



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Paul R. LePage
GOVERNOR

David Bernhardt
COMMISSIONER

August 11, 2015
Subject: HVAC PM & Repair
Location: 66 Industrial Drive, Augusta
Amendment No. 1

Dear Sir/Ms:

Make the following change to the Bid Documents:

In the Contract Book:

REMOVE page 2, of the "Schedule of Items" and **REPLACE** with the attached revised page 2 item list. The radiant heat system in the Wash Bay area has been added.

ADD to Scope and Specification of Work under A. 1. "(c) Radiant heat system in the Wash Bay area is to also have blowdown process performed every three months during the year as specified by the manufacturer."

The following questions were asked at the August 10, 2015, facility walk through:

QUESTION: Is there a man lift available on site for the contractor to use for servicing equipment?

ANSWER: Yes there is but only reaches 22' which is what the units are at and must be scheduled ahead of time with Contract Administrator. If there is a need to work above the units, contractor must supply.

QUESTION: Is there a list of filters and numbers for specific equipment, and model #s for the Reznor units?

ANSWER: The information on filters and Reznor unit is attached. Equipment specifications are available on line at:

http://www.maine.gov/tools/whatsnew/index.php?topic=DOT_projects&id=651142&v=full-planholder-rfi
Under "As Built Documents".

QUESTION: Is there access to the roof units?

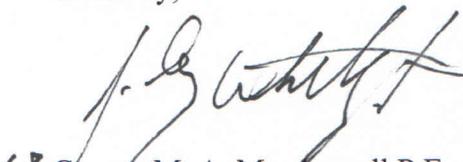
ANSWER: There is a roof hatch to access roof top units in the main part of the building. The Sign Shop area will need a ladder or man lift to access roof top units. DOT's on site man lift must be schedule ahead of time with Contract Administrator.

QUESTION: Can you isolate and blackout power when working on the Trane units?

ANSWER: Yes

Consider these changes and information prior to submitting your bid on August 19, 2015.

Sincerely,



For George M. A. Macdougall P.E.
Contracts & Specifications Engineer

1. Price

Bidders are required to bid all Items.

Description	Estimated Quantities & Units	Unit Price \$	Bid Amount \$ Est Quantity X Unit Price
Annual Trane Heating Preventative Maintenance and Service Work	1 Lump Sum	\$	\$
Annual Trane Air Conditioning and ventilation Preventative Maintenance and Service Work	1 Lump Sum	\$	\$
Annual preventative maintenance for ReznorV3 series unit heaters	15 each		
Annual preventative maintenance for gas furnace in Prep Bay area – LG14-225/275B40-2B	1 Lump Sum		
Annual preventative maintenance and quarterly inspections & quarterly filter changes for exhaust removal, makeup air units and RenewAire exchange units	6 each		
Annual preventative maintenance of Taco Radiant heat floor system & quarterly blowdown in wash bay area per manufacturer’s specifications	1 lump sum		
Regular Hourly Rate - Hourly rate for repair/emergency services at this site, (6:00am – 5:00pm)	Estimate 80 Hrs.	\$ _____ Per Hr.	\$
TOTAL BID			\$

For clarification, refer to Measurement and Payment in Appendix A.

REZNOR®

Model UEAS



Super High Efficiency Separated Combustion, Low Static Unit Heaters for Commercial/ Industrial Use



DESCRIPTION

Reznor® V3 Series Model UEAS gas-fired, high efficiency, separated combustion unit heaters are available in 4 sizes ranging from 131,000 to 305,000 BTUH gas input. Heaters are designed for up to 93% thermal efficiency and are approved for installation in the United States and Canada by ETL.

Reznor V3 Series unit heaters have a refreshing appearance with a glossy white cabinet finish and less visible hardware. Each size cabinet is easily suspended from 4 suspension points. The low voltage terminal strip on the outside of the cabinet makes connecting control wiring easy with no panels to remove. The addition of a "G" terminal to the low voltage strip, along with the new design of the circuit board, allows for fan only operation (without adding relays). All units have a factory installed gas line nipple to the exterior of the cabinet for easy gas service connection. The MacroChannel® secondary heat exchanger has a 1/2" PVC pipe for attaching a coupling for ease of installation and cleaning of the required condensate drain. A 4" PVC cleanout cap that is drilled and tapped for a 1/2" NPT fitting is furnished with the heater for attaching the vent condensate drain.

The preeminent new internal feature is the T_{CORE}³® high efficiency heat exchanger and single burner combustion system. Other standard features include a single-stage gas valve, multi-try direct spark ignition with timed lockout, pressure switch to verify vent flow, venter motor, aluminum venter wheel with housing, resiliently isolated axial fan and motor assembly, a high temperature limit control, interlock door switch, and a built-in disconnect switch. Operation is controlled through an integrated circuit board. The circuit board monitors heater operation and has LED diagnostic indicator lights to identify abnormalities in control functions.

The 1st ever separated combustion system in the commercial/industrial heating industry **was introduced on a Reznor heater** in the 1960s, and that proven technology is continued in this new separated combustion product. Model UEAS separated combustion units require installation of a specially designed combustion air/vent system including the unique concentric adapter box that allows for only one building penetration for both the vent and combustion air.

The V3 Series unit heaters are designed to provide all the features you expect in a Reznor heater plus improved efficiency, easier installation, and a new look ~ **both inside and out**. Look for the unique white unit with no visible front and bottom hardware, deep red louvers, black side handle, and angled corner to know you have a genuine Reznor unit by Thomas & Betts.

STANDARD FEATURES

- Up to 93% Thermal efficient
- 50-60°F temperature rise range
- Arranged for use with natural gas (propane conversion kit included with unit)
- T_{CORE}³ titanium stabilized aluminized steel primary heat exchanger with extruded aluminum MacroChannel secondary heat exchanger (patent pending)
- Patented ^A single burner combustion system including a one-piece burner assembly
- 115/1/60 Supply voltage
- 115 Volt open fan motor with internal overload protection
- Transformer for 24-volt controls
- Integrated circuit board with diagnostic indicator lights
- Multi-try direct ignition with timed lockout
- Fan relay (included on the circuit board)
- Single-stage natural gas valve
- Vibration/noise isolated fan motor
- Sealed control compartment houses all electrical components
- 48 frame, ball bearing, PSC venter motor
- 4-point Suspension
- Built-in disconnect switch (20A @ 115V Rating)
- External terminal strip for 24-volt wiring
- Sealed junction box for supply wiring
- External gas connection
- Fully gasketed door panel with safety door switch
- Full fan guard ~ **engineered for safety**
- Improved cabinet design with less visible hardware

OPTIONAL FEATURES - FACTORY INSTALLED

- ~~409 stainless steel primary heat exchanger~~
- ~~Totally enclosed fan motor (115 V only)~~

^A U.S. Patent No. 6,889,686

NOTE: Model UEAS should not be used in applications where space temperature is set below 45°F.

ACCESSORIES - FIELD INSTALLED

- Horizontal or vertical combustion air/vent kit including concentric adapter [#]
- ~~Thermostat~~
- ~~Thermostat guard with locking cover~~
- ~~Vertical louvers~~
- ~~Downturn nozzle kits~~
- ~~Manual shutoff valves~~

[#] Selection of either a horizontal or vertical combustion air/vent kit is required.

TECHNICAL DATA

Model UEAS

MODEL NUMBER		130	180	260	310
INPUT HEATING CAPACITY	BTUH	131,000	175,000	260,000	305,000
	KW/H	38.4	51.2	76.1	89.3
THERMAL EFFICIENCY		93%	91%	92%	91%
OUTPUT HEATING CAPACITY ^c	BTUH	121,830	159,250	239,200	277,550
	KW/H	35.7	46.6	70.0	81.3
GAS CONNECTION (INCHES) ^d	NATURAL	1/2	1/2	3/4	3/4
	PROPANE	1/2	1/2	3/4	3/4
VENT CONNECTION DIAMETER (INCHES)		4	4	4	4
COMBUSTION AIR INLET DIAMETER (INCHES)		6	6	6	6
CONTROL AMPS (24 - VOLT)		1.0	1.0	1.0	1.0
FULL-LOAD AMPS (115V)		6.3	6.3	10	10
MAXIMUM OVER CURRENT PROTECTION (115V) ^e		15	15	20	20
NORMAL POWER CONSUMPTION (WATTS)		657	657	1020	1020
DISCHARGE AIR TEMPERATURE RISE (°F)		50	60	50	60
AIR VOLUME	CFM	2256	2458	4430	4283
	M ³ /MINUTE	63.9	69.6	125.4	121.3
DISCHARGE AIR OPENING AREA (FT. ²)		2.56	2.56	4.79	4.79
OUTLET VELOCITY (FPM)	FPM	883	962	924	894
	M/MINUTE	269	293	282	272
FAN MOTOR HP ^f	STANDARD	1/4	1/4	1/2	1/2
	OPTIONAL ENCLOSED	1/4	1/4	1/2	1/2
FAN MOTOR RPM		1050	1050	1050	1050
FAN DIAMETER (IN.)		18	18	24	24
APPROXIMATE CONDENSATE PER HOUR	Gallons	1	1	2	2
	Liters	3.8	3.8	7.6	7.6
APPROXIMATE NET WEIGHT	LBS	230	245	360	395
	KG	104	111	163	179
APPROXIMATE SHIP WEIGHT	LBS	255	270	385	420
	KG	116	122	175	190

^c Output capacities shown are for units installed at elevations up to 2,000 ft. (600M).

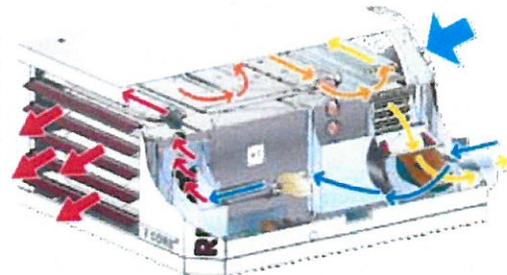
^d Sizes shown are for gas connection to a single-stage gas valve, not gas supply line size.

^e MOP = 2.25 x largest motor FLA + remaining load. Answer is rounded down to the next size of commercially available circuit breaker or fuse.

^f All other information in this table is based on a heater equipped with standard 115 Volt open fan motor.

HOW IT WORKS

Following is a diagram showing the air flow patterns for Model UEAS. Thin arrows show air flow from combustion air intake, across the burner, through primary and secondary heat exchangers and out exhaust vent. Larger arrows show air flow across the heat exchanger to provide heat to the space.



<u>Qty</u>	<u>Description</u>	<u>Tag(s)</u>
10	Super High Efficiency Separated Combustion Gas Fired Unit Heaters	
	Reznor Model UEAS130 Separated Combustion Gas Fired Unit Heaters	UH-1,2,3,4,5,9,10,11,15,16
6	Reznor Model UEAS310 Separated Combustion Gas Fired Unit Heaters	UH-6,7,8,13,14,17
	<ul style="list-style-type: none">• 115v/1ph/60hz• Horizontal or vertical vent kit – <i>confirm which is required</i>	

Accessory - Performance Climate Changer (CSAA)**Filter Schedule****Item: A1, A2 Qty: 2 Tag(s): AHU-1, AHU-2**

Unit Tag(s)	Unit Size	Filter Location	Filter Arrangement	Filter Depth	Filter Type	MERV Rating	Filter Quantity	Filter Size
AHU-1	Unit size 4	Air mixing section [1]	-	2in. filter frame	Pleated media - run set	MERV 8	2	20in.x20in.
AHU-2	Unit size 12	Air mixing section [1]	-	2in. filter frame	Pleated media - run set	MERV 8	6	16in.x20in.

<u>Qty</u>	<u>Description</u>	<u>Tag(s)</u>
	Air to Air Energy Recovery Unit (Outdoor)	
1	RenewAire Model HE1XINH Indoor Energy Recovery Unit	ERU-1 2
1	RenewAire Model EV450 Indoor Energy Recovery Unit	ERU-2 3

ERU-2

ERU-3
TS-Sheridan-5/19/14

Filter: MERV13

Tag Data – Energy Recovery Unit - Outdoor (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	ERU-1	1	RenewAire HE2XRT	HE-1XJINH-D15EE---GFTF--L
A2	ERU-2	1	RenewAire EV450	EV450JINV-D15EE---GFTF--L

- 20" x 20" x 2"
- 14" x 20" x 2"

Product Data – Energy Recovery Units (Indoor)

Item: A1, A2 Qty: 2 Tag(s): ERU-2, ERU-3

- 208v/1ph/60hz
- Indoor unit
- Double Wall
- ECM motors
- Fused disconnect
- Filter alarm (both airstreams)

2 Per Unit

<u>Qty</u>	<u>Description</u>	<u>Tag(s)</u>
1	Air to Air Energy Recovery Unit (Outdoor) RenewAire Model HE2XRT Outdoor Energy Recovery Unit	ERU-1

Tag Data – Energy Recovery Unit - Outdoor (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	ERU-1	1	RenewAire HE2XRT	HE-2XJRTV-D34UU—DVFTF-WL

Filter MERV 13

-20"x20"x2"

2 Per unit

Product Data - Energy Recovery Unit - Outdoor

Item: A1 Qty: 1 Tag(s): ERU-1

- 460v/3ph/60hz
- Outdoor unit – shares curb with RTU-3
- Double Wall
- 1.5hp motors w/ VFD
- EA & OA dampers
- Fused disconnect
- Filter alarm (both airstreams)
- Painted unit – standard white finish



TRANE
www.trane.com

Equipment Menu Schedules Alarms History

Outside Air Temperature
Outside Air Humidity

RTU-1

Spr Workshop H4	VAV-1
Spr Shop Office 141(dan)	VAV-2
Office 143	VAV-3
Office 144 (master)	VAV-4

RTU-2

PM 121 Production Control	VAV-23
PM 116 Small Conference	VAV-24
Right click here To change Room Name!	VAV-25
Right click here To change Room Name!	VAV-26
Right click here To change Room Name!	VAV-27
Right click here To change Room Name!	VAV-28
Right click here To change Room Name!	VAV-29
Right click here To change Room Name!	VAV-30
Right click here To change Room Name!	VAV-31
Right click here To change Room Name!	VAV-32
PM 116 Best Fan	VAV-33
Right click here To change Room Name!	VAV-34
Right click here To change Room Name!	VAV-35

RTU-3

PM 122 Conference	VAV-37
PM 124 Conference	VAV-38

AHU-1

PM 125 Fleet supervisor office	VAV-18
PM 132 OFFICE	VAV-19
PM 133 OFFICE	VAV-20
PM 138 OFF-Rm Coverl	VAV-21
PM 131 OFF Front Office	VAV-22

AHU-2

PM 121 Production Control	VAV-4
PM 116 Small Conference	VAV-7
Right click here To change Room Name!	VAV-8
Right click here To change Room Name!	VAV-9
Right click here To change Room Name!	VAV-10
Right click here To change Room Name!	VAV-11
Right click here To change Room Name!	VAV-12
Right click here To change Room Name!	VAV-13
Right click here To change Room Name!	VAV-14
Right click here To change Room Name!	VAV-15
PM 116 Best Fan	VAV-16
Right click here To change Room Name!	VAV-17



TRANE
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Outside Air Temperature 75.5°F
Outside Air Humidity 61.37%

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Hot Water System

AHU-1

MAU-1

Radiant Floor System

AHU-2

MAU-2

VAV

MAU-3

Exhaust Fans

MAU-4

Baseboard Connectors

RTU-1

RTU-2

RTU-3/ERU-1

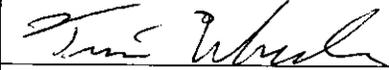
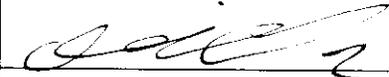
ERU-2

ERU-3

Sign in sheet for MaineDOT HVAC Maintenance Services

66 Industrial Drive Facility site visit

August 10, 2015

Company Name	Print Name	Signature
PULLEN BROS. INC.	MARK PULLEN	
Mechanical Services	Travis Wheeler	
Radigan Mechanical	David McCue	
AAA Energy	David Barden	
AAA	Don Brewer	
THAYER	Robert Martini	
thayer	PERRY CROOSPER	