

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



# CITY OF PORTLAND

# BUILDING PERMIT

This is to certify that LLC BUCKSTAR

Located At 188 MIDDLE ST

Job ID: 2011-08-1844-ALTCOMM

CBL: 032-1-021-001

has permission to add Lennox Electric heat on Roof

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

Fire Prevention Officer

Code Enforcement Officer / Plan Reviewer

**THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY  
PENALTY FOR REMOVING THIS CARD**

## BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: [buildinginspections@portlandmaine.gov](mailto:buildinginspections@portlandmaine.gov)

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OF CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life • [www.portlandmaine.gov](http://www.portlandmaine.gov)*

Director of Planning and Urban Development  
Penny St. Louis

**Job ID: 2011-08-1844-  
ALTCOMM**

**Located At: 188 MIDDLE ST**

**CBL: 032- I-021-001**

## **Conditions of Approval:**

### **Zoning**

1. This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
2. This B-3 zone has maximum noise allowances. The City of Portland strictly enforces the level of sound generated on the property. Any verified noise violations shall require the owner to take mitigating measures to bring the property and the noise it generates into compliance.
3. All previous conditions are still in force with the issuance of this permit.

### **Zoning**

1. This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
2. ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.
3. This property shall remain retail and a bar/lounge remaining in the basement with the issuance of this permit. Any change of use shall require a separate permit application for review and approval.
4. Separate tenant fit-up permits are required for future tenants in the building. This permit *only* covers the specific tenant fit-up for "Urban Outfitters" on the first floor, with bathrooms and egress access in the basement.
5. Separate permits shall be required for any new signage and will be reviewed separately from this permit. The signs shown on the submitted plans are *not* approved at this time.

### **Historic**

\* Proposed door handles for front entrance not approved at this time. Staff will consult with Historic Preservation Board and communicate decision to project architect.

### **Fire**



All construction shall comply with City Code Chapter 10.

Previous NFPA occupancy use was assembly on floor 1 and basement and business on upper floors. Proposed use is new class A mercantile floor 1, with basement bathrooms & egress, basement assembly and vacant floors 2, 3, & 4.

Exit doors shall not be provided with locks that require special tools or knowledge, including the front exit without approval from the Fire Prevention Bureau in writing.

The doors enclosing the rear exit stair between floor 1 and the basement shall be 60-minute fire door assemblies, not 45-minute door assemblies, per LSC Table 8.3.4.2. Hardware on rear exit stair doors shall be listed fire exit hardware.

Occupancies with an occupant load of 100 persons or more require panic hardware on all doors serving as a means of egress.

Application requires State Fire Marshal approval.

Central Station monitoring for addressable fire alarm systems shall be by point.

The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required.

A separate Fire Alarm Permit is required.

Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.

The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.

Fire alarm system requires a wireless master box connection per city ordinance.

The sprinkler system shall be installed in accordance with NFPA 13.

A separate Suppression System Permit is required.

The fire alarm system shall provide sprinkler supervisory service in accordance with NFPA 101, *Life Safety Code*, and NFPA 72, *National Fire Alarm and Signaling Code*.

Sprinkler protection shall be maintained. Where the system is to be shut down for maintenance or repair, the system shall be checked at the end of each day to insure the system has been placed back in service.

The Fire Department will require Knox locking caps on all Fire Department Connections on the exterior of the building.

System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

Installation of a sprinkler or fire alarm system requires a Knox Box to be installed per city ordinance.

Fire extinguishers are required per NFPA 10.

Emergency lights and exit signs are required. Emergency lights and exit signs are required to be labeled in relation to the panel and circuit and on the same circuit as the lighting for the area they serve.

Any cutting and welding done will require a Hot Work Permit from Fire Department.

Walls in structure are to be labeled according to fire resistance rating. IE; 1 hr. / 2 hr. / smoke proof.

A single source supplier should be used for all through penetrations.

## **Building**

1. Application approval based upon information provided by applicant with revisions received as dated. Any deviation from approved plans requires separate review and approval prior to work.
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 2009 Section 713.
3. A final special inspection report must be submitted prior to issuance of a certificate of occupancy. This report must demonstrate any deficiencies and corrective measures that were taken.
4. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.

## **Fire**

Installation shall comply with City Code Chapter 10.

Fuel-fired boilers shall be protected in accordance with NFPA 101, *Life Safety Code*.

Installation shall comply with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*;

NFPA 54, *National Fuel Gas Code*;

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*;

NFPA 91, *Standard for Exhaust Systems for Air Conveying Vapors, Gases, Mists, and Noncombustible Particulate Solids*;

NFPA 70, *National Electrical Code*; and the manufacturer's published instructions.

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

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

Job No: 2011-08-1844-ALTCOMM 2011-11014 HVAC	Date Applied: 10/11/2011	CBL: 032- 1-021-001	
Location of Construction: 188 MIDDLE ST	Owner Name: BUCKSTAR LLC	Owner Address: 100 SILVER ST PORTLAND, ME 04101	Phone:
Business Name: Urban Outfitters	Contractor Name: Airtemp, Inc	Contractor Address: 11 Wallace Ave., South Portland, ME 04106	Phone: 774-2300
Lessee/Buyer's Name:	Phone:	Permit Type: HVAC	Zone: B-3
Past Use: Retail	Proposed Use: Same: Retail - To install cooling system on roof (Lennox)	Cost of Work: \$46,000.00	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved w/conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A Signature: <i>Capt. Biron 11/2/11</i>	Inspection: Use Group: HVAC Type: Signature: <i>[Signature]</i>
Proposed Project Description: HVAC		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Lannie		<b>Zoning Approval</b>	

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building Permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

## Special Zone or Reviews

- ☐ Shoreland  
☐ Wetlands  
☐ Flood Zone  
☐ Subdivision  
☐ Site Plan

\_\_\_ Maj \_\_\_ Min \_\_\_ MM

Date:

**CERTIFICATION**

## Zoning Appeal

- ☐ Variance  
☐ Miscellaneous  
☐ Conditional Use  
☐ Interpretation  
☐ Approved  
☐ Denied

Date:

## Historic Preservation

- ☐ Not in Dist or Landmark  
☐ Does not Require Review  
☐ Requires Review  
☒ Approved  
☐ Approved w/Conditions  
☐ Denied

Date:

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 appication 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

2011-08-1844  
# 2011-11014

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 180 Middle St. 327-21 Use of Building Retail Date 10/11/11  
Name and address of owner of appliance Urban Outfitters  
5000 S. Broad St. Bldg. 7 Philadelphia, PA 19112  
Installer's name and address Airtamp Inc. 11 Wallace Ave.  
S. Portland, ME 04106 Telephone 207-774-2300

**Location of appliance:**☐ Basement☐ Floor☐ Attic☒ Roof

1- Roof top  
1- cooling only  
A/C system

**Type of Fuel:**Electric heat☐ Gas☐ Oil☐ Solid**Appliance Name:**LennoxU.L. Approved ☒ Yes ☐ NoWill appliance be installed in accordance with the manufacture's installation instructions? ☒ Yes ☐ No

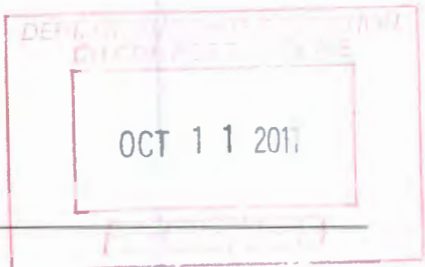
IF NO Explain: \_\_\_\_\_

**The Type of License of Installer:**☐ Master Plumber # \_\_\_\_\_☐ Solid Fuel # \_\_\_\_\_☐ Oil # \_\_\_\_\_☒ Gas # PNT 1977☐ Other \_\_\_\_\_**Type of Chimney:**☐ Masonry LinedFactory built N/A☐ MetalFactory Built U.L. Listing # N/A☐ Direct VentType N/A

UL# \_\_\_\_\_

**Type of Fuel Tank**☐ Oil N/A☐ GasSize of Tank N/ANumber of Tanks N/A

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

Cost of Work: \$ 46,000Permit Fee: \$ 480**Approved**

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

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

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

Signature of Installer [Signature]**Approved with Conditions**☐ See attached letter or requirement

Inspector's Signature \_\_\_\_\_

Date Approved \_\_\_\_\_

White - Inspection

Yellow - File

Pink - Applicant's

Gold - Assessor's Copy

**From:** "Tim Goering" <tgoering@phillipspart.com>  
**To:** "Mike Ethridge" <MEthridge@phillipspart.com>, "Michael Mould" <mmould@b...  
**CC:** "Brian Lindsay" <BLindsay@urbn.com>, "Chris Smith" <CSmith@urbn.com>, "R...  
**Date:** 10/28/2011 9:47 AM  
**Subject:** UO, 188 Middle Street (Portland, ME)  
**Attachments:** Letter to Marge Schuckal City of Portland 10-28-11.pdf

Ms. Schmuckal,

Please find the requested information attached for RTU-3.

Let me know if you have any questions or require additional information.

Respectfully,

Tim Goering  
678-463-9166



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From: Marge Schmuckal [mailto:MES@portlandmaine.gov]  
Sent: Wednesday, October 26, 2011 10:51 AM  
To: Grant, Dean  
Cc: Lewis, Peter  
Subject: Re: FW: Send data from MFP-07163759 10/26/2011 10:01

Dean,

Thank you for the quick response. I am noticing that on page for that you sent me the outdoor sound rating is 76 dBAs. The B-3 Zone allows a maximum of 60 dBAs from 7:00 am to 9:00 pm and a maximum of 55 dBAs from 9:00 pm to 7:00 am. Your unit is well over the maximum allowable.

You will need to first show me how you will mitigate the sound and bring it down to at least the maximum.

Marrge





PHONE: 770.394.1616

FAX: 770.394.1314

October 27, 2011

Ms. Marge Schmuckal  
Planning & Urban Development Department  
389 Congress St. Room 308  
Portland, ME 04101

Re: URBAN OUTFITTERS  
188 Middle Street  
Portland, ME 04101

Dear Ms. Schmuckal,

Thank you for the additional clarification regarding the noise ordinance listed under Sec. 14-221.1.(b) City of Portland Code of Ordinances. Per our conversation this letter will provide additional information regarding how the sound level emitting from the new rooftop unit RTU-3 attenuates from the rooftop unit to the property line at the rear of the building. The unit is located 25'-10" from the rear property line, which runs along the back wall of the building.

The calculation for sound pressure level depending on the distance for point-shaped sound sources is as follows:

$$L_2 = L_1 - 20 \lg(-)$$

Where  $L_1$  = Sound level at reference distance (in dBSPL)

Where  $L_2$  = Sound level at reference distance (in dBSPL)

Where = Reference distance from sound source per the RTU cut sheet (1'-0")

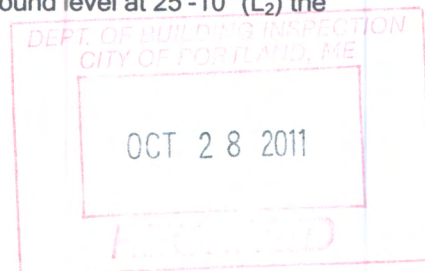
Where = Reference distance from sound source at the property line (25'-10")

The sound level difference is calculated from the following equation:

$$\Delta L = L_1 - L_2 \text{ (in dB)}$$

dBSPL = sound pressure level which is measured in decibels (dB)

Per the information submitted to you by the mechanical contractor,  $L_1 = 76$  dB (the sound level when standing within 1'-0" of the unit. When calculating the sound level at 25'-10" ( $L_2$ ) the equation above results in the following:





## Sound pressure level depending on the distance for point-shaped sound sources

Enter the three gray boxes and you get the amount of attenuation,  
you can expect with a change in sound source distance, in a free field.

<b>Reference distance</b> from sound source $r_1$	<b>Sound level <math>L_1</math></b> at reference distance $r_1$	<b>The 1/r law.</b> There really is no square and no power! Sound pressure
1.00 m or ft	76 dBSPL	
<b>Another distance <math>r_2</math></b> from sound source	<b>Sound level <math>L_2</math></b> at another distance $r_2$	<b>Sound level difference</b> $\Delta L = L_1 - L_2$
25.83333 m or ft	47.76 dBSPL	28.24 dB
	<input type="button" value="calculate"/>	<input type="button" value="reset"/>

$$L_2 = L_1 - 20 \cdot \lg \left( \frac{r_2}{r_1} \right)$$

Given sound levels and calculation of the distance:

$$r_2 = r_1 \cdot 10^{\frac{L_1 - L_2}{20}}$$

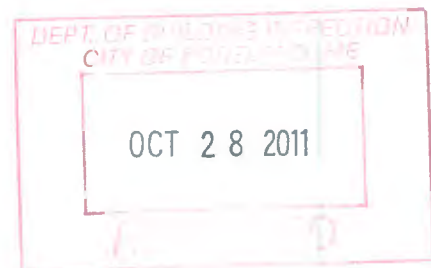
<http://www.sengpielaudio.com/calculator-distance.htm>

Based on the calculations above, the sound level from RTU-3 would drop to 47.76 dBSPL at roof level on the rear parapet of the building. Please note that this equation measures the sound level from the unit itself (direct sound field) and does not necessarily take into account the sound produced by the other units on the roof, the ambient noise produced by roof top units on or sound reflections caused by adjacent buildings.

Our understanding is that the 47.76 dB is within the City of Portland's requirement of 60 dB during the day and 55 dB during the evening. Please let me know if you require any additional information at this time prior to releasing this project for permit.

Regards,

Tim Goering  
Phillips Partnership



**From:** "Grant, Dean" <dgrant@comfortsystemsusa.com>  
**To:** <mes@portlandmaine.gov>  
**CC:** "Lewis, Peter" <plewis@comfortsystemsusa.com>  
**Date:** 10/26/2011 10:08 AM  
**Subject:** FW: Send data from MFP-07163759 10/26/2011 10:01  
**Attachments:** DOC102611.pdf

Marge attached are the specification sheets for the New RTU and Condensing units proposed for installation at Urban Outfitters. The sound ratings are included.

Please let me know if you need additional information.

Thank you,

Dean H. Grant

Airtemp, Inc.  
11 Wallace Ave.  
S. Portland, Maine 04106  
207-774-2300  
207-871-1345 fax

-----Original Message-----

**From:** EStudio355Upstairs@comfortsystemsusa.com  
[mailto:EStudio355Upstairs@comfortsystemsusa.com]  
**Sent:** Wednesday, October 26, 2011 10:01 AM  
**To:** Grant, Dean  
**Subject:** Send data from MFP-07163759 10/26/2011 10:01

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Date: 10/26/2011 10:01  
Pages: 11  
Resolution: 200x200 DPI

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7:00am - 9:00pm - 60 dBAS  
e

9:00pm - 7:00am - 55 dBAS



**Marge Schmuckal - Re: FW: Send data from MFP-07163759 10/26/2011 10:01**

**From:** Marge Schmuckal  
**To:** Dean Grant  
**Date:** 10/26/2011 10:50 AM  
**Subject:** Re: FW: Send data from MFP-07163759 10/26/2011 10:01  
**CC:** Peter Lewis

Dean,

Thank you for the quick response. I am noticing that on page for that you sent me the outdoor sound rating is 76 dBAs . The B-3 Zone allows a maximum of 60 dBAs from 7:00 am to 9:00 pm and a maximum of 55 dBAs from 9:00 pm to 7:00 am. Your unit is well over the maximum allowable.

You will need to first show me how you will mitigate the sound and bring it down to at least the maximum.

Marge

>>> "Grant, Dean" <dgrant@comfortsystemsusa.com> 10/26/2011 10:10 AM >>>

Marge attached are the specification sheets for the New RTU and Condensing units proposed for installation at Urban Outfitters. The sound ratings are included.

Please let me know if you need additional information.

Thank you,

Dean H. Grant

Airtemp, Inc.  
 11 Wallace Ave.  
 S. Portland, Maine 04106  
 207-774-2300  
 207-871-1345 fax

-----Original Message-----

From: EStudio355Upstairs@comfortsystemsusa.com  
 [mailto:EStudio355Upstairs@comfortsystemsusa.com]  
 Sent: Wednesday, October 26, 2011 10:01 AM  
 To: Grant, Dean  
 Subject: Send data from MFP-07163759 10/26/2011 10:01

Scanned from MFP-07163759.

Date: 10/26/2011 10:01

Pages:11

Resolution:200x200 DPI

## Lennox Industries Inc. - Product Submittal

System ID: AHU 1/ CU 1

Condenser Model: 13ACX-030-230-LVR

Evaporator Coil Model: CBX32M-030

Description: CONDENSER/2.5TON/230-1 LVR

Description: FAN-COIL/2.5TON/230-1

### HEATING PERFORMANCE

Heat Source	Electric	Electric Heater	12.5 (kW)
H/E HighOutput	32058 (Btuh)	H/E Heat Rise	44.0 (°F)

### COOLING PERFORMANCE

Refrigerant	R-410A	Number Compressors	1
ARI EER	12.5	Condensate Drain Size	0.75 (in.)
ARI SEER	14.0	Condensate Pipe Thread	FPT
ARI Total Power	2430 (W)	Condensate Drain Qty	2
ARI NetTotalCool	30400 (Btuh)	Cooling OutdoorDB	95.0 (°F)
Coil GrossTotalCool	30720 (Btuh)	Cooling CondenserDB	95.0 (°F)
Coil NetTotalCool	29671 (Btuh)	Cooling MixedDB	80.0 (°F)
Coil GrossSensCool	21688 (Btuh)	Cooling MixedWB	67.0 (°F)
Coil NetSensCool	20640 (Btuh)	Coil DischargeDB	48.3 (°F)
Cond Liquid Line	3/8 (in.)	Coil DischargeWB	48.3 (°F)
Cond Suction Line	3/4 (in.)	Unit DischargeDB	49.8 (°F)
Coil Liquid Line	3/8 (in.)	Unit DischargeWB	49.8 (°F)
Coil Suction Line	3/4 (in.)	Coil MoistureRemoval	8.5 (lb/hr)
		System MoistRemoval	8.5 (lb/hr)

### SUPPLY FAN PERFORMANCE

Supply AirFlow	675 (cfm)	TotalStaticPress	0.50 (in.WC)
ExtStaticPress Supply	0.50 (in.WC)		
SupplyFan Req'dPower	0.33 (hp)		
SupplyFan NomPower	0.33 (hp)		
SupplyDrive Speed	MEDIUM		

### ELECTRICAL

Voltage	208V 1Ph	AirHandler MCA-1	21.0 (amp)
Condenser Voltage	208V 1Ph	AirHandler MCA-2	31.0 (amp)
Frequency	60 (Hz)	AirHandler MOCP-1	25 (amp)
Condenser MCA	18.7 (amp)	AirHandler MOCP-2	45 (amp)
Condenser MOCP	30 (amp)	AirHandler FLA	1.7 (amp)
Cond Oper Range-Nom Voltage	+/- 10%	Single Point Power Source MOCP	60 (amp)
Unit Oper Range-Nom Voltage	+/- 10%	Single Point Power Source MCA	60 (amp)

### DIMENSIONS

CondensingUnit Height	29.3 (in.)	CondensingUnit Weight	133 (lb)
CondensingUnit Width	24.3 (in.)	Coil Weight	157 (lb)
CondensingUnit Length	24.3 (in.)		
Coil Height	49.3 (in.)		
Coil Width	21.3 (in.)		
Coil Length	21.3 (in.)		

### SOUND

Outdoor Sound Rating	76 (db)
----------------------	---------

P94



Job Name : Urban Outfitters

Purchaser :

Engineer :

Submitted To :

Submitted By :

Unit Designation : Schedule No.:

Location : Portland

P.O. No.:

Architect :

Date :

For : • Reference • Approval • Construction

Model No.:

## Submittal Data : LS122HE

Heat Pump  
Single Zone Mini Split



### Capacities :

Rated Cooling Capacity (Btu/h)	11,500
Power Input (W, Coefficient)	1,150
SEER	13.0
EER	10.0
Rated Heating Capacity (Btu/h)	11,500
Power Input (W, Coefficient)	1,150
HSPF (W)	7.8

Indoor Unit  
Cooling Capacity (Btu/h) 11,500  
Power Input (W) 1,150  
SEER 13.0  
EER 10.0  
Heating Capacity (Btu/h) 11,500  
Power Input (W) 1,150  
HSPF 7.8

### Indoor Unit :

Power Supply (V, Ph, Hz)	36V DC
Minimum Circuit Capacity (A)	15
Maximum Overcurrent Protection (A)	20
Weight (lbs)	20.5
Sound Pressure (dB(A), High Cool, 3.3ft front)	41/44/34
Circulation (CFM, High Cool)	300/300/230
Weight (lbs)	3.0
Pipe (inches, O.D.)	5/4, 5/8

### Outdoor Unit :

Power Supply (V, Ph, Hz)	115.1/60
Minimum Circuit Capacity (A)	15
Maximum Overcurrent Protection (A)	20
Running Current (A, Cooling/Heating)	10.5/10.5
Weight (lbs)	72.8
Sound Pressure (dB(A), High Cool, 3.3ft front)	48

### Refrigerant Piping :

Maximum Length (ft)	50
Maximum Height Difference (ft)	25
Liquid Side (inches, O.D.)	1/4
Gas Side (inches, O.D.)	1/2
Refrigerant	R410A

### Operating Range :

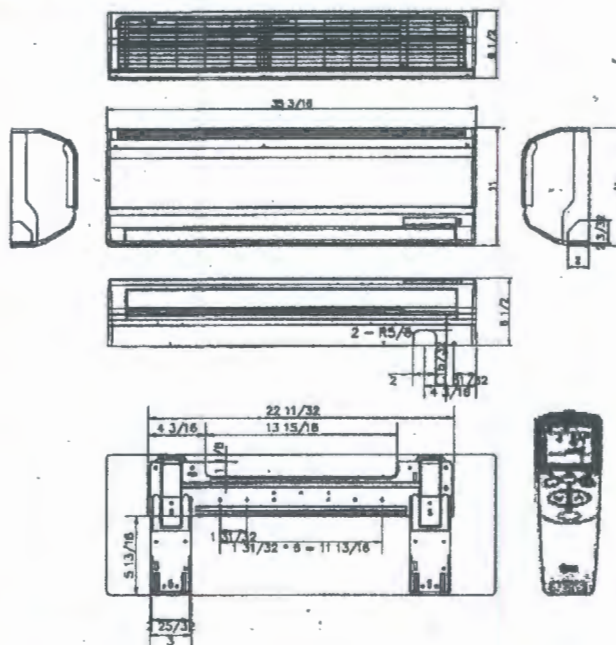
Cooling Operating Range (° : standard)	0 - 115
Heating Operating Range (° : )	14 - 75

### Standard Features :

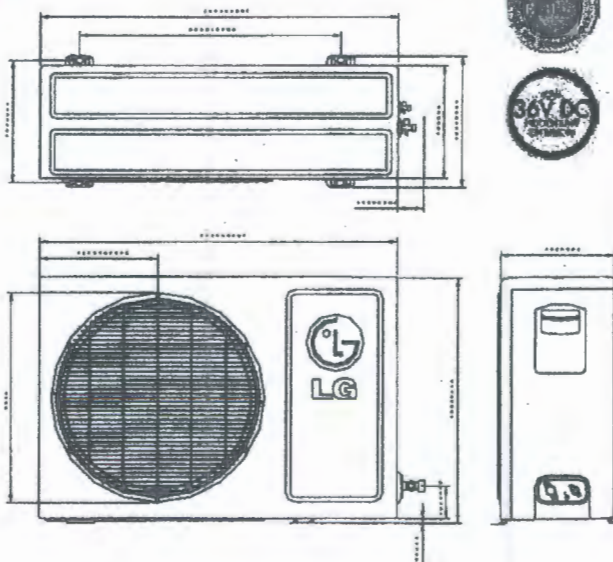
- Five Year Compressor Warranty
- Two Year Functional Parts Warranty
- Plasma Air Purifying System
- Chaos Swing Air Circulation
- Jet Cool™
- LCD Wireless Remote Controller
- Auto Restart
- 24 Hour On/Off Timer
- Built-in Low Ambient Standard down to 0° at cooling mode

### Note :

### LSN122HE



### LSU122HE







PHILLIPS

URBAN OUTFITTERS

188 MIDDLE STREET  
PORTLAND, ME 04101

DESIGN CONSULTANT :  
URBAN OUTFITTERS INC.  
5000 S. BROAD ST  
BUILDING 7  
PHILADELPHIA, PA 19112  
PH: (215) 454.5500

MEP ENGINEERING  
CONSULTANT :  
DEVITA & ASSOCIATES  
P.O. BOX 1596  
GREENVILLE, SC 29602  
PH: (864) 232.6642



ARCH PROJECT #: 1121907  
DRAWN BY:

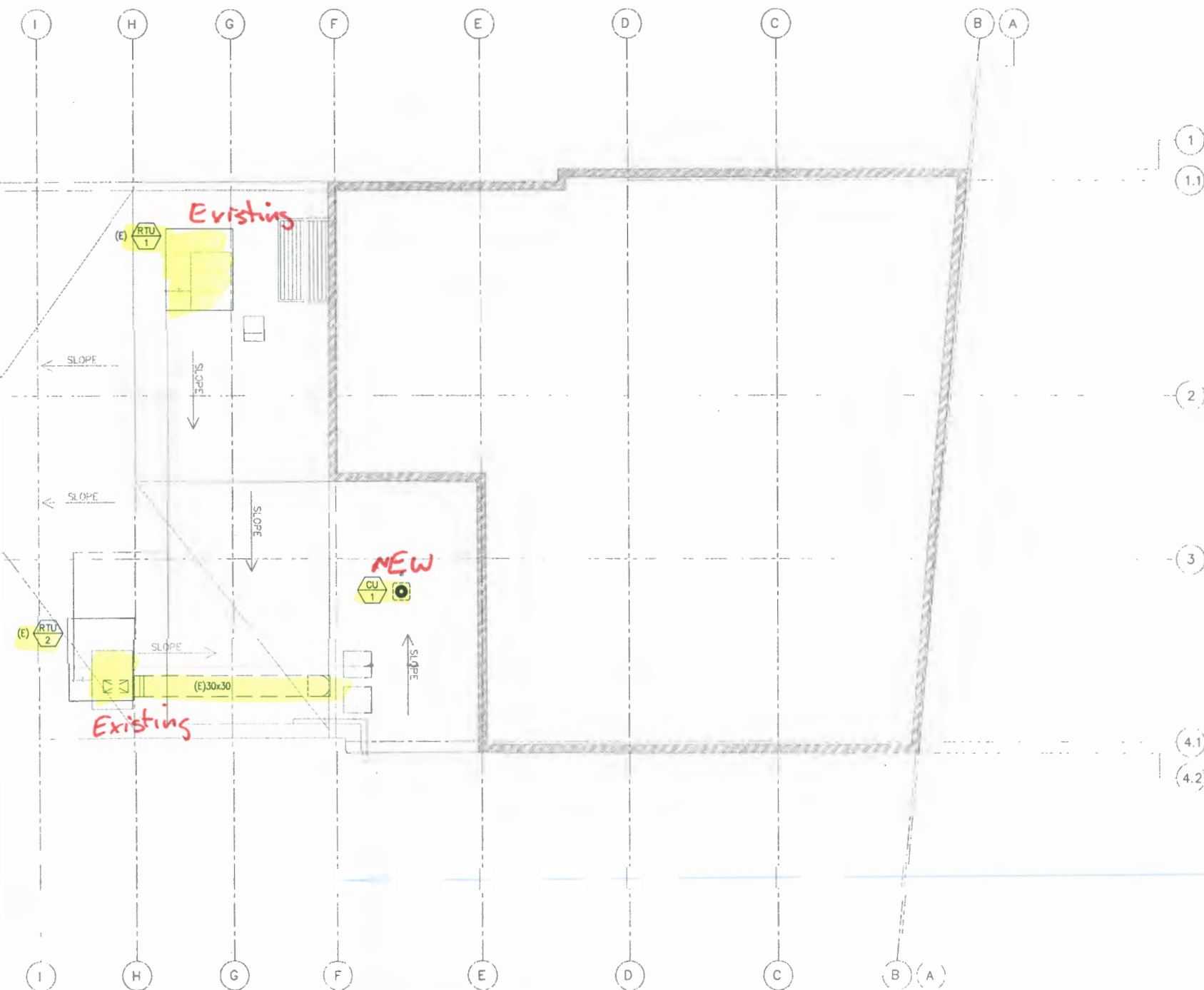
BRD

ISSUE / DATE:

100% CHECKSET  
07-08-11

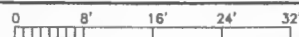
REVISION:

SHEET TITLE :  
MECHANICAL  
ROOF PLAN



1 ROOF PLAN - HVAC

M102 SCALE: 1/8"=1'-0"



350		
0.375		
1050		
120/1/60		
234		
BD, DS		
35		
VISUAL MERCHANDISE		
1, 3, 4, 5, 6, 8		

RENE VIBRATION ISOLATORS.  
 UNCTION USING ONLY PENN FURNISHED MODEL  
 D CONTROLLERS FOR BALANCING PURPOSES.

I. SWITCH PROVIDED BY ELECTRICAL  
 R INSTALL HIGH OR ON FAN OUT OF

CFM	1000
EXT. STATIC (IN W.C.)	50
OUTDOOR AIR	150
COOLING CAPACITY	
EAT (DB/WB)	80/67
TOTAL (MBH)	19.3
SENS'BLE (MBH)	-
INDOOR UNIT	
SA FAN HP	1/3
VOLTAGE	230/1/60
MCA	60
MOCP	60
ELECTRIC HEAT	
KW RATING	12.5
OUTPUT (MBH)	32.0
STAGES	2
OUTDOOR UNIT	
VOLTAGE	208/1/60
MCA	18.7
MOCP	30
AMBIENT TEMP. (°F)	95*
SEER/EER	14.0 SEER
APPOX. WEIGHT (LBS.)	
AHU	175
CU	160
NOTES	1 - 10

#### NOTES:

1. EVAPORATOR DEFROST CONTROLS
2. LOW AMBIENT CONTROL (TO 0°F)
3. HOT GAS BY-PASS
4. ANTI-RECYCLE TIMER
5. REFRIGERANT FILTER - DRYER
6. COPPER TUBES W/ALUMINUM FIN
7. CONTROL TRANSFORMER
8. VIBRATION ISOLATOR FAN MOTOR RELAY
9. 2 SETS OF 2" THICK PLEATED FILTERS
10. PROGRAMMABLE T'STAT
11. BASE RAILS TO SUPPORT UNIT

FOR EQUIPMENT PRICING PLEASE CONTACT:

RAZI DOLE  
 LENNOX INDUSTRIES  
 NATIONAL ACCOUNT MANAGER  
 O - (614) 871-2952 EXT. 224  
 C - (614) 886-0719  
 F - (614) 871-0854

## ELECTRIC DUCT HEATER SCHEDULE

EDH-1: ELECTRIC DUCT COIL SHALL BE INDEECO 'OPEN COIL' ELECTRIC DUCT HEATER STANDARD SLIP-IN TYPE QUA, 7.5 KW, 12"x10" DUCT COIL, 208V, 3 PHASE, 2 STEPS OF CONTROL, 24V CONTROL CIRCUIT, CONTROL OPTION K USING SCR POWER CONTROLLER WHICH INCLUDES THERMAL CUT-OUTS, FAN RELAY, DISCONNECTING CONTACTORS, CONTROL TRANSFORMER, AIR FLOW SWITCH, BUILT-IN, SNAP ACTING, DOOR INTERLOCKED DISCONNECT SWITCH, CONFORM TO NEC REQUIREMENTS, 80% NICKEL AND 20% CHROMIUM HEATING ELEMENT, TYPE 'A' RESISTANCE WIRE, ALUMINIZED STEEL FRAME AND NEMA 1 TERMINAL BOXES, MANUAL RESET THERMAL CUTOUTS, TERMINAL BLOCKS FOR FIELD WIRING. CONTROL FROM RTU-3.

CFM	330
EXT. STATIC (IN W.C.)	0.25
OUTDOOR AIR	-
COOLING CAPACITY	
EAT (DB/WB)	80/67
TOTAL (MBH)	11.5
SENSIBLE (MBH)	-
INDOOR UNIT	
SA FAN HP	-
VOLTAGE	115/1/60
MCA	SEE OUTDOOR UNIT
MOCP	SEE OUTDOOR UNIT
INTEGRAL HEATING	
(MBH) @ 47°F	11.5
(MBH) @ 17°F	6.9
C.O.P. (HIGH)	3.3
C.O.P. (LOW)	2.2
OUTDOOR UNIT	
VOLTAGE	115/1/60
MCA	15
MOCP	20
AMBIENT TEMP. (°F)	95*
SEER	13.0
APPOX. WEIGHT (LBS.)	HP - 80 SS - 25
NOTES	1 - 9

#### NOTES:

1. EVAPORATOR DEFROST CONTROLS
2. LOW AMBIENT CONTROL (TO 0°F)
3. HOT GAS BY-PASS
4. ANTI-RECYCLE TIMER
5. REFRIGERANT FILTER - DRYER
6. COPPER TUBES W/ALUMINUM FIN
7. CONTROL TRANSFORMER
8. VIBRATION ISOLATOR FAN MOTOR RELAY
9. PROGRAMMABLE T'STAT WITH REMOTE SENSORS
10. BASE RAILS TO SUPPORT UNITS

## ROOFTOP UNIT SCHEDULE

MARK (RTU - #)	3
MANUFACTURER	LENNOX
MODEL	KCA07254
AIR FLOW (CFM)	2400
OA FLOW (CFM)	400
AMBIENT CAT (°F)	95
EXT. S.P. (IN W.C.)	en
SEER/EER	11.4 SEER
DX COOLING COIL	
EAT (°FDB/WB)	80/67
TOTAL (MBH)	72.8
SENSIBLE (MBH)	51.0
ELECTRIC HEATING	
KW RATING	22.5
OUTPUT (MBH)	70.7
STAGES	2
ELECTRICAL	
VOLTS/PH/Hz	460V/3/60
MOTOR HP	1.5
MCA	38
MOCP	40
APPROX. WEIGHT (LBS.)	800
ACCESSORIES	DS, ECON, RC
NOTES	1, 2, 3

#### ACCESSORIES:

DS-DISCONNECT, ECON-ECONOMIZER  
 RC-14" INSULATED FACTORY ROOF CURB

#### NOTES:

1. INTEGRAL DUCT MOUNTED SMOKE DETECTOR IN RETURN AIR DUCTS
2. UNITS ARE TO BE PROVIDED WITH...

PHILLIPS

## URBAN OUTFITTERS

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 PORTLAND, ME 04101

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 URBAN OUTFITTERS INC.  
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 BUILDING 7  
 PHILADELPHIA, PA 19112  
 PH: (215) 454.5500

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 CONSULTANT :  
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 P.O. BOX 1596  
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 PH: (864) 232.6642



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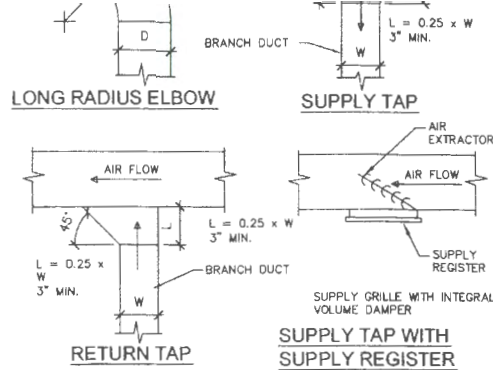
SHEET TITLE :  
 MECHANICAL  
 SCHEDULES



MECHANICAL SYMBOLS		MECHANICAL ABBREVIATIONS		MECHANICAL ABBREVIATIONS	
	CEILING MOUNTED EXHAUST FAN	AHU	AIR HANDLING UNIT	HZ	FREQUENCY
	SUPPLY DIFFUSER	(E)	EXISTING	LAT	LEAVING AIR TEMPERATURE
	RETURN GRILLE	BDD	BACKDRAFT DAMPER	LWT	LEAVING WATER TEMPERATURE
	SUPPLY/ OUTSIDE AIR DROP	BHP	BRAKE HORSEPOWER	OA	OUTSIDE AIR
	RETURN/ EXHAUST AIR RISER	BTU	BRITISH THERMAL UNIT	PD	PRESSURE DROP
	SIDEWALL MOUNTED SUPPLY REGISTER	CFM	CUBIC FEET PER MINUTE	TYP	TYPICAL
	SQUARE NOTE DESIGNATION	SA	SUPPLY AIR	WC	WATER COLUMN
	REVISION DESIGNATION	RA	RETURN AIR	WB	WET BULB
	TAG				
	SCHEDULE NUMBER				

THIS PROJECT MAY NOT USE EVERY SYMBOL OR DEVICE APPEARING ON THIS LEGEND.

DUCTWORK DESIGN / INSTALLATION REQUIREMENTS							
DUCTWORK LOCATION / CONDITION	DUCTWORK TYPE	DUCTWORK ORIENTATION	DIFFUSER ORIENTATION	DUCTWORK HANGER SYSTEM	DUCTWORK CONNECTIONS	DUCTWORK MATERIAL	DUCTWORK FINISH
NEW DUCTWORK IN EXPOSED CEILING SALES AREA / FITTING ROOMS	RETANGULAR	JUSTIFY CENTER	JUSTIFY CENTER	THREADED ROD AND UNISTRUT	SLIP AND DRIVE	GALVANNEALED	FACTORY - NO FIELD FINISH
NEW DUCTWORK IN EXPOSED BOH CEILING	RECTANGULAR OR SPIRAL	AS INDICATED	AS INDICATED	SMACNA STRAP AND SCREW	SLIP AND DRIVE	REGULAR GALVANIZED	FACTORY - NO FIELD FINISH
NEW DUCTWORK ABOVE HARD LID CEILING	RECTANGULAR	AS INDICATED	AS INDICATED	SMACNA STRAP AND SCREW	SLIP AND DRIVE	REGULAR GALVANIZED	FACTORY - NO FIELD FINISH



## 2 DUCTWORK DETAILS

M300 SCALE: NONE

SUPPORT DUCT WITH STRAPS PER SMACNA GUIDELINES AND/OR STRUCTURAL ENGINEER'S DIRECTION. STRAP MUST BE A MIN. 1" WIDE, 26 GA. OR HEAVIER.

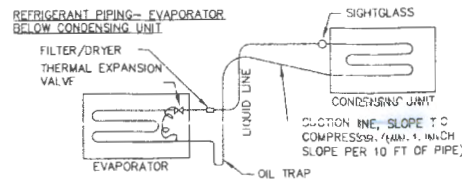
RECTANGULAR DUCT. REFER TO PLANS FOR SIZE.

FOIL WRAP INSULATION OVER DUCT AND STRAPS

NOTE:  
DUCT WRAP INSULATION IS TO BE PROVIDED FOR ABOVE CONCEALED CEILING ONLY. EXPOSED & RETURN AIR DUCTWORK SHALL HAVE 1" THICK DUCT LINING.

## 5 RECTANGULAR DUCT SUPPORT DETAIL - CONCEALED

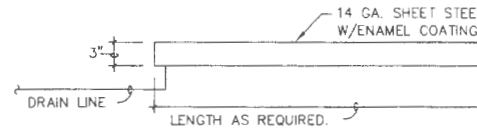
M300 SCALE: NONE



### NOTES:

- REFRIGERANT PIPING PROCEDURES ON SPLIT SYSTEMS MUST BE INSTALLED PER MANUFACTURER'S DETAILS AND WIRING DIAGRAMS.
- IF HEAT PUMPS ARE USED, CONSULT WITH MANUFACTURER'S APPLICATION DEPARTMENT.
- MAXIMUM LINE LENGTH IS 100 FEET. FOR LINE LENGTHS IN EXCESS OF 100 FEET, CONSULT MANUFACTURER'S REFRIGERANT PIPING DESIGN MANUAL.
- REFRIGERANT PIPE(S) SIZES SHALL BE DETERMINED BY THE COMPRESSIONED EQUIPMENT MANUFACTURER OR THEIR REPRESENTATIVE, WHO SHALL ALSO DETERMINE THE NEED FOR DOUBLE SUCTION PIPE RISERS, ACCUMULATORS AND OTHER APPURTENANCES REQUIRED FOR PROPER LONG TERM OPERATION OF THE EQUIPMENT. REFRIGERANT PIPE(S) SIZING AND ROUTING SHALL MEET ALL SYSTEM OPERATING CONDITIONS. THE CONTRACTOR SHALL PROVIDE TO THE OWNER AND ENGINEER LETTERS AND DRAWINGS THAT ADEQUATELY

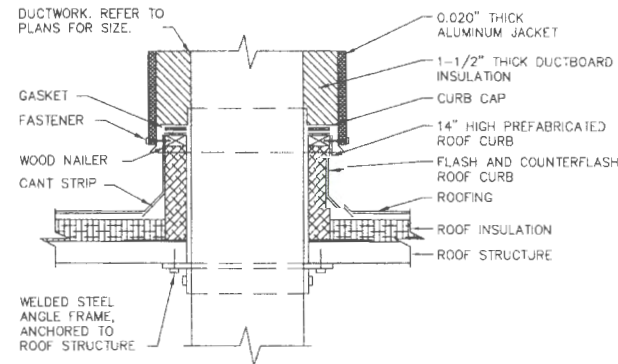
NOTE: EXTEND DRAIN PIPE FROM EACH DRIP PAN TO FLOOR SERVICE SINK. DRAIN PIPE SHALL BE 3/4" TYPE 'M' COPPER.



DRIP PAN SHALL BE CONSTRUCTED OF STAINLESS STEEL 140 DRAIN PAN SLOPED IN 2 DIRECTIONS (INSIDE AND OUT) TO ENSURE WATERTIGHT SEAL. PAN SHALL BE 3" LARGER IN ALL DIRECTIONS THAN EQUIPMENT AND SHALL HAVE A 3" HIGH EDGE

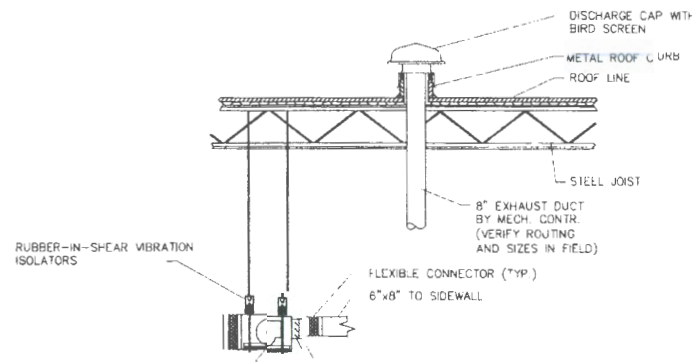
## 3 SECONDARY DRAIN PAN DETAIL

M300 SCALE: NONE



## 6 DUCT THRU ROOF DETAIL

M300 SCALE: NONE



PHILLIPS

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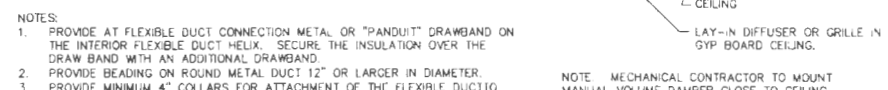
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REVISION:

SHEET TITLE:  
MECHANICAL  
DETAILS

PARTAIN MUST BE INSTALLED SO  
 STREAM IS NOT OBSTRUCTED  
 DEFLECTED 2" TO EITHER SIDE  
 L  
 RICAL CONNECTIONS TO BE  
 LE,  
 VERIFY DIMENSIONS.  
 RS TO SUPPORTING STRUCTURE  
 HERS.  
 CY OF SUPPORTING STRUCTURE IS  
 VERIFIED BY A PROFESSIONAL  
 TURAL ENGINEER.  
 GE "•" WITH "E" FOR ELECTRIC  
 "A" FOR UNHEATED, "W" FOR FOR  
 WATER OR "S" FOR STEAM HEAT.  
 IONS IN INCHES [CENTIMETERS].



STATE OF MAINE  
WILLIAM R. DENKER, JR.  
No. 11381  
LICENSED PROFESSIONAL ENGINEER  
Exp. 12/31/99

[illegible]

SHEET TITLE :  
MECHANICAL  
DETAILS



AND CONTROLS REQUIRED TO PROVIDE A COMPLETE AND THE MECHANICAL EQUIPMENT FROM THE TENANT'S POWER

FURNISH AND INSTALL ALL EQUIPMENT AND MATERIAL NECESSARY FOR A COMPLETE INSTALLATION.

PROVIDE POWER WIRING TO THE TOILET EXHAUST FAN SWITCH WITH DELAY OFF BUILT IN.

ORD'S SPECIFIED CONTRACTOR FOR ALL ROOF AND WALL

EQUIPMENT SUPPORT(S) ARE NOT ALREADY INCORPORATED IONS, THE MECHANICAL CONTRACTOR, AT THEIR OWN COST TO THE G.C., IS TO HIRE A STRUCTURAL ENGINEER TO DESIGN AND A STRUCTURAL SUBCONTRACTOR TO FURNISH AND RACING, ETC. TO HANG FROM THE STRUCTURE FOR ALL NEW QUIRED ALL STRUCTURAL SHOP DRAWINGS TO THE LANDLORD'S L, PRIOR TO STARTING WORK.

ROVIDE A COMPLETE AIR & WATER BALANCE OF ALL SYSTEMS AS

VE MARKERS AND DIRECTION ARROWS EVERY 15 FEET PER UT CUSTOMER/RETAIL AREAS WHERE DUCT/PIPING IS EXPOSED.

WINGS IDENTIFIED WITH PROJECT NAME AND LOCATION, TO THE ING:

ATUTE FOR SHOP DRAWINGS AND SHOULD NOT BE

INCLUDE IN THE PROPOSAL A ONE YEAR GUARANTEE. ERIAL HE INSTALLS OR REFURBISHES UNLESS A LONGER T (IE: COMPRESSOR TO HAVE A MINIMUM FIVE (5) YEAR

PROVIDE COMPLETE AIR BALANCING OF ALL NEW SYSTEMS. ORMED BY AN INDEPENDENT CONTRACTOR AT MECHANICAL TEMS SHALL BE BALANCED IN ACCORDANCE WITH THE LATEST ANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL TUTIONS WILL BE ACCEPTABLE. A COMPLETE CERTIFIED REPORT DROPS, STATIC PRESSURES, BRAKE HORSEPOWER, AMP DRAW, O TO THE ARCHITECT, THE TENANT AND THE MALL MANAGEMENT E PERFORMED WITH A 98% ACCURATE AIR VELOCITY METER. LUDGE VAV BOX AIRFLOW SENSOR DIFFERENTIAL PRESSURE ILING AND HEATING.

HAVE AN INSIDE RADIUS OF NOT LESS THAN THE WIDTH OF THE

ND INSTALLED IN ACCORDANCE WITH SMACNA LOW VELOCITY ARDS MANUAL, LATEST EDITION AND ASHRAE USING PRIME ARE ELBOWS SHALL BE PROVIDED WITH DOUBLE WALLED VANES, CLASS "C" ON ALL TRAVERSE JOINTS UNLESS SUPERSEDED BY CT CONNECTIONS ARE TO BE RIGID AND LEAK FREE ASSEMBLIES TRIES OR APPROVED EQUIVALENT.

PROVIDE ALL FIRE DAMPERS AS REQUIRED BY LANDLORD S HAVING JURISDICTION. ALL FIRE DAMPERS SHALL COMPLY I OF FIRE UNDERWRITERS, THE LOCAL FIRE MARSHAL, AND IDERWRITERS LABORATORIES.

BE EQUIPPED WITH MANUAL VOLUME CONTROLLING DEVICES ICE.

NGERS SECURED TO BAR JOISTS OR STRUCTURAL STEEL -0". DUCTWORK SHALL NOT BE SUPPORTED FROM ROOF E SUSPENDED FROM THE TOP CHORD OF BAR JOISTS. S AND OTHER OBSTACLES AND SHALL BE HUNG AS HIGH AS

BE AS SCHEDULED ON DWG M200, FLUSH TO THE CEILING, URSERS BAKED ENAMEL FINISH (COLOR TO MATCH CEILING ) ON EXPOSED DUCTWORK SHALL HAVE ANODIZED ALUMINUM AKED ENAMEL OFF-WHITE FINISH (FOR ANTHROPOLOGIE) E PATTERN TYPE WITH VOLUME CONTROL DAMPERS AND FLOW JSING LOCATED IN CONCEALED CEILING MUST BE INSULATED,

ALLOWED:

ER TO DUCTWORK SCHEDULE ON DRAWING M200 FOR ICTIONS, ETC. NOTIFY ARCHITECT IMMEDIATELY IF ANY

IGH AS POSSIBLE TO MAINTAIN ARCHITECTURAL CEILING HEIGHT

ERS ON ALL NEW SUPPLY AIR DUCT SPLITS AND TAPS AND AIR ERS.

FOR EXACT LOCATION OF ALL CEILING DIFFUSERS AND

COMPONENTS OF THE JOB. THE MANUAL SHALL BE FURNISHED TO THE OWNER'S OPERATING PERSONNEL, AND A COMPETENT TECHNICIAN SHALL BE PROVIDED FOR INSTRUCTION PURPOSES. THE CONTRACTOR SHALL FURNISH A FRAMED SCHEMATIC CONTROL DIAGRAM SEQUENCE OF OPERATION AND WIRING DIAGRAM IN A LAMINATED COVER.

2. SERVICE AND GUARANTEE CONTROLS SHALL BE ADJUSTED, REPAIRED OR REPLACED FREE OF CHARGE FOR A PERIOD OF ONE (1) YEAR, UNDER NORMAL USE AND SERVICE.

3. THERMOSTATS  
A. MOUNT SENSORS 5'-0" ABOVE FINISHED FLOORS OR AS NOTED ON PLANS. TURN OVER OPERATING INSTRUCTIONS TO TENANT REPRESENTATIVE.

4. ALL LOW VOLTAGE WIRING FOR THERMOSTATS/SENSORS SHOULD BE NO LESS THAN 18 GAUGE.

## VI. SPECIFIC HVAC SPECIFICATIONS

SEE HVAC DRAWINGS SPECIFICATIONS FOR:

1. WORK FURNISHED AND/OR INSTALLED BY LANDLORD.

2. INSULATION AND/OR ACOUSTIC LINING  
1) DUCTWORK

3. AUTOMATIC TEMPERATURE CONTROLS  
1) DESCRIPTION OF OPERATIONS  
2) OPERATING INSTRUCTIONS

4. EQUIPMENT  
1) EXHAUST FANS & HVAC UNITS.  
2) MISCELLANEOUS HVAC EQUIPMENT ACCESSORIES.

## VII. INSULATION

1. PIPE INSULATION (WHERE APPLICABLE)  
A. ALL INSULATION SHALL BE APPLIED BY CRAFTSMAN SKILLED IN SUCH TRADE.  
B. ALL HVAC CHILLED WATER AND HOT WATER PIPING, VALVES, FITTINGS AND ACCESSORIES SHALL BE INSULATED WITH 1" THICK FIBERGLASS PIPING INSULATION WITH FACTORY APPLIED VAPOR BARRIER. INSULATION SHALL BE JOHNS MANVILLE "MICRO-LOK" OR APPROVED EQUIVALENT. COVER FITTINGS AND VALVES WITH FACTORY-MOLDED FIBROUS GLASS FITTING EQUAL TO COMPRESSED FIBROUS GLASS BLANKET AND ONE PIECE PVC FITTING COVER, JOHNS MANVILLE "ZESTON 300 SERIES" OR EQUIVALENT.  
C. FLAME SPREAD AND SMOKE DEVELOPED RATING OF ALL MATERIAL UTILIZED IN AND FOR THE INSTALLATION OF ALL INSULATION SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).  
D. ALL REFRIGERANT PIPING (WHERE REQUIRED) MUST HAVE A MINIMUM OF 1/2" ARMOR INSULATED AND SEALED WITH FACTORY APPROVED SEALANT PER MANUFACTURER'S SPECIFICATION. EXTERIOR INSULATION MUST BE COATED WITH ULTRAVIOLET COATING - MINIMUM TWO COATINGS.

2. ALL UNEXPOSED SUPPLY AND RETURN AIR DUCTWORK, OUTSIDE AIR AND ANY UNEXPOSED DUCTWORK WITHIN BUILDING SHALL HAVE 1-1/2" (OR 2" DEPENDING ON CLIMATE), 1 POUND DENSITY FIBERGLASS DUCT WRAP INSULATION WITH FOIL FACE VAPOR BARRIER, ADHERED WITH WHITE MASTIC CEMENT AND FOIL TAPE. ALL EXPOSED DUCT THAT REQUIRES INSULATION (SUPPLY, RETURN & OUTSIDE AIR DUCTWORK) SHALL BE INTERNALLY LINED.

3. ALL EXTERIOR DUCTWORK SHALL BE PROTECTED BY A PREFABRICATED SELF-ADHESING, SHEET-TYPE WATERPROOF MEMBRANE AS MANUFACTURED BY POLYGUARD PRODUCTS, INC., OR MFM BUILDING PRODUCTS CORPORATION. THE ABOVE REFERENCED PRODUCTS SHALL BE POLYGUARD "ALUMAGUARD 60" OR MFM'S "FLEXCLAD 400". THE WATERPROOFING MEMBRANE SHALL ONLY BE APPLIED AFTER DUCTWORK HAS BEEN PROPERLY SEALED AND PROPERLY INSULATED. THE MEMBRANE SHALL NOT BE USED AS A MEANS FOR AFFIXING THE BOARD INSULATION TO THE DUCTWORK. THE WATERPROOFING MEMBRANE SHALL BE APPLIED ON PINNED OR BONDED FIBERGLASS BOARD DUCT INSULATION AFTER THE INSULATION SURFACE HAS BEEN PROPERLY YETED AND CLEANED. THE INSULATION SURFACE SHALL BE DIRT FREE, DRY AND FREE OF ALL FOREIGN MATERIALS. THE WATERPROOFING MEMBRANE SHALL BE INSTALLED SO THAT ALL SEAMS HAVE A MINIMUM 4" OVERLAP. THE MEMBRANE SHALL FIRST BE APPLIED TO THE UNDERSIDE OF THE DUCT WITH ENOUGH MATERIAL TO WRAP UP THE SIDES OF THE DUCT A MINIMUM OF 4". THE MEMBRANE SHOULD THEN BE APPLIED TO THE SIDE OF THE DUCT WITH ENOUGH MATERIAL TO WRAP OVER THE TOP OF THE DUCT A MINIMUM OF 4", AS WELL AS COVERING THE BOTTOM PIECE OF LAPPING MEMBRANE. FINALLY THE TOP SECTION OF MEMBRANE SHALL BE APPLIED SO THAT 4" MINIMUM OF MEMBRANE SHALL LAP DOWN OVER EACH SIDE. A CLEAN GLOVE SHALL BE USED DURING THE WATERPROOFING INSTALLATION SO AS TO PREVENT HAND OILS FROM CONTAMINATING THE OVERLAP AREAS. WATERPROOFING MEMBRANE SHALL BE APPLIED WHEN INSULATION SURFACE TEMPERATURE IS ABOVE 50°F. WHEN THE SURFACE TEMPERATURE IS BELOW 50°F, USE OF A HOT AIR GUN TO WARM THE SURFACE OF THE ADHESIVES BEFORE THE MEMBRANE IS APPLIED. ON HORIZONTAL DUCT LAYOUTS, COORDINATE THE INSULATION THICKNESS AND THE A/C UNIT LOCATIONS TO PROVIDE SERVICE ACCESS TO THE INTAKES OF THE ECONOMIZER HOODS.

4. LEADING EDGES OF DUCT INSULATION SHALL BE OVERLAPPED BY ADJOINING INSULATION FOR 8" MINIMUM AND THEN SEALED WITH FOIL VAPOR BARRIER ADHESIVE TAPE AND COATED WITH WHITE MASTIC CEMENT SO THAT NO FIBERGLASS INSULATION IS VISIBLE. MECHANICAL CONTRACTOR SHALL REFER TO MANUFACTURER'S INSTALLATION MANUAL FOR ADDITIONAL REQUIREMENTS, RECOMMENDATIONS, PROCEDURES, ETC.

5. ALL INSULATION ON EXISTING PIPING OR DUCTS THAT IS WETTED, DAMAGED, DISTURBED OR REMOVED SHALL BE REPLACED.

6. MAXIMUM FLAME SPREAD SHALL BE 25 AND MAXIMUM SMOKE DEVELOPED CRITERIA SHALL BE 50 OR LESS TO MEET MORE STRINGENT LOCAL CODE CRITERIA.

7. INTERNALLY LINED DUCTWORK TO BE INSULATED WITH 1" THICK, 3 PCF DENSITY, NEOPRENE COATED, LONG TEXTILE FIBER TYPE DUCT LINER, WITH COATING ON THE AIR STREAM SIDE CONFORMING TO NFPA 90A. DUCT LINER ADHESIVE SHALL BE AS RECOMMENDED BY DUCT LINER MANUFACTURER, AND SHALL COMPLY WITH ASTM C-916. DUCT LINER FASTENERS SHALL COMPLY WITH SMACNA "HVC DUCT CONSTRUCTION STANDARDS", LATEST EDITION. THERMAL CONDUCTIVITY SHALL BE EQUAL TO OR LESS THAN 0.26 AT 75°F. DUCT DIMENSIONS INDICATED ARE NET INSIDE DIMENSIONS REQUIRED FOR AIRFLOW. INCREASE DUCT SIZE TO ALLOW FOR INSULATION THICKNESS. DUCT LINER IS PERMITTED ONLY IN URBAN OUTFITTERS STORES, FOR ACOUSTICAL PURPOSES. THE LENGTH OF DUCT LINER SHALL BE THE FIRST 15'-0" OF DUCTWORK FROM THE UNIT DISCHARGE, AND/OR THE FIRST TWO (2) 90° ELLS, WHICHEVER CONDITION IS MET FIRST.

## VIII. FLEXIBLE CONNECTIONS

LISTED BY THE UNDERWRITERS LABORATORIES UNDER THEIR UL-181 STANDARDS AS A CLASS 1 DUCT AND SHALL COMPLY WITH NFPA STANDARD - 90A. THE FLEXIBLE DUCT SHALL BE THERMAFLEX M-KC OR APPROVED EQUIVALENT. FLEXIBLE DUCT SHALL ROUTE FROM SHEET METAL DUCTWORK TO CEILING DIFFUSERS ONLY. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 6'-0" MAXIMUM. THERE SHALL BE NO EXPOSED FLEXIBLE DUCT. FLEXIBLE DUCT BENDS MUST NOT BE GREATER THAN 45° OVER A 3 FOOT SPAN. KINKS OR BUNCHING OF FLEXIBLE DUCT IS PROHIBITED.

## X. INDOOR AIR QUALITY

1. NO ANALYSIS HAS BEEN MADE WITH REGARD TO SOURCES OR POTENTIAL SOURCES OF INDOOR OR OUTDOOR AIR CONTAMINANTS OR LEVELS OF CONTAMINATION.

2. IT IS THE RESPONSIBILITY OF THE GENERAL AND MECHANICAL CONTRACTOR TO INFORM THE TENANT'S REPRESENTATIVE, LANDLORD AND TENANT'S ARCHITECT IF ANY SOURCE OR POTENTIAL SOURCE OF INDOOR AIR CONTAMINATION IS IDENTIFIED.

3. PRIOR TO ENCLOSING SPACES SUCH AS PLUMBING CHASES, AIR SHAFTS AND RETURN AIR PLENUMS CLEAN ALL AREAS THOROUGHLY. THE CONTRACTOR SHALL GUARANTEE THAT THE PLENUM CHAMBER USED FOR RECIRCULATING OF AIR WILL BE OF TIGHT CONSTRUCTION AND THAT ALL SOURCES OF CONTAMINATION FROM TRAPS, SOIL STACKS, DOWNSPOUTS, VENTS, EXHAUST DISCHARGES AND OTHER SOURCES WILL BE ENCLOSED SO THAT NO CONTAMINATED AIR WILL BE RECIRCULATED.

4. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES SHUT OFF THE HVAC SYSTEM, BLOCK OFF ALL AIR GRILLS, DIFFUSERS, AND OTHER OPENINGS OUTSIDE THE IMMEDIATE CONSTRUCTION AREA. OPENINGS TO ADJACENT TENANT SPACES SHALL BE COVERED WITH FILTER MEDIA TO PREVENT DUST AND OTHER AIRBORNE CONTAMINANTS FROM PASSING TO ADJOINING SPACES.

5. CONTRACTOR TO INSTALL TEMPORARY EXHAUST SYSTEM TO VENTILATE CONSTRUCTION SITE AND KEEP SITE UNDER SLIGHT NEGATIVE PRESSURE DURING ALL HOURS OF CONSTRUCTION, EVEN IF AFTER NORMAL BUSINESS HOURS.

6. CONTRACTOR TO INSTALL TEMPORARY BARRIERS TO PROTECT ADJACENT SPACES FROM DUST, PARTICULATES, VAPORS AND NOISE. WHERE TEMPORARY BARRIERS ARE INSTALLED ALWAYS MAINTAIN FIRE EXITS AND EXITWAYS.

## XI. REFRIGERANT PIPING:

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE REFRIGERANT PIPING SYSTEM BETWEEN THE INDOOR FAN UNITS AND OUTDOOR CONDENSING UNITS. REFER TO PLANS TO DETERMINE IF A REFRIGERANT SYSTEM IS REQUIRED.

### 2. PIPING

A. REFRIGERANT PIPING SHALL BE TYPE "L" HARD DRAWN, DEHYDRATED COPPER TUBING (ASTM B88). TUBING SHALL BE CLEAN, CAPPED AND NITROGEN CHARGED.  
B. ALL FITTINGS AND JOINTS SHALL BE WROUGHT COPPER OR CAST BRONZE (ANSI B16.22). ALL COPPER TO COPPER JOINTS SHALL BE BRAZED WITH A COPPER-PHOSPHORUS ALLOY AND ALL OTHER JOINTS SHALL BE BRAZED WITH SILFOS-5 ALLOY.  
C. ALL ELBOWS ARE TO BE LONG RADIUS TYPE.  
D. IF EXISTING UNITS ARE REPLACED BUT THE EXISTING REFRIGERANT LINES ARE REUSED, THEN THE CONTRACTOR MUST INSTALL CLEAN UP KIT AND LIQUID LINE DRYER.

### 3. INSTALLATION

A. SUCTION LINES SHALL HAVE ADEQUATE LIFT TRAPS AND/OR DOUBLE SUCTION RISERS TO MEET THE REQUIREMENTS OF FIELD CONDITIONS AND EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.  
B. BRAZE ALL JOINTS WITH SILFOS-5 STARTING AT THE INDOOR UNIT AND WORKING TOWARD THE OUTDOOR UNIT. THE SEALS ON THE OUTDOOR UNIT SHALL BE BROKEN LAST. A NITROGEN BLEED SHALL BE USED DURING ALL BRAZING AND ANY TIME THE SYSTEM IS OPEN. ALL OPEN LINES SHALL BE CAPPED AND SEALED BEFORE LEAVING THE SITE DURING CONSTRUCTION. PRESSURE TEST FOR LEAKS WITH AN INERT GAS UP TO 245 PSIG. REDO LEAKING JOINTS AND RETEST UNTIL SYSTEM IS TIGHT. EVACUATE ENTIRE SYSTEM TO 200 MICRONS OF MERCURY. CHARGE SYSTEM WITH 25 PSI OF R-22 AND A INERT GAS TO 245 PSI AND RETEST SYSTEM. ENERGIZE CRANK CASE HEATERS 24 HOURS PRIOR TO STARTING COMPRESSOR TO ENSURE THAT ALL REFRIGERANT LIQUID IS OUT OF THE COMPRESSOR.  
C. UPON COMPLETION OF TESTING, BUT BEFORE THE REFRIGERANT PIPING INSULATION IS APPLIED, THE PIPING MUST BE INSPECTED BY A REPRESENTATIVE OF THE LOCAL GOVERNING AUTHORITY AS NECESSARY.  
D. INSULATE THE REFRIGERANT SUCTION LINES AND CONDENSATE LINES WITH RUBATEX OR ARMSTRONG 1 INCH THICK PIPE INSULATION WITH FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NOT MORE THAN 50 IN ACCORDANCE WITH INDUSTRY STANDARDS. DO NOT INSULATE THE HOT GAS (LIQUID) LINES OR ANY HOT GAS BYPASS.

### 4. INSPECTION

A. CONTRACTOR MUST PREPARE AND SUBMIT A COMPLETE PIPING SCHEMATIC TO THE LOCAL MANUFACTURER REPRESENTATIVE FOR APPROVAL PRIOR TO BEGINNING INSTALLATION. UPON COMPLETION OF PIPING, THIS CONTRACTOR MUST CALL THE LOCAL REPRESENTATIVE FOR FIELD INSPECTION OF WORK PERFORMED. ALL ITEMS FOUND TO BE INADEQUATE FOR PROPER PERFORMANCE BY MANUFACTURER REPRESENTATIVE MUST BE CORRECTED. THIS INSPECTION IS PERFORMED AT CONTRACTOR'S EXPENSE.

## XII. COOLING COIL CONDENSATE WASTE PIPING:

1. PIPING SHALL BE STANDARD WEIGHT GALVANIZED STEEL ASTM A-53 WITH SCREWED TYPE FITTINGS OR DWV TYPE COPPER WITH DRAINAGE TYPE FITTINGS AND TRAPS. THEY SHALL BE INSTALLED IN CONFORMITY WITH THE LANDLORD REQUIREMENTS AND LOCAL CODES.

2. CONDENSATE PIPING SHALL HAVE A MINIMUM PITCH OF 1/8" PER FOOT.

3. PIPING SHALL BE A MINIMUM OF 1 INCH NOMINAL DIAMETER. IT SHALL BE INSULATED WITH A MINIMUM OF 1/2 INCH THICK CLOSED CELL INSULATION EQUAL TO ARMACELL "AP" ARMAFLEX IN INTERIOR SPACES. SEPARATED WHERE THEY COME IN CONTACT WITH ONE ANOTHER.

## XIII. GAS PIPING:

1. THE MECHANICAL CONTRACTOR IS TO FURNISH AND INSTALL, IN COMPLIANCE WITH THE MOST RECENT CODES AND STANDARDS FOR GAS PIPING SYSTEMS, REGULATORS, ETC. REQUIRED TO MAKE THE SYSTEM FULLY FUNCTIONAL AND OPERATIONAL. ANY OTHER EQUIPMENT REQUIRED TO MAKE THE SYSTEM OPERATIONAL AND NOT SHOWN OR SPECIFIED WILL BE PROVIDED BY THIS CONTRACTOR.

A. PIPING SHALL BE SCHEDULE 40 BLACK STEEL ASTM A-53.  
B. FITTINGS FOR THREADED PIPING SHALL BE 150# MALLEABLE IRON IN ACCORDANCE WITH ASA-B16.3 AND ASTM A-197.  
C. PROVIDE UNIONS AT EACH PIPING CONNECTION TO EQUIPMENT AND SPECIALTIES UNIONS FOR STEEL PIPING SHALL BE GROUND JOINT, SCREWED END, MALLEABLE IRON UNIONS. PROVIDE DIELECTRIC UNION FITTINGS FOR JOINING FERROUS TO NONFERROUS PIPING. FITTINGS SHALL BE

PHILLIPS

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