Granite Corp
"Mechanical Contractors"

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 03/21/17

Schlotterbeck Block
117 Preble Street
Portland, Me

SUBMITTAL COVER SHEET

Mechanical
23 00 00 2.10 Heat Recovery Resubmission
***Post heaters have Disconnect**

Date: June 4, 2016

Contractor:

Landry/French Construction
160 Pleasant Hill Road
Scarborough, Maine 04074

Architect:

Goduti/Thomas
44 Oak Street
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Engineer:

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COOK

MARK: HRV1
PROJECT: GRANITE - 117 F
DATE: 5/18/2016

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 03/21/17

ERV

Energy Recovery Ventilator
Belt Drive With Heating/Cooling Coils
Arrangement V

STANDARD CONSTRUCTION FEATURES:
Energy recovery wheel constructed of fluted synthetic media containing water selective molecular sieve desiccant - Cassette assembly slides out for easy access and consists of energy recovery wheel, drive motor, and drive components - Removable access doors provide access to all internal components - Ventilator cabinet consisting of a minimum 18 gauge galvanized steel housing mounted to a minimum 16 gauge galvanized steel base - Cabinet internally lined with 1" thick, 3 lb. density, FSK insulation - Two DWDI forward curved steel blowers mounted on vibration isolators - Blower wheel bearings rated at 200,000 hours average life - Blower wheels are factory adjusted to specified RPM - Standard size 2" thick, MERV 8 filters in supply and exhaust air streams - All electrical components pre-wired for single point power connection - Interlock disconnect on hinged control panel door.

Performance *Bhp includes drive loss: 8%(S),7%(E)

Qty	Catalog Number	Airstream	Flow (CFM)	Ext. SP** (inwc)	Fan RPM	Power* (HP)	FEG
1	ERV-4500	Supply	2955	1.00	1078	1.55	60
		Exhaust	2955	1.00	1180	1.84	60

Altitude (ft): 0 **Static Pressure external to unit.

Dimensions (inches)

A	105-1/2
B	64-1/2
C	66-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	2731	Unit	2218

***Includes fan, motor & accessories.

Motor Information

Airstream	HP	RPM	Volts/Ph/Hz	Enclosure	Mounted
Supply	2	1725	200/3/60	ODP	YES
Exhaust	2				

Electrical

ERV Full Load Amps	Minimum Circuit Amps	MOCP*
~~18.48~~	~~23.1~~	~~30~~

* Maximum Overload Circuit Protection

Electric Post Heater**

Heater Voltage	Amps	kW (4 Steps)
208	~~37.8~~	~~13.6~~ 24

** Electric Post Heater requires separate power connection.

Design Conditions

	Outdoor		Indoor	
	Dry Bulb (°F)	Wet Bulb (°F)	Dry Bulb (°F)	Relative Humidity
Summer	94.0	80.0	75.0	48.0%
Winter	-10.0	-10.2	70.0	30.0%

Supply Conditions

	Flow (CFM)	Dry Bulb (°F)	Wet Bulb (°F)	Relative Humidity	Humidity Ratio (gr/lb)	Humidity Ratio (lb/lb)	Dew Point (°F)	Enthalpy (Btu/lb)
Summer	2955	78.3	66.1	52.5%	76.1	0.01087	59.6	30.73
Winter		72.0	52.2	23.0%	26.6	0.00380	32.1	21.45

Accessories:
- Premium Efficiency Motor (Min. 86.5%) - Supply
- Premium Efficiency Motor (Min. 86.5%) - Exhaust
- DRIVES (1.5 SF) @ 1078 RPM (SUPL.)
- DRIVES (1.5 SF) @ 1180 RPM (EXH.)
- ELEC HTR 208V ~~13.6~~KW 24 KW
- COIL ADAPTOR KIT
- BD MOTORIZED INTAKE CTR PIVOT L-24V (OUT. A
- BD MOTORIZED INTAKE CTR PIVOT L-VC-24V (RET
- BD (EXH. AIR DISCH)
- ROOF CURB RCGH 63 X 102-13.5H
- LORENIZED FINISH
- INTAKE HOOD
- EXHAUST HOOD
- HINGE ACC DOOR W/QTL
- PURGE SECTION
- DOUBLE WALL CONSTRTN
- ECON MODE-TEMP SENSR
- ECON AUTO OVERRIDE
- FROST CTRL-TIMED EXH
- 6 INCH E/R WHEEL
- 24 KW HEATER - SPECIAL
- 2" METAL MESH INTAKE HOOD FILTERS STD
- 90 DEGREE INTAKE HOOD

COOK

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ERV

Energy Recovery Ventilator
Belt Drive With Heating/Cooling Coils
Arrangement V

Performance *Bhp includes drive loss: 8%(S),7%(E)

Qty	Catalog Number	Airstream	Flow (CFM)	Ext. SP** (inwc)	Fan RPM	Power* (HP)	FEG
1	ERV-4500	Supply	2955	1.00	1078	1.55	60
		Exhaust	2955	1.00	1180	1.84	60

Altitude (ft): 0 **Static Pressure external to unit.

Sound Data 8 Octave Bands dB (10^{-12} Watts)

Airstream	1	2	3	4	5	6	7	8	LwA
Supply	97	93	84	80	77	74	71	65	84
Exhaust	100	97	88	84	82	78	75	70	88

Fan Curve Legend

- CFM vs SP (1078)
- MaxRPM(1341)
- MinRPM(413)
- CFM vs HP
- Point of Operation
- System Curve

Fan Curve Legend

- CFM vs SP (1180)
- MaxRPM(1478)
- MinRPM(454)
- CFM vs HP
- Point of Operation
- System Curve

COOK

MARK: HRV1

PROJECT: GRANITE - 117 P

DATE: 5/18/2016

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Inspections Division
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ERV

Energy Recovery Ventilator
With Heating/Cooling Coils
Belt Drive
Arrangement V

LEFT VIEW

BACK VIEW

BOTTOM VIEW

Dimensions (inches)

Size	4500
A	105-1/2
B	64-1/2
C	66-1/2
D	13-7/16
E	15-5/8
F	34
G	24
K	26
L	18-3/4
R	7-5/16
S	38-5/8
T	10
U	8-1/8
V	4-3/4
W	4-1/8
X	5-1/4
Y	23-7/8

Coordinating Curbs and making them adjustable to make down flow per Architect Revisions

v6.6.95.13147

COOK

ERV

MARK: HRV1

PROJECT: GRANITE - 117 P

DATE: 5/18/2016

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ERV 6" Wheel Performance Report

Performance

Catalog Number	Flow (CFM)		Wheel Effectiveness	
	Supply	Exhaust	Sensible	Latent
ERV-4500	2955	2955	82.4%	80.1%

Performance shown is based on 6" deep Energy Recovery Wheel

Summer

Outdoor Intake

Dry Bulb(°F):	94.0
Wet Bulb(°F):	80.0
Humidity Ratio (lb/lb):	0.01892
Humidity Ratio (gr/lb):	132.4
Relative Humidity:	54.8%
Enthalpy (Btu/lb):	43.45
Mass Flow Rate (lb/min):	221.6

Room Supply

Dry Bulb(°F):	78.3
Wet Bulb(°F):	66.1
Humidity Ratio (lb/lb):	0.01087
Humidity Ratio (gr/lb):	76.1
Relative Humidity:	52.5%
Enthalpy (Btu/lb):	30.73
Mass Flow Rate (lb/min):	221.6

Outdoor Exhaust

Dry Bulb(°F):	90.7
Wet Bulb(°F):	77.1
Humidity Ratio (lb/lb):	0.01692
Humidity Ratio (gr/lb):	118.4
Relative Humidity:	54.5%
Enthalpy (Btu/lb):	40.41
Mass Flow Rate (lb/min):	221.6

Room Exhaust

Dry Bulb(°F):	75.0
Wet Bulb(°F):	62.0
Humidity Ratio (lb/lb):	0.00886
Humidity Ratio (gr/lb):	62.0
Relative Humidity:	48.0%
Enthalpy (Btu/lb):	27.72
Mass Flow Rate (lb/min):	221.6

Outdoor Air Cooling Load Reduction

Cooling Load w/o ERV (tons)	17.43
Cooling Load w/ERV (tons)	3.34
Energy Savings (tons)	14.09

Winter

Outdoor Intake

Dry Bulb(°F):	1.0*
Wet Bulb(°F):	-0.6*
Humidity Ratio (lb/lb):	0.00041
Humidity Ratio (gr/lb):	2.9
Relative Humidity:	49.6%
Enthalpy (Btu/lb):	0.67
Mass Flow Rate (lb/min):	221.6

Room Supply

Dry Bulb(°F):	57.9
Wet Bulb(°F):	45.9
Humidity Ratio (lb/lb):	0.00380
Humidity Ratio (gr/lb):	26.6
Relative Humidity:	37.6%
Enthalpy (Btu/lb):	18.03
Mass Flow Rate (lb/min):	221.6

Outdoor Exhaust

Dry Bulb(°F):	13.1
Wet Bulb(°F):	12.2
Humidity Ratio (lb/lb):	0.00126
Humidity Ratio (gr/lb):	8.8
Relative Humidity:	81.9%
Enthalpy (Btu/lb):	4.50
Mass Flow Rate (lb/min):	221.6

Room Exhaust

Dry Bulb(°F):	70.0
Wet Bulb(°F):	53.0
Humidity Ratio (lb/lb):	0.00465
Humidity Ratio (gr/lb):	32.5
Relative Humidity:	30.0%
Enthalpy (Btu/lb):	21.89
Mass Flow Rate (lb/min):	221.6

Outdoor Air Heating Load Reduction

Heating Load w/o ERV (Btu/hr)	255,312
Heating Load w/ERV (Btu/hr)	44,918
Energy Savings (Btu/hr)	210,394

*Adjusted to the energy wheel frost formation threshold temperature

v6.8.95.13147

COOK

ERV

MARK: HRV1

PROJECT: GRANITE - 117

DATE: 5/18/2016

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Coil Performance

Electric Heating Coil

Coil kW	~~13.6~~ 24

*Coil SP (inwc) is shown for information only. ERV unit performance data is adjusted for value shown.

Ent Air Dry Bulb (°F)	57.9
Ent Air Wet Bulb (°F)	45.9
Humidity Ratio (lb/lb)	0.0038
Humidity Ratio (gr/lb)	26.6
Relative Humidity	37.6%
Enthalpy (Btu/lb)	18.03

Lvg Air Dry Bulb (°F)	72
Lvg Air Wet Bulb (°F)	52.2
Humidity Ratio (lb/lb)	0.0038
Humidity Ratio (gr/lb)	26.6
Relative Humidity	22.9%
Enthalpy (Btu/lb)	21.43

Electric Electric Post-heat requires a separate power connection from the ERV control panel

COOK

MARK: HRV2

PROJECT: GRANITE - 117 F

DATE: 5/18/2016

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 03/21/17

ERV

Energy Recovery Ventilator
Belt Drive With Heating/Cooling Coils
Arrangement V

STANDARD CONSTRUCTION FEATURES:
Energy recovery wheel constructed of fluted synthetic media containing water selective molecular sieve desiccant - Cassette assembly slides out for easy access and consists of energy recovery wheel, drive motor, and drive components - Removable access doors provide access to all internal components - Ventilator cabinet consisting of a minimum 18 gauge galvanized steel housing mounted to a minimum 16 gauge galvanized steel base - Cabinet internally lined with 1" thick, 3 lb. density, FSK insulation - Two DWDI forward curved steel blowers mounted on vibration isolators - Blower wheel bearings rated at 200,000 hours average life - Blower wheels are factory adjusted to specified RPM - Standard size 2" thick, MERV 8 filters in supply and exhaust air streams - All electrical components pre-wired for single point power connection - Interlock disconnect on hinged control panel door.

Dimensions (inches)

A	90-1/4
B	40-1/2
C	49-1/4

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	1676	Unit	1351

***Includes fan, motor & accessories.

Performance *Bhp includes drive loss: 10%(S),9%(E)

Qty	Catalog Number	Airstream	Flow (CFM)	Ext. SP** (inwc)	Fan RPM	Power* (HP)	FEG
1	ERV-1500	Supply	1425	1.00	1481	.865	n/a(<1HP)
		Exhaust	1425	1.00	1622	1.21	<50

Altitude (ft): 0 **Static Pressure external to unit.

Motor Information

Airstream	HP	RPM	Volts/Ph/Hz	Enclosure	Mounted
Supply	1-1/2	1725	200/3/60	ODP	YES
Exhaust	1-1/2				

Electrical

ERV Full Load Amps	Minimum Circuit Amps	MOCP*
~~15.38~~	~~19.23~~	~~25~~

* Maximum Overload Circuit Protection

Electric Post Heater**

Heater Voltage	Amps	kW (4 Steps)
208	~~25.0~~	~~9~~ 11

** Electric Post Heater requires separate power connection.

Design Conditions

	Outdoor		Indoor	
	Dry Bulb (°F)	Wet Bulb (°F)	Dry Bulb (°F)	Relative Humidity
Summer	94.0	80.0	75.0	48.0%
Winter	-10.0	-10.2	70.0	30.0%

Supply Conditions

	Flow (CFM)	Dry Bulb (°F)	Wet Bulb (°F)	Relative Humidity	Humidity Ratio (gr/lb)	Humidity Ratio (lb/lb)	Dew Point (°F)	Enthalpy (Btu/lb)
Summer	1425	79.4	67.2	53.6%	80.4	0.01149	61.2	31.67
Winter		72.0	51.7	21.4%	24.8	0.00354	30.0	21.17

Accessories:
- Premium Efficiency Motor (Min. 86.5%) - Supply
- Premium Efficiency Motor (Min. 86.5%) - Exhaust
- DRIVES (1.5 SF) @ 1481 RPM (SUPL.)
- DRIVES (1.5 SF) @ 1622 RPM (EXH.)
- ELEC HTR 208V ~~9.0KW~~ 11 KW
- COIL ADAPTOR KIT
- BD MOTORIZED INTAKE CTR PIVOT L-24V (OUT. A
- BD MOTORIZED INTAKE CTR PIVOT L-VC-24V (RET
- BD (EXH. AIR DISCH)
- ROOF CURB RCGH 45.75 X 86.75-13.5H
- LORENIZED FINISH
- INTAKE HOOD
- EXHAUST HOOD
- HINGE ACC DOOR W/QTL
- PURGE SECTION
- DOUBLE WALL CONSTRTN
- ECON MODE-TEMP SENSR
- ECON AUTO OVERRIDE
- FROST CTRL-TIMED EXH
- 6 INCH E/R WHEEL
- 11 KW HEATER - SPECIAL
- 2" METAL MESH INTAKE HOOD FILTERS STD
- 90 DEGREE INTAKE HOOD

COOK

MARK: HRV2

PROJECT: GRANITE - 117 PI

DATE: 5/18/2016

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ERV

Energy Recovery Ventilator
Belt Drive With Heating/Cooling Coils
Arrangement V

Performance *Bhp includes drive loss: 10%(S),9%(E)

Qty	Catalog Number	Airstream	Flow (CFM)	Ext. SP** (inwc)	Fan RPM	Power* (HP)	FEG
1	ERV-1500	Supply	1425	1.00	1481	.865	n/a(<1HP)
		Exhaust	1425	1.00	1622	1.21	<50

Altitude (ft): 0 **Static Pressure external to unit.

Sound Data 8 Octave Bands dB (10^{-12} Watts)

Airstream	1	2	3	4	5	6	7	8	LwA
Supply	99	98	89	82	77	76	73	70	87
Exhaust	101	101	93	85	80	79	77	73	91

Fan Curve Legend

CFM vs SP (1481)	
MaxRPM(1576)	
MinRPM(562)	
CFM vs HP	
Point of Operation	○
System Curve	

Fan Curve Legend

CFM vs SP (1622)	
MaxRPM(1725)	
MinRPM(520)	
CFM vs HP	
Point of Operation	○
System Curve	

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MARK: HRV2

PROJECT: GRANITE - 117 P

DATE: 5/18/2016

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ERV

Energy Recovery Ventilator
With Heating/Cooling Coils
Belt Drive
Arrangement V

LEFT VIEW

BACK VIEW

BOTTOM VIEW

Dimensions (inches)

Size	1500
A	90-3/16
B	40-13/32
C	49-9/32
D	10-1/4
E	11-13/16
F	18
G	14
K	19
L	13
R	6-1/8
S	21-1/8
T	6-1/16
U	6-11/16
V	3-5/8
W	3-1/4
X	4-1/16
Y	15-5/8

COOK

ERV

MARK: HRV2

PROJECT: GRANITE - 117 I

DATE: 5/18/2016

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Date: 03/21/17

ERV 6" Wheel Performance Report

Performance

Catalog Number	Flow (CFM)		Wheel Effectiveness	
	Supply	Exhaust	Sensible	Latent
ERV-1500	1425	1425	77.0%	73.9%

Performance shown is based on 6" deep Energy Recovery Wheel

Summer

Outdoor Intake

Dry Bulb(°F):	94.0
Wet Bulb(°F):	80.0
Humidity Ratio (lb/lb):	0.01892
Humidity Ratio (gr/lb):	132.4
Relative Humidity:	54.8%
Enthalpy (Btu/lb):	43.45
Mass Flow Rate (lb/min):	106.9

Room Supply

Dry Bulb(°F):	79.4
Wet Bulb(°F):	67.2
Humidity Ratio (lb/lb):	0.01149
Humidity Ratio (gr/lb):	80.4
Relative Humidity:	53.6%
Enthalpy (Btu/lb):	31.67
Mass Flow Rate (lb/min):	106.9

Outdoor Exhaust

Dry Bulb(°F):	89.6
Wet Bulb(°F):	76.1
Humidity Ratio (lb/lb):	0.01629
Humidity Ratio (gr/lb):	114.0
Relative Humidity:	54.3%
Enthalpy (Btu/lb):	39.47
Mass Flow Rate (lb/min):	106.9

Room Exhaust

Dry Bulb(°F):	75.0
Wet Bulb(°F):	62.0
Humidity Ratio (lb/lb):	0.00886
Humidity Ratio (gr/lb):	62.0
Relative Humidity:	48.0%
Enthalpy (Btu/lb):	27.72
Mass Flow Rate (lb/min):	106.9

Outdoor Air Cooling Load Reduction

Cooling Load w/o ERV (tons)	8.41
Cooling Load w/ERV (tons)	2.11
Energy Savings (tons)	6.29

Winter

Outdoor Intake

Dry Bulb(°F):	-0.7*
Wet Bulb(°F):	-2.0*
Humidity Ratio (lb/lb):	0.00041
Humidity Ratio (gr/lb):	2.9
Relative Humidity:	54.1%
Enthalpy (Btu/lb):	0.27
Mass Flow Rate (lb/min):	106.9

Room Supply

Dry Bulb(°F):	53.7
Wet Bulb(°F):	43.3
Humidity Ratio (lb/lb):	0.00354
Humidity Ratio (gr/lb):	24.8
Relative Humidity:	40.7%
Enthalpy (Btu/lb):	16.74
Mass Flow Rate (lb/min):	106.9

Outdoor Exhaust

Dry Bulb(°F):	15.6
Wet Bulb(°F):	14.9
Humidity Ratio (lb/lb):	0.00152
Humidity Ratio (gr/lb):	10.6
Relative Humidity:	87.7%
Enthalpy (Btu/lb):	5.37
Mass Flow Rate (lb/min):	106.9

Room Exhaust

Dry Bulb(°F):	70.0
Wet Bulb(°F):	53.0
Humidity Ratio (lb/lb):	0.00465
Humidity Ratio (gr/lb):	32.5
Relative Humidity:	30.0%
Enthalpy (Btu/lb):	21.89
Mass Flow Rate (lb/min):	106.9

Outdoor Air Heating Load Reduction

Heating Load w/o ERV (Btu/hr)	123,120
Heating Load w/ERV (Btu/hr)	28,373
Energy Savings (Btu/hr)	94,747

*Adjusted to the energy wheel frost formation threshold temperature

v6.6.95.13147

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ERV

MARK: HRV2

PROJECT: GRANITE - 117

DATE: 5/18/2016

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 03/21/17

Coil Performance

Electric Heating Coil

Coil kW 9

*Coil SP (inwc) is shown for information only. ERV unit performance data is adjusted for value shown.

Ent Air Dry Bulb (°F)	53.7
Ent Air Wet Bulb (°F)	43.3
Humidity Ratio (lb/lb)	0.00354
Humidity Ratio (gr/lb)	24.8
Relative Humidity	40.7%
Enthalpy (Btu/lb)	16.74

Electric Electric Post-heat requires a separate power connection from the ERV control panel

Lvg Air Dry Bulb (°F)	72
Lvg Air Wet Bulb (°F)	51.7
Humidity Ratio (lb/lb)	0.00354
Humidity Ratio (gr/lb)	24.8
Relative Humidity	21.3%
Enthalpy (Btu/lb)	21.15

COOK

PROJECT: GRANITE - 117 I

DATE: 5/18/2016

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Date: 03/21/17

BDMICL

Backdraft Motorized Center Pivot Low Leakage Damper

STANDARD CONSTRUCTION FEATURES:

14 ga galvanized steel blades -
16 ga galvanized steel frame -
1/2" plated steel hex hinge pins -
Stainless steel sleeve bearings -
24 VAC Non-overloading motor.

Notes: Max operating temperature -
130 Deg F (50 Deg C).

Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E
HRV1	1	BDMICL-24V (OUT. AIR	23-3/4	33-3/4	1-1/2	5	8-1/4
HRV2	1	BDMICL-24V (OUT. AIR	13-3/4	17-3/4	1-1/2	5	8-1/4

COOK

PROJECT: GRANITE - 117 F

DATE: 5/18/2016

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BDMICL-VC

Backdraft Motorized Center Pivot Low Leakage Damper

STANDARD CONSTRUCTION FEATURES:

14 ga galvanized steel blades -
16 ga galvanized steel frame -
1/2" plated steel hex hinge pin -
Stainless steel sleeve bearing -
24VAC Non-overloading motor.

Notes: Max operating temperature -
130 Deg F (50 Deg C).

Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E
HRV1	1	BDMICL-VC-24V (RET. A	25-3/4	18-1/2	1-1/2	5	8-1/4
HRV2	1	BDMICL-VC-24V (RET. A	18-3/4	12-3/4	1-1/2	5	8-1/4

COOK

PROJECT: GRANITE - 117 PI

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BD

Automatic Backdraft Damper

Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E
HRV1	1	BD (EXH. AIR DISCH)	15-1/8	12-15/16	6-3/4	1-3/4	1-1/2
HRV2	1	BD (EXH. AIR DISCH)	11-5/16	9-3/4	6-3/4	1-3/4	1-1/2

COOK

PROJECT: GRANITE - 117 F

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RCGH

Galvanized Steel
Heavy Duty Roof Curb

STANDARD CONSTRUCTION FEATURES:

1-1/2", 3 lbs. density thermal and acoustical insulation - Continuously welded corners - wood nailer.

Options:(As noted below*)

1) No wood nailer (deduct 1-1/2" for actual height)

Dimensions (inches)

Mark	Qty	Description	Ht	Options*	A	B	C	D	E	Steel Ga.
HRV1	1	RCGH 63 X 102	13.5	-	102	63	106	67	1-1/2	14
HRV2	1	RCGH 45.75 X 86.75	13.5	-	86-3/4	45-3/4	90-3/4	49-3/4	1-1/2	16

COOK

PROJECT: GRANITE - 117 F

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INTAKE HOOD

Galvanized Steel

STANDARD CONSTRUCTION FEATURES:

Minimum 18 Ga galv steel panels - 2" thick washable, removable aluminum filters

Dimensions (inches)

Mark	Qty	Description	A	B	C
HRV1	1	INTAKE HOOD	43-3/16	41-7/16	33
HRV2	1	INTAKE HOOD	24-13/16	24-1/4	23

COOK

PROJECT: GRANITE - 117 I

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EXHAUST HOOD

Galvanized Steel

STANDARD CONSTRUCTION FEATURES:

Minimum 18 Ga Galv Steel - Birdscreen covering exhaust - integral damper mounting flange

Dimensions (inches)

Mark	Qty	Description	A	B	C
HRV1	1	EXHAUST HOOD	21-3/4	22-7/8	21-9/16
HRV2	1	EXHAUST HOOD	18-3/16	20-5/8	17-3/4