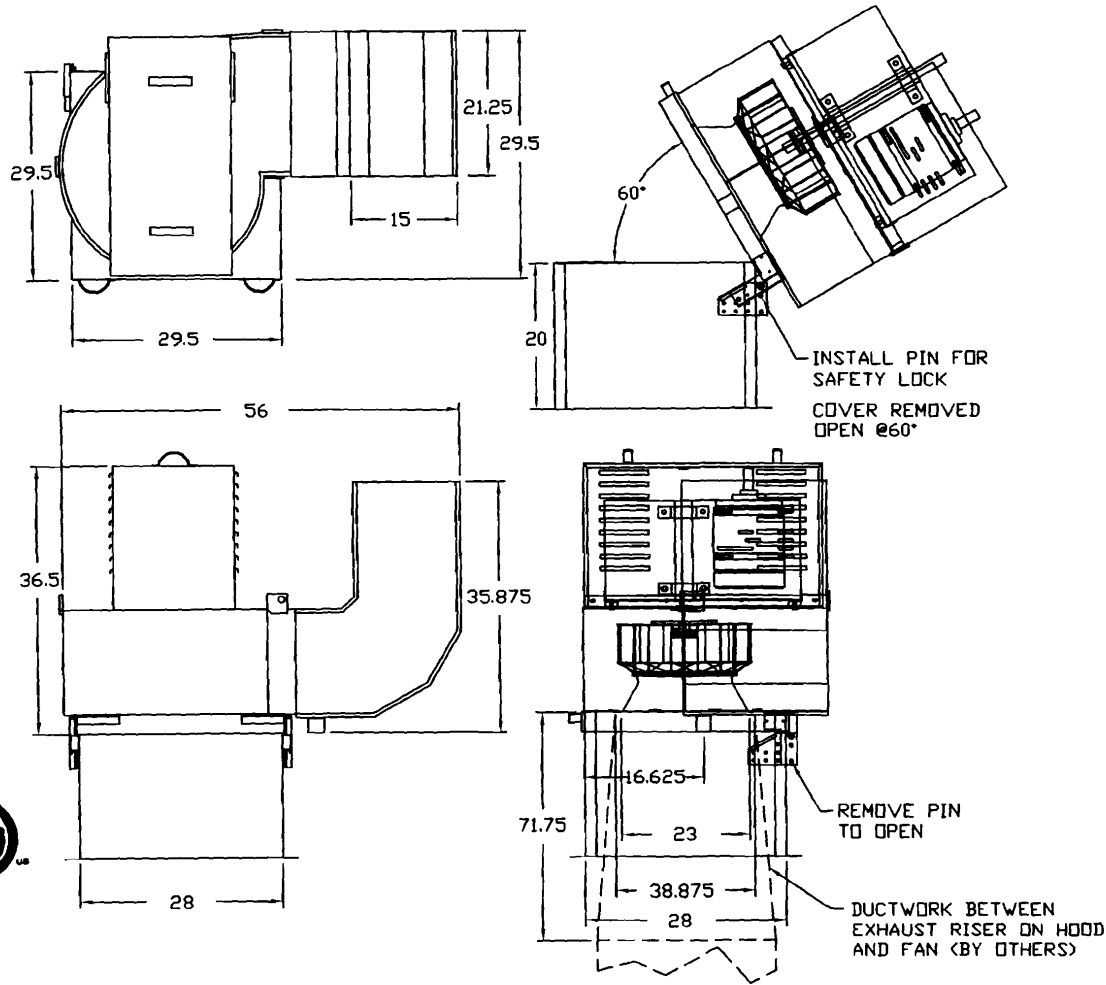
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- Your Title \_\_\_\_\_ Date \_\_\_\_\_

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# CAPTIVE AIR

JOB	Grace Restaurant Fans	
LOCATION	PORTLAND, ME	
DATE	10/28/2008	JOB # 863683
DWG #	GraceRestauran	DRAWN BY BFC
REV.	1.00	SCALE 8.5' x 11'

Utility Set (Restaurant. Duty) (Fan #4 HRE-20)



**FEATURES:**

- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL762
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

**NORMAL TEMPERATURE TEST**

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**OPTIONS:**

- GREASE BOX
- INSULATED CURB

**CUSTOMER APPROVAL TO MANUFACTURE:**

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- Approved with NO Exception Taken
- Revise and Resubmit

SIGNATURE \_\_\_\_\_

Your Title \_\_\_\_\_ Date \_\_\_\_\_

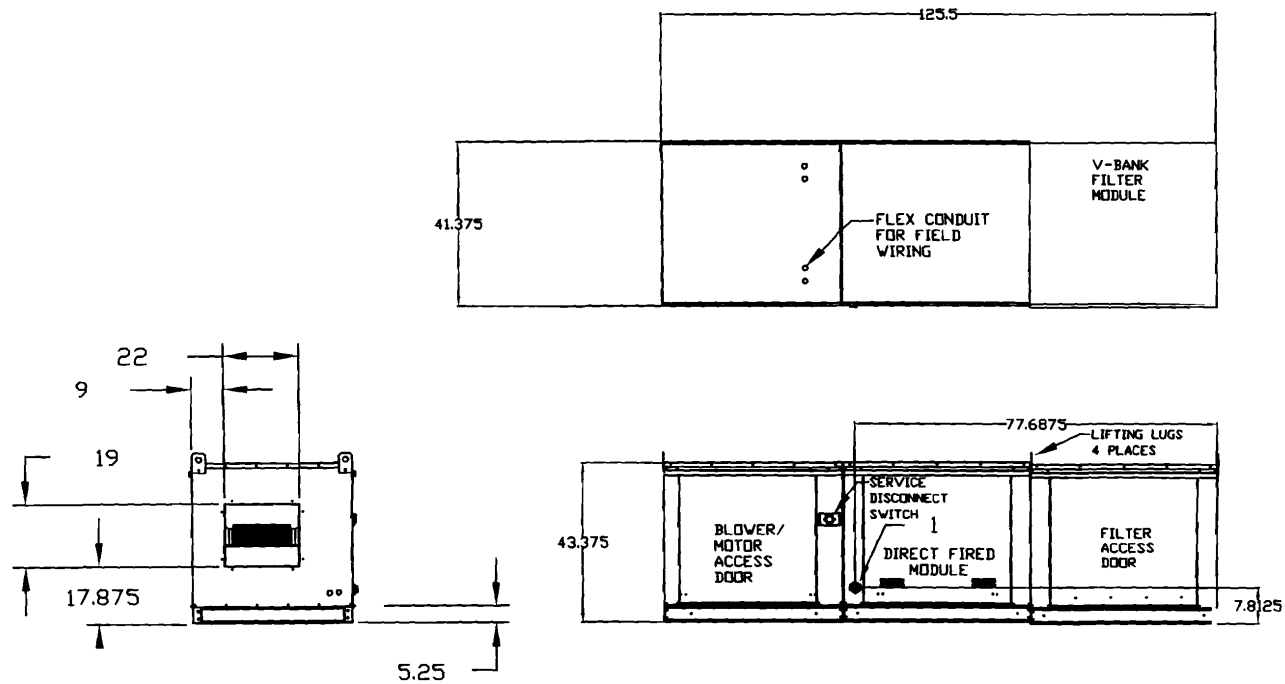
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**CAPTIVEAIR**

<b>JOB</b> Grace Restaurant Fans	
<b>LOCATION</b> PORTLAND, ME	
<b>DATE</b> 10/28/2008	<b>JOB #</b> 863683
<b>DWG #</b> GraceRestauran	<b>DRAWN BY</b> BFC
<b>REV.</b> 1.00	<b>SCALE</b> 8.5' x 11'

# Modular Direct-Fired Heater (Fan #5 A3-D.750-G18)

- (Model#: VB-I-03MDF-F) V-Bank for Size # 3 Modular Heater with Foam EZ Kleen Filters. For indoor installation.
- (Model#: A3-D.750-G18) Direct Gas Fired Heated Make Up Air Unit with 18" Blower and 18" Burner.
- Side Discharge - Air Flow Right -> Left



## CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

SIGNATURE \_\_\_\_\_

Your Title \_\_\_\_\_ Date \_\_\_\_\_

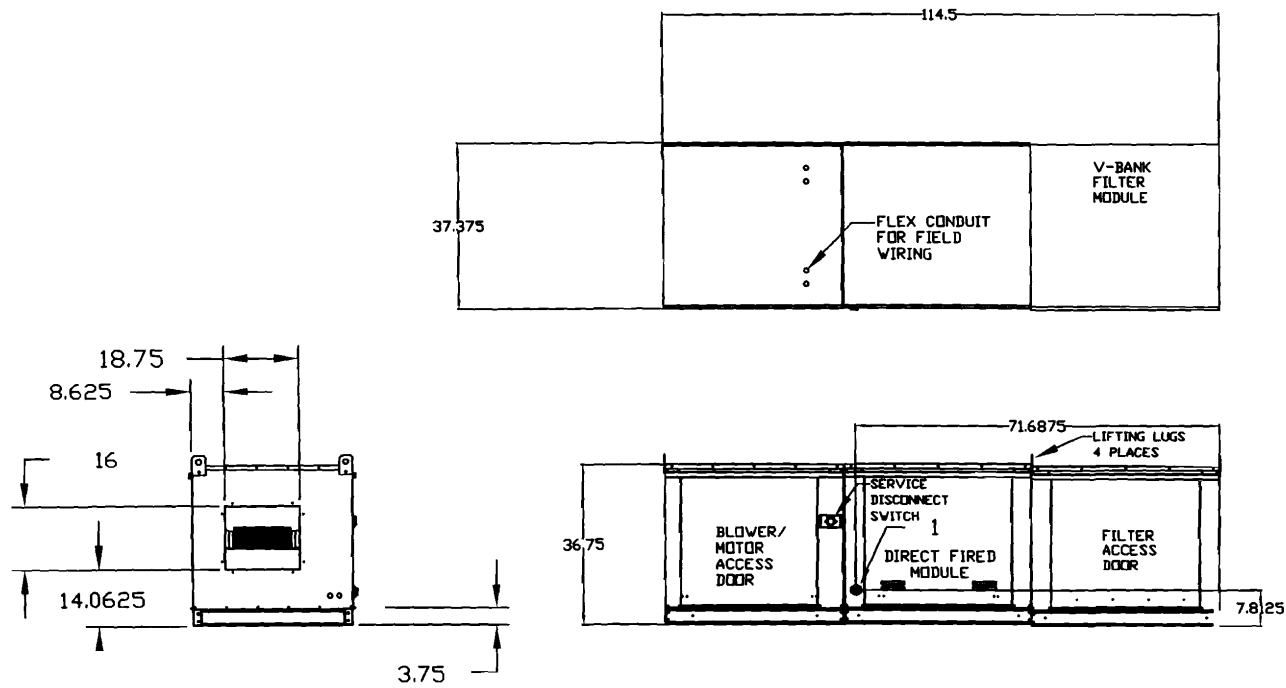
**\*FOR QUESTIONS AND PRICING\***  
 CALL OR FAX: BART CHANDLER  
 MAINE REGIONAL OFFICE  
 124 OHIO HILL ROAD, FAIRFIELD, ME 04937  
 PHONE: (207) 238-9213  
 FAX: (207) 238-9238

# CAPTIVE AIR

<b>JOB</b>	Grace Restaurant Fans	
<b>LOCATION</b>	PORTLAND, ME	
<b>DATE</b>	10/28/2008	<b>JOB #</b> 863683
<b>DWG #</b>	GraceRestaurant	<b>DRAWN BY</b> BFC
<b>REV.</b>	1.00	<b>SCALE</b> 8.5' x 11'

# Modular Direct-Fired Heater (Fan #6 A2-D.500-G15)

- (Model#: VB-I-02MDF-F) V-Bank for Size # 2 Modular Heater with Foam EZ Klean Filters. For Indoor Installation.
- (Model#: A2-D.500-G15) Direct Gas Fired Heated Make Up Air Unit with 15' Blower
- Side Discharge - Air Flow Right -> Left



## CUSTOMER APPROVAL TO MANUFACTURE:

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SIGNATURE \_\_\_\_\_

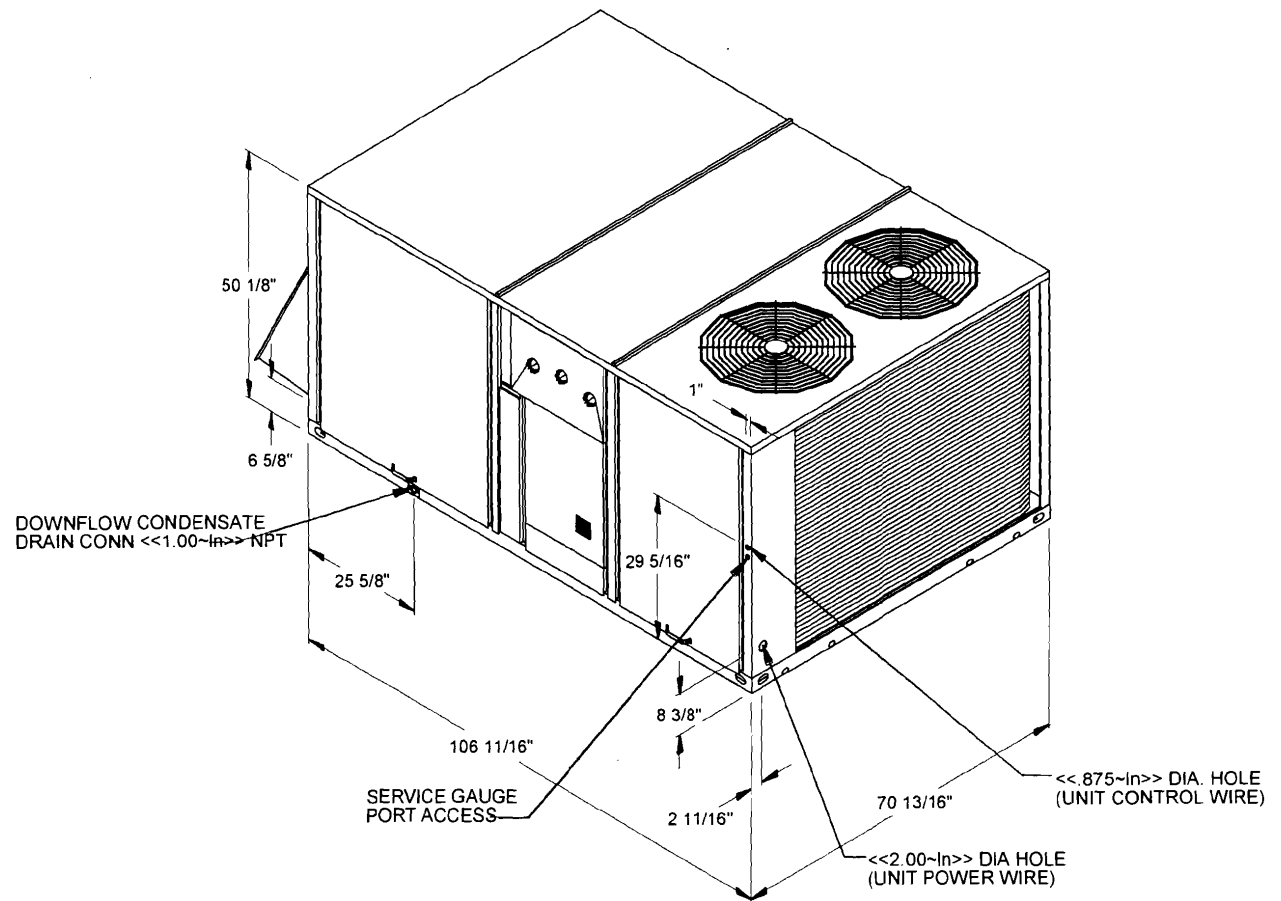
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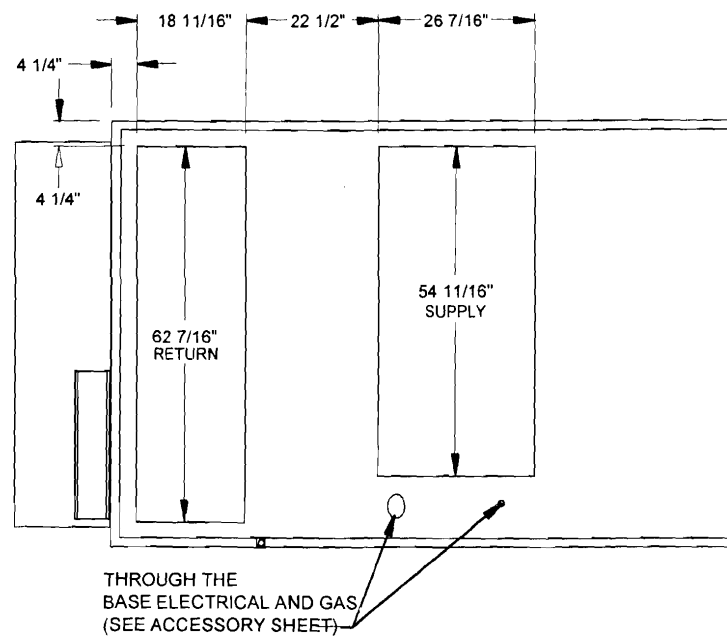
# CAPTIVE AIR

<i>JOB</i> Grace Restaurant Fans	
<i>LOCATION</i> PORTLAND, ME	
<i>DATE</i> 10/28/2008	<i>JOB #</i> 863683
<i>DWG #</i> GraceRestaurant	<i>DRAWN BY</i> BFC
<i>REV.</i> 1.00	<i>SCALE</i> 8.5' x 11'

**Unit Dimensions - Packaged Gas/Electric Rooftop Units**  
**Item: A1 Qty: 1 Tag(s): RTU-1**



DOWNFLOW ISOMETRIC-PACKAGED GAS/ELECTRIC



DOWNFLOW-PENATRATION

**ELECTRICAL / GENERAL DATA**

GENERAL PERFORMANCE			
Tons:	12.5	Standard Motor	
Unit Operating Voltage Range:	187-253	Minimum Circuit Ampacity:	53.0
Unit Primary Voltage:	208	Maximum Fuse Size:	80.0
Unit Secondary Voltage:	230	Maximum (HACR) Circuit Breaker:	80.0
Unit Hertz:	60	Oversized Motor	
Unit Phase:	3	MCA:	N/A
EER:	9.6	MFS:	N/A
		MCB (HACR):	N/A
		Field Installed Oversized Motor	
		MCA:	N/A
		MFS:	N/A
		MCB (HACR):	N/A

GAS HEATING		COMPRESSOR	
Heating Models:	High	Circuit #1	Circuit #2
Heating Input (Btu/h):	250,000	Number:	1
Heating Output (Btu/h):	203,000	Horsepower:	6.0
	1st Stage Input: 175,000	Phase:	3
	1st Stage Output: 142,000	Rated Load Amps:	20.4
Min./Max. Gas Input -	Turn Down Ratio: N/A	Locked Rotor Amps:	156.0
Pressure Natural or LP:	2.50 / 14.00		
Gas Connection Pipe Size:	1/2"		

INDOOR MOTOR		OUTDOOR MOTOR	
	Field Installed Oversized Motor		
Number:	1	Number:	2
Horsepower:	3.00	Horsepower:	.50
Motor Speed (RPM):	1,740	Motor speed (RPM):	1,100
Phase:	3	Phase:	1
Full Load Amps:	10.6	Full Load Amps:	3.2
Locked Rotor Amps:	81.0	Locked Rotor Amps:	8.8

POWER EXHAUST		COMBUSTION BLOWER MOTOR	
(Field Installed Power Exhaust)		(Gas-Fired Heating only)	
Horsepower:	N/A	Horsepower:	.05
Motor Speed (RPM):	N/A	Motor Speed (RPM):	3,500
Phase:	N/A	Phase:	1
Full Load Amps:	N/A	Full Load Amps:	.50
Locked Rotor Amps:	N/A	Locked Rotor Amps:	.78

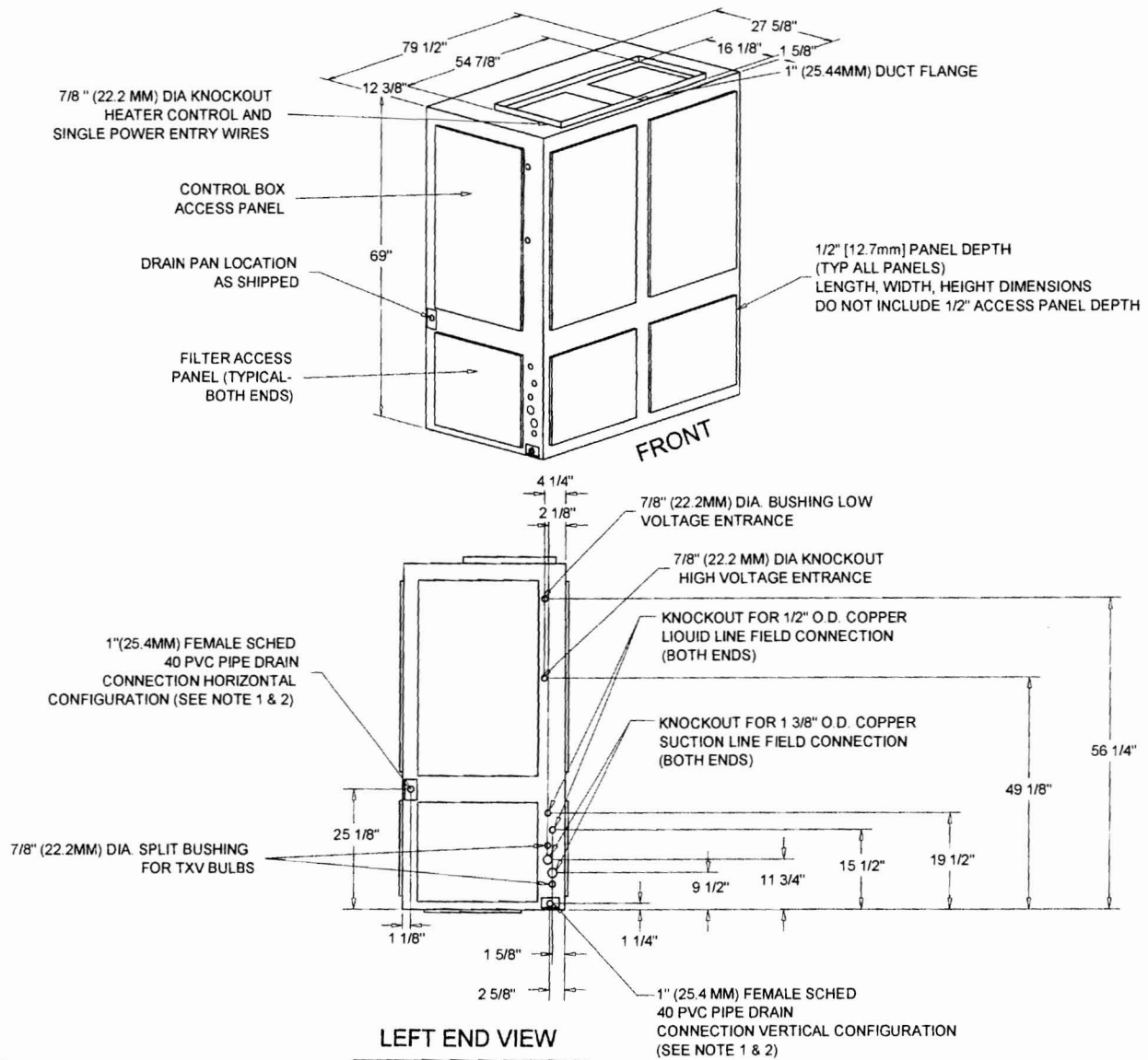
FILTER		REFRIGERANT	
Type:	Throwaway	Circuit #1	Circuit #2
Furnished:	Yes	Type:	R-22
Number:	2 / 4	Factory Charge:	9.3
Recommended Size:	20"x20"x2" / 20"x25"x2"		9.4

**NOTES:**

1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at ARI conditions and in accordance with DOE test procedures.

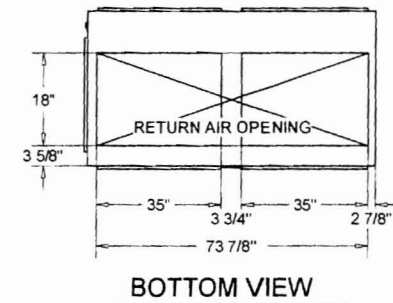
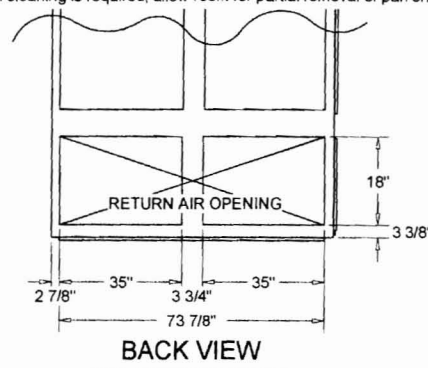
*RTU-1 Wt. 1900 Lbs*

**Unit Dimensions - Split System Air Conditioning Units (Large)**  
**Item: B1 Qty: 2 Tag(s): AHU-1/CU-1, AHU-2/CU-2**



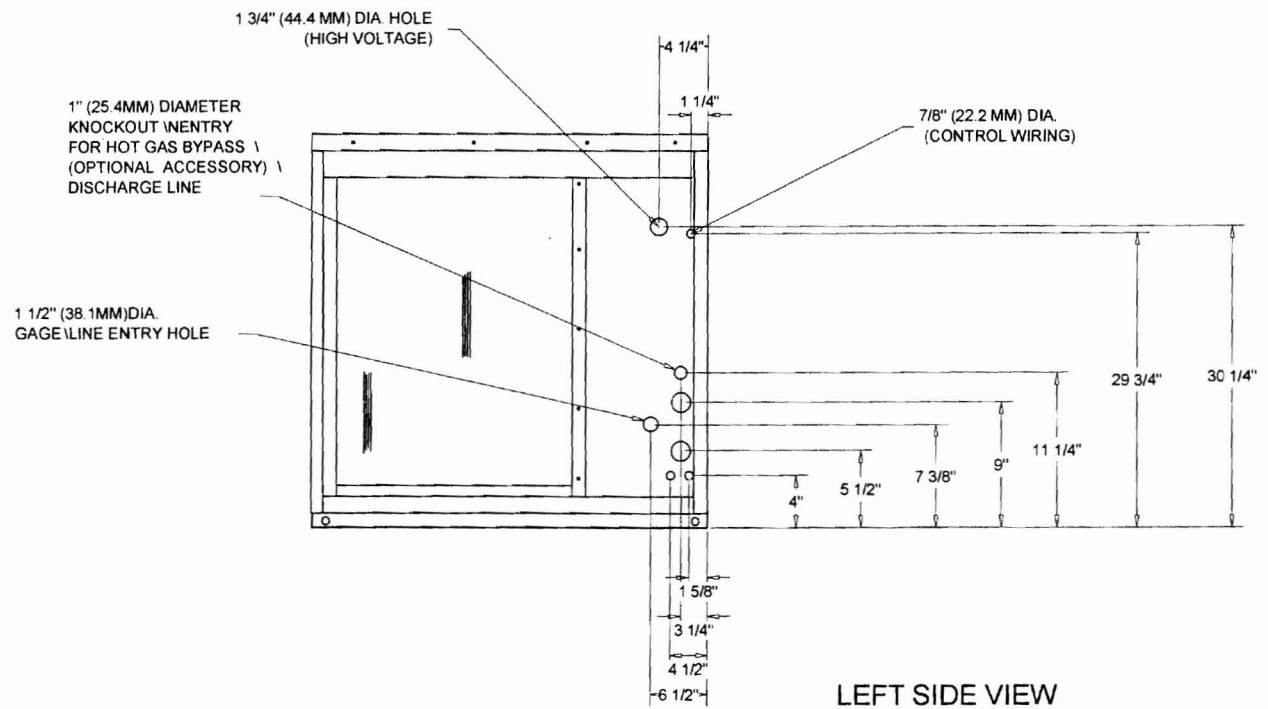
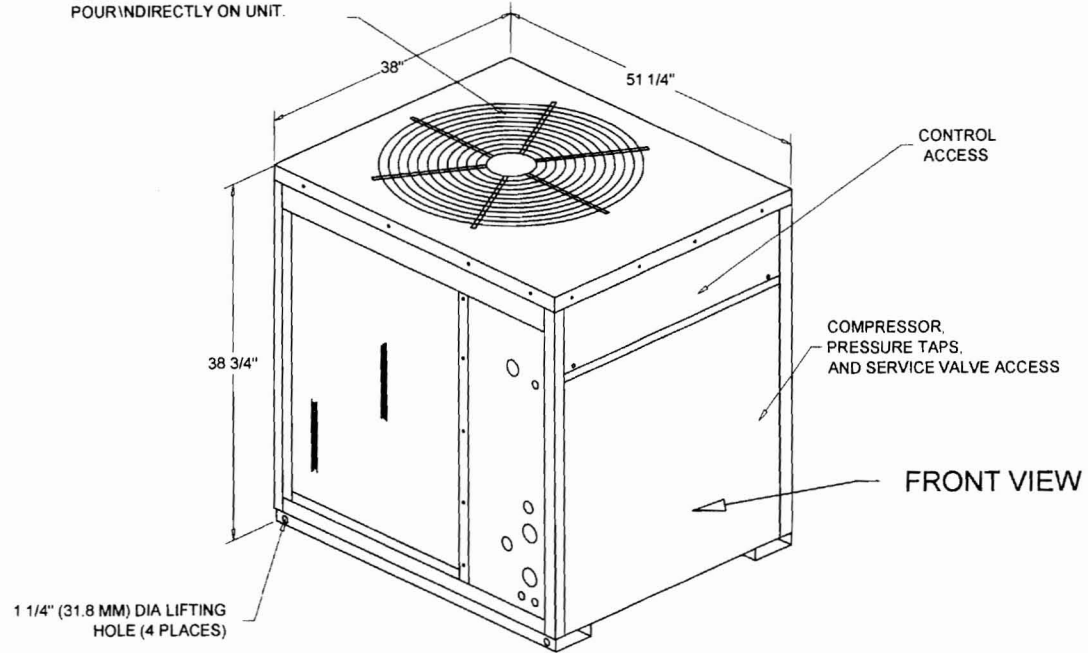
**NOTES:**

1. Removable drain pan and attached drain connection may be installed on either end of the vertical or horizontal configuration. Plastic drain pan access plate on the end of unit opposite drain connection must be removed to slide drain pan out of unit for cleaning. Access plate must be re-installed after sliding drain pan back into unit.
2. If periodic drain pan cleaning is required, allow room for partial removal of pan on drain connection end of unit.



Grace Restaurant  
 Dimensions - Split System Air Conditioning Units (Large)  
 Item: B1 Qty: 2 Tag(s): AHU-1/CU-1, AHU-2/CU-2

TOP DISCHARGE AREA SHOULD BE UNRESTRICTED IN FOR 100" (2540 mm) MINIMUM. UNIT SHOULD BE IN PLACED SO ROOF RUN-OFF WATER DOES NOT POUR INDIRECTLY ON UNIT.





**Tag Data - Split System Air Conditioning Units (Large) (Qty: 2)**

Item	Tag(s)	Qty	Description	Model Number
B1	AHU-1/CU-1, AHU-2/CU-2	2	12.5 Ton Unitary Split Systems	TTA150B300--TWE180B300

**Product Data - Split System Air Conditioning Units (Large)**

**Item: B1 Qty: 2 Tag(s): AHU-1/CU-1, AHU-2/CU-2**

TTA Air Condensing Outdoor Unit  
 12 1/2 Ton Nominal Cooling Capacity  
 Dual Compressors - R22  
 208-230 Volt 3 Phase 60 Hertz  
 TWE Air Handler Unit  
 12.55 Ton Nominal Cooling Capacity  
 Dual Refrigerant Circuit - R22  
 208-230 Volt 3 Phase 60 Hertz  
 Hot water coil enclosure & asm (Fld)  
 Oversized motor (Fld)

**Performance Data - Split System Air Conditioning Units (Large)**

Tags	AHU-1/CU-1, AHU-2/CU-2
MCA - cooling only unit (A)	55.50
MOP - cooling only unit (A)	70.00
Min. Cond. operating weight (lb)	488.0
Max. Cond. operating weight (lb)	544.0
Airflow (cfm)	5000
Cooling EDB (F)	80.00
Cooling EWB (F)	67.00
Ambient (F)	95.00
Relative humidity (%)	51.08
Gross total capacity (MBh)	149.41
Gross sensible capacity (MBh)	107.29
Latent capacity (MBh)	42.12
Net total capacity (MBh)	141.77
Net sensible capacity (MBh)	99.64
Cooling LDB (F)	61.97
Cooling LWB (F)	58.09
Saturated suction temp (F)	46.50
Discharge temperature (F)	128.92
Electric Heat Capacity (MBh)	0.00
Electric heat delta T (F)	0.00
Line length - actual (ft)	50.00
Cond. location to A.H.	Above air handler
Vertical rise (ft)	12.00
Suction line size od (per circuit)	1-3/8 in.
Liquid line size od (per circuit)	1/2 in
Est. refrig. chrg / circuit (lb)	14.9
Solenoid valve part #	N/A
Sight glass part #	GLS00852
Metering device	Expansion valve
External Static Pressure (in H2O)	1.00
Hydronic coil (for S.P. add)	Hot water
External plus component static pressure (in H2O)	1.41
Oversized motor to be field installed	Yes
Indoor mtr operating power (bhp)	2.43
Indoor motor RPM (rpm)	1006
MCA - A.H. (A)	12.00
MOP - A.H. (A)	20.00

CU-1/2

500#

Tags	AHU-1/CU-1, AHU-2/CU-2
Indoor motor power (kW)	2.21
Outdoor motor power (kW)	0.98
Compressor power (kW)	12.64
Total power (kW)	15.83
EER @ ARI (with air handler) (EER)	9.8
EER @ ARI (cond. unit only) (EER)	9.8
IPLV (system) (IPLV)	11.0
IPLV (cond. unit only) (IPLV)	13.7
Compressor 1 RLA (A)	22.00
Compressor 2 RLA (A)	22.00
Condenser motor 1 FLA (A)	6.00
Min. A.H. operating weight (lb)	692.0
Max. A.H. operating weight (lb)	1014.0
Fan motor heat (MBh)	7.65

AHU-1  
8 2

1000#

**Tag Data - BCXC Blower Coil Air Handler (Qty: 1)**

Item	Tag(s)	Qty	Description	Model Number
C1	AHU-3	1	BCXC Blower Coil Air Handler	BCHC036E2**A1A13H000000B010000000000000

**Product Data - BCXC Blower Coil Air Handler**
**Item: C1 Qty: 1 Tag(s): AHU-3**

HORIZONTAL CONFIGURATION

Horizontal Configuration

Unit Size 36; 3 Ton

208/60/3

Foil Faced Insulation 1"

Motor, drive &amp; control box on Same Side as Coil &amp; Drainpan Connection

Polymer Drainpan - Right Hand Coil &amp; Drainpan Connections

1 Row Heating Hydronic Coil

3 Row DX, 3/16" (0.032 wall) Distributor

3/4 Horsepower

1200-1700 rpm 60 hz (995-1410 rpm 50 hz)

2" Pleated Throwaway Filter

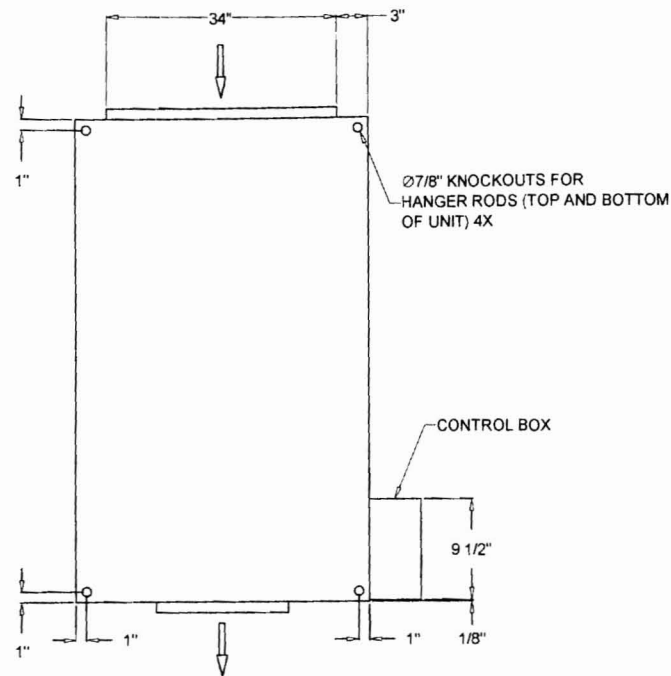
Control Interface

**Performance Data - BCXC Blower Coil Air Handler**

Tags	AHU-3
Design airflow (cfm)	1200
Total cooling capacity (MBh)	38.39
Sensible capacity (MBh)	26.92
Cooling EDB (F)	76.00
Cooling EWB (F)	65.00
Cooling LDB (F)	55.56
Cooling LWB (F)	54.43
Entering refrigerant temp (F)	115.00
Saturated suction temp (F)	45.00
Cooling face velocity (ft/min)	450
Auxiliary heat type	Hydronic Preheat
Aux EAT (F)	55.00
Aux LAT (F)	97.85
Auxiliary total capacity (MBh)	55.77
Aux APD (in H2O)	0.10
Aux ent fluid temp (F)	180.00
Aux flow rate (gpm)	3.71
Aux fluid PD (ft H2O)	12.59
Unit length (in)	44.000
Unit width (in)	40.000
Unit height (in)	18.000
Installed weight (lb)	145.6
Rigging weight (lb)	142.5
Aux delta T (F)	30.00
Aux face velocity (ft/min)	450
ESP (in H2O)	1.00
TSP (in H2O)	1.59
Fan speed (rpm)	1412
Aux lvg fluid temp (F)	150.00
Min circuit ampacity (A)	3.63
Max fuse size (A)	15.00
Main coil type	DX - R22
Actual motor power (hp)	0.557
Full load amps (A)	2.90
Lock rotor amps (A)	15.90
Outlet velocity (ft/min)	1015

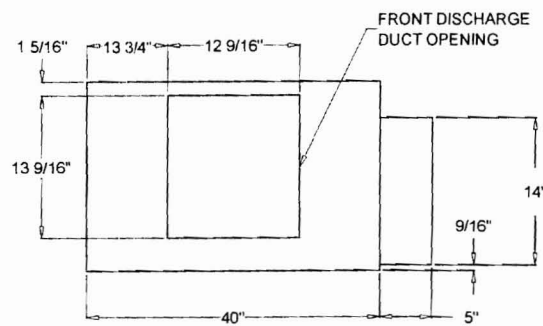
200#

Unit Dimensions - BCXC Blower Coil Air Handler  
 Item: C1 Qty: 1 Tag(s): AHU-3

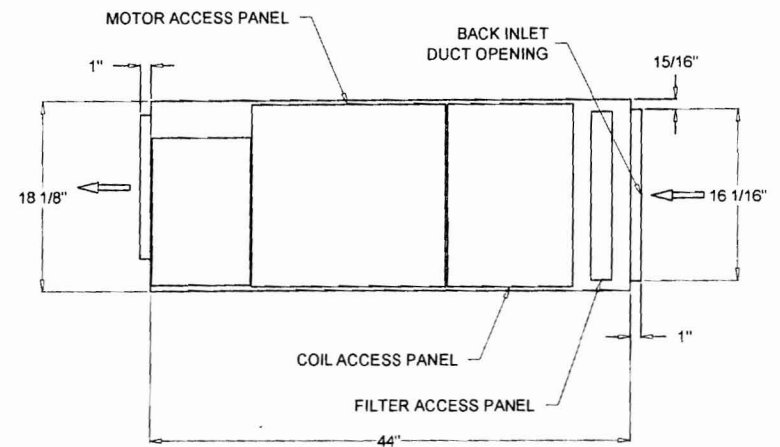


TOP VIEW

WEIGHT	
BASIC UNIT	121.6 lb



FRONT VIEW



RIGHT VIEW

## NOTES:

1. ACCESS PANELS ARE LOCATED ON BOTH SIDES OF THE UNIT TO PROVIDE ACCESS TO THE UNIT'S INTERNAL COMPONENTS.
2. WEIGHT OF BASIC UNIT DOES NOT INCLUDE COIL, ELECTRIC HEATER, MOTOR OR BOTTOM ACCESS FILTER SECTION. ADD 9.0 lb TO BASIC UNIT WEIGHT FOR CONTROL BOX. REFER TO CATALOG FOR COIL, ELECTRIC HEATER, MOTOR AND BOTTOM ACCESS FILTER SECTION WEIGHTS.
3. CONTROL BOX IS FACTORY MOUNTED ON DRIVE SIDE AND PROVIDED WITH 7/8" DIAMETER KNOCKOUTS FOR FIELD WIRING.
4. ARROWS INDICATE THE DIRECTION OF AIRFLOW.

ADJACENT  
BUILDING MEFFIL  
AUDITORIUM

Boiler vent 16"x16" opening

28"x28" O.A.  
INTAKE LOUVER

12"x12" O.A.  
INTAKE LOUVER

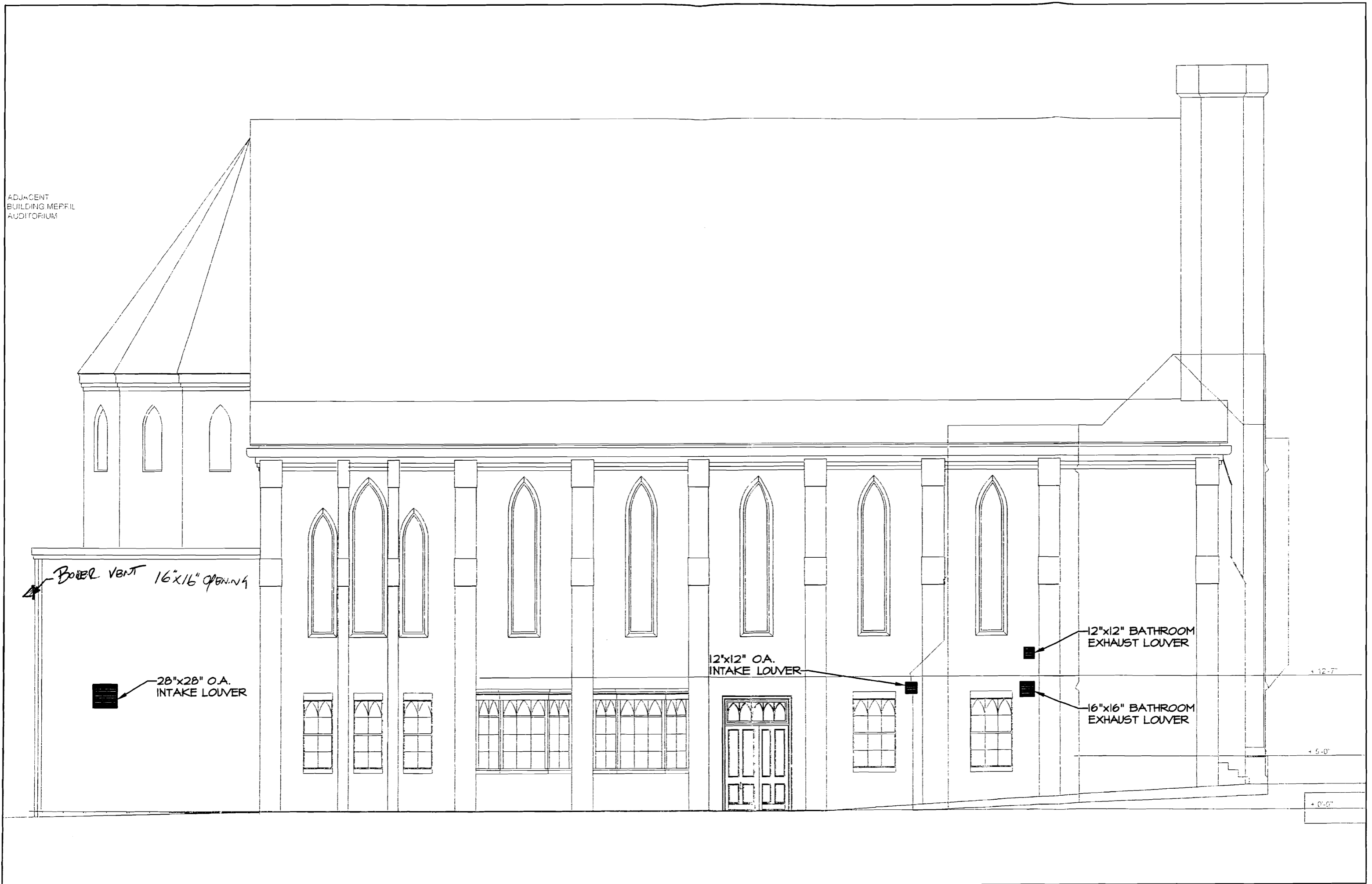
12"x12" BATHROOM  
EXHAUST LOUVER

16"x16" BATHROOM  
EXHAUST LOUVER

+ 12'-7"

+ 5'-0"

+ 0'-0"



THE FOLLOWING BUILDING CODES AND STANDARDS SHALL BE REFERENCED DURING CONSTRUCTION:

IBC 2003	EDITION OF THE IBC INTERNATIONAL BUILDING CODE
ASCE 7	AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
ACI 301	AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE
AISC	AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE
ACI 318	AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
NDS	NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION BY NATIONAL FOREST PRODUCTS ASSOCIATION, 2001.

REFERENCE ARCHITECTURAL PLANS FOR DIMENSIONS NOT SHOWN. REFERENCE MECHANICAL, ELECTRICAL, AND ARCHITECTURAL PLANS FOR SIZES AND LOCATIONS OF WALL AND SLAB OPENINGS, DUCTS, PIPING, CURBS, AND EQUIPMENT PADS. IN THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS, SPECIFICATIONS, OR NOTES ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION.

EXISTING DIMENSIONS AND CONDITIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY. ALL EXISTING CONSTRUCTION AND DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION OR FABRICATION. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO COMMENCING WORK.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF DEVIATIONS OR CHANGES ARE REQUIRED TO THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS DUE TO INTERFERENCES, FABRICATION ERRORS, OR OTHER CAUSES.

THE STRUCTURE IS SELF-SUPPORTING AND STABLE AFTER THE ENTIRE BUILDING IS COMPLETELY CONSTRUCTED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCING DURING CONSTRUCTION AND ERECTION TO PROVIDE AND ENSURE LOCAL AND OVERALL STABILITY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION AND ERECTION. THE CONTRACTOR SHALL RETAIN A LICENSED STRUCTURAL ENGINEER TO DESIGN TEMPORARY BRACING/SHORING AND DETERMINE WHERE THE TEMPORARY BRACING/SHORING IS NEEDED.

**GENERAL NOTES**

USE DEFORMED BILLET-STEEL REINFORCING BARS, GRADE 60, IN CONFORMANCE WITH ASTM A615. REINFORCEMENT SHALL BE ACCURATELY PLACED AND SUPPORTED PRIOR TO CONCRETE PLACEMENT, AND SHALL BE SECURED AGAINST DISPLACEMENT.

THE CONTRACTOR SHALL SUBMIT REINFORCING SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO COMMENCING FABRICATION. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING OF REINFORCED CONCRETE STRUCTURES". SHOP DRAWINGS SHALL SHOW REINFORCING STEEL PLACEMENT DETAILS AND SECTIONS.

MINIMUM CONCRETE COVER FOR REINFORCEMENT	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER	2 INCHES
CONCRETE NOT EXPOSED TO EARTH OR WEATHER IN SLABS AND WALLS (FOR PRIMARY REINFORCEMENT, TIES, AND STIRRUPS)	1½ INCHES
CONCRETE NOT EXPOSED TO EARTH OF WEATHER IN COLUMNS AND BEAMS	1½ INCHES

CONTINUOUS REINFORCEMENT SHALL BE TENSION LAP SPLICED PER LAP SPlice LENGTH TABLE, U.N.O..

LAP SPlice LENGTH TABLE							
BAR SIZE	#3	#4	#5	#6	#7	#8	#9
MIN LAP SPlice (INCHES)	18	24	30	36	48	64	81

REINFORCEMENT HOOKS SHALL CONFORM TO STANDARD HOOKS ACCORDING TO ACI 318, UNLESS OTHERWISE NOTED WELDING OF REINFORCEMENT IS NOT PERMITTED, UNLESS OTHERWISE NOTED.

**CONCRETE REINFORCING NOTES**

LIVE LOAD:  
MECHANICAL ROOM = 125 PSF  
WALK-IN FREEZER AREA = 150 PSF

SNOW LOADS:  
GROUND SNOW LOAD, P<sub>g</sub> = 50 PSF  
SNOW EXPOSURE FACTOR, C<sub>e</sub> = 1.0  
SNOW LOAD IMPORTANCE FACTOR, I = 1.0  
FLAT ROOF SNOW LOAD, P<sub>f</sub> = 35 PSF + DRIFT

**DESIGN CRITERIA**

ALL CONCRETE WORK, INCLUDING MATERIAL SELECTION, ADMIXTURES, MIXING, AND PLACEMENT OF CONCRETE SHALL BE IN CONFORMANCE WITH APPLICABLE BUILDING CODES. IN ADDITION, REFERENCE THE FOLLOWING CONCRETE STANDARDS AND SPECIFICATIONS:

- ACI 318 AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
- ACI 301 AMERICAN CONCRETE INSTITUTE SPECIFICATIONS FOR STRUCTURAL CONCRETE
- ACI 305 STANDARD SPECIFICATIONS FOR HOT WEATHER CONCRETING
- ACI 306 STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING
- ACI 308 STANDARD PRACTICE FOR CURING CONCRETE

REQUIRED CONCRETE PARAMETERS ARE AS FOLLOWS:

LOCATION	MAX W/C RATIO	f <sub>c</sub>	AIR-ENTRAINMENT
INT. SLAB-ON-GRADE	.47	4,000 PSI	NONE

WHERE: W/C = WATER TO CEMENT RATIO AND  
f<sub>c</sub> = COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS

MAXIMUM AGGREGATE SIZE SHALL BE ¾", IN CONFORMANCE WITH ASTM C33  
USE PORTLAND CEMENT TYPE II, IN CONFORMANCE WITH ASTM 150.  
AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C 260.  
ADMIXTURES SHALL CONFORM TO "SPECIFICATION FOR CHEMICAL ADMIXTURES FOR CONCRETE" ASTM C 494.  
FLY ASH USED AS ADMIXTURES SHALL CONFORM TO ASTM C 618.  
FLY ASH USED AS ADMIXTURES SHALL CONFORM TO ASTM C 618. CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE IS NOT PERMITTED.

MAXIMUM SLUMP AFTER THE ADDITION OF A WATER-REDUCING ADMIXTURE IS 8 INCHES.

CONCRETE EXPOSED TO FREEZING AND THAWING, INCLUDING FOUNDATIONS, FOOTINGS, FOUNDATION WALLS, AND EXTERIOR WALKWAYS SHALL BE AIR ENTRAINED WITH AIR CONTENT BETWEEN 5% AND 6%. CONTRACTOR SHALL NOT PLACE CONCRETE ON FROZEN GROUND OR IN WATER. ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING NEAR-FREEZING OR FREEZING WEATHER. REFERENCE ACI 306, AS NOTED ABOVE, FOR RECOMMENDATIONS FOR COLD WEATHER CONCRETING.

CONTRACTOR SHALL SUBMIT PROPOSED CONCRETE MIX DESIGN AND LABORATORY TESTS OF FABRICATED CYLINDERS VERIFYING CONCRETE STRENGTH OR PERFORMANCE HISTORY OF MIX TO ENGINEER FOR ACCEPTANCE PRIOR TO PLACEMENT OF CONCRETE. CONCRETE USED ON SITE SHALL BE FIELD TESTED IN ACCORDANCE WITH AND IN THE PRESENCE OF AN APPROVED TESTING AGENCY. FIELD TESTING INFORMATION SHALL INDICATE SLUMP, AIR CONTENT, AND TEMPERATURE. COMPRESSION TEST 1 CYLINDER AT 7 DAYS AND 2 AT 28 DAYS. HOLD AN ADDITIONAL CYLINDER FOR A 56 DAY BREAK, IF NECESSARY. PROVIDE A SET OF 4 CYLINDERS FOR EACH PLACEMENT AND PER 50 CUBIC YARDS OF CONCRETE PLACED. THE OWNER SHALL PAY FOR ALL CONCRETE TESTING.

CONSTRUCTION JOINTS IN WALLS SHALL BE PERMITTED AS DETAILED ON THE STRUCTURAL DRAWINGS. SURFACES OF CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED. VERTICAL CONSTRUCTION JOINTS IN WALLS SHALL NOT EXCEED A SPACING OF 40 FEET.

WHERE ELECTRICAL CONDUIT/ RADIANT HEATING TUBES RUN IN THE SLAB, THEY SHALL BE LOCATED AT MID-DEPTH OF THE SLAB. ALUMINUM CONDUIT AND SLEEVES ARE NOT PERMITTED.

ANCHOR BOLTS SHALL CONFORM TO ASTM A307. ANCHOR BOLTS SHALL HAVE HEAVY HEX NUTS AND LOCK WASHERS.

**CONCRETE NOTES**



424 Fore Street  
Portland, ME 04101  
Phone 207.842.2800  
Fax 207.842.2828  
www.cascobayengineering.com

CLIENT:  
**R. DEAN BINGHAM**  
55 ROBERTS STREET  
PORTLAND, ME 04102

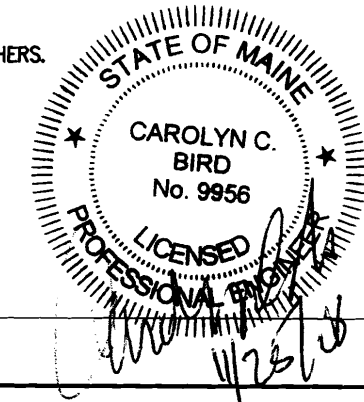
**GRACE**  
 CHESTNUT STREET CHURCH  
 PORTLAND MAINE

REVISIONS	DATE	ISSUE
0	11-15-08	FIX CONCRETE SECTION

SHEET TITLE:

**NOTES**

DESIGNED:	TD
DRAWN:	TD
DATE:	10-31-08
CADD FILE:	8097-S1.DWG
PROJECT No:	8097



**S0**