**MECHANICAL** LEGEND, NOTES, **ABBREVIATIONS & DETAILS** 

DRAWN	BNH
CHECKED	GRL
DATE	02/07/12
CAD	3702060/CD

REVISIONS

SHEET

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**NEW** 1659 S

DRAWN	BNH
CHECKED	GRL
DATE	02/07/12
CAD	3702060/CD

3702.060

## **Bid Documents**

BALANCING DAMPER

IN ALL DUCT RUNOUTS

(MAY BE IN SPIN-IN)

FOR INSULATED DUCTS.

PROVIDE STANDOFF

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## 100% OUTSIDE AIR UNIT SCHEDULE

- 1		the state of the state of
	AIR HANDLER MARK	A
	MANUFACTURER	A
	MODEL	,
	UNIT TYPE	
	CONDENSING UNIT MARK	(

CEILING OUTLETS AND INLETS.
CONTRACTOR SHALL VERIFY CLEARANCE SPACE AVAILABLE, OFFSETS REQUIRED, STRUCTURAL OPENINGS, AND WORK BY OTHER TRADES PRIOR TO FABRICATION OF DUCTWORK. SUBMIT SHOP DRAWINGS ON DUCTWORK LAYOUT. COORDINATE WITH ROOF TRUSSES/STRUCTURE. PRESSURE TEST ALL DUCTWORK FOR LEAKS. SEE SPECIFICATIONS. RETURN AND EXHAUST DUCT SHALL BE TESTED UNDER NEGATIVE PRESSURE.
DROVIDE ELEVALE DUCT CONNECTIONS FOR ALL LINITS

PROVIDE FLEXBILE DUCT CONNECTIONS FOR ALL UNITS. EXTERNALLY INSULATE FLEXIBLE CONNECTIONS.

## B. EQUIPMENT

MECHANICAL NOTES

PARALLEL WITH AND OVER WALLS.

A. AIR DISTRIBUTION

MECHANICAL LEGEND

CONDITIONING UNIT CHANGE PER HOUR VE FINISHED FLOOR

SH THERMAL UNITS PER HOUR

ONTROL AIR COMPRESSOR

WATER PUMP WATER RETURN WATER SUPPLY

TERNAL STATIC PRESSURE ITERING WATER TEMPERATURE

**FARENHEIT** 

OW MEASURING STATION

OF WATER, GAUGE TERMINAL UNIT

HOT WATER HOT WATER

EAVING AIR TEMPERATURE

PRESSURE STEAM

NOMBER
NOT TO SCALE
OUTDOOR AIR
OUTDOOR AIR LOUVER
ON CENTER
OUTSIDE DIAMETER

SUPPLY AIR REGISTER
SMOKE DAMPER
SUPPLY FAN
SOFFIT GRILLE
STATIC PRESSURE

TRANSFER GRILLE TOTAL STATIC PRESSURE

TYPICAL UNDERCUT DOOR - 3/4"

THROUGH ROOF BLE\_VOLUME UNIT

WATER PRESSURE DROP

SPECIFICATION
SQUARE FEET
SIMILAR
STAINLESS STEEL
STANDARD

UNDS PER SQUARE INCH

EAVING WATER TEMPERATURE

OF WATER, GAUGE

DIAMETER

KW

ONDENSING UNIT; COPPER

FICIENT OF VALVE

XHAUST FAN XHAUST GRILLE

R DRAIN

AIR HANDLING

CHWP CHWP CHWR CHWS

DUCTWORK WITH INSULATION

DUCTWORK W/ NO INSULATION

DUCT ELBOW W/ TURNING VANES

RUNOUT TO CD/RAG (SEE DETAILS)

FLEXIBLE DUCT CONNECTION

THERMOSTAT

SMOKE DETECTOR

SPEED CONTROL SWITCH

MOTORIZED DAMPER

VOLUME BALANCING DAMPER

FIRE DAMPER (WITH DUCT ACCESS DOOR)

DIELECTRIC WATERWAY

AUTOMATIC AIR VENT

ECCENTRIC REDUCER

CONCENTRIC REDUCER

PRESSURE SWITCH

PLENUM BOX FULL SIZE

OF UNIT INTAKE, PROVIDE FLEX

CONNECTION

FLEXIBLE PIPE CONNECTION

DIFFERENTIAL PRESSURE TRANSMITTER

FLOW SWITCH

FLOW METER

HUMIDISTAT

FIRESTAT

UNION

CEILING DIFFUSER:

EXHAUST DUCTWORK W/ NO INSULATION

RECTANGULAR DUCT TAKEOFF (SEE DETAILS)

"X" = TYPE AS NOTED IN SPECS
'24' = FACE SIZE, "08" = NECK DIAMETER

4-WAY THROW OR AS SHOWN ON PLANS

CEILING RETURN: SIZE AND TYPE SHOWN

" = TYPE AS NOTED IN SPECS

PROVIDE ADAPTOR AS REQUIRED

UNIT SYMBOL W/ UNIT NUMBER

PROVIDE FULL SIZE INSULATED COPPER CONDENSATE DRAINS FROM ALL UNITS TO DISPOSAL POINT INDICATED ON THE DRAWINGS.

DUCT SIZES ARE SHEET METAL SIZES. NO DUCTWORK SHALL RUN

VERIFY COLLAR SIZES ON ALL AIR TERMINALS AND EQUIPMENT INLETS AND OUTLETS. TRANSITION DUCTWORK AS NECESSARY.

EXTERNALLY INSULATE TRANSITIONS AT EQUIPMENT CONNECTIONS.

SEE REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL

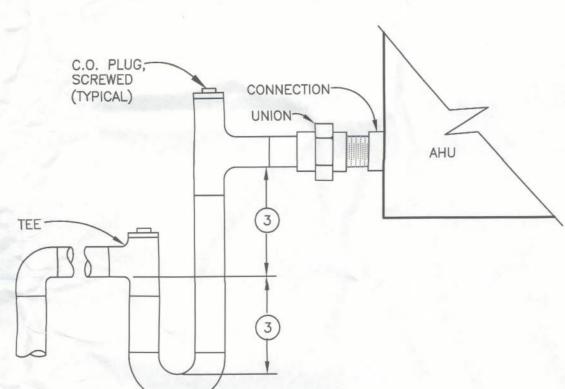
PROVIDE A TRAP ON ALL CONDENSATE DRAIN OUTLETS. SLOPE ALL CONDENSATE DRAIN PIPING 1/8" INCH PER FOOT.

CONTRACTOR SHALL INSTALL ALL EQUIPMENT, PIPING AND DUCTWORK SUCH THAT MANUFACTURER'S RECOMMENDED CLEARANCES ARE MET FOR ALL ACCESS PANELS, MOTORS, FANS, BELTS, FILTERS AND AIR INTAKES.

PROVIDE VIBRATION ISOLATORS FOR ALL UNITS. SEE SPECIFICATIONS.

FLOOR MOUNTED AHUS AND OTHER EQUIPMENT SHALL BE INSTALLED ON 4 INCH HIGH CONCRETE HOUSEKEEPING BASES, 6 INCHES LARGER IN EACH DIRECTION.

PROVIDE ACCESS PANELS IN ALL NON-ACCESSIBLE CONSTRUCTIONS (INCLUDING CEILING, WALLS, ETC) SIZED AND LOCATED AS REQUIRED TO PROVIDE PROPER SERVICE ACCESS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION FOR ALL HVAC EQUIPMENT INCLUDING DAMPERS AND VALVES.



(1) SLOPE DRAIN LINE TO CONDENSATE RECEPTOR (MIN. 1/8" PER FOOT). 2) DRAIN LINE SHALL BE INSULATED.

(3) MANUFACTURERS' MINIMUM RECOMMENDATIONS

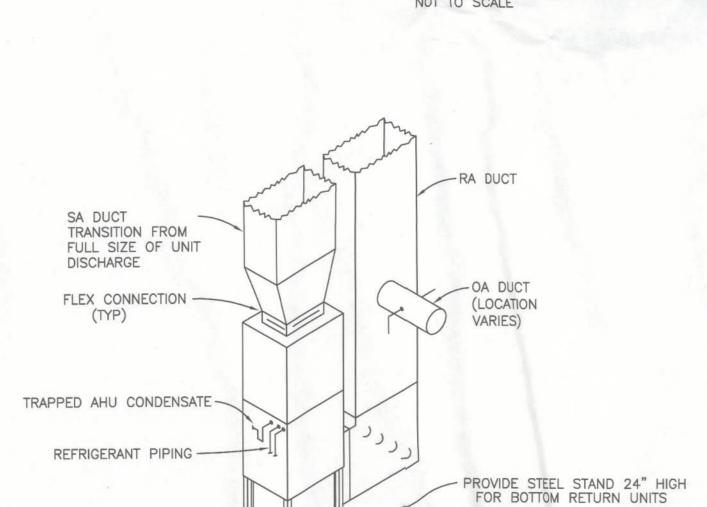
CONDENSATE P-TRAP DETAIL

PROVIDE CONTINUOUS SUPPORT

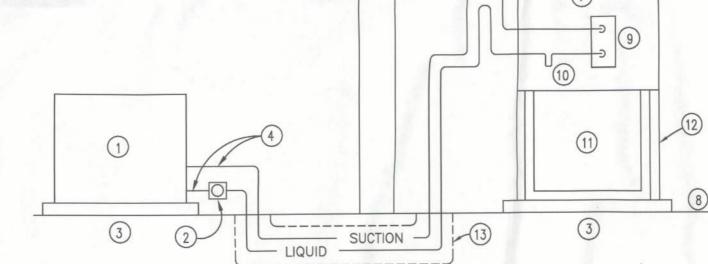
ON TOP SURFACE, CROSS BRACE

TO PREVENT RACKING AND

ANCHOR TO PREVENT MOVEMENT



TYPICAL SPLIT SYSTEM AHU



CAPACITY (kW)

1) CONDENSING UNIT

(2) SIGHT GLASS

3 3" CONCRETE PAD

5 LOOP TO TOP OF COIL 10 TRAPPED SUCTION (11) RA PLENUM BOX

(7) AIR HANDLING UNIT

(12) STEEL STAND (13) UNDERGROUND PVC

(4) INSULATE W/3/4" ARMAFLEX PROVIDE ALUMINUM JACKETS 9 EVAPORATOR COIL FOR ALL INSULATION EXPOSED TO SUN SEE SCHEDULE FOR SIZES

> REFRIGERANT PIPING DIAGRAM NOT TO SCALE

NOTE: DUAL COMPRESSOR SYSTEMS REQUIRE TWO REFRIGERANT CIRCUITS

AIR HANDLER MARK	AHU-OA1
MANUFACTURER	ADDISON
MODEL	VCA101
UNIT TYPE	SPLIT
	SYSTEM
CONDENSING UNIT MARK	CU-OA1
CONDENSING UNIT MODEL	RCA101
EER	10.6
ELECTRICAL CHAR (V-Ø)	208-3
TYPE SUPPORT	SLAB
DESIGN CONDITIONS	
WINTER OUTDOOR-INDOOR (*F)	25-70
SUMMER OUTDOOR DB/WB (*F)	96/80
SUMMER INDOOR DB/WB (*F)	75/63
SUPPLY AIR (CFM)	1150
OUTSIDE AIR (CFM)	1150
SUMMER TOTAL HEAT GAIN (BT/UH)	105,400
SUMMER SENSIBLE HEAT GAIN (BTUH)	53,000
WINTER HEAT LOSS (BTUH)	64,200
AIR ENT COOLING COIL DB/WB (*F)	96/80
AIR LVG COOLING COIL DB/WB (*F)	55.3/55.3
HOT GAS REHEAT ENT (*F)	55.3
HOT GAS REHEAT LVG (*F)	90
CONDENSING SECTION	
COMPRESSOR ELEC CHAR (V-Ø)	208-3
SUCTION LINE SIZE (IN.)	(1)
LIQUID LINE SIZE (IN.)	(1)
HOT GAS BYPASS LINE SIZE (IN.)	(1)
HOT GAS REHEAT LINE SIZE (IN.)	(1)
D/ADODATOR SECTION	
EVAPORATOR SECTION	0.5
EXTERNAL STATIC PRESSURE (IIN. H20)	0.5
FAN ELECTRICAL CHAR (V-Ø)	208-3
FAN MOTOR (HP)	3/4
HEAT SECTION (SUPPLEMENTARY)	
TYPE	ELECTRIC
LOCATION	UNIT
	Control of the contro

(1) REFRIGERANT PIPE SIZING PER MANUFACTURER'S RECOMMENDATION.

_

ELECTRICAL CHAR (V-Ø)

FAN	MANUF	MODEL	TYPE	AIR QUANTITY (CFM)	STATIC PRESSURE IN. H20	MOTOR (HP)	ELEC CHAR (V-ø)		REMA	ARKS	
EF-1	соок	100ACEB	ROOF	725	0.25	1/6	120-1	(1)	(3) (4) (5	5) (6) (7	7) (9)
EF-2	COOK	GC-160	CEILING	100	0.25	1/12	120-1	(1)	(4)	(6)	(8) (9) (
EF-3	COOK	GC-160	CEILING	100	0.25	1/12	120-1	(1)	(4)	(6)	(8) (9) (

(1) PROVIDE DISCONNECT (2) PROVIDE THERMOSTAT (3) BIRDSCREEN

MAIN DUCT

(4"MIN)

(1) REFRIGERANT PIPE SIZING PER MANUFACTURER'S RECOMMENDATION.

SPLIT SYSTEM ACU SCHEDULE

MANUFACTURER

CONDENSING UNIT MARK

CONDENSING UNIT MODEL

AIR HANDLER MARK

AIR HANDLER MODEL

DESIGN CONDITIONS

TOTAL AIR (CFM)

WINTER OUTDOOR-INDOOR (\*F)

SUMMER OUTDOOR DB/WB (°F)

OUTSIDE AIR (CFM) (PRECONDITIONED)

TOTAL COOLING CAPACITY (BTUH)

HEATING CAPACITY (BTUH)

AIR ENT HEATING COIL (°F)

CONDENSING SECTION

SUCTION LINE SIZE (IN.)

LIQUID LINE SIZE (IN.)

EVAPORATOR SECTION

FAN MOTOR (HP)

TYPE

LOCATION

STAGES

18.8

CAPACITY (KW)

FAN ELECTRICAL CHAR (V-Ø)

HEAT SECTION (SUPPLEMENTARY)

SENSIBLE COOLING CAPACITY (BTUH)

AIR ENT COOLING COIL DB/WB (°F)

COMPRESSOR ELEC CHAR (V-Ø)

EXTERNAL STATIC PRESSURE (IN. H20)

SUMMER INDOOR DB/WB (\*F)

AIR HANDLER UNIT TYPE

UNIT TYPE

LENNOX

HEAT PUMP

HP-2

XP14-030

AHU-2

VERTICAL

DRAW-THRU

25-70

96/80

75/63

120

28,600

22,900

27,800

75/63

70

208 - 1

3/4 (1)

3/8 (1)

0.4

208 - 1

1/2

ELECTRIC

UNIT

208 - 1

LENNOX

HEAT PUMP

HP-1

XP14-036

AHU-1

CBX27UH-036

VERTICAL

DRAW-THRU

25-70

96/80

75/63

1165

150

34,800

27,800

35,000

75/63

70

208 - 1

7/8 (1)

3/8 (1)

0.4

208 - 1

1/2

ELECTRIC

UNIT

208 - 1

LENNOX

HEAT PUMP

HP-3

XP14-030

AHU-3

VERTICAL

DRAW-THRU

25-70

96/80

240

28,600

22,900

27,800

75/63

70

208 - 1

3/4 (1)

3/8 (1)

0.4

208 - 1

1/2

ELECTRIC

UNIT

208-1

CBX27UH-030 | CBX27UH-030

LENNOX

HEAT PUMP

HP-4

XP14-036

AHU-4

**VERTICAL** 

DRAW-THRU

25-70

96/80

75/63

1240

150

34,800

27,800

35,000

75/63

70

208-1

7/8 (1)

3/8 (1)

0.4

208 - 1

1/2

**ELECTRIC** 

UNIT

208 - 1

LENNOX

HEAT PUMP

HP-5

XP14-048

AHU-5

**VERTICAL** 

DRAW-THRU

25-70

96/80

75/63

1630

410

48,500

38,800

47,000

75/63

208 - 1

7/8 (1)

3/8 (1)

0.4

208-1

**ELECTRIC** 

UNIT

208 - 1

CBX27UH-036 | CBX27UH-048 |

LENNOX

HEAT PUMP

HP-6

XP14-018

AHU-6

CBX27UH-018

**VERTICAL** 

DRAW-THRU

25-70

96/80

75/63

630

19,400

15,500

16,700

75/63

70

208 - 1

3/4 (1)

3/8 (1)

0.4

208 - 1

1/2

**ELECTRIC** 

UNIT

208 - 1

2.5

EMI

HEAT PUMP

HP-7

S1HA4

AHU-7

WLHA24

**DUCTLESS** 

SPLIT

25-70

96/80

75/63

750

23,000

16,800

20,600

75/63

70

208 - 1

5/8 (1)

3/8 (1)

208 - 1

0.7 MCA

(10) PROVIDE ROOF CAP WITH CURB

(4) PROVIDE BACKDRAFT DAMPER (5) PROVIDE ROOF CURB (6) THERMAL OVERLOAD

(7) BELT DRIVE (8) DIRECT DRIVE

(9) PROVIDE SPEED CONTROLLER

CANNOT FIT USE SMACNA 45° RECTANGULAR WITH TRANSITION TO ROUND CONICAL SPIN-IN FITTING ROUND SHEET METAL DUCT AS REQUIRED INSULATE AS MAIN DUCT ADAPTER AS REQUIRED\_ INSULATE SUPPLY DIFFUSERS BACK WITH 2" FIBERGLASS AND SEAL EDGES FINISHED CEILING

FOR SA & RA. RIGID SHEET EXHAUST, SEE SPEC FOR

IF CONICAL SPIN-IN

BRANCH DUCT TAKEOFF DETAIL

1. DETAIL IS FOR CONCEALED DUCT, WHERE EXPOSED, DUCT RUNOUTS TO CD'S SHALL BE DOUBLE WALL

2. EXHAUST SIMILAR, BUT DO NOT USE FLEX DUCT AND DO NOT INSULATE BACK OF GRILLE.

3. PROVIDE ADAPTER WITH SIDE CONNECTION WHERE OBSTRUCTIONS DO NOT ALLOW CONNECTION TO TOP

DUCT RUNOUT TO AIR OUTLETS AND INLETS

4. IF SIDE ADAPTERS ARE NEEDED AT DIFFUSER/GRILLE, NOTIFY ENGINEER.