

BLOCK ~~102~~ ⁷⁰²LOT ~~5~~ ⁵

QUALIFICATION CODE

ADDRESS (SITE)

301 Chambers Br. Road

PERMIT NO.

11-2172

CONSTRUCTION PERMIT
APPLICATION

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

C-11-002210

I. IDENTIFICATION

1. Proposed Work Site at: 301 Chamber Bridge Road
2. Name of Owner in Fee: Ocean County Library Commission
Tel. (732) 349-6200 e-mail _____
Address 101 Washington Street, Toms River, NJ 08753
street municipality zip code
3. Ownership in Fee: Public ☒ Private _____
4. Principal Contractor: Midcoast Mechanical, Inc Tel. (732) 918-1222
Address 6 Columbia Road e-mail _____
Neptune, NJ 07753
- License No. OR, if new home, Builder Reg. No. 12075 Exp. Date 4/30/13
- Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____
- Federal Emp. ID No. 22-3257222 FAX: (732) 918-8254
5. Architect or Engineer Birdsall Services Group Contact Ted Haefner
Address 611 Industrial Way, Eatontown, NJ e-mail _____
Tel. (732) 380-1100 FAX: (732) 380-1111
6. Responsible Person in Charge once Work has Begun Bob Madry
Tel. (732) 918-1222 FAX: (732) 918-8254

V. FEE SUMMARY (for office use only)

	Update	Update
1. Building	\$	
2. Electrical	\$	
3. Plumbing	\$	
4. Fire Protection	\$	
5. Elevator Devices	\$	
6. Subtotal	\$	
7. Less 20% for State Plan Review	\$	
8. Subtotal	\$	
9. State Permit Surcharge Fee	\$	
10. Subtotal	\$	
11. Cert. of Occupancy	\$	
12. Other	\$	
13. TOTAL	\$	

VI. BUILDING/SITE CHARACTERISTICS

	(office use only)
1. Number of Stories	
2. Height of Structure	ft.
3. Area — Largest Floor	sq. ft.
4. New Building Area	sq. ft.
5. Volume of New Structure	cu. ft.
6. Max. Live Load	
7. Max. Occupancy Load	
8. If Industrialized Building: State Approved	HUD
9. Total Land Area Disturbed	sq. ft.
10. Flood Hazard Zone	
11. Base Flood Elevation	ft.
12. Wetlands	yes no

IIa. PROPOSED WORK

- ☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition
- ☐ Repair ☐ Alteration ☐ Renovation ☐ Reconstruction
- ☐ Asbestos Abat. -Subch. 8 ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES

(Check all that apply)

- ☐ Building
- ☐ Electrical
- ☐ Plumbing
- ☐ Fire Protection
- ☐ Elevator

FOR OFFICE USE ONLY (Optional)

Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates	Re-viewer
						Approval	Rejection

TOTAL COST 262,455.00

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: _____
2. Use Group, Proposed: _____
3. Change in Use Group, Indicate Present: _____
4. No. of dwelling units: Total Units Income-restricted
- Gained, Sale _____
- Gained, Rental _____
- Lost, Sale _____
- Lost, Rental _____

B. NON-RESIDENTIAL (primary use)

1. State Specific Use: _____
2. Use Group, Proposed: _____
3. Change in Use Group, Indicate Present: _____

C. MIXED USE -List secondary use(s): _____

- D. Construct. Classification: Present _____ Proposed _____

III. PLAN REVIEW (optional)

DO YOU WANT:

1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☒ Elevators/Escalators/Lifts/
Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☒ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers/Standpipes
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LPGas Tanks
12. ☐ Fire Alarm



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 11/21/2011
Control Number C-11-002210
Permit Number 11-2172
Permit Issue Date 07/21/2011
Certificate Number 11-2172

Certificate

Construction Code Division
(Certificate of Approval)

Identification

Work Site Location: 301 CHAMBERS BRIDGE RD. Ocean County Block: 702 Lot: 5 Qual:
Library - Brick Branch Brick Township, NJ
Owner in Fee: OCEAN COUNTY
Owner Address: 101 HOOPER AVE TOMS RIVER NJ 08753
Telephone:
Contractor: MIDCOAST MECHANICAL INC
Address: 6 COLUMBIA RD NEPTUNE NJ 07753-
Telephone: 732/918-1222 Fax:
License Number or Builders Registration Number: Federal Emp. Number: 15-4589703

Home Warranty Number:

Type of Warranty Plan: ☐ State ☐ Private

Use Group: A-3 Construction Classification:

Maximum Live Load: 0 Maximum Occupancy Load: 0

Description of Work/Use: AIR CONDITIONER, FURNACE

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:

This certificate has an expiration date of:

Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

- ☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than: or the owner will be subject to fine or order to vacate: This certificate has an expiration date of:

Conditions to be met:

Construction Official

Fee: \$0.00

Check Number:

Collected By:

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☐ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☐ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☐ I further certify that I will perform or supervise the following work:

C.1. ☐ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☐ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature _____ Date _____

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals have been given, including such certification as the construction official may require.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

Agent Name Midcoast Mechanical, Inc

Address 66 Columbia Road
Neptune, NJ

Telephone (732) 918-1222

Signature _____

III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:17.



ELECTRICAL SUBCODE TECHNICAL SECTION



Library

IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO. 1-800-272-1000.
Block 74 Lot 102 Qualification Code 5
Work Site Location 301 Chambers Bridge Road

Owner in Fee: Ocean County Library Commission

Tel. (732) 349-6200 e-mail _____

Address 101 Washington Street, Toms River, NJ 08753 Zip code 08753

Contractor: STARLINE ELECTRIC Tel. (732) 495 7600 Zip code 08753

Address 260 MAIN ST. SUITE 1 e-mail _____

Contractor License No. 10606 Exp. Date 2012

Home Improvement Contractor Registration No. or Exemption Reason (if applicable): _____

Federal Emp. ID No. 341998379 FAX: (732) 495-7688

B. ELECTRICAL CHARACTERISTICS

Use Group Present _____ Proposed _____

☐ Pole/Pad # _____ ☐ Temporary ☐ Other _____

Building Occupied as LIBRARY Utility Co. JCP&L

Est. Cost of Elec. Work \$ 8000.00

JOB SUMMARY (Office Use Only)

PLAN REVIEW		INSPECTIONS		Dates (Month/Day)	
☒ No Plans Required		Type:	Failure	Approval	Initial
☐ Partial Under-slab Utilities Approved		Rough			
Date: _____	Approved by: _____	Barrier-Free			
☐ Electric Plans Approved		Trench			
Date: _____	Approved by: _____	Temp. Serv.			
☐ Joint Plan Review Required:		Constr. Serv.			
☐ Bldg. ☐ Plumb. ☐ Fire. ☐ Elev.		TCO			
☐ Other		Service			
SUBCODE APPROVAL for PERMIT		Final			
Date: <u>7/11/11</u>	Approved by: <u>[Signature]</u>	Barrier-Free			
SUBCODE APPROVAL for CERTIFICATE		Temp. Cut-in-Card Date Issued			
☐ CO ☐ CCO ☐ CA		Final Cut-in-Card Date Issued			
Date: <u>11-1-11</u>	Approved by: <u>JS</u>	Annual Pool Inspection			
		Date of Grounding and Bonding			
		Certification			

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that the information provided is true and correct and am authorized to make this application and to execute the work listed on this application.
Applicant, sign and affix signature and seal here.

Print name: DEBORAH LUCAS

Signature: [Signature] Date Issued: 7.21.2011

D. TECHNICAL SPECIFICATIONS

DESCRIPTION OF WORK: REPLACE EXISTING HVAC UNITS AND CONNECT NEW

QTY. SIZE ITEMS

Lighting Fixtures

Receptacles

Switches

Detectors

Light Poles

Motors—Fract. HP

Emergency & Exit Lights

Communications Points

Alarm Devices/F.A.C. Panel

TOTAL NUMBERS

Pool Permit/with UV Lights

Storable Pool/Spa/Hot Tub

KW Elec. Range/Receptacle

KW Oven/Surface Unit

KW Elec. Water Heater

KW Elec. Dryer/Receptacle

KW Dishwasher

HP Garbage Disposal

KW Central A/C Unit

HP/KW Space Heater/Air Handler

KW Baseboard Heat

HP Motors 1/4 HP

KW Transformer/Generator

AMP Service

AMP Subpanels

AMP Motor Control Center

KW Elec. Sign/Outgoing Light

Administrative Surcharge \$ _____

Minimum Fee \$ _____

State Permit Surcharge Fee \$ _____

TOTAL FEE \$ _____



FIRE PROTECTION SUBCODE TECHNICAL SECTION



Library

Date Received
Control #
Date Issued
Permit #
7-21-2011
14-2172

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO. 1-800-272-1000.

Block 74 702 Lot 25 Qualification Code

Work Site Location 301 Chamber Bridge Road

Owner in Fee: Ocean County Liberty Commission

Tel. (732) 349-6200 e-mail

Address 101 Washington Street, Toms River, NJ 08753

Contractor: STARLITE ELECTRIC Municipality Tel. (732) 495 7606 zip code

Address 260 MAIN ST. SUITE 1 e-mail

KENASBUAG NJ 07734

Fire Protection Equipment, NJ Div of Fire Safety Permit No.

Fire Protection Equipment, NJ Div of Fire Safety Installer No. 10606

Fire Alarm Contractor No. 10606 Exp. Date 2012

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):

Federal Emp. ID No. 341998379 FAX: (732) 495 7688

B. FIRE PROTECTION CHARACTERISTICS

Use Group: Present Proposed

Constr. Class: Present Proposed

Heating System: ☐ New or ☐ Modification to Existing

Fuel Type: ☐ Gas ☐ Oil ☐ Electric ☐ Solar

Location: Other

Total Cost of Fire Protection Work \$ 1,000.00

C. CERTIFICATION IN LIEU OF OATH

I hereby certify that I am the (agent or owner of record and am authorized to make this application.

Applicant's Signature/Contractor's Signature

☐ Certified Contractor ☐ Exempt Applicant

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK: DISCOVER AND INSTALL TWO NEW DUCT DETECTORS.

Water Supply Source DUCT DETECTORS.

Method of Alarm/Suppression System Supervision

Flammable/Combustible Tanks

Alarm Systems

☐ System

☐ 110v Interconnected

☐ CO Detectors/110v

Alarm Devices (i.e., smoke, heat, pulls, waterflow)

Suppression Systems (i.e., tamper, low/high air)

Other Devices

TOTAL

Suppression Systems

Fire Pump GPM Type

Dry Pipe/Alarm Valves

Pre-action Valves

Sprinkler Heads (Dry and Wet)

Standpipes

Pre-engineered Systems

Wet Chemical

Dry Chemical

CO₂ Suppression

Foam Suppression

FM200 Suppression

Other

Other Systems

Kitchen Hood Exhaust System

Smoke Control System

Fuel-Fired Appliances ☐ Gas ☐ Oil ☐ Solid

Fireplace Venting/Metal Chimneys

Other

Administrative Surcharge \$

Minimum Fee \$

State Permit Surcharge Fee \$

TOTAL FEE \$

U.C.C. F140 (rev. 12/07) 1 White = Inspector Copy 2 Canary = Office Copy 3 Pink = Office Copy 4 Gold = Applicant Copy



BUILDING SUBCODE TECHNICAL SECTION



Library

Date Received
Control #
Date Issued
Permit #

7-21-2011
11-21-12

A. IDENTIFICATION—APPLICANT: COMPLETE ALL APPLICABLE INFORMATION. WHEN CHANGING CONTRACTORS, NOTIFY THIS OFFICE. CALL UTILITY DIG NO: 1-800-272-1000.

Block ~~702~~ 702 Lot ~~5~~ 5 Qualification Code
Work Site Location 301 Chambers Bridge Road

Owner In Fee: Ocean County Library Commission

Tel. (732) 349-6200 e-mail
Address 101 Washington Street, Toms River, NJ 08753

Contractor: Micoast Mechanical, Inc. Tel. (732) 918-1222
Address 6 Columbia Road Neptune, NJ 07753 e-mail

Contractor License No. or Builder Registration No. 12075 Exp. Date 6/30/13

Home Improvement Contractor Registration No. or Exemption Reason (if applicable):
Federal Emp. ID No. 22-3257222 FAX: (732) 918-8284

JOB SUMMARY (Office Use Only)

PLAN REVIEW	Date	Initial	INSPECTIONS	Failure	Failure	Approval	Initial
☐ No Plans Required			Type:				
☐ All			Footings				
☐ Footings/Foundations			Footings Bonding				
☐ Structural/Framework			Foundation				
☐ Exterior			Slab				
☒ Foundation	7/11/11	AK	Frame				
Joint Plan Review Required:			Truss Sys./Bracing				
☐ Elec. ☐ Plumb. ☐ Fire ☐ Elevator			Barrier-Free				
SUBCODE APPROVAL FOR PERMIT			Insulation				
Date:			Finishes -Base Layer				
Approved by:			Finishes -Final				
SUBCODE APPROVAL FOR CERTIFICATE			Energy				
☐ CO ☐ DCO ☐ COCA			Mechanical				
Date:	11/13/11	AK	TCO				
Approved by:			Other				
			Barrier-Free				

B. BUILDING CHARACTERISTICS

Use Group Present	Proposed	Const. Class Present	Proposed
No. of Stories		If Industrialized Building:	
Height of Structure		State Approved	HUD
Area — Largest Floor		Est. Cost of Bldg. Work:	
New Bldg. Area/All Floors		1. New Bldg.	\$ 262,455.00
Volume of New Structure		2. Rehabilitation	\$ 262,455.00
Max. Live Load		3. Total (1 + 2)	\$ 262,455.00
Max. Occupancy Load			

C. CERTIFICATION IN LIEU OF OATH
I hereby certify that I am the (agent of) owner of record and am authorized to make this application.
Signature _____

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

Replace 2 roof-top HVAC units.

New duct work

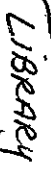
FEE (Office Use Only)

Administrative Surcharge \$	
Minimum Fee \$	
State Permit Surcharge Fee \$	
TOTAL FEE \$	

1 White = Inspector Copy
3 Pink = Office Copy

2 Canary = Office Copy
4 Gold = Applicant Copy

U.C.C. F110
(rev. 12/07)



Library

7-21-2011
11-2172

Block 702 Lot 5 Qualification Code _____
 Work Site Location 391 Chamber Bridge Road

Water Service Size _____
Est. Cost of Plumbing Work \$ 1500.00

CONFIDENTIAL
918-8254

I hereby certify that I am the (agent of) owner of record and am authorized to make this application and perform the work listed on this application.

Applicant sign/contractor sign and seal here: _____

Print name here:

D. TECHNICAL SITE DATA

DESCRIPTION OF WORK

Disconnect gas piping to existing units
Connect to new HVAC Units

QTY.

FIXTURE/EQUIPMENT

Water Closet

Urinal/Bidet

Bath 1 and 2

Laundry

Floor Drain

Sink

Dishwasher

Drinking Fou

Washing Ma

Hose Bibb

Water Heate

Fuel Oil Pipin

Gas Piping
 LPGas Tank

Stages of the

Hot Water Boilers

Sewer Pump

Interceptor/S

Backflow Pre

Greasetrap

Sewer Conn

Water Service

Stacks —

Other 4

Administrative Surcharge

Minimum Fee

State Permit Surcharge Fee

TOTAL FEE

U.C.C. F-130 (rev. 11/09) 1 White = Inspector Copy 2 Canary = Office Copy 3 Pink = Office Copy 4 Gold = Applicant Copy



CONSTRUCTION PERMIT

Date Issued
Control #
Permit #

7-21-2011

C-11-002210

11-2172

IDENTIFICATION Block: 702 Lot: 5 Qualifier
Work Site Location: 301 CHAMBERS BRIDGE RD. Ocean County Contractor: MIDCOAST MECHANICAL INC
Library - Brick Branch Brick Township, NJ Address: 6 COLUMBIA RD. NEPTUNE NJ 07753-
Owner in Fee OCEAN COUNTY
101 HOOPER AVE TOMS RIVER NJ 08753 Telephone: 732/918-1222
Telephone: Lic. No. or Bldrs. Reg. No.
Federal Employee No. 15-4589703

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☒ PLUMBING ☐ LEAD HAZARD ABATEMENT
☒ ELECTRICAL ☒ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

AIR CONDITIONER, FURNACE

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work - \$272,955

Construction Official

Date

U.C.C. F170
equiv (rev 8/03)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building	\$0
Electrical	\$0
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$0
CO Fee	\$0
Other	\$0
Total	\$0
Check No.	
Cash	\$0
Credit	\$0
Collected By	

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

- ☐ Required inspections for all subcodes for one- and two-family dwellings are as follows:
1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
 2. Foundations and all walls up to grade level prior to back filling.
 3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and/or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
 4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

- ☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

- ☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

- ☐ A complete copy of released plans must be kept on the job site.

If you do not understand any of this information, please ask.

*** FAX TX REPORT ***

TRANSMISSION OK

fixed 6/21

JOB NO. 1295
DESTINATION ADDRESS 97329188254
PSWD/SUBADDRESS
DESTINATION ID
ST. TIME 06/21 07:45
USAGE T 00' 21
PGS. 1
RESULT OK



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723
(732) 262-1027

resubmit 7/6/06/11
732/918 8254

Subcode Official Review

To: 101 HOOPER AVE TOMS RIVER, NJ 08753 CC:

RE: Building Subcode
Block: 702 Lot: 5 Qual:
301 CHAMBERS BRIDGE RD.
Permit Number: Control Number: C-11-002210
Last Submit Date: Friday, June 17, 2011

Date: Monday, June 20, 2011

Dear OCEAN COUNTY,

Your request is hereby denied based upon the following infractions.

Provide an engineers letter to certify newly imposed loads on existing roof. Provide detailed plans for any new openings on roof.

Provide manufacturers specs for all new equipment

Sincerely,

Michael Vecchio, Subcode Official



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723
(732) 262-1027

732 918 8254

Subcode Official Review

To: 101 HOOPER AVE TOMS RIVER, NJ 08753 CC:

RE: Building Subcode
Block: 702 Lot: 5 Qual:
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Michael Vecchio, Subcode Official



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723
(732) 262-1027

732 918 8254

Subcode Official Review

To: 101 HOOPER AVE TOMS RIVER, NJ 08753 CC:

RE: Building Subcode
Block: 702 Lot: 5 Qual:
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Provide manufacturers specs for all new equipment

Sincerely,

Michael Vecchio, Subcode Official



BIRDSALL SERVICES GROUP
ENGINEERS & CONSULTANTS

June 24, 2011

Mr. George A. Murawski
Birdsall Services Group
611 Industrial Way West,
Eatontown, NJ 07724

TOWNSHIP OF BRICK	
RELEASED FOR PERMIT	INITIAL <u>KA</u> DATE <u>7/7/11</u>
Building Subcode	_____
Fire Subcode	_____
Electrical Subcode	_____
Plan Reviewer	_____
Plans Released	_____
Construction Official	_____

**RE: OCEAN COUNTY LIBRARY - BRICK BRANCH
ROOF TOP UNIT REPLACEMENT**

Dear George,

At your request, we have reviewed the impacts of replacing the two existing roof top units with new roof top units. The two new units will weigh 8050 lbs each and will sit at the same location. We understand that the existing roof openings will be used. No new roof openings or enlargement of the existing openings are required. The new roof top units are the same size as the existing and the existing roof curb will be used. No new curb is required.

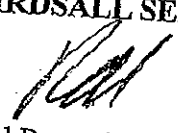
As shown on the existing drawings, the roof framing consists a of 1/2" -20 gage Type B Metal roof deck supported by Steel W beams. The roof curb is continuously supported by a WT4 spanning between steel beams.

Based on our analyses the existing framing can safely carry the new roof top units with no additional reinforcing required. The new units shall be attached securely to the existing curb. The existing curb has to be directly attached to the structural steel below. This needs to be verified in the field.

Please advise if you would like any further information or assistance on this matter. It was a pleasure to provide you with engineering services.

Very truly yours,

BIRDSALL SERVICES GROUP


Paul Panzarino, PE
Principal 6-29-11

NJ License # GE 42798

WWW.BIRDSALL.COM

65 Jackson Drive, Cranford, NJ 07016 | 888.335.BSGi (2744) | 908.497.9134 fax



ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

RECEIVED

JUN 21 2011

MIDCOAST MECH., INC

This submittal has been
checked and is suitable for
submission for approval

Submittal No. 3

By Rem

Date 6/21/11

MIDCOAST MECHANICAL, INC.

EQUIPMENT SUBMITTAL
for
BRICK TOWNSHIP LIBRARY
BRICK TOWNSHIP, NJ
F.O. # A969

CUSTOMER
MIDCOAST MECHANICAL

SEASONS-4 REPRESENTATIVE
AIRE-AQUA, INC
CONTACT: KIRK CAWTHORNE
PHONE: 973-256-8755
FAX: 973-256-8765

Document Prepared
June 20, 2011

Seasons-4 Inc.
4500 Industrial Access Rd.
Douglasville, Georgia 30134-3949
(770) 489-0716
(770) 489-2938 fax

Rigging Assistance Request Form

- ☐ Unit Factory order # _____
- ☐ Unit Model # _____
- ☐ Job name: _____
- ☐ Address: _____
- ☐ Date rigging requesting: _____ Time rigging to take place _____
- ☐ Person requesting: _____
- ☐ Phone # _____ Fax # _____
- ☐ E-mail address: _____
- ☐ Authorized signature: _____ Date: _____

Is start-up needed on same day of rigging? ☐ Yes ☐ No
If answer is yes please list the following contacts:

1. Controls: _____ Phone # _____
2. Electrician: _____ Phone # _____
3. Plumber (gas line): _____ Phone # _____
4. Servicing contractor: _____ Phone # _____

Please note: If start-up is not need at this time please complete the start-up request form, and fax back with minimum 2 week notice before date needed.

Rigging Assistance

Seasons-4 provides an experienced person to be on site with the installer during rigging. **When the "on site" date is determined please mail or fax this completed form back to Seasons-4 service dept with a minimum of 2 weeks notice.** Rigging assistance includes (see rigging information & instructions for detailed information) advice on rigging, recommendations for solving unexpected problems uncovered when the old unit is removed, and offering advice on the proper location of the new unit on the existing curb.

Note: Seasons-4 or the authorized service company representing Seasons-4 is not responsible for the rigging, they are merely there to offer advice during rigging. The installing contractor, the owner, and the rigger are the responsible parties for properly rigging the unit(s). The riggers are the experts, and must know the capabilities of their equipment, and the proper procedures for placing the unit(s) in the proper location.

For further information on rigging assistance and the arrival of the new unit(s) please refer to the rigging information & instruction sheets located in your Seasons-4 submittal.

Please mail completed form to Seasons-4 Inc.
4500 Industrial Access Rd.
Douglasville, Georgia 30134
Attn: Service Manager

Or fax to: Service Dept.
Seasons-4
(770) 489-2938

REQUEST FOR START-UP SUPERVISION

In purchasing equipment from Seasons-4, you have placed confidence in us to supply you with equipment designed and constructed to meet your exacting conditions. The equipment start-up and operational check out is the responsibility of the mechanical contractor who purchased the equipment and associated personnel responsible for its operation.

As a continuing effort to support and reinforce the confidence you and your customer have placed in us, a Seasons-4 field technician will supervise the start-up and provide instructions in the operation of the equipment, as well as point out areas of a particular design and service requirement.

In order that we may provide this service the mechanical contractor will be responsible for assuring that the equipment is ready for start-up.

The following items must be completed before arrival of the Seasons-4 field technician.

- | | |
|---|--|
| ☐ 1. All power and control wiring complete | ☐ 7. Main power on for 12 hours before start-up |
| ☐ 2. Gas lines complete and purged | ☐ 8. All items shipped loose installed (O.A. hoods vent caps, drain traps, etc.) |
| ☐ 3. All sensors installed and terminated in control panel | ☐ 9. All shipping blocks removed from blower and compressors (if spring mounted) |
| ☐ 4. Main power to the unit connected | ☐ 10. (For Split system units) Refrigerant piping is complete, evacuated and charged with initial charge. |
| ☐ 5. All duct main runs completed | |
| ☐ 6. All unit control switches "off" | |

The request for start-up must be filed a minimum of 2 weeks before actual start-up date. The mechanical contractor must supply all tools, gauges and instruments as required. The personnel responsible for the operation of equipment MUST be present for the start-up.

► **NOTE: ONLY ONE TRIP TO JOBSITE HAS BEEN INCLUDED IN THE PRICE OF THE EQUIPMENT. RETURN TRIPS WILL REQUIRE A PURCHASE ORDER NUMBER.**

REQUEST FOR START-UP SUPERVISION FORM

Unit Model# _____ S/N: _____

Job Name: _____

Address: _____

Date Start-Up Requested: _____

Person Requesting Start-Up: _____

Phone number to contact for start-up: _____

FAX number to be contacted at: _____

Signed By: _____ Date: _____

Use space below for additional information you feel necessary for start-up:

► **NOTE: Should unit not be ready for start-up when our technician arrives, a Purchase Order must be issued, and approved by Seasons-4, Inc., in order to hold our technician at jobsite**

Mail or fax completed form to the attention of Service Dept at the address listed below.
Fax: 770-489-2938 or Mail: Seasons-4 Inc. 4500 Industrial Access Rd. Douglasville, GA 30134-3949

DIRECT REPLACEMENT SERIES
SUBMITTAL SPECIFICATION for APPROVAL

for

Brick Township Library

Brick Township, NJ

SEASONS-4 PROJECT #A969

6/15/2011

EQUIPMENT

Replacement roof mounted packaged air conditioning units manufactured by SEASONS-4 with dimensions, capacities and electrical characteristics as shown in this submittal will be provided. The equipment complies with the requirements and terms of ETL's Listing, Labeling and Follow-up Service Agreement and the complete unit bears the ETL Label.

In order to provide improved reliability, higher efficiency, and meet requirements for improved rates of ventilation, the replacement units may be slightly higher, longer, or wider than the units being replaced; however, the base of the new unit is designed to match the existing curb and duct connections of the unit being replaced. Prior to Seasons-4's engineer completing the design of the unit, a technician visited the project, measured the old unit's ducts, determined the location of the utilities, and noted any obstructions adjacent to the unit.

EXTERIOR CASING AND FRAME

The unit base will be constructed of formed and welded heavy gauge galvanized structural steel. Perimeter base rails will be fabricated from 12 gauge Galvanized Steel, and cross rails from 14 gauge steel. Lifting lugs are welded on the base frame for rigging the unit. Posts are formed from 14 gauge galvanized steel. All exterior panels are fabricated from 0.04 Thick Series 3001 Aluminum with a kynar coating (Color To Be Determined). Interior floor and ceiling are fabricated 0.05 smooth mill finish aluminum and liners are fabricated from 0.03 smooth mill finish aluminum. Aluminum panels are fastened to the frame with stainless steel bolts. Panels are isolated from the steel base with dielectric gaskets to prevent galvanic corrosion. The roof of the unit is pitched to provide positive drainage. Top seams are covered with cap strips to prevent water leakage into the unit and the floor of each section has an aluminum deck to isolate the entire unit from the building. All seams are caulked with silicone inside and out to prevent air and water leakage.

Access doors are provided for all sections housing components requiring routine maintenance. Doors are supported on full-length continuous aluminum hinges and have single handle, multiple latch closures. Full height access doors have stainless steel "hold back" latches to prevent door closure during the performance of service procedures.

All walls, roof, and doors in the air-handling compartment and the air-cooled condenser are double wall construction enclosing 2" thick polyurethane foam insulation. Liners are aluminum sheet metal to protect the insulation during routine service and maintenance operations. The floor of the air handling sections is insulated with 2 inch polyurethane foam insulation.

Unit is designed to be mounted on the existing roof curb

AIR COOLED CONDENSING SECTION

The air-cooled condensing section is designed and manufactured by Seasons-4. The floor of the air-cooled condensing section is crowned for water drainage and constructed of aluminum to resist the corrosive effects of the weather. All refrigerant piping is installed and tested in the factory prior to shipment of the complete unit.

The air-cooled condenser coils are a minimum of four rows deep and have copper tubes expanded into a maximum of ten aluminum fins per inch. The coils shall be provided with heavy gauge galvanized casing. Coils are tested at 550 PSIG and mounted vertically for complete surface utilization. Coils are counter flow with a minimum of 10 degrees of liquid sub-cooling and have adequate capacity to dissipate the total heat rejection of the system at design conditions. Condensers have guards to protect the coils from vandalism and weather related damage.

Condenser fans are coated steel and have a steel hub locked on a stainless steel motor shaft with a keyway and square head set screws. Fans have a radius spun type venturi for efficient performance. Fans have vinyl coated external guards capable of being removed for service without removing the fan motor. Fans are direct driven by NEMA constructed, three phase motors operating at 1140 RPM. Motors have stainless steel shafts to prevent "rust welding" of the fan hubs to the shaft. Each motor has a shaft slinger to prevent water seepage into the motor.

Condenser head pressure will be controlled and maintained down to an ambient of 50° F.

Compressors are heavy duty suction cooled, hermetic scroll type complete with forced feed lubrication, suction and discharge service valves, suction strainer, crankcase heater, and 3 phase solid state thermal motor protection. The compressors are mounted on rubber in shear isolators to prevent transmission of any noise and vibration to the space below. The lead refrigeration circuit shall have a digital scroll compressor for capacity control.

The multiple independent refrigerant circuits are completely piped, tested, dehydrated and fully charged with oil and R410. The refrigerant circuit components include compressor, condenser with integral liquid sub-cooling, liquid line service and charging valve, filter drier in the liquid line, filter in the suction line, liquid line sight glass, and relief valve.

DX COOLING COIL SECTION

Cooling coils are installed downstream of the supply air blower and parallel with the heating section. Coils are direct expansion type and constructed of seamless copper tubes expanded into aluminum fins and enclosed with a galvanized casing. The coil section is provided with thermostatic expansion valves, adjustable super heat controls, and external equalizers. Each evaporator coil shall be provided with a positive draining IAQ type double pitched, stainless steel drain pan. The drains for the main drain pan must be metal and extend through the side of the unit.

HEATING SECTION - (Natural gas – Power Vented Tubular Heat Module)

The heater is a natural gas indirect fired type with draft inducer with capacity as shown in this submittal and is installed downstream of the blower in the heating deck of the unit. The tubular heat exchanger is constructed of stainless steel. The burner assembly consists of individual in-shot burners and includes a spark-ignited intermittent safety pilot with electronic flame supervision. The gas train is complete with a modulating gas valve and is ready for connection

to a natural gas supply with pressure between 7" and 14" WC. Standard controls include an electric gas valve, high temperature limit switch, two-speed draft inducer, ignition control, air proving switch and roll out safety switch. Final adjustments must be made at startup of the unit.

MULTI-VAV-ZONE DAMPER SECTION

Unit has the capability of providing VAV cooling or VAV heating in each zone and each zone has factory mounted multi-VAV zone dampers. Dampers are arranged to provide individual zone Variable Air Volume control with a single factory mounted and wired operator for each zone that are provided by Seasons 4. In no case may air from any zone's cold deck mix with the air from that zone's hot deck. Damper shafts are mounted in permanently lubricated nylon bearings to assure smooth operation. Damper blades operate without clatter or binding.

SUPPLY AIR BLOWER SECTION (VARIABLE AIR VOLUME)

The supply air blower wheel is a single width/single inlet airfoil plenum type, secured to a machined, ground and polished solid steel shaft. The shaft is coated with a rust inhibitor and supported by two outboard bearings. The complete blower assembly is dynamically balanced. Bearings are self-aligning ball bearing pillow block type and are designed for an L-50 life of 200,000 hours.

Blower drive includes a fixed pitch motor sheave with multiple V-belts having a minimum service factor of 150%. Motors are premium efficiency heavy-duty open drip proof 3-phase, 1800 rpm, mounted on a heavy-duty sliding base. Motor and blower assembly are mounted on a heavy duty steel frame supported by 2 " deflection springs designed for 90-98% isolation efficiency. In addition to the spring isolators, the blower assembly has seismic restraints.

On VAV applications, the blower speed will be controlled by a Variable Speed Drive (VSD) (see separate specifications) housed in a UL listed NEMA 1 enclosure, factory mounted and wired in the ventilated control vestibule. The drive is an advanced microprocessor type utilizing a PWM/Voltage Vector design technique. The unit includes line side reactors. Unit includes controls to provide variable air volume and maintain constant static pressure at the field mounted pressure sensor in the supply duct. A manually reset adjustable range high-pressure safety switch is included to prevent excessive pressure in the supply duct.

PROPELLER EXHAUST SECTION

Unit shall be equipped with a belt drive propeller type exhaust fan to maintain the building pressure during economizer operation. Fan shall be a wall mounted, belt driven aluminum propeller type. The fan shall be bolted and welded construction utilizing corrosion resistance fasteners. The motor, bearings, and drives shall be mounted on a tubular steel power assembly. The power assembly shall be bolted to a minimum 14 gauge wall panel with continuously welded corners and an integral venture. All fan components shall have an electrostatically applied baked polyester coating. Propeller shall be a high efficiency fabricated aluminum design with blades securely fastened to a minimum 7-gauge hub. The hub shall be keyed and locked to the fan shaft utilizing two setscrews. Propeller shall be balanced in accordance with AMCA standard 204-96. Motors shall be 1800 RPM, open drip proof three phase premium efficiency heavy-duty type. Bearings shall be designed and tested specifically for use in air handling applications. Construction shall be heavy duty regreasable ball type in a cast iron pillow block housing selected for a minimum L50 life in excess of 200,000 hours at maximum rated operating speed. Belts shall be oil and heat resistant, non-static type. Drives shall be

precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150% of the installed motor horsepower. The variable pitch motor drive shall be factory set to the specified fan RPM.

VARIABLE FREQUENCY DRIVE

Unit fan motors shall be provided with solid state variable frequency drives to convert three phase, 60 Hz power to adjustable frequency and voltage three phase power for step less motor speed control from 0% to 100% of base speed. Input voltage shall be same as the unit voltage. The VFD shall be capable of operating within the range of 10% over to 10% under the rated input voltage. The VFD shall be designed for use on variable torque loads and shall be capable of providing sufficient torque to start motor from rest with initial influx of power.

The VFD operation shall be fully factory tested by the drive manufacturer prior to shipment and installation. The VFD controller shall have the following features: isolated power for control circuits, automatic type reset faults for over-current, under-voltage, over-voltage, phase loss or over-temperature, fault counter reset, adjustable current limiting circuitry, independent acceleration and deceleration time adjustment, 4-20 mA control signal interface, 0-10Vdc output signal, and automatic frequency adjustment. VFD shall be provided with digital read output meter indicating percent speed and load, local/remote selector switch, power/on, diagnostic, and fault trip indicating lights, Hands/Off/Auto selector switch, manual bypass switch and bypass starter (if stated in the factory order), and manual speed control adjustment. The complete drive shall be tested to ANSI C37.90.1 and UL Standard 508 and be ETL or UL listed. Power line noise distortion shall be limited to voltage distortion factor and line notch depth as defined in IEEE Standard 519-1981. Total voltage distortion shall not exceed 5%. VFD shall be provided with two N.O. (normally open) and two N.C. (normally closed) dry contacts rated 120 volts, 10 amps, 60 Hz for remote indication of the following: controller shutdown with automatic restart, system shutdown with automatic restart, and system running. Controller shall include a door interlocked fused safety disconnect or circuit breaker that will disconnect all input power. The variable frequency drive shall be as manufactured by ABB.

FILTER SECTION

The filter section includes UL Class 2, 4 inch thick, 30% efficiency panel type filters. Access for filter maintenance is through a full height service door on the side of the unit. Filter support rails include slide out "pulls" to facilitate removal of the filters.

Unit includes a factory mounted Magnahelic Series 2000 differential pressure gauge for each bank of filters. Gauge is factory mounted in the unit control panel.

RETURN AIR/OUTSIDE AIR/EXHAUST AIR SECTION

Outside air intake has storm-proof hoods sized to prevent entrainment of rainwater into the unit and includes an aluminum bird screen. Outside air intake is located on the opposite side of the unit from the exhaust air discharge. Outside and return air dampers have factory mounted and wired operators that are provided by Seasons 4. Damper shafts are mounted in permanently lubricated nylon bearings to assure smooth operation. Damper blades operate without clatter or binding. Motorized dampers are low leakage type limiting leakage to 8 CFM/ft² at a pressure differential of 4 inches with formed galvanized blades. Exhaust dampers are gravity relief type with a hood to divert rain from the face of the dampers.

MAIN CONTROL PANEL

The main control panel with a disconnect switch is mounted in a ventilated service enclosure on the side of the unit. The panel is ventilated with conditioned air.

The unit has a non-fused disconnect switch with a through the door operating handle, and the control panel door has an OFF-AUTO switch to allow proper deactivation of the unit.

All components are identified with nametags and wired in accordance with the National Electric Code. The main control panel includes the following:

1. A power terminal block for single point power supply with fuses for all branch circuits.
2. A 24-volt control transformer and 24-volt field wiring control terminal strip. Terminals shall be numbered for field connection of all controls in accordance with the wiring diagram.
3. All wiring is numbered and color-coded.
4. A phase failure and low voltage protection relay.
5. All refrigeration safety and operating controls.
6. Temperature controls as described in the "Sequence of operation".
7. Wiring diagrams are laminated to the control panel door and a print storage pocket on the door includes startup and maintenance instructions.
8. The control panel has a service light with switch and a 115-volt, 10 amp ground fault convenience outlet factory mounted and wired to its own transformer.
9. Fan motor starters with three-phase overloads factory mounted and wired.
10. Compressor and condenser fan motor starters.
11. Condensing unit low ambient lockout set at 50 degrees F.
12. Variable frequency drive(s).
13. Ambient heating and cooling lock outs where required.
14. Low temperature cut out (Freeze stat).

The above components are in addition to electrical components associated with other sections required to accomplish the sequence of control specified below.

TEMPERATURE CONTROLS

Unit will have a complete factory installed temperature control system including control of the mechanical cooling and heating, new room temperature controls, and economizer controls all provided by **Others**. When programming of the controls is required, it shall be the responsibility of the control system provider.

The unit is designed for continuous blower operation and includes terminals for field connection to a building operating system, to be provided by the temperature control contractor.

FACTORY INSTALLATION AND TESTING

The controller will be installed and the leads tested at the factory to verify proper operation with the unit prior to shipping. Final field connections with remote devices and/or controllers or networks must be performed by fully trained and certified technicians who must verify proper operation and control. They must provide owner training and review of the unit's controls.

OTHER CONTROLS

Unit has terminal strips and interlocking relays factory mounted and wired to interlock with other components of the building. It is the responsibility of the control contractor to advise Seasons-4 of any requirement for any additional interlocks not covered in this specification.

A filter alarm switch with contact to activate remote indicator is factory mounted and wired in the unit.

INSTALLATION

Seasons-4 will send an installation expert to the jobsite to advise on proper rigging and alignment of the equipment. The installing contractor should become familiar with Seasons-4 rigging and installation instructions.

CHECK, TEST, STARTUP AND WARRANTY

Unit will be checked out, tested, and placed into operation under the supervision of an authorized representative of Seasons-4, Inc. Seasons-4, Inc. warrants each product to be free from defects in material and workmanship under normal and proper use, and will within twelve (12) months from date of start up and not to exceed fifteen (15) months from shipment, repair or replace any part which, when returned to our factory transportation charges prepaid, and upon inspection by Seasons-4, proves to be defective. This warranty does not include any refrigerant, labor, or service charges that occur under this warranty.

In addition, Seasons-4, Inc. warrants to the original purchaser-user the refrigerant compressor to be free from defects in factory workmanship and material for a period of four (4) years following the expiration of the standard one (1) year product warranty. This extended warranty does not include any external parts, electrical components, labor, refrigerant, freight charges or taxes.

In addition, Seasons-4, Inc. warrants to the original purchaser-user the solid state ignition modules and control boards for a period of three years from date of substantial completion. This extended warranty does not include any external parts, electrical components, labor, refrigerant, freight charges or taxes.

The installing contractor must be responsible for warranty service and maintenance after the equipment is placed into operation.

CAUTION! Occasionally, modifications to control sequences and systems occur after the equipment is installed at the jobsite. Any modification to the Seasons-4 equipment, including the controls and sequence of operation, without specific approval in writing by Seasons-4, will result in a violation of the equipment warranty.

SUGGESTED
SEQUENCE OF OPERATION
(CONTROLS BY OTHERS)

For
BRICK TOWNSHIP LIBRARY
BRICK TOWNSHIP, NJ

TAG: RTU-1 (WEST)

SEASONS-4 PROJECT #A969
6/20/11

Equipment Description

The unit is a packaged, rooftop mounted, multi-zone unit with an air cooled condensing section along with a variable air volume supply blower and variable air volume exhaust fans.

The unit includes:

- a) DX Cooling System
- b) Scroll Compressors and Direct Drive Propeller Condenser Fans
- c) Plenum Supply Air Blower
- d) Prop Exhaust Fan
- e) Power Vented Tubular Duct Furnace
- f) Enthalpy Changeover Economizer
- g) DDC Controls (By Others)

Occupied Mode

The unit can be placed in the occupied mode by a 7-day programmable schedule in the DDC controller, accessible through the keypad. A digital input shall be available to override any other command, and turn the unit on even when the schedule is calling for the unit to be off (unoccupied mode). The digital input can become the primary means of enabling the unit by not having any on/off times in the schedule.

Unoccupied Mode

The supply air blower and exhaust air fan shall be de-energized. The outdoor air damper will be fully closed and the return air damper will be fully open. No cooling or heating function will be allowed.

Supply Air Blower

The supply air blower will run continuously in occupied mode. The supply air blower will be a variable air volume type controlled by variable speed drive. The input to the VSD shall be a pressure transducer located in the supply air plenum. This transducer will send a control signal to the controller that will in turn send a signal to the drive. The drive will ramp the speed of the supply air blower to maintain a constant supply air plenum pressure of 1.65" W.C. (adjustable). There shall be a manual reset high pressure safety switch located in the supply air plenum to de-energize the supply air blower in the event that the supply air plenum pressure becomes excessive (Set point: 3.03" of W.C.). The VSD incorporates a manual bypass which allows the supply air blower to run independent of the VSD in case of any failure (repair) in the VSD.

Exhaust Air Fan

The exhaust air fan will be variable air volume type controlled by a variable speed drive and will be energized and controlled based on building pressure. The VSD incorporates a manual bypass which allows the return air blower to run independent of the VSD in case of any failure (repair) in the VSD.

Compressor & Cooling Section

The unit cooling will be enabled from space mounted zone temperature sensors. The unit cooling will be controlled from a unit mounted cold deck temperature sensor. A call for cooling will be initiated when any one zone is fully open to the cold deck and the temperature rises above the cooling set point of the zone's temperature control. The call for cooling will continue until all zones are satisfied. The unit is equipped with an evaporator cooling coil and scroll compressors, including a digital scroll lead compressor capable of modulating capacity for capacity control. The compressors will stage based on a call for cooling and shall maintain a cold deck temperature of 55°F (adjustable).

The digital scroll compressor requires a demand signal from 1.52 VDC to 5.0 VDC based on a PID loop comparing discharge temperature to discharge temperature set point. At 5.0 VDC, the compressor will operate at 100% capacity. Below 1.52 VDC, the compressor will shut off. The compressor can operate down to 10% (1.8 VDC), but the range of operation should be limited to a minimum output of 2.2 VDC (approx. 30% capacity) for protection of the system. Therefore, the range of operation programmed in the DDC controller will be 2.2 VDC to 5.0 VDC.

Compressor staging sequence will be: Compressor 1 on, Compressor 2 on. Compressor staging must be re-started beginning with Stage 1 upon reset of any safety device. Once there is a call for cooling, the DDC controller will enable Compressor 1 and provide a demand signal based on discharge air temperature. Each subsequent compressor will have an on-delay of 5 minutes to allow the digital compressor to modulate to meet set point before any other compressors are turned on/off. If after 5 minutes the digital compressor is at full capacity (5.0 VDC) and the discharge air temperature is still above the discharge air temperature deadband, the next compressor will be staged on. If after 5 minutes the digital compressor is at minimum output (2.2 VDC) and the discharge air temperature is still below the deadband, the next compressor will be staged off. The digital compressor must reach full

capacity (5.0 VDC) on an increase in demand or minimum output (2.2 VDC) on a decrease in demand before staging any other compressors on/off. Each compressor has a solid-state 5 minute timer to prevent short cycling.

Mechanical cooling is disabled if the coil leaving temperature drops below 38°FDB (adjustable). Cooling will reactivate once the freeze stat downstream of evaporator coil is satisfied. The unit will have a low ambient lockout set at 50°F (adjustable).

Heating Section

The unit heat will be enabled from space mounted zone temperature sensors. The unit heat will be controlled from a unit mounted hot deck temperature sensor to maintain a set point of 117°F (adjustable). The controls contractor will provide a heat enable signal and a 0-10 VDC control signal to maintain the set point temperature. A call for heating will be initiated when any one zone is fully open to the hot deck and the temperature falls below the heating set point of the zone's temperature control. The call for heating will continue until all zones are satisfied. The unit will have two power vented tubular duct furnaces. One furnace is accompanied with a 2-stage gas valve for staging purpose and the second furnace has a modulated control with a 4:1 turndown ratio. A time-delay relay is hard wired to allow the fan to run for a period of 5 minutes upon unit shut-down after heating mode of operation in order to dissipate the residual heat. The unit will have a high ambient temperature lockout set at 73°F (adjustable).

Economizer (Outside, Return & Exhaust Dampers)

The economizer will have an enthalpy changeover control which will enable the economizer anytime there is a call for cooling and the ambient enthalpy is below the changeover set point of 22 Btu/lb (adjustable). The outdoor and return air dampers will modulate to maintain a mixed air temperature of 55°F (adjustable). When the economizer is disabled and the unit is in occupied mode, the outdoor air damper will be set at minimum position. When the economizer is disabled and the unit is in unoccupied mode, the outdoor air damper will be closed. The outdoor and return air damper actuators will be electric.

Triple Deck Damper

The zone damper will be a 3-deck damper and shall consist of hot deck, bypass (neutral) deck, and cold deck. The zone actuators will be electric.

During full cooling demand, the cold deck damper shall be 100% open, neutral and hot deck dampers shall be closed. If cooling demand decreases in a zone, cold deck damper shall modulate towards closed position, neutral deck damper shall modulate to open position in proportion to cold deck damper. Hot deck damper shall remain closed.

During full heating demand, hot deck damper shall be 100% open, neutral and cold deck dampers shall be closed. If heating demand increases in a zone, hot deck damper shall modulate towards open

position, neutral deck damper shall modulate to closed position, in proportion to hot deck damper. Cold deck damper shall remain closed.

The damper operation shall be reversed in the event that heating demand decreases and cooling demand increases. Hot deck and cold deck dampers shall not be open at the same time. Simultaneous heating and cooling shall not be allowed. If there is no demand for heating or cooling, the associated hot and cold deck dampers shall be closed and neutral deck damper shall be 100% open.

A single, manually adjustable damper is provided between the hot deck and cold deck of the unit to restrict the airflow to the bypass (neutral) deck to create pressure drop required for the VSD to slow the fan speed. The manual damper must be set to minimum outside air requirements by the air balancing contractor.

Condenser Fan Control

The condenser fans will be controlled by a Hoffman controller which will sequence the fans according to input from liquid line temperature sensors.

This procedure of sequence of operation is provided by Seasons-4, Inc. Controls contractor must verify that their controls operate in the manner described above or else provide the sequence of operation to Seasons-4 two (2) weeks prior to beginning of unit's production.

SUGGESTED
SEQUENCE OF OPERATION

(CONTROLS BY OTHERS)

For

BRICK TOWNSHIP LIBRARY

BRICK TOWNSHIP, NJ

TAG: RTU-2 (EAST)

SEASONS-4 PROJECT #A969

6/20/11

Equipment Description

The unit is a packaged, rooftop mounted, multi-zone unit with an air cooled condensing section along with a variable air volume supply blower and variable air volume exhaust fans.

The unit includes:

- a) DX Cooling System
- b) Scroll Compressors and Direct Drive Propeller Condenser Fans
- c) Plenum Supply Air Blower
- d) Prop Exhaust Fan
- e) Power Vented Tubular Duct Furnace
- f) Enthalpy Changeover Economizer
- g) DDC Controls (By Others)

Occupied Mode

The unit can be placed in the occupied mode by a 7-day programmable schedule in the DDC controller, accessible through the keypad. A digital input shall be available to override any other command, and turn the unit on even when the schedule is calling for the unit to be off (unoccupied mode). The digital input can become the primary means of enabling the unit by not having any on/off times in the schedule.

Unoccupied Mode

The supply air blower and exhaust air fan shall be de-energized. The outdoor air damper will be fully closed and the return air damper will be fully open. No cooling or heating function will be allowed.

Supply Air Blower

The supply air blower will run continuously in occupied mode. The supply air blower will be a variable air volume type controlled by variable speed drive. The input to the VSD shall be a pressure transducer located in the supply air plenum. This transducer will send a control signal to the controller that will in turn send a signal to the drive. The drive will ramp the speed of the supply air blower to maintain a constant supply air plenum pressure of 1.65" W.C. (adjustable). There shall be a manual reset high pressure safety switch located in the supply air plenum to de-energize the supply air blower in the event that the supply air plenum pressure becomes excessive (Set point: 2.97" of W.C.). The VSD incorporates a manual bypass which allows the supply air blower to run independent of the VSD in case of any failure (repair) in the VSD.

Exhaust Air Fan

The exhaust air fan will be variable air volume type controlled by a variable speed drive and will be energized and controlled based on building pressure. The VSD incorporates a manual bypass which allows the return air blower to run independent of the VSD in case of any failure (repair) in the VSD.

Compressor & Cooling Section

The unit cooling will be enabled from space mounted zone temperature sensors. The unit cooling will be controlled from a unit mounted cold deck temperature sensor. A call for cooling will be initiated when any one zone is fully open to the cold deck and the temperature rises above the cooling set point of the zone's temperature control. The call for cooling will continue until all zones are satisfied. The unit is equipped with an evaporator cooling coil and scroll compressors, including a digital scroll lead compressor capable of modulating capacity for capacity control. The compressors will stage based on a call for cooling and shall maintain a cold deck temperature of 55°F (adjustable).

The digital scroll compressor requires a demand signal from 1.52 VDC to 5.0 VDC based on a PID loop comparing discharge temperature to discharge temperature set point. At 5.0 VDC, the compressor will operate at 100% capacity. Below 1.52 VDC, the compressor will shut off. The compressor can operate down to 10% (1.8 VDC), but the range of operation should be limited to a minimum output of 2.2 VDC (approx. 30% capacity) for protection of the system. Therefore, the range of operation programmed in the DDC controller will be 2.2 VDC to 5.0 VDC.

Compressor staging sequence will be: Compressor 1 on, Compressor 2 on. Compressor staging must be re-started beginning with Stage 1 upon reset of any safety device. Once there is a call for cooling, the DDC controller will enable Compressor 1 and provide a demand signal based on discharge air temperature. Each subsequent compressor will have an on-delay of 5 minutes to allow the digital compressor to modulate to meet set point before any other compressors are turned on/off. If after 5 minutes the digital compressor is at full capacity (5.0 VDC) and the discharge air temperature is still above the discharge air temperature deadband, the next compressor will be staged on. If after 5 minutes the digital compressor is at minimum output (2.2 VDC) and the discharge air temperature is still below the deadband, the next compressor will be staged off. The digital compressor must reach full

capacity (5.0 VDC) on an increase in demand or minimum output (2.2 VDC) on a decrease in demand before staging any other compressors on/off. Each compressor has a solid-state 5 minute timer to prevent short cycling.

Mechanical cooling is disabled if the coil leaving temperature drops below 38°FDB (adjustable). Cooling will reactivate once the freeze stat downstream of evaporator coil is satisfied. The unit will have a low ambient lockout set at 50°F (adjustable).

Heating Section

The unit heat will be enabled from space mounted zone temperature sensors. The unit heat will be controlled from a unit mounted hot deck temperature sensor to maintain a set point of 118°F (adjustable). The controls contractor will provide a heat enable signal and a 0-10 VDC control signal to maintain the set point temperature. A call for heating will be initiated when any one zone is fully open to the hot deck and the temperature falls below the heating set point of the zone's temperature control. The call for heating will continue until all zones are satisfied. The unit will have two power vented tubular duct furnaces. One furnace is accompanied with a 2-stage gas valve for staging purpose and the second furnace has a modulated control with a 4:1 turndown ratio. A time-delay relay is hard wired to allow the fan to run for a period of 5 minutes upon unit shut-down after heating mode of operation in order to dissipate the residual heat. The unit will have a high ambient temperature lockout set at 73°F (adjustable).

Economizer (Outside, Return & Exhaust Dampers)

The economizer will have an enthalpy changeover control which will enable the economizer anytime there is a call for cooling and the ambient enthalpy is below the changeover set point of 22 Btu/lb (adjustable). The outdoor and return air dampers will modulate to maintain a mixed air temperature of 55°F (adjustable). When the economizer is disabled and the unit is in occupied mode, the outdoor air damper will be set at minimum position. When the economizer is disabled and the unit is in unoccupied mode, the outdoor air damper will be closed. The outdoor and return air damper actuators will be electric.

Triple Deck Damper

The zone damper will be a 3-deck damper and shall consist of hot deck, bypass (neutral) deck, and cold deck. The zone actuators will be electric.

During full cooling demand, the cold deck damper shall be 100% open, neutral and hot deck dampers shall be closed. If cooling demand decreases in a zone, cold deck damper shall modulate towards closed position, neutral deck damper shall modulate to open position in proportion to cold deck damper. Hot deck damper shall remain closed.

During full heating demand, hot deck damper shall be 100% open, neutral and cold deck dampers shall be closed. If heating demand increases in a zone, hot deck damper shall modulate towards open

position, neutral deck damper shall modulate to closed position, in proportion to hot deck damper. Cold deck damper shall remain closed.

The damper operation shall be reversed in the event that heating demand decreases and cooling demand increases. Hot deck and cold deck dampers shall not be open at the same time. Simultaneous heating and cooling shall not be allowed. If there is no demand for heating or cooling, the associated hot and cold deck dampers shall be closed and neutral deck damper shall be 100% open.

A single, manually adjustable damper is provided between the hot deck and cold deck of the unit to restrict the airflow to the bypass (neutral) deck to create pressure drop required for the VSD to slow the fan speed. The manual damper must be set to minimum outside air requirements by the air balancing contractor.

Condenser Fan Control

The condenser fans will be controlled by a Hoffman controller which will sequence the fans according to input from liquid line temperature sensors.

This procedure of sequence of operation is provided by Seasons-4, Inc. Controls contractor must verify that their controls operate in the manner described above or else provide the sequence of operation to Seasons-4 two (2) weeks prior to beginning of unit's production.

ENGINEERING SPECIFICATIONS

JOB NAME BRICK TOWNSHIP LIBRARY
LOCATION BRICK TOWNSHIP, NJ
DATE PREPARED 06/14/11
SEASONS-4 REFERENCE # A969-01
UNIT MODEL # 6MJI21-0332-TN7.0-11SE
UNIT DESIGNATION RTU-1 (WEST)
SYSTEM VOLTAGE 460/3/60

DESIGN DATA

TOTAL COOLING CAPACITY (BTUH)	407,913
TOTAL AIRFLOW (CFM)	10,930
OUTDOOR AIR (CFM)	0 - 10,930
ESTIMATED REFRIGERANT CHARGE (LBS. R410A)	95

COMPRESSOR SECTION

COMPRESSOR:

TYPE	COPELAND SCROLL
NUMBER	2
STAGES OF CAPACITY	MODULATING

AIR COOLED CONDENSER SECTION

CONDENSER COIL:

COIL FACE AREA/ROWS/FPI	41.7/6/10
DESIGN AMBIENT TEMPERATURE (FDB):	95.0

CONDENSER FANS:

TYPE	PROPELLER
DIA/RPM	30/1,140
QTY/HP	2/1.5

COOLING COIL SECTION

FACE AREA (SQ-FT)	21.9
ROWS/FPI	6/11
COIL CIRCUITS (NUMBER)	2
TOTAL CAPACITY (BTUH)	407,913
SENSIBLE CAPACITY (BTUH)	290,886
ENTERING AIR TEMP (FDB/FWB)	79.0/66.0
COIL LEAVING AIR TEMP (FDB/FWB)	54.8/53.6
CONDITIONED AIR (CFM)	10,930

SUPPLY AIR BLOWER SECTION

TYPE	AF SWSI PLENUM
NUMBER/SIZE	1/24.5"
AIRFLOW (CFM)	10,930
TOTAL STATIC PRESSURE (TSP) IN WC	3.78
EXTERNAL STATIC (ESP) IN WC	1.40
DESIGN FAN SPEED (RPM)	1,671
FAN BHP (INCLUDING DRIVE LOSSES)	9.5
MOTOR HP	15.0
MOTOR DRIVE	VARIABLE FREQUENCY DRIVE

ENGINEERING SPECIFICATIONS

EXHAUST AIR FAN SECTION

TYPE	PROPELLER
NUMBER/SIZE	4/24.375"
AIRFLOW (CFM)	10,930
TOTAL STATIC PRESSURE (TSP) IN WC	1.50
EXTERNAL STATIC (ESP) IN WC	1.00
DESIGN FAN SPEED (RPM)	1,624
FAN BHP (INCLUDING DRIVE LOSSES)	4 @ 1.9
MOTOR HP	4 @ 2
MOTOR DRIVE	VARIABLE FREQUENCY DRIVE

FILTER SECTION

TYPE	4" PLEATED; MERV 7
NUMBER/SIZE	8/16x20, 8/16x25
TOTAL FACE AREA (SQ-FT)	40.0
FACE VELOCITY (FPM)	273

GAS HEAT SECTION

TYPE	NATURAL GAS; TUBULAR DUCT FURNACE
INPUT CAPACITY (BTUH)	700,000
OUTPUT CAPACITY (BTUH)	560,000
CONDITIONED AIR (CFM)	10,930
CONDITIONED AIR TR (F)	47
STAGING	MODULATING
GAS CONNECTION SIZE (MPT)	1"
MIN GAS PRESSURE (IN-WC)	7"
MAX GAS PRESSURE (IN-WC)	14"

UNIT WEIGHT (LBS)	8,050
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**ENGINEERING SPECIFICATIONS
ELECTRICAL DATA**

JOB NAME BRICK TOWNSHIP LIBRARY
LOCATION BRICK TOWNSHIP, NJ
DATE PREPARED 06/14/11

SEASONS-4 REF NUMBER A969-01 **UNIT MODEL** 6MJ121-0332-TN7.0-11SE

UNIT DESIGNATION RTU-1 (WEST)

SYSTEM VOLTAGE	460	CONTROL VOLTAGE	120	EXT. VOLTAGE	24	
ITEM	QTY	HP	FLA	LRA	KW	TYPE
COMPRESSOR 1	1	***	30.0	173.0	15.1	ZPD182KCE
COMPRESSOR 2	1	***	30.0	173.0	14.7	ZP182KCE
COND FAN	2	1.5	2.7	16.2	1.4	
SA FAN	1	15.0	17.7	118.0	7.6	Bald
EA FAN	4	2.0	2.8	19.6	1.6	Bald
CONTROL CIRCUIT			1.6			
CONVENIENCE OUTLET			3.3			10 Amps
TOTALS (COOL)	9	***	99.0		46.5	
TOTALS (HEAT)	5	23.0	33.6		14.0	

M.C.A. 106 (MINIMUM CIRCUIT AMPACITY)
M.O.P. 125 (MAXIMUM OVERLOAD PROTECTION)
S.C.C.R. 65,000 (SHORT CIRCUIT CURRENT RATING)

ENGINEERING SPECIFICATIONS

JOB NAME BRICK TOWNSHIP LIBRARY
LOCATION BRICK TOWNSHIP, NJ
DATE PREPARED 06/14/11
SEASONS-4 REFERENCE # A969-02
UNIT MODEL # 6MJ121-0332-TN7.0-11SE
UNIT DESIGNATION RTU-2 (EAST)
SYSTEM VOLTAGE 460/3/60

DESIGN DATA

TOTAL COOLING CAPACITY (BTUH)	403,270
TOTAL AIRFLOW (CFM)	10,725
OUTDOOR AIR (CFM)	0 - 10,725
ESTIMATED REFRIGERANT CHARGE (LBS. R410A)	105

COMPRESSOR SECTION

COMPRESSOR:

TYPE	COPELAND SCROLL
NUMBER	2
STAGES OF CAPACITY	MODULATING

AIR COOLED CONDENSER SECTION

CONDENSER COIL:

COIL FACE AREA/ROWS/FPI	41.7/6/10
DESIGN AMBIENT TEMPERATURE (FDB):	95.0

CONDENSER FANS:

TYPE	PROPELLER
DIA/RPM	30/1,140
QTY/HP	2/1.5

COOLING COIL SECTION

FACE AREA (SQ-FT)	21.9
ROWS/FPI	6/10
COIL CIRCUITS (NUMBER)	2
TOTAL CAPACITY (BTUH)	403,270
SENSIBLE CAPACITY (BTUH)	283,253
ENTERING AIR TEMP (FDB/FWB)	79.0/66.0
COIL LEAVING AIR TEMP (FDB/FWB)	55.0/53.5
CONDITIONED AIR (CFM)	10,725

SUPPLY AIR BLOWER SECTION

TYPE	AF SWSI PLENUM
NUMBER/SIZE	1/24.5"
AIRFLOW (CFM)	10,725
TOTAL STATIC PRESSURE (TSP) IN WC	3.72
EXTERNAL STATIC (ESP) IN WC	1.88
DESIGN FAN SPEED (RPM)	1,648
FAN BHP (INCLUDING DRIVE LOSSES)	9.1
MOTOR HP	15.0
MOTOR DRIVE	VARIABLE FREQUENCY DRIVE

ENGINEERING SPECIFICATIONS

EXHAUST AIR FAN SECTION

TYPE	PROPELLER
NUMBER/SIZE	4/24.375"
AIRFLOW (CFM)	10,725
TOTAL STATIC PRESSURE (TSP) IN WC	1.50
EXTERNAL STATIC (ESP) IN WC	1.00
DESIGN FAN SPEED (RPM)	1,619
FAN BHP (INCLUDING DRIVE LOSSES)	4 @ 1.88
MOTOR HP	4 @ 2
MOTOR DRIVE	VARIABLE FREQUENCY DRIVE

FILTER SECTION

TYPE	4" PLEATED; MERV 7
NUMBER/SIZE	8/16x20, 8/16x25
TOTAL FACE AREA (SQ-FT)	40.0
FACE VELOCITY (FPM)	268

GAS HEAT SECTION

TYPE	NATURAL GAS; TUBULAR DUCT FURNACE
INPUT CAPACITY (BTUH)	700,000
OUTPUT CAPACITY (BTUH)	560,000
CONDITIONED AIR (CFM)	10,725
CONDITIONED AIR TR (F)	48
STAGING	MODULATING
GAS CONNECTION SIZE (MPT)	1"
MIN GAS PRESSURE (IN-WC)	7"
MAX GAS PRESSURE (IN-WC)	14"

UNIT WEIGHT (LBS)	8,000
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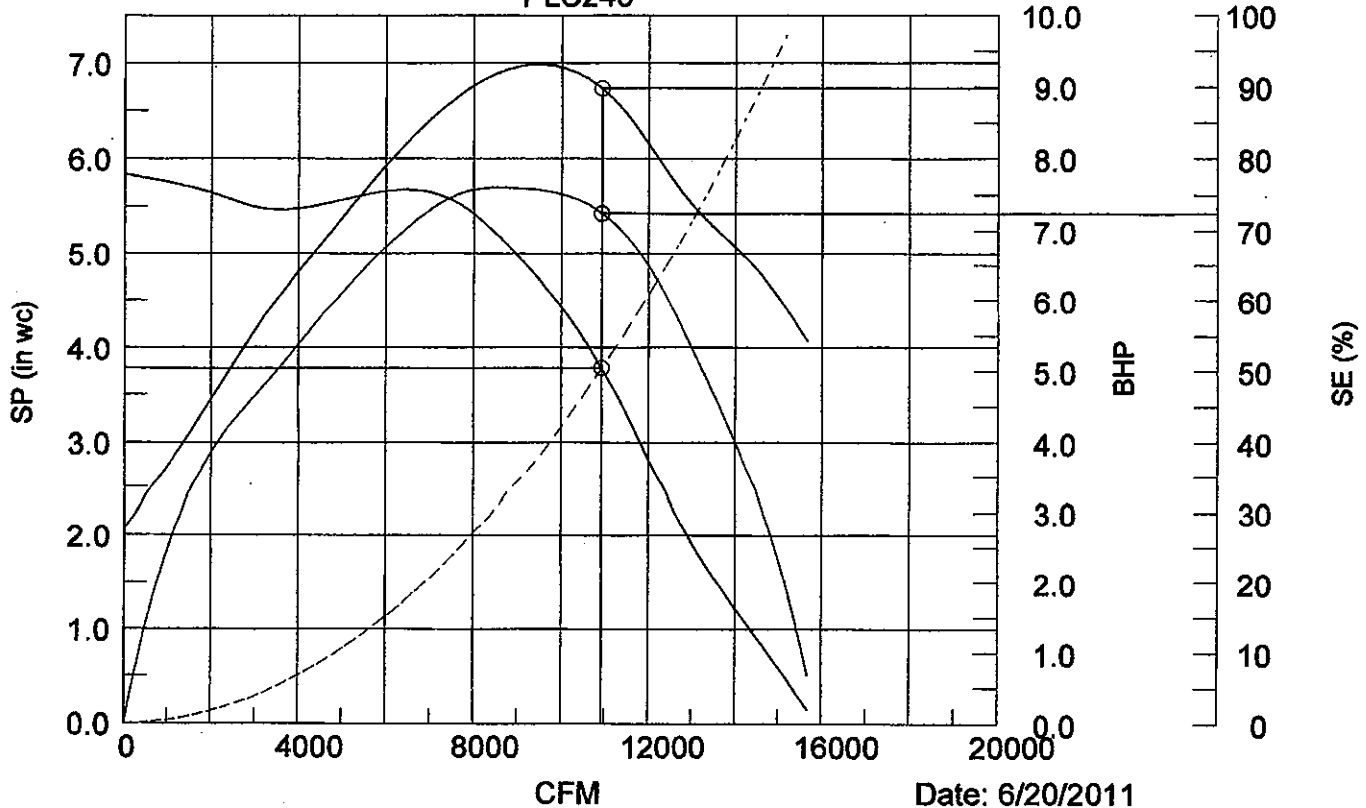
**ENGINEERING SPECIFICATIONS
ELECTRICAL DATA**

JOB NAME BRICK TOWNSHIP LIBRARY
LOCATION BRICK TOWNSHIP, NJ
DATE PREPARED 06/14/11
SEASONS-4 REF NUMBER A969-02 **UNIT MODEL** 6MJ121-0332-TN7.0-11SE
UNIT DESIGNATION RTU-2 (EAST)

SYSTEM VOLTAGE	460	CONTROL VOLTAGE	120	EXT. VOLTAGE	24	
<u>ITEM</u>	<u>QTY</u>	<u>HP</u>	<u>FLA</u>	<u>LRA</u>	<u>KW</u>	<u>TYPE</u>
COMPRESSOR 1	1	***	30.0	173.0	15.0	ZPD182KCE
COMPRESSOR 2	1	***	30.0	173.0	14.6	ZP182KCE
COND FAN	2	1.5	2.7	16.2	1.4	
SA FAN	1	15.0	17.7	118.0	7.3	Bald
EA FAN	4	2.0	2.8	19.6	1.6	Bald
CONTROL CIRCUIT			1.6			
CONVENIENCE OUTLET			3.3			10 Amps
TOTALS (COOL)	9	***	99.0		46.1	
TOTALS (HEAT)	5	23.0	33.6		13.6	

M.C.A. 106 (MINIMUM CIRCUIT AMPACITY)
M.O.P. 125 (MAXIMUM OVERLOAD PROTECTION)
S.C.C.R. 65,000 (SHORT CIRCUIT CURRENT RATING)

**Cook AF PLC Plenum SWSI
PLC245**



**TAG: SUPPLY AIR BLOWER RTU-1 (WEST)
BRICK TOWNSHIP LIBRARY BRICK TOWNSHIP, NJ**

Req'd Performance: Operating Cond:
 CFM: 10,930 Alt(ft): 0 Density(psf): 0.075
 SP: 3.780 Temp(F): 70 Density Ratio: 1.000

Performance at Operating Conditions:
 BHP: 8.981 RPM: 1,671 TS: 10,719
 SE (%): 72.4 % WOV: 68.8 CLASS: II
 HP with drive losses: 9.461

BHP at Operating Altitude and 70F:
 BHP at 70F: 8.981 With drv losses: 9.461

Performance at RPM and Std Conditions (70F / 0 Alt) :
 SP_std: 3.780 BHP_std: 8.981
 HP_std with drive losses: 9.461

Sound Power - dB

Octave Band:	1	2	3	4	5	6	7	8	LwA
Inlet:	84.3	84.7	98.3	85.5	82.4	80.8	81.4	74.7	92.2
Outlet:	89.0	90.8	101.0	92.3	88.4	84.9	84.6	78.8	96.2



COOK



Loren Cook Company certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

MARK: RTU-1 (WEST)

PROJECT: BRICK TOWNSHIP LIBRARY

DATE: 06-15-2011

EW

Performance

Catalog Number	CFM	SP	Fan RPM	Power* HP	Motor HP	OVEL (fpm)	TSPD (fpm)	SE	TEMP (°F)	ELEV (Ft)	*Drive Loss Included
24EW624B	2733	1.50	1624	1.9	2	852	10203	37%	70	0	8%

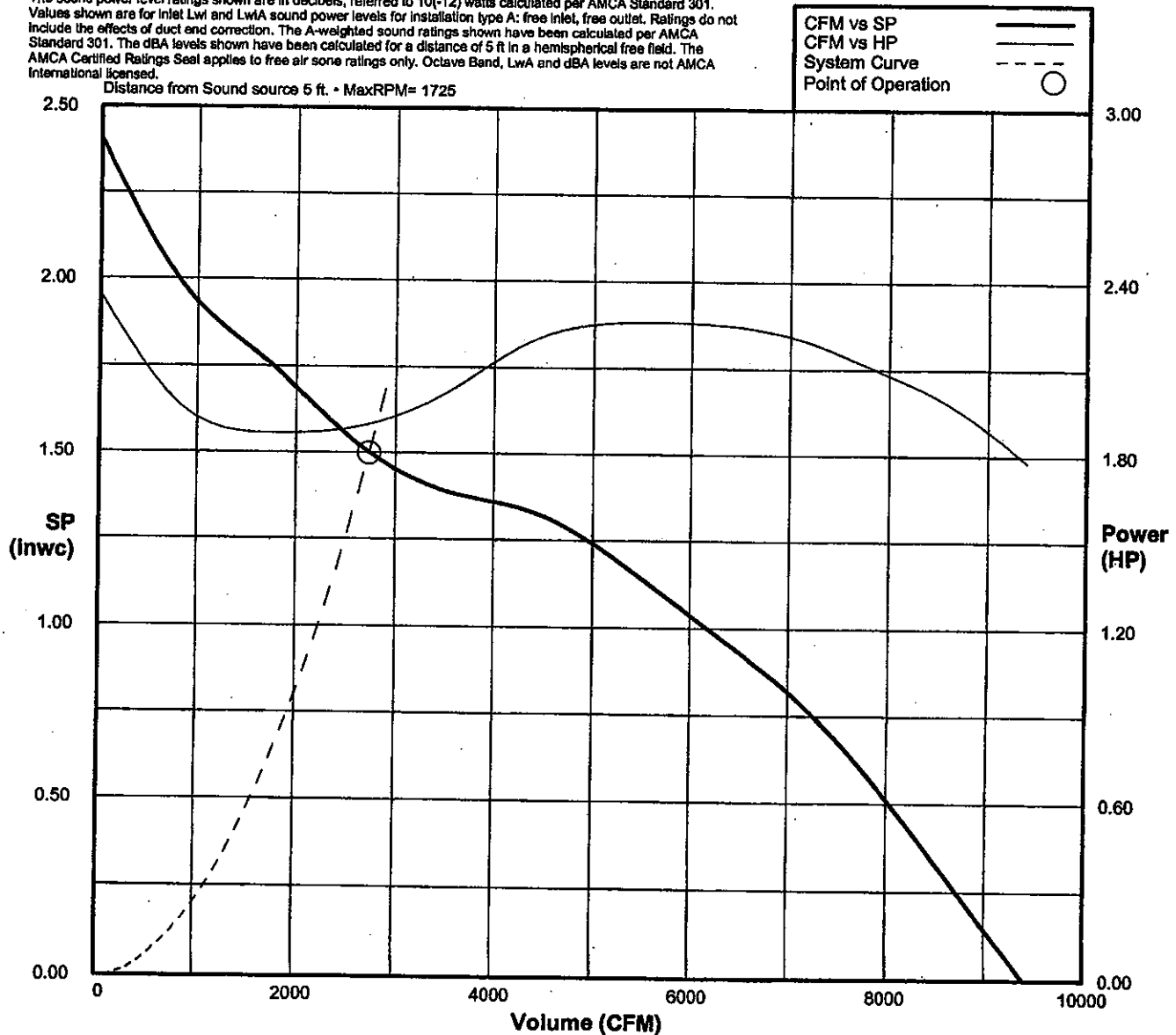
Sound Data 8 Octave Bands 10⁻¹² Watts

1	2	3	4	5	6	7	8	LwA	dBA	SONES
90	94	93	88	85	83	82	82	92	80	38

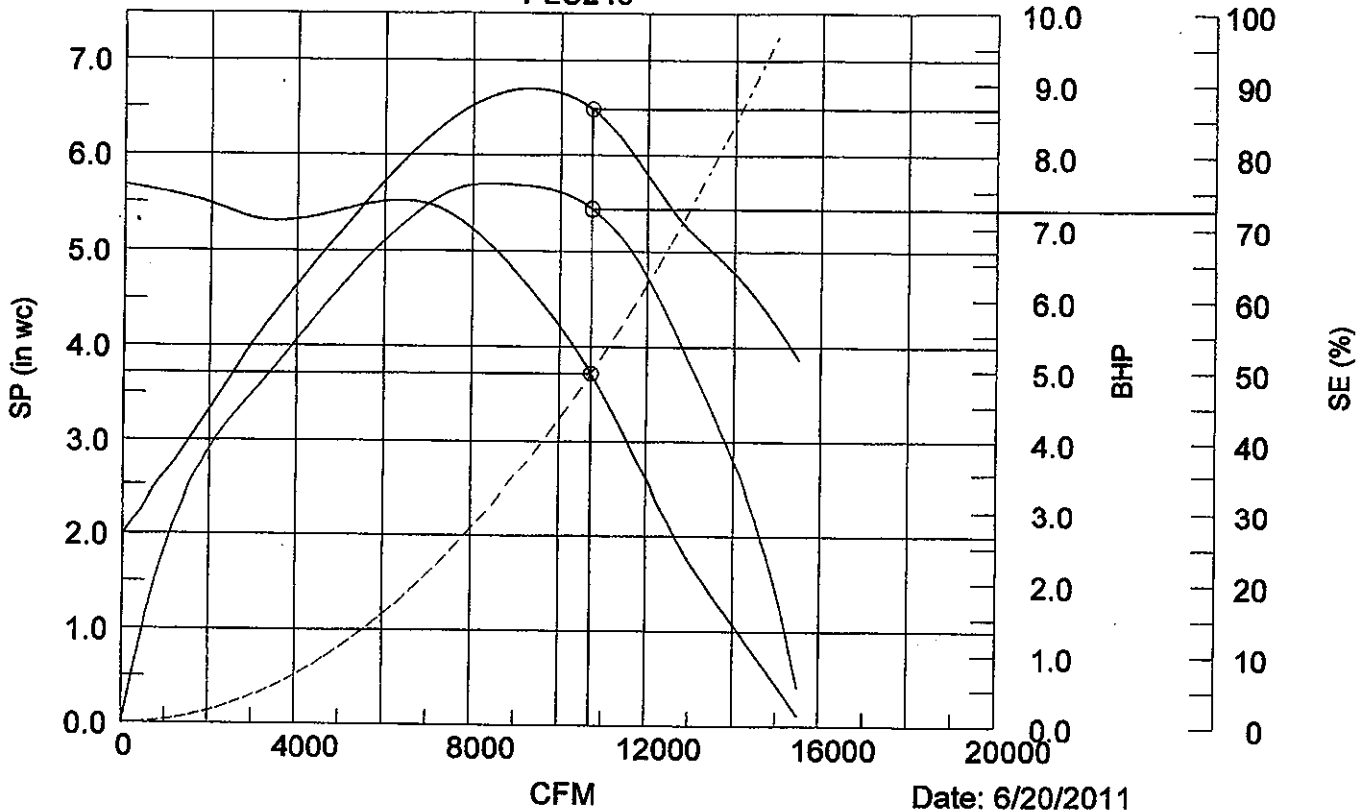
Performance certified for installation type A: free inlet, free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in hemispherical sones at 5 ft. in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. The AMCA International licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

The sound power level ratings shown are in decibels, referred to 10⁻¹² watts calculated per AMCA Standard 301. Values shown are for inlet LwI and LwA sound power levels for installation type A: free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301. The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. The AMCA Certified Ratings Seal applies to free air sone ratings only. Octave Band, LwA and dBA levels are not AMCA International licensed.

Distance from Sound source 5 ft. • MaxRPM= 1725



**Cook AF PLC Plenum SWSI
PLC245**



**TAG: SUPPLY AIR BLOWER RTU-2 (EAST)
BRICK TOWNSHIP LIBRARY · BRICK TOWNSHIP, NJ**

Req'd Performance: Operating Cond:
 CFM: 10,725 Alt(ft): 0 Density(psf): 0.075
 SP: 3.720 Temp(F): 70 Density Ratio: 1.000

Performance at Operating Conditions:
 BHP: 8.644 RPM: 1,648 TS: 10,573
 SE (%): 72.6 % WOV: 68.4 CLASS: I
 HP with drive losses: 9.109

BHP at Operating Altitude and 70F:
 BHP at 70F: 8.644 With drv losses: 9.109

Performance at RPM and Std Conditions (70F / 0 Alt) :
 SP_std: 3.720 BHP_std: 8.644
 HP_std with drive losses: 9.109

Sound Power - dB

Octave Band:	1	2	3	4	5	6	7	8	LwA
Inlet:	84.0	84.9	97.3	85.0	82.0	80.3	80.9	74.1	91.4
Outlet:	88.6	90.9	100.5	92.0	88.0	84.5	84.2	78.2	95.8



COOK



Loren Cook Company certifies that the model shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

MARK: RTU-2 (EAST)

PROJECT: BRICK TOWNSHIP LIBRARY

DATE: 06-20-2011

EW

Performance

Catalog Number	CFM	SP	Fan RPM	Power* HP	Motor HP	OVEL (fpm)	TSPD (fpm)	SE	TEMP (°F)	ELEV (Ft)	*Drive Loss Included
24EW624B	2681	1.50	1619	1.88	2	836	10172	36%	70	0	8%

Sound Data 8 Octave Bands 10 -12 Watts

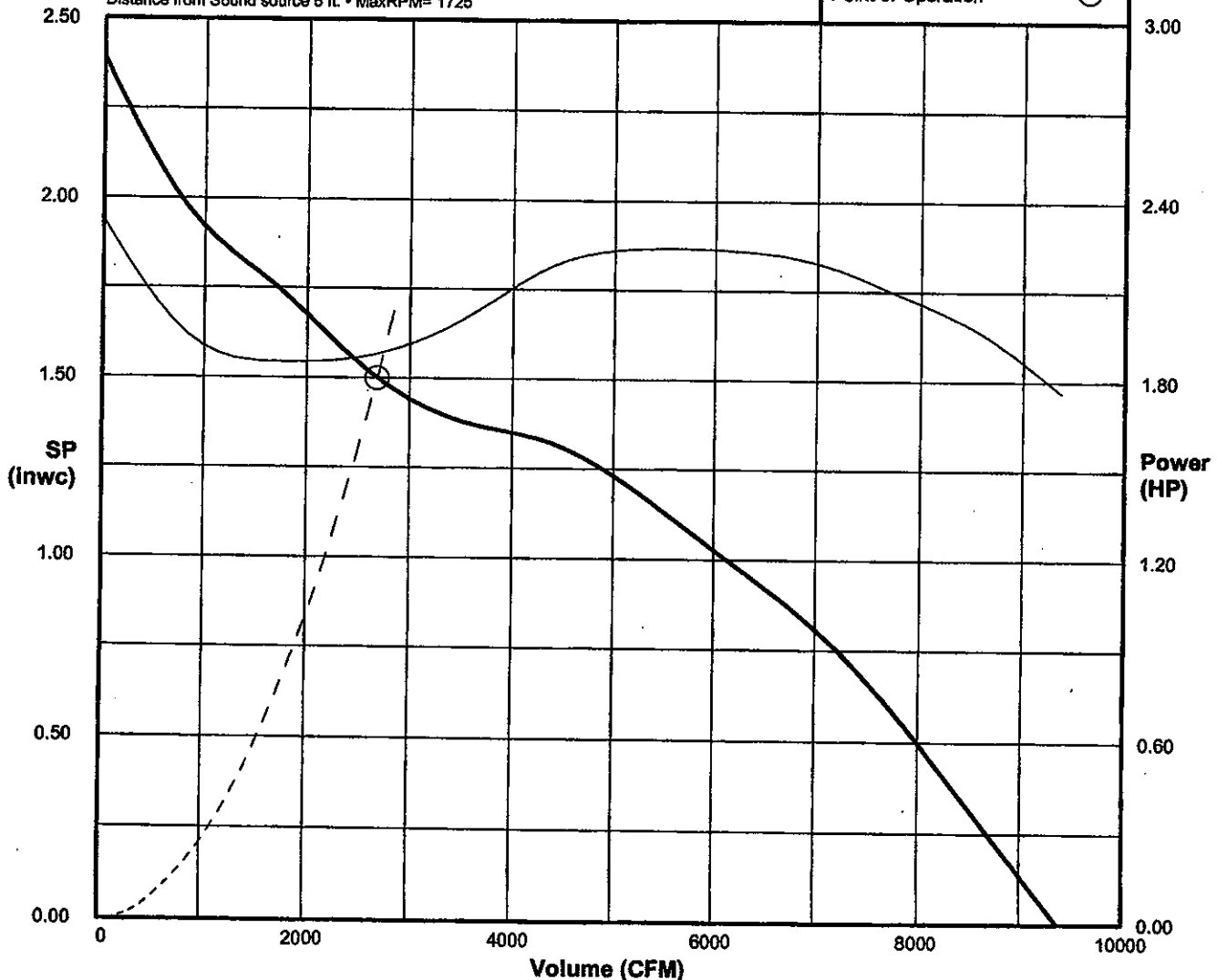
1	2	3	4	5	6	7	8	LwA	dBA	SONES
90	94	93	88	85	83	82	82	92	80	38

Performance certified is for installation type A: free inlet, free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in hemispherical sones at 5 ft. In a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation type A: free inlet hemispherical sone levels. The AMCA International licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

The sound power level ratings shown are in decibels, referred to 10(-12) watts calculated per AMCA Standard 301. Values shown are for inlet LwI and LwA sound power levels for installation type A: free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301. The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. The AMCA Certified Ratings Seal applies to free air sone ratings only. Octave Band, LwA and dBA levels are not AMCA International licensed.

Distance from Sound source 5 ft. • MaxRPM= 1725

CFM vs SP
CFM vs HP
System Curve
Point of Operation

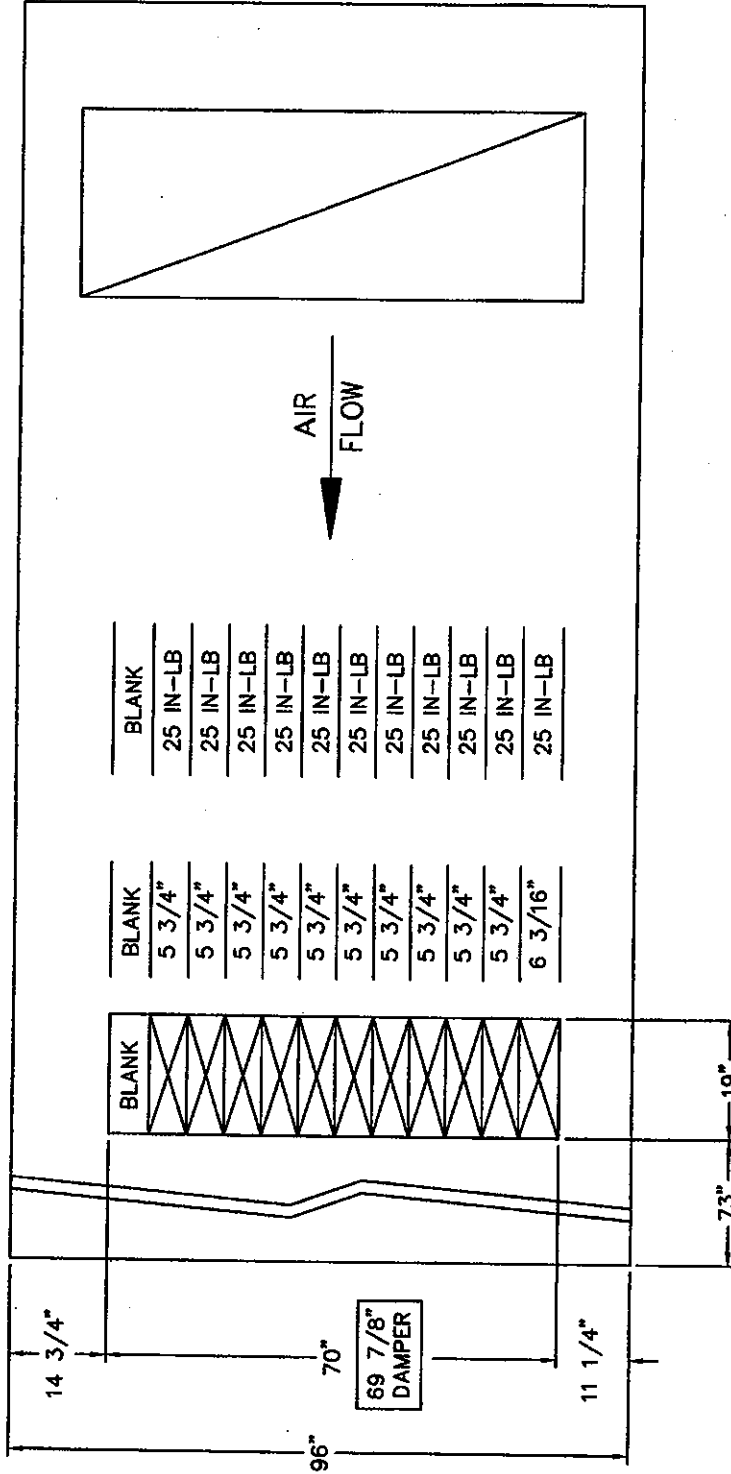




SEASONS 4

ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

MODULE SIZE ACTUATOR TORQUE (MIN)



REV. #	BY	DATE	DESCRIPTION	ZONE DETAIL	DRAWN BY
0	JHH	6/15/2011	ORIGINAL ISSUE	BRICK TOWNSHIP LIBRARY	JHH
				BRICK TOWNSHIP, NJ	DATE 6/15/2011
				RTU-1 (WEST)	SCALE N/A
					REVISION # 0
					DWG. NAME A969Z01HH

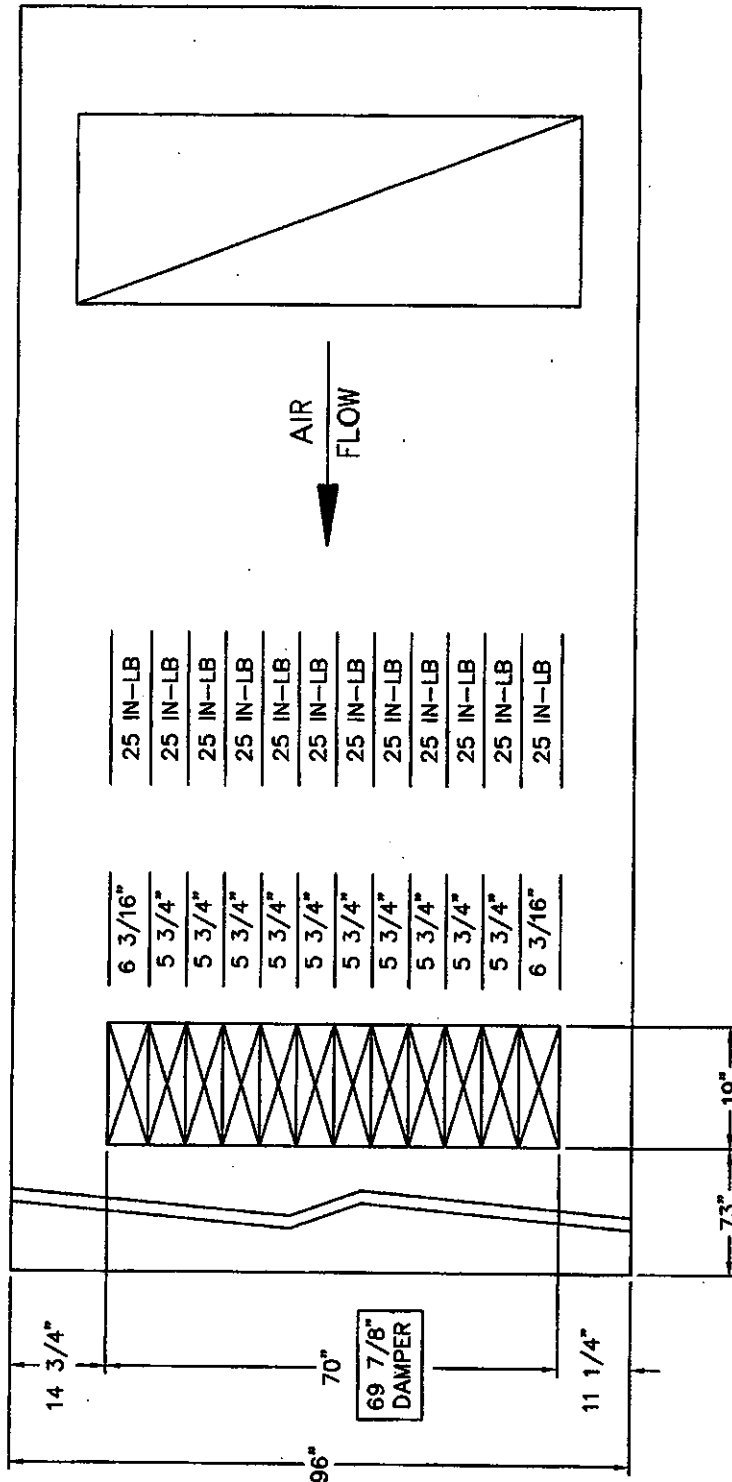
4500 INDUSTRIAL ACCESS ROAD • DOUGLASVILLE, GEORGIA 30134-3949 • 770/489-0716 • FAX 770/489-2938



SEASONS 4

ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

MODULE SIZE ACTUATOR TORQUE (MIN)



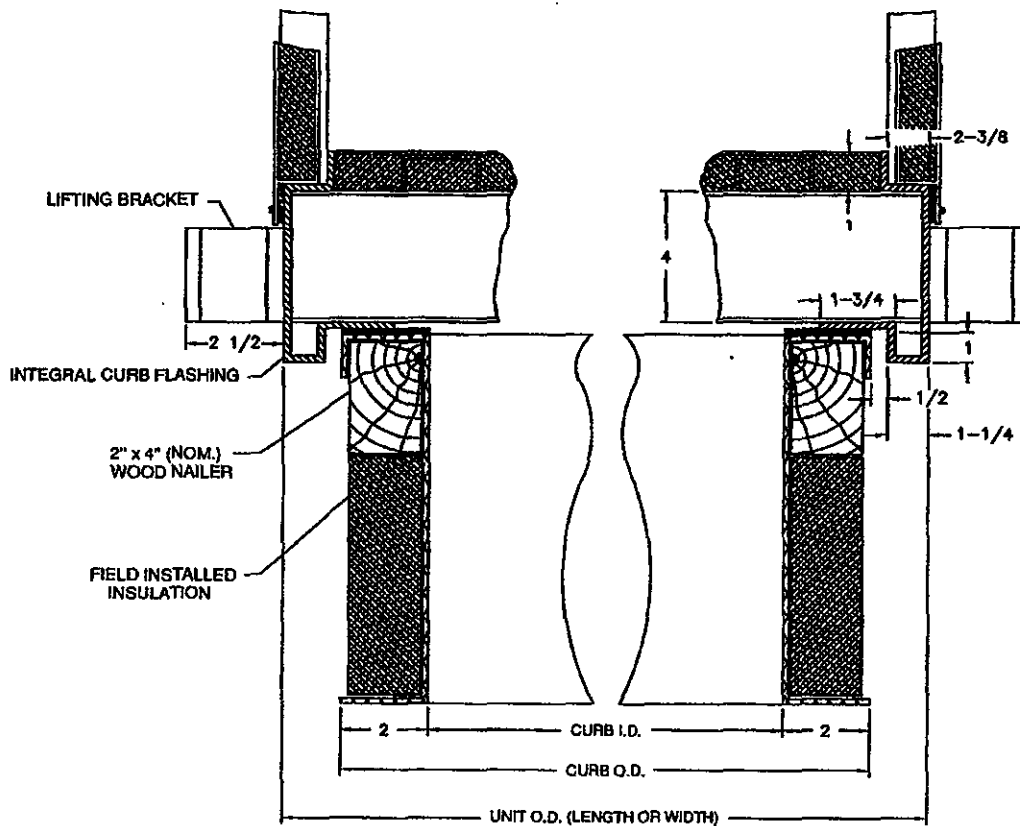
REV. #	BY	DATE	DESCRIPTION	ZONE DETAIL	DRAWN BY	JHH
0	JHH	6/15/2011	ORIGINAL ISSUE	BRICK TOWNSHIP LIBRARY BRICK TOWNSHIP, NJ RTU-2 (EAST)	DATE	6/15/2011
					SCALE	N/A
					REVISION #	0
					DWG. NAME	A969Z02HH

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ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

UNIT BASE DETAIL/CURB INTERFACE (1-1/4" BASE)



UNIT O.D. (LENGTH AND WIDTH) ARE UNIT OVERALL DIMENSIONS AS SHOWN ON DIMENSIONAL DATA DRAWING(S).

CURB DIMENSIONS SHALL BE CALCULATED AS FOLLOWS:

CURB I.D. (LENGTH OR WIDTH) = UNIT O.D. - SEVEN AND ONE-HALF (7-1/2) INCHES

CURB O.D. (LENGTH OR WIDTH) = CURB I.D. + FOUR (4) INCHES = UNIT O.D. - THREE AND ONE HALF (3-1/2) INCHES

EXAMPLE:

UNIT DIMENSIONS (FROM DIMENSIONAL DATA DRAWING) = 473-1/8" L x 96" W

CURB I.D. = 465-5/8" L x 88-1/2" W

CURB O.D. = 469-5/8" L x 92-1/2" W

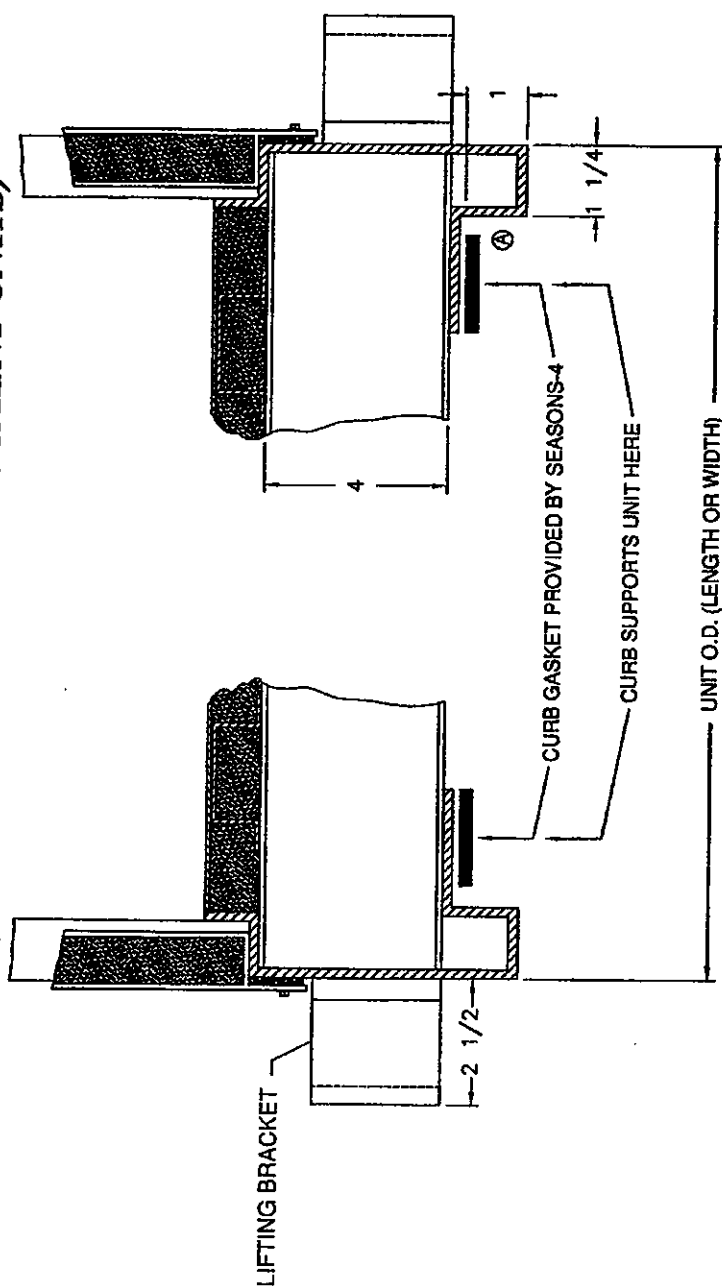
THE DESIGNED CLEARANCE BETWEEN UNIT AND CURB IS 1/2" AT EACH SIDE.

REVISED 07/10/2009 CCB
10/10/2002 BASE-ZZBA



ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

UNIT BASE DETAIL (1-1/4" BASE FOR REPLACEMENT UNITS)



Ⓐ THE SPACE BETWEEN THE CURB FLANGE AND THE UNIT BASE WILL VARY FROM UNIT TO UNIT.
THE CURB GASKET PROVIDED BY SEASONS-4 IS APPLIED TO THE ROOF CURB, NOT THE UNIT.

NOTE:

Curbs of existing equipment will vary from unit to unit. The length and width of the new Seasons-4 unit will be greater than the length and width of the existing unit that is being replaced. Refer to the unit dimensional data drawing for specific information for each Seasons-4 unit. When some type of tie down device is required for the unit, the dimensions and configuration of the existing curb must be taken into consideration. Please contact Seasons-4 for additional information.

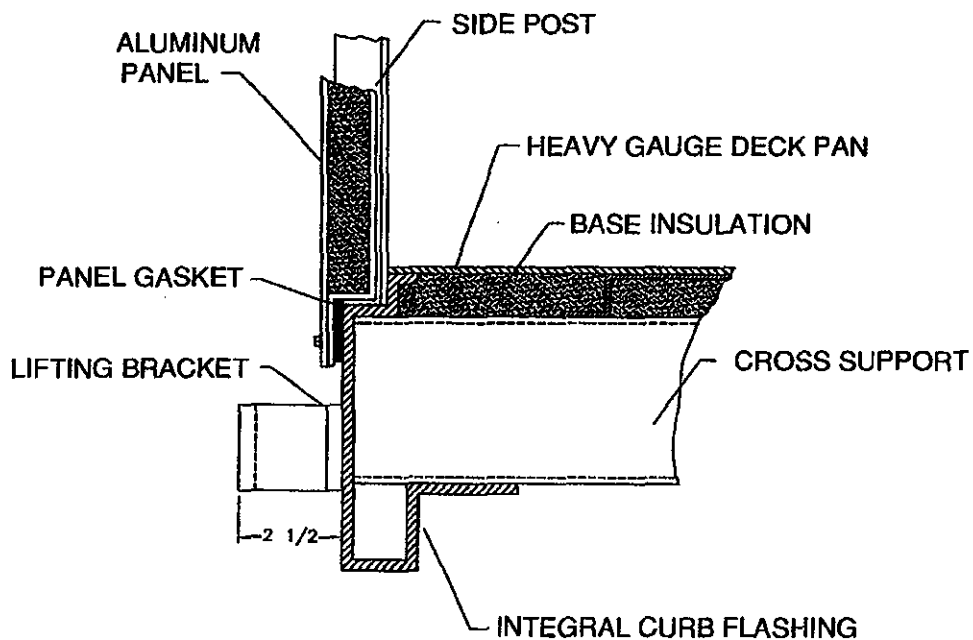
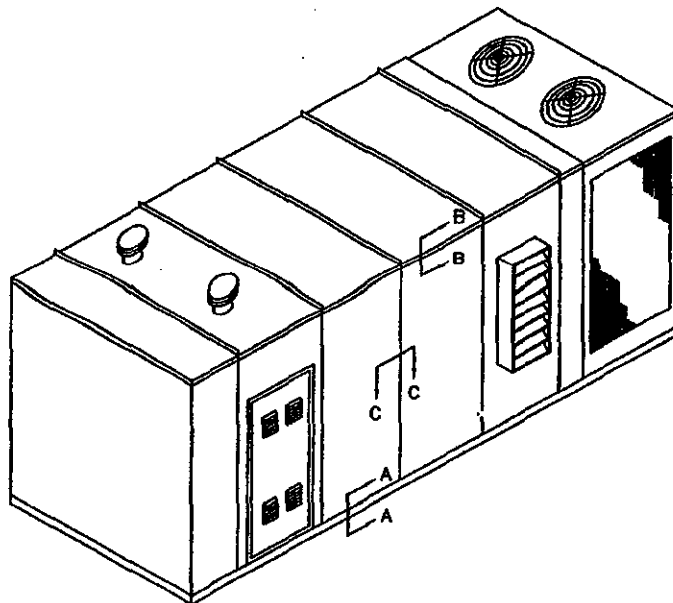
REVISED 07/10/2009 BASE-RES



SEASONS-4

ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

SECTIONAL DETAILS



SECTION A-A

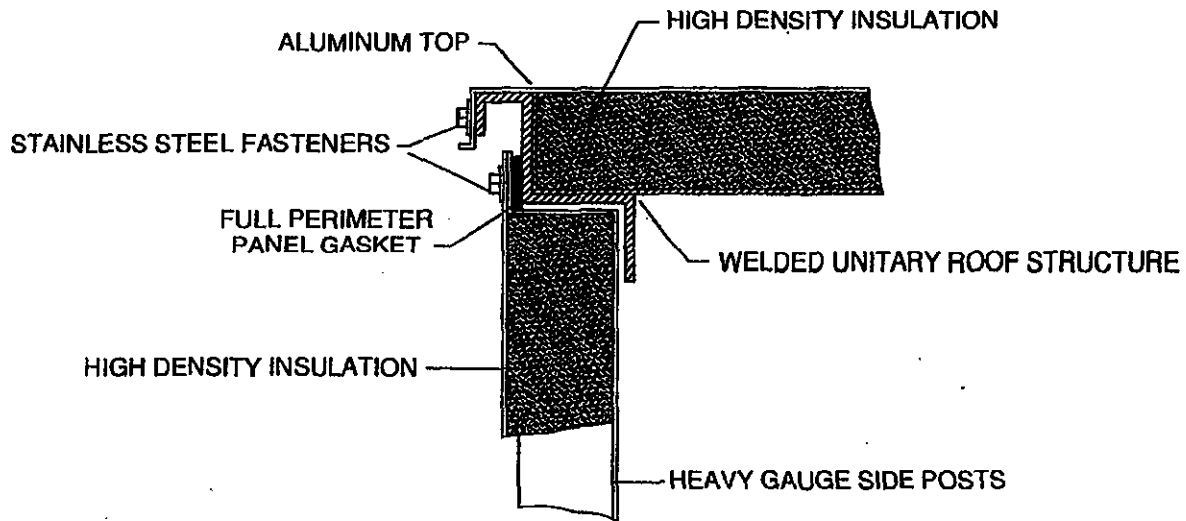
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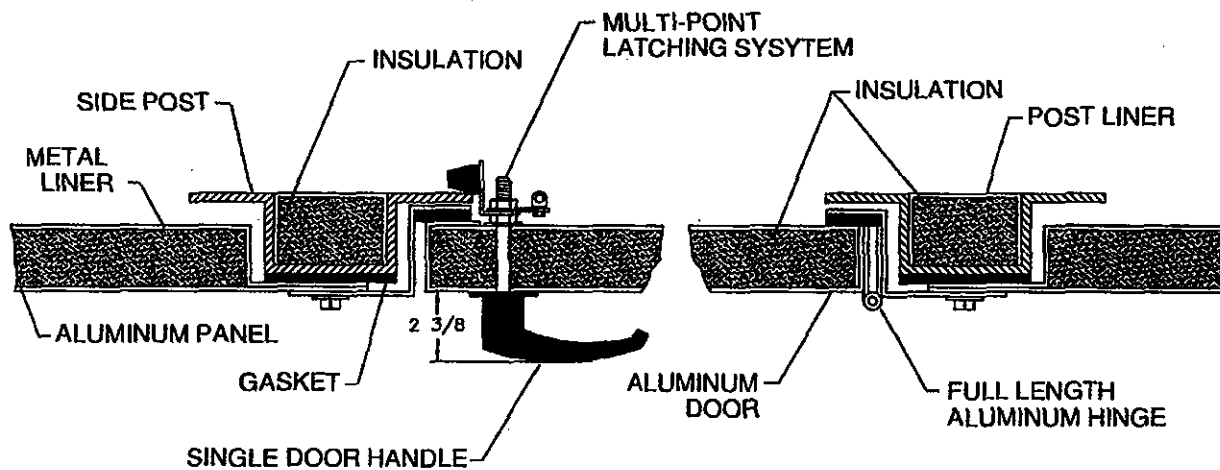
SEASONS 4

ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

SECTIONAL DETAILS



SECTION B-B



SECTION C-C

07/2009

SEASONS - 4, INC. FACTORY ORDER NUMBER: A96900
4500 Industrial Access Rd.
Douglasville, Georgia 30134
(770) 489-0716

DATE: 06/02/11
PRINTED: 06/20/11
TIME: 3:02 PM

To: 634915
MIDCOAST MECHANICAL
6 COLUMBIA ROAD

Project: 005862
BRICK TOWNSHIP LIBRARY
301 CHAMBERSBRIDGE RD

NEPTUNE NJ 07753
732-918-1222
732-918-8254 (F)

BRICK NJ 08723
PAGE: 5

SALESMAN	QUOTE NO.	CONTACT	P.O. NO.	P.O. DATE	EST SHIP
SLM	580700	BOB MADDIX	11-1076	06/01/11	08/08/18

DESCRIPTION OF EQUIPMENT

ORDER	ID	MODEL	CUSTOMER TAG
A96900	01	6MJI21-0332-TN7.0-11SE	RTU-1(WEST)
A96900	02	6MJI21-0332-TN7.0-11SE	RTU-2(EAST)

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SLM	580700	BOB MADDIX	11-1076	06/01/11	08/08/18

DESCRIPTION OF EQUIPMENT

2 6MJI21-0332-TN7.0-11SE RTU-1 (WEST)
6MJI21-0332-TN7.0-11SE RTU-2 (EAST)

TWO (2) REPLACEMENT ROOFTOP PACKAGE MULTIZONE UNITS FOR
MAMMOTH REPLACEMENT OF NESBITT RMA 170/230. DX COOLING AS
SCHEDULED, NATURAL GAS HEAT AS SCHEDULED, CFM AS SCHEDULED

UNIT TO BE DESIGNED AND BUILT AS STANDARD SEASONS 4
CONSTRUCTION AND SPECS AS DETAILED IN THIS QUOTATION.

03040 460/3/60 System Voltage Supply
03100 Natural Gas Supply (7"w.c. minimum 14"maximum Gas Pressure)
03220 Refrigerant R410A
03300 Polyol Ester oil used with HFC refrigerants
04050 ETL listed equipment File 536162
04100 Unit manufactured to match existing roof curb and duct
connection. Utility connections are located to require
minimal field effort to re-connect system
04110 All aluminum exterior panels with corrosion resistant
fasteners
04200 All motors three-phase with fuse and overload protection,
motor contactors included
04210 Power block, terminal strip, and operational relays included
in hinged weatherproof control panel
05300 Lifting lugs in base of unit for rigging of equipment
05548 Unit to be constructed of COLOR finished panels as indicated
05566 Selection must be made from Seasons-4 standard colors
Classic Bronze, Frisco White, Mocha Bronze, Parchment,
Pueblo Tan and Cadet Grey.
05580 Double wall panel construction, no exposed insulation in
conditioned air section of unit
05700 Hinged access doors with single lever multiple engagement
latching system and door holdbacks.
05840 Roof, side panels, doors and base insulated with 2"
polyurethane foam with minimum R value of 13
08310 Curb Gasket shipped with unit for installation on customer
supplied curb. Self adhesive gasket

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SLM	580700	BOB MADDIX	11-1076	06/01/11	08/08/18

DESCRIPTION OF EQUIPMENT

- 11005 Scroll Compressor Design
- 11010 Digital scroll compressor(s) for staging and capacity control
- 13000 Air Cooled Condensing Section; Direct Drive Fans
- 14010 Condenser coil guards - expanded aluminum
- 17010 Copper tube/aluminum fin DX Evaporator coil with rows and FPI as per specifications
- 17700 Stainless steel drain pan and deflector pans.
- 23010 Supply air fan - SWSI, airfoil, backward inclined, minimum Class I construction with spring isolation
- 23030 Seismic spring isolators on supply blower rated through Zone 4
- 24205 Propeller exhaust fan.
- S.E. PROP EXHAUST PROVIDED WITH ALUMINUM BLADE CONFIGURED AS BELT DRIVE
- 25010 Premium efficiency motor on supply air fan
- 25806 Fixed sheave on supply air fan motor
- 26030 Filters - 4" pleated throw away type, MERV 7 EFFICIENCY
- 26155 Filter Gauge - Magnehelic (Dwyer 2000)
- 29378 Natural gas heater, two pass, power vented tubular heater with stainless steel heat exchanger
- 29515 Heaters are provided with modulating gas valve.
- 41010 Outside air damper sized to meet airflow requirements.
- 41011 Aluminum airfoil outside air dampers required.
- 41100 Return air damper sized to meet airflow requirements.
- 41101 Aluminum airfoil return air dampers required.
- 41155 0-100% outside air and return air dampers
- 41200 Gravity relief exhaust air damper sized to meet airflow requirements
- 41405 Three Deck multizone damper with number of zones as specified.
- 41415 All multizone damper motors are provided, wired and installed by Seasons-4 at the factory.

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SLM	580700	BOB MADDIX	11-1076	06/01/11	08/08/18

DESCRIPTION OF EQUIPMENT

44015 Service light with switch and 120 volt. 10 amp ground fault convenience outlet factory mounted and wired to a transformer in the control panel.

44808 Fused disconnect switch with through the door handle

47002 Encapsulated high and low pressure switches; direct mounted

47003 Manual reset high pressure switch and Auto reset low pressure switch

47006 Anti short cycle pumpdown systems

47007 Condenser fan cycling for mild ambient conditions

47190 Economizer controls for damper motors & enthalpy changeover

47200 Evaporator Freezestat (DX-LTC);

47217 Gas heat high temperature limit sensor (A419) mounted in discharge side of heating section.

47320 Ambient cooling lockout

47342 Ambient Heating Lockout

47420 Phase Loss Protection

47631 Clogged Filter Switch (unit mounted)

50000 Unit completely wired - wires numbered and color coded

51550 Temperature control provided by ATC and mounted by SEASONS-4 Programming and commissioning by others.

Controls Name _____ Controls Contact _____

52204 Variable speed motor drive (VSD) on supply and exhaust fan motors

52210 VSD Bypass Circuit, MANUAL Operation, for drive service and removal

63005 Refrigerant piping to include suction filter and insulated suction line

63010 Replaceable core suction filter

67005 Refrigerant piping includes sight glass, liquid line filter drier, solenoid valve, and thermostatic expansion valve

67010 Replaceable core liquid filter;

67060 Liquid line filter drier bypass valving;

99100 Complete operational testing of equipment by factory personnel prior to shipment

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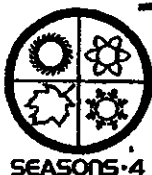
BRICK NJ 08723

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SALESMAN	QUOTE NO.	CONTACT	P.O. NO.	P.O. DATE	EST SHIP
SLM	580700	BOB MADDIX	11-1076	06/01/11	08/08/18

DESCRIPTION OF EQUIPMENT

99105 Approximate freight to jobsite (or first location)
99205 Four (4) year extended compressor warranty.
99215 Fifteen (15) year warranty on maintenance free aluminum
cabinet
99405 Supervision of start up of equipment by factory trained
personnel. Additional trips because the unit(s) are not
ready for complete start up are not included.
Onsite Measurement of existing equipment and Onsite
Assistance at Rigging.



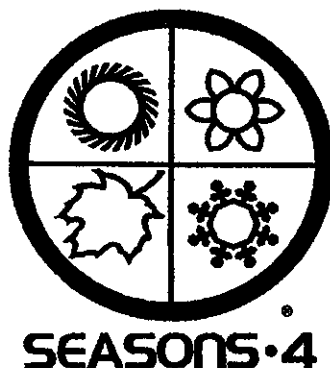
ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

LISTINGS AND APPROVALS



Seasons-4 systems are manufactured and tested in accordance with Electrical Testing Laboratories (ETL) procedures and requirements. Units manufactured and labeled in accordance with ETL standards.

ETL REPORT NUMBER 536162



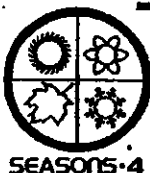
In conjunction with ETL listing units are further listed:

CITY OF NEW YORK MEA 200-84-E

CITY OF NEW YORK ELECTRICAL CONTROL CAL# 37223

COMMONWEALTH OF MASSACHUSETTS, G3-0609-516

07/2009



RECEIVING AND INSTALLATION INSTRUCTIONS

Seasons 4 roof mounted air conditioners are designed and catalogued with standard features as shown on specification material. However, these units are often furnished to meet special engineering requirements, and some units have special components. In such cases, installation and startup procedures will vary slightly depending upon the special feature. It is recommended that a factory engineer be consulted in each special situation.

Experience has proven that proper and thorough Start-test-adjustment procedures completed upon installation provide the customer or user maximum satisfaction and the installation contractor less expense during the life of the equipment.

CODES AND INSTALLATION REQUIREMENTS

Local codes and regulations must necessarily supercede all recommendations made by the factory and appropriate authorities should be consulted before installation. Where an apparent conflict of code requirements and manufacturer recommendations or standard design exists, the assistance of a sales engineer should be requested. In almost every instance, the factory will be able to make the necessary modifications to comply with local codes and interpretations, if notified prior to actual fabrication or upon order placement.

RECEIVING THE EQUIPMENT

Before acceptance of the equipment upon its arrival at the job site, the equipment should be inspected CAREFULLY for damage that may have occurred during shipment. If physical damage is observed, it should be noted and itemized on the carrier's freight bill. The manufacturer must be notified in writing so that appropriate action may be taken. It is VERY IMPORTANT that all items shown on the manufacturer's Packing Slip be checked to verify the quantity and description of each item before signing the manufacturer's copy. Should any items be found missing or should there be a conflict between items received and those shown on the packing slip, it should be noted on the manufacturer's copy and on the carrier's freight bill.

Items appearing on manufacturer's packing list which should be checked to verify receipt of correct quantity:

- Air conditioning units
- Remote mounted sensors or thermostats packed in a separate carton, or sometimes mounted in unit
- Extra filters, separately boxed
- Electrical accessories, time switches, central control panels, etcetera, separately boxed

PLACING THE EQUIPMENT

Although the design of the unit roof mounting supports is usually done by an architect or structural engineer, it is coordinated with dimensional data supplied by the manufacturer. Recommended mounting details and dimensions which the mechanical contractor may use for verification of correct steel roof curb dimensions and electrical and gas service locations on the job site before the arrival of the equipment are furnished by Seasons 4, Inc. If this is done, time and money may be saved when the equipment arrives. If any details are found to be questionable, consult with the local Unit Manufacturer's Representative or the factory.

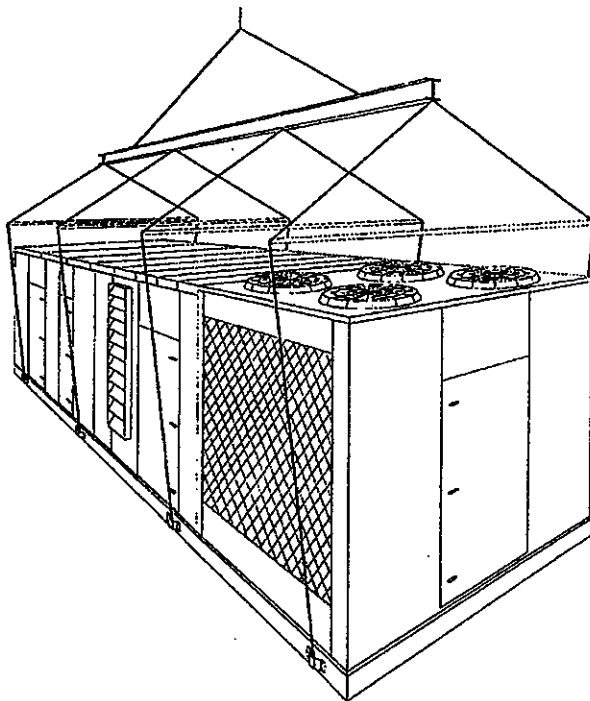


When the equipment arrives, the air conditioning units are chained to a flat bed trailer. Coordinated arrival of the equipment and the crane should have previously been arranged with the factory. This is necessary if extra unloading costs are to be avoided. The truck driver will unchain the units. NOTE: It is the responsibility of the contractor to provide the necessary personnel to unload and rig the equipment to the roof and the manufacturer will assume NO additional costs incurred by the failure of the contractor to meet this responsibility.

Units which are mounted on a roof curb (usually provided by the unit manufacturer) must utilize a curb gasketing material. The curb gasket acts as a moisture and weather seal between the unit and the roof curb. Seasons 4 ships an ample supply of curb gasket inside the unit. A label on the unit will identify exactly where in the unit the gasket may be found. It is the responsibility of the contractor to install the curb gasket. The curb gasket should be installed around the perimeter of the curb and any duct opening cross members.

Each unit is provided with lifting brackets welded to the unit base frame for the purpose of attaching lifting hooks (see drawing). It is the responsibility of the crane operator to provide and utilize adjustable cable spreader bars. The spreader bars must be placed as close to the top of the unit as possible. The spreader bars must also be wider than the unit so that the cable will angle away from the unit. This will prevent damage to the cabinet. Seasons 4 Inc. will not be responsible for damage to the equipment due to improper rigging procedures.

Drawing depicts recommended spreader bar configuration. Actual number of lifting lugs may vary. Consult factory.





ENGINEERING AND MANUFACTURING HVAC EQUIPMENT SINCE 1971

SEASONS-4 UNIT START UP POLICY

Seasons-4 will provide a factory authorized technician to supervise and instruct in the start-up of all units. The start-up should be requested a minimum of two weeks (10 working days) before the actual date of the start-up. Seasons-4 will contact the person requesting start-up to confirm a start-up date.

Before start-up is done, there are several items that must be completed by the installing contractor. These items are as follows:

- 1) All power and control wiring complete
- 2) Gas lines complete and purged
- 3) All sensors installed and terminated in control panel
- 4) Main power to the unit connected
- 5) All duct main runs completed
- 6) All unit control switches "off"
- 7) Main power on for 12 hours before start-up
- 8) All items shipped loose installed (O.A. hood, vent caps, drain traps, etc.)
- 9) All shipping blocks removed from blower and compressors (if spring mounted)

At start up, the contractor of record is to have the personnel responsible for the operation of the equipment present. This person is to have all the required gauges, test equipment and tools required to start the unit. The Seasons-4 technician will supervise the start-up and provide instructions in the operation of the equipment, as well as point out areas of particular design and maintenance requirements. All work will be done by the contractor's representative. If problems are found at start-up, they will be corrected at that time by Seasons-4's technician and the contractor representative. Labor and parts required to correct the problem will be handled on the spot by our technician and/or the Atlanta office.

When the start-up is completed, both parties will sign the unit acceptance of start-up. One copy will be given to the contractor representative, and one copy will be sent to the customer as proof of start-up.

In the cost of start-up, only one trip to the jobsite will be allowed. Seasons-4 will not return to start the unit for A/C or heating at another time. If more than one trip is necessary, approval from both the customer and Seasons-4 is mandatory as additional fees may be required, and will require a Purchase Order number to be issued.

If problems are found after the unit start-up, they will be handled under our unit warranty. All repairs under warranty must be approved by Seasons-4, and a field claim number assigned. These invoices will be returned to sender.

For further information, contact the Seasons-4 Service Department at the following:

Seasons-4, Incorporated
4500 Industrial Access Road
Douglasville, GA 30134
Phone: (770) 489-0716
Fax: (770) 489-2938

Revised February 6, 2008

RIGGING INFORMATION & INSTRUCTIONS

SEASONS•4 RES PRODUCTS

Seasons•4 manufactures RES Series roof mounted HVAC units designed to replace most types of existing units. In addition to a replacement expert having measured the existing units to provide our engineers with the information they need to design the unit, additional rigging assistance is also provided. The following instructions are intended to describe this service and to assist our customers with the installation of their units.

RIGGING ASSISTANCE

1. Seasons•4 provides an experienced person to be on site with the installer during rigging. When the "on site" date approaches, we make arrangements for a person experienced in installing replacement equipment to be at the jobsite when the units arrive. The rigging request form must be sent to the Seasons-4 Service Department at least two weeks prior to the date of the rigging.
2. In the interest of maintaining good customer relationships and addressing any unforeseen problems (existing units weren't always installed in accordance with their manufacturer's recommendations), our Seasons-4 Representatives usually plan to be at the jobsite.
3. "RIGGING ASSISTANCE" includes advice on rigging (see below), recommendations for solving unexpected problems uncovered when the existing unit is removed, and offering advice on the proper location of the new unit on the existing curb.
4. Note! Seasons•4 personnel are not responsible for the rigging; they merely offer advice. The installing contractor or owner and their rigger are responsible for properly rigging the units. The riggers are the experts and must know the capabilities of their equipment and the proper procedures for placing the units in the proper location.

SAFETY

It is imperative for the installing contractor to instruct all personnel attending the rigging in proper safety procedures:

1. Under no circumstances shall any person stand below a unit being lifted or removed. Be aware of loose pieces that may fall from the old units.
2. Where it becomes necessary to reach under a unit to remove attached ductwork, see below in the section on duct attachments.
3. If for any reason a person is required to place hands or arms under a lifted unit supported by the crane, the contractor shall insert wood blocks across each corner of the curb. Blocks shall be of sufficient height, length and strength to maintain the unit above the curb. Maintain tension on the lifting straps while using blocks.

4. The contractor shall instruct personnel on the proper use of hard-hats, and other required safety equipment.
5. The contractor shall adhere to all OSHA and code requirements to insure the safety of the public and job-site personnel.

PREPARATION for REMOVAL of EXISTING UNITS

1. Prepare to remove the existing units. Many existing units have lifting lugs which can be used to remove the units. Occasionally the existing lifting lugs will have been removed and new lugs or lifting eyes will have to be provided by the contractor. Check this prior to the arrival of the new units. Avoid the extra cost of delaying the crane on the day the new units are to be rigged.
2. When lifting lugs are inadequate or missing, it will be necessary to lift (by whatever means is appropriate) portions of the unit to allow placing cables under the unit. Be very CAUTIOUS about pieces falling off the old unit while it is being lifted.
3. Make arrangements for an electrician and a control technician to be present during the removal of the old units. Power wiring and control wiring (or tubing) must be properly handled to allow using it with the new units.
4. The rigger must have a crane (or helicopter) with enough capacity to lift the new units (and remove the old units which may be stuck to the curb). Having a properly sized crane may seem obvious; but, several times a year, we observe a poorly prepared rigger attempting to lift a unit using an undersized crane. This results in delays to obtain a larger crane or cobbling up some means of adding additional counterbalances. Not only is this expensive; it can also be dangerous. Seasons 4 submittals include the shipping weights of the units. The rigger should always allow a minimum 10% safety factor to accommodate variations in rigging requirements caused by unexpected jobsite conditions.
5. Disconnect the old unit's wiring, piping, etc.. Disconnect the wiring from the old unit terminals. Do not cut the wiring. It will be reused for the new units. Ducts must be loose prior to lifting units.
6. CAUTION! The duct connection on most existing units is a simple gasketed compression fit. However, some existing units have their ductwork attached to the unit in such a way as to prevent detachment while the existing unit rests on the curb. Sometimes the ductwork was screwed to the unit's underside and it was impossible to see this before the existing unit was lifted. Also, they didn't always fasten all the ducts to the unit. Therefore, the following precautions must be exercised:
 - A. The contractor shall instruct the crane operator to cable up slowly and carefully when lifting the old unit. Lifting the supply end first is suggested.
 - B. The contractor should assign a spotter at the supply air and return air duct locations.

- C. As the cable is lifting the unit, the spotters must immediately communicate if the ductwork is tightly fastened to the bottom of the unit (ducts rising with the unit). If the duct is fastened to the unit, **STOP** the lifting immediately.
- D. The contractor must determine the location, type, and extent of attachments (may require more careful lifting).
- E. When screws have been used to attach the duct, it will be necessary to use a long-handled chisel and a hammer to break off the screw heads. Sometimes it is possible to pry between the bottom of the unit and the duct next to each screw head (shearing off the screw head).
- F. Every effort should be made to avoid cutting the flexible connections. This will require rebuilding the duct prior to setting the new unit.

ARRIVAL of the NEW UNITS

- 1. The customer must inspect the new units for damage prior to accepting the shipment and clearly describe any damage on the bill of lading. **Note:** This inspection should include looking inside the unit for damage. Do this before signing the bill of lading and have the driver acknowledge the damage. Contact Carol Johnson at Seasons•4 (770-489-0716) and report the extent of the damage. Also, send a copy of the bill of lading to her for use in discussions with the trucking company.
- 2. Find and remove the curb gasket material (and drive cleats and duct angles when included) which is shipped in the unit (a label on the unit tells the location). Send these items up to the location of the unit being replaced. They will be needed when the existing unit is removed and prior to setting the new unit.

PREPARATION FOR SETTING THE NEW UNITS

- 1. The rigger should have proper rigging materials -- long enough straps or cables, spreader bars, different sized shackles, and "scuff" blocks. **Note:** Spreader bars (or cables a minimum of 40 feet long) must be used to avoid damage to the new unit. Damage to the unit during rigging is the responsibility of the rigger.
- 2. Seasons•4 units include multiple lifting lugs. Use them all. The units must be lifted level. Adjust the rigging to provide a level lift. If the unit is not level, it will be very difficult to properly locate it on the existing curb.
- 3. Remove the existing units. Scrape existing gaskets from curb and ducts to provide a clean surface for the new gaskets.
- 4. Make certain the existing ducts are properly supported. If supports are required for the existing ducts, sheetmetal angles can be used. It is the responsibility of the installing contractor to provide adequate support for the existing ducts.
- 5. The seal between the existing ducts and the new units is a compression fit; therefore, the ducts must be properly supported and must be flush with the top of the roof curb. The bottom of the Seasons•4 units is designed for the supply and

return ducts to be flush with the top of the roof curb. Install a layer of gasket material around the curb and around each duct. Use two layers if necessary to insure a good seal.

6. Some existing units may have the condensing section installed over a weatherproof platform. Rubber/cork pads will be included with the new Seasons•4 unit to build up this platform to provide a level surface. The Seasons•4 specialist can advise on the proper location of these pads.

RIGGING & SETTING the UNIT

1. Prepare unit for rigging. Remove shipping straps used to secure access doors during shipment. If rigging straps or cables pass in front of the control panel door, the return air compartment door, or a ChW/HW/Steam piping access door, open the doors prior to connecting the rigging. Access to the inside of the control panel is necessary to guide the power wiring into the unit during final setting. Access to piping may also be necessary. It is also necessary to view the return air duct.
2. Check rigging. Spreader bars or 40 foot straps must be used to lift the unit. Check to make sure lifting cables or straps are clear of door handles and/or louvers. Use "scuff" blocks if necessary to prevent damage to the unit. Lift the new unit to the vicinity of the old unit's curb.
3. Remove the casing panel located under the zone damper control access doors or on the sides of the unit to allow viewing the individual zones prior to trying to set the unit on the curb. If the new unit has a ducted return air connection, make sure the access door to the return air opening is free of the lifting cables or straps. Check to make certain that none of the access doors outlined above are blocked shut by the lifting cables or straps. You must be able to open them when setting the new unit.
4. Lower the new unit to within a foot of the curb. Remove the plate from the bottom of the wiring chase(s) and pull the power and control wiring into the unit. Be careful to avoid "skinning" the wiring and make sure it doesn't fall back down inside the curb. Check alignment of any piping connections.
5. Proceed with lowering the unit into place. Check duct alignment (both supply and return air). Make adjustments to assure proper sealing of the ducts to the unit.
6. Remove the rigging and replace the end panel used to view the zone connections. Caulk the end panel to assure a weather tight seal.

The unit is now ready for completion of the installation. See "Installation & Start-up Instructions – Seasons-4 Products" included with the unit.

INSTALLATION & START-UP INSTRUCTIONS

SEASONS-4 PRODUCTS

These instructions are intended to provide a general guide for completing the installation and start up of Seasons-4 units. They are not all inclusive and the installing contractor and sub-contractors should become familiar with the complete sequence of operation for the complete project. The Seasons-4 technician supervising the start up of the equipment is most familiar with the equipment only. Additional expertise should be provided by the installing contractor.

MULTI-SECTION UNITS

Units shipped in multiple sections (to comply with rigging or shipping restrictions) must be assembled (and refrigeration piping must be completed as required).

1. Multiple sections are usually shipped bolted together to better survive the rigors of shipment. Remove the bolts on the base and the flanges inside the sections. Also, remove the cap strip from the standing seam on the roof.
2. Installing contractor should remove all shipping straps and protective panels. Replace screws in the same holes as the screws used for the shipping straps.
3. Split sections should be matched with labels located on the split sections of the unit.
4. Carefully lift individual sections and check to make sure there is no interference between sections. When possible, rig the heaviest section first and place it in its final location on the building.
5. Prior to rigging the next section in to place, apply a double bead of caulk liberally to the joint between the sections.
6. Rig the second section to match up with the first section as closely as possible. A few extra minutes to properly locate the additional section(s) will simplify the final process of bolting them together. Use a "drift" or similar tool to align the main flanges on the base of the unit.
7. When sections are properly aligned and "snug" together, bolt the base (external) and internal flanges (walls and roof) together with the factory provided hardware.
8. The unit must be caulked inside and outside at the joints (roof, base, and sides) to avoid any leaks.
9. Install insulation and the casing cover panel at the split joints on both sides. The cover panel holes should line up because the panels were previously installed at the factory.
10. Caulk and install the roof cleats. Secure the cleat by driving screws every 18". Be sure to apply plenty of caulk at the roof joint before installing the cleats.
11. On multi-section units with refrigerant lines run between sections, the refrigerant lines will have been installed at the factory with "slip couplings" placed on the lines prior to cutting. Please note: The lines have been cut at the factory prior to shipment. They must be realigned at the jobsite and

the "slip coupling" must be properly positioned. Complete the joint using accepted good practices using a 95% copper - 5% silver solder.

12. Most split system (multi-section or separate air handling unit with remote condensing unit) shipments will have the refrigerant lines sealed with a holding charge of dry nitrogen and refrigerant. Release the pressure before cutting the lines. Connection of refrigerant lines between sections should follow the same soldering practice outlined above for split units.
13. Complete refrigerant piping and pressurize the system to 35 PSIG with refrigerant. Then increase the pressure to 175 PSIG with dry nitrogen. Leak check to prevent loss of refrigerant.
14. After the unit has been thoroughly leak checked, purge each circuit and evacuate (when the ambient is above 60° F) to 1500 microns. At 1500 microns, close the gauge manifold valves tightly, remove the line from the vacuum pump, and connect to a refrigerant cylinder. Loosen the common hose connection at the gauge manifold, crack the refrigerant drum valve to purge the hose, and retighten the hose connection. Crack the valves on the gauge manifold open until the system pressure rises to 2 PSIG. Close the refrigerant drum valve and the gauge manifold valves.
15. The above evacuation procedure should be repeated three times, evacuating twice to 1500 microns, and the last time to 500 microns. Use an electronic vacuum gauge. The system is now ready for charging with refrigerant.
16. Charge the unit with refrigerant as estimated and recommended for the unit. Verify the sight glass is clear and the subcooling is at 10° F with all the condenser fans running. (Some split units will have been shipped with most of the charge valved off in the condensing section. It may be necessary for the installing contractor to provide additional refrigerant to complete the charge).
17. The control and power wiring between sections will have been terminated with plug in terminals or will require installation of electrical wire nuts or lug clamps and insulators (included). Observe wire colors and terminal numbers.
18. Go on to the next section of these instructions.

COMPLETION of the INSTALLATION

1. Installing contractor should remove all shipping straps and protective panels. Replace screws in the same holes as the screws used for the shipping straps.
2. Install any louvers which were shipped inside the cabinet. Caulk the louvers to assure a weather tight seal.
3. Install any hoods which were shipped inside the cabinet.
4. Install heater vent caps if unit includes gas heat.
5. When the unit includes gas heat, complete the gas piping following local codes.
6. When the unit includes Chilled Water, Hot Water, or Steam coils, complete the piping with controls and specialties as indicated on the project plans and as specified in the Seasons-4 submittal data.

7. Note: On replacement (RES) series units, the piping connections on the unit are located in close proximity to where the lines were on the old unit; but it will be necessary for the plumber to make slight modifications to the existing piping in order to complete the final connection to the unit.
8. Remove shipping blocks from fans and check for free "floating" movement.
9. Remove shipping blocks from compressor spring isolators (if used). Replace the shipping nuts with the rubber grommets and the special locking nuts fastened to the compressor. Reuse the large washer on the mounting bolts. Run the locking nuts down to within a quarter of an inch of the top of the washer.
10. Connect the power wiring to the unit.
11. Connect the control wiring to the unit or coordinate the installation of new controls with the control contractor.
12. Note! When controls are provided by others and mounted by Seasons-4, a representative of the controls supplier must be present during checkout and start up of the new unit.

CHECK, TEST, & START UP

1. The blowers, DX cooling, and gas heating on all Seasons-4 units are test run at the factory prior to shipment. Units can normally be placed into operation with a minimum of adjustment.
2. The DX cooling cycle of new units must be placed into operation by the installing contractor under the supervision of an authorized representative of Seasons-4. This may be done at the time of rigging or may be later, depending on individual project schedules. When start up is required at some time after setting the equipment in place, please notify the Seasons-4 Service Department (770-489-0716) a minimum of two weeks prior to the requested date.
3. When the job requires operation of the fans to test for proper airflow, or when heating is required prior to the requirement for cooling, the installing contractor may place the fans into operation without the presence of an authorized representative of Seasons-4. Contact the Seasons-4 Service Department (770-489-0716) for specific authorization. Please see additional instructions as outlined below.
4. Make certain all service switches (24 volt, compressors, fans, heat, etc.) are in the "OFF" position.
5. Check the voltage to the unit to make certain it agrees with the unit nameplate.
6. Close the main power disconnect switch. All the motors in the unit have been properly phased out at the factory during final testing. Check the phase monitor in the control panel for proper jobsite phasing of the unit (no light indicates improper phasing, green light on indicates proper phasing). Reverse phases if necessary - only on the line side of the unit.
7. Check all wiring terminal connections and tighten if necessary.
8. Check to make sure the return air damper (when included) is open.

9. Turn on the 24 volt control power switch. Turn on the supply air fan switch. Check for proper rotation. Check amperage to make sure it is within the "nameplate" rating of the fan motor. Repeat this procedure for the return air fan if it is used. **Note: Do not turn on any compressor switches!**
10. A rough ride to the jobsite on the truck can occasionally cause the drive belts to become misaligned. Check the alignment of the fan drive belts and realign if necessary.
11. Regardless of whether the complete unit is to be operated, open the compressor discharge valves. This will avoid blowing a head gasket should the compressor cycle for any reason.
12. Do not turn on the compressors until an authorized Seasons-4 representative is present to oversee the startup of the unit. Again, Seasons-4 will make every effort to meet the startup timetable required by the project and we ask for at least two weeks notice to work our schedule into the startup schedule.
1. When the Seasons-4 representative arrives at the job, the installing contractor must have a fully equipped HVAC service technician to perform the startup. Others who may benefit from instruction should also be present for any required service and maintenance training.
2. Seasons-4 units are engineered to provide performance based on project documentation. If any questions of performance are raised, Seasons-4 will do everything possible to assist in resolving the problem. A complete copy of the test and balance report will usually be necessary to provide this assistance.

CONDENSING UNIT START UP

1. Check the setting and operation of the outside ambient lockout switch. The normal switch settings are: Open below 50°F. Closed above 50°F.
2. Connect service gages to the compressor suction and discharge gage connections.
3. Open service valves on the discharge line leaving the compressor, the suction line entering the compressor, the liquid line leaving the condenser, and the hot gas bypass line (if included). See the Seasons-4 O & M Manual if receiver is included.
4. Verify the unit has refrigerant in it (pressure against ambient temperature).
5. Turn on the 24 volt control power switch. Turn on the SA and RA (if applicable) fans. Turn on the # 1 compressor pump down switch. Compressor will usually start and pump down if the temperature controls are not calling for cooling.
6. Adjust temperature controls to call for cooling. In approximately 5 minutes, the compressor should start. Check compressor operating amps against full load nameplate.
7. Check rotation and amperage of condenser fans.
8. On unloading type compressors controlled from temperature, make sure the compressor is fully loaded (adjust temperature controls to cause this action).

9. On unloading type compressors controlled from suction pressure, check the setting of the unloader pressure switches. (Factory settings are shown on the unit wiring diagram)
10. If amps are normal, allow the compressor to run and determine stable operating pressures. Record operating pressures and amperage.
11. Unload compressor by stages and record operating characteristics.
12. Close the liquid line solenoid valve (using temperature controls) and watch compressor pump down. Record cutoff point setting of the low pressure control. (Factory settings are shown on the unit wiring diagram)
13. Call for cooling through the control sequence and verify the operation of the 5-minute anti-cycle time delay for the liquid line solenoid valve and the compressor. Record the cut in point of the low pressure control.
14. Pull fuses or a control wire on the condenser fans to simulate a high head pressure condition and record the cut out setting of the high pressure switch. (Factory setting is shown on the unit wiring diagram). Switch has manual reset.
15. Replace fuses on condenser fans and allow head pressure to return to normal. High pressure switch must be manually reset. The compressor will run after the 5-minute time delay.
16. Close the liquid line valve to check the operation of the hot gas bypass valve (if included). The line downstream of the HGB valve will get warm (hot) when the valve opens. Record the valve opening pressure. (Factory setting is shown on the unit wiring diagram). After verifying proper operation of the HGB valve, reopen the liquid line valve. The HGB valve setting is adjustable.
17. Turn off the # 1 compressor pump down switch. Recheck pump down sequence.
18. Repeat steps 1 through 17 for additional compressors. (Note: Skip step 16 if the compressor does not have a HGB circuit.)
19. When all compressor circuits have been checked out, turn on all circuits and check out their response to the temperature control system. (See below)

CHILLED WATER COOLING

1. Complete connection of the chilled water piping to the chilled water coil. Piping specialties and control valves (if required) must also be installed at the jobsite. Fill the system with water and check for leaks. Initiate the flow of water to the coil.
2. Turn on the unit's blower(s).
3. Using the unit's temperature controls to simulate a call for heating, verify the control valve opens and closes responding to calls for cooling.

HEATING

Seasons-4 units are manufactured with different types of heating including indirect fired natural gas, electric, hot water, and steam. The contractor's start up service person should become familiar with the type heater as outlined in the Seasons-4 O & M Manual included with the unit.

The following checks are intended to provide a general guide to assist the technician in starting the unit.

1. Check to make sure the "heater switch" is OFF. On natural gas fired units, purge the gas line to get gas to the unit. Caution! Do not purge the gas line with controls calling for operation of the heater.
2. Indirect fired natural gas (or LP) - gravity furnace. Note: Unit must be provided with a natural gas supply at a pressure from 7" to 14" WC (11" to 14" WC for LP). If gas pressure is outside these limits, installing contractor must make the necessary adjustments. With the unit's heater switch off, open the manual gas valve to the unit. Verify the inlet gas pressure to be within the limits stated above. The gas pressure must remain above the minimum at the 100% firing rate.
3. Set the unit's temperature controls to call for the first stage of heat. Turn the heater switch on. The gas valve should open and the heater should ignite. Note: If unit has two gravity furnaces, check the operation of each furnace.
4. Set temperature controls to call for the second stage of heat.
5. Indirect fired natural gas (or LP) - power burner furnace. Note: Unit must be provided with a natural gas supply at a pressure from 7" to 14" WC (11" to 14" for LP). If gas pressure is outside these limits, installing contractor must make the necessary adjustments. With the unit's heater switch off, open the manual gas valve to the unit. . Verify the inlet gas pressure to be within the limits stated above. The gas pressure must remain above the minimum at the 100% firing rate.
6. Set the unit's temperature controls to call for the first or minimum stage of heat. Turn the heater switch on. The gas valve should open and the heater should ignite.
7. Set the unit's temperature control to call for additional stages of heat.
8. Electric heat: Set the unit's temperature controls to call for the first stage (only) of heat. Turn the heater switch on. Verify the first stage of heat is on.
9. Set the unit's temperature controls to call for additional stages of heat. Verify each stage.
10. Set the unit's temperature controls to call for full heat. Record heater amperage.
11. Hot water or steam heat. Using the unit's temperature controls to simulate a call for heating, verify the control valve opens and closes.
12. When all heater circuits have been checked out, turn on all circuits and check out their response to the temperature control system. (See below)

TEMPERATURE CONTROLS

Seasons-4 units are manufactured with an almost unlimited variety of control systems including electric/electronic, pneumatic, and Direct Digital Control. The contractor's start up service person should become familiar with the sequence of operation for the complete unit and the Automatic Temperature Control (ATC) contractor should be present to assist with the interface between unit controls and field mounted controls in the building. When the factory mounted controls have been provided by the project ATC, the ATC must be present to complete the checkout of the unit.

The following checks are intended to provide a general guide and limited to a few options. The contractor's start up service person should become familiar with the Sequence of Control as described in the unit's specifications portion of the Seasons-4 O & M manual included with the unit.

1. OA/RA Economizer. When electric/electronic controls are provided, check out the operation of the economizer. In the absence of a test and balance technician actually measuring the CFM, adjust the minimum position potentiometer on the OA/RA damper motor(s) so the OA damper is about 15% open or an approximate angle of about 20° from vertical. Verify that OA damper closes when the unit is deactivated.
2. Using the unit's temperature controls, simulate a call for economizer operation. Verify the outside air changeover control (enthalpy or sensible) enables the economizer system. Set the changeover control at the setting indicated in the O & M Manual.
3. Morning warm-up (if included). Unit will have a morning warm up thermostat located in the return air to the unit and set at approximately 70°F. Verify its operation.
4. Zone dampers (if included). With help from the ATC, verify that space zones are coordinated with the unit's zones. Verify that a call for cooling in each zone opens its cooling zone damper and a call for heating causes the heating zone damper to open. Do this for each zone.
5. If the outdoor ambient is above the setting of the economizer changeover thermostat, set zone dampers to call for cooling. Verify the operation of the compressors.
6. If the outdoor ambient is below the setting of the economizer changeover thermostat, set the zone dampers to call for heating. Verify the operation of the heater(s).
7. Variable Air Volume (VAV). The control of the air volume from the Seasons-4 unit is usually accomplished with a Variable Frequency Drive. This drive will have been programmed at the factory. Verify the pressure setting of the drive and its operation. See O & M manual for additional information.

When other types of control systems are used on the unit, information on those systems is included in the Seasons-4 O & M manual. The Seasons-4 technician will be familiar with the other control systems and will offer advice on interfacing these systems with the Seasons-4 equipment.



WARRANTY

Seasons • 4, Inc. warrants each product to be free from defects in material and workmanship under normal and proper use, and will within twelve (12) months from date of start-up and not to exceed fifteen (15) months from manufacturer's date code on product, repair or replace any part which, when returned to our factory transportation charges • prepaid, and upon inspection by Seasons • 4, proves to be defective.

Seasons • 4, Inc. will not participate in any refrigerant, labor or service charges that occur under this warranty.

This warranty does not apply to equipment that has been damaged in transit, altered, abused, misused, or where Seasons • 4 service and installation requirements are not met. This warranty is valid only after all financial obligations to Seasons • 4 have been paid. Replaced parts warranty expires on original product warranty expiration. This warranty is valid only in the United States and Canada. Seasons • 4 neither assumes nor authorizes any person or persons to assume for it any obligation or warranty other than that stated in this warranty.

Seasons • 4 is solely responsible for this warranty and makes no other warranty either expressed or implied. All implied warranties or merchantability and fitness for a particular purpose which exceed Season • 4's obligations are hereby disclaimed and excluded from this warranty. In no event shall Seasons • 4 be liable for consequential or special damages, including but not limited to loss of use, loss of income, loss of profit, damages to building or cost of replacement.

SEASONS • 4, INC.

RECD JUL 06 2011



TEL (732) 918-1222
NJ MASTERS PLUMBERS LIC. No. 12075

FAX (732) 918-8254

June 30, 2011

Mr. Michael Vecchio
Subcode Official
Brick Township
401 Chambers Bridge Road
Brick, NJ 08723

Re: Ocean County Library, Brick Branch – Block 702, Lot 5, Control Number C-11-002210

Dear Mr. Vecchio,

In response to your memo dated June 20, 2011 enclosed please find the following:

1. Birdsall Services Group letter dated June 24, 2011 stating the no new roof openings are required and verifying the new load on the existing structure.
2. One copy of the submittal for the new roof top equipment.

Also enclosed is an Electrical Permit application form ATC Systems for low voltage automatic temperature control devices and associated wiring. Please add this application to the permit application package. Note that there will be two electrical contractors working on this project. Starlite Electric will be doing all power wiring, 120 V and above, and ATC Systems will be doing all low voltage control wiring. Thus the need for two permit applications.

Please feel free to contact me with any questions or requests for additional information.

Very truly yours,

MIDCOAST MECHANICAL, INC.

Robert C. Maddix, Jr. V.P.

enc.