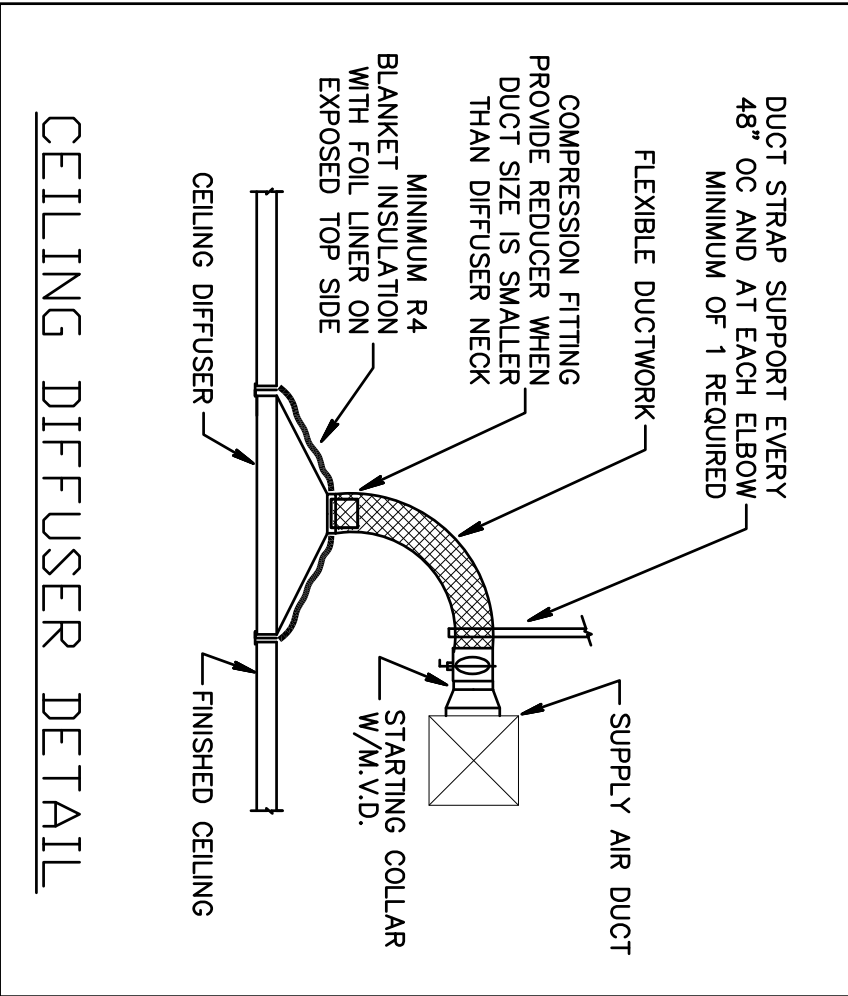
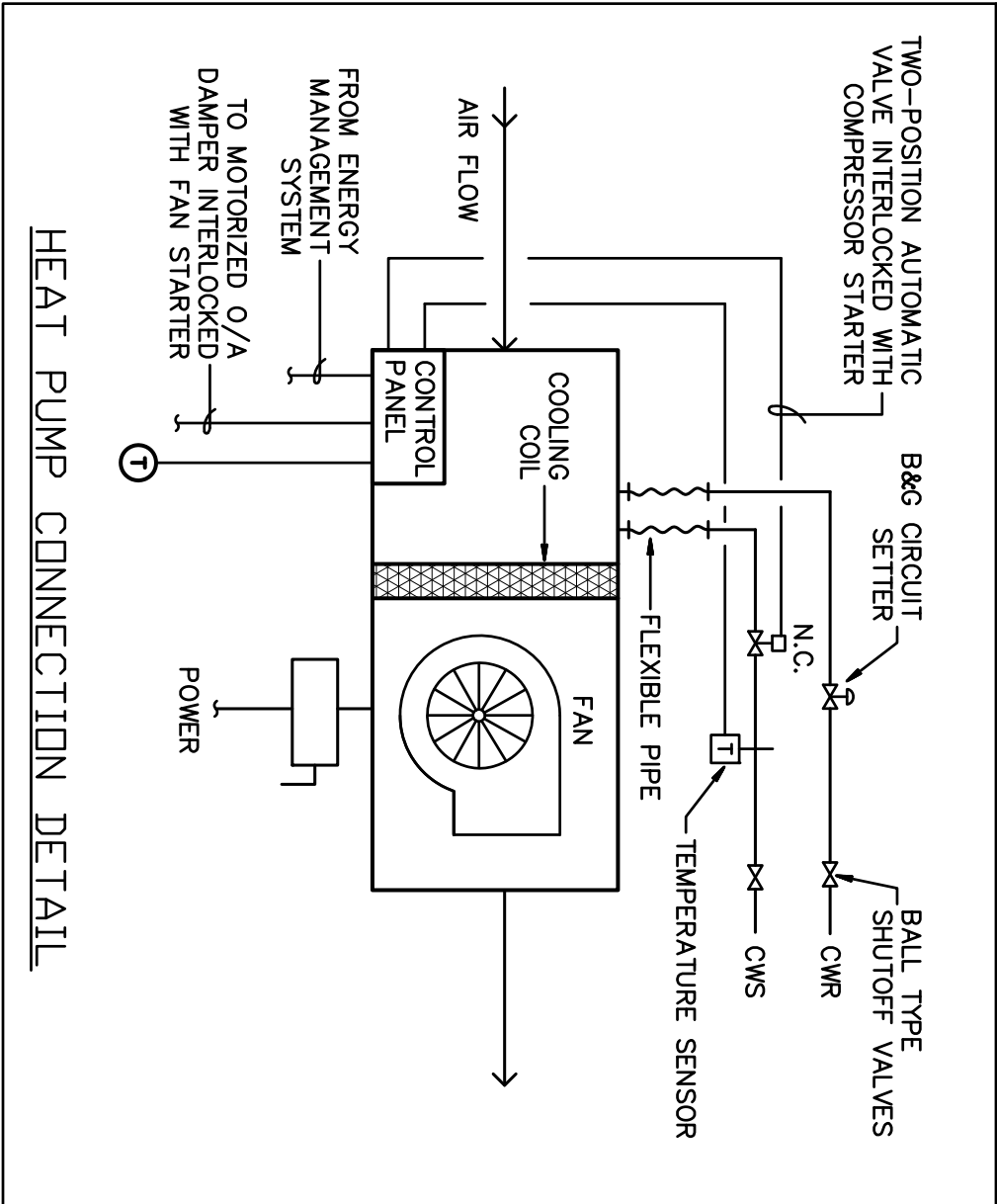


MECHANICAL GENERAL NOTES:

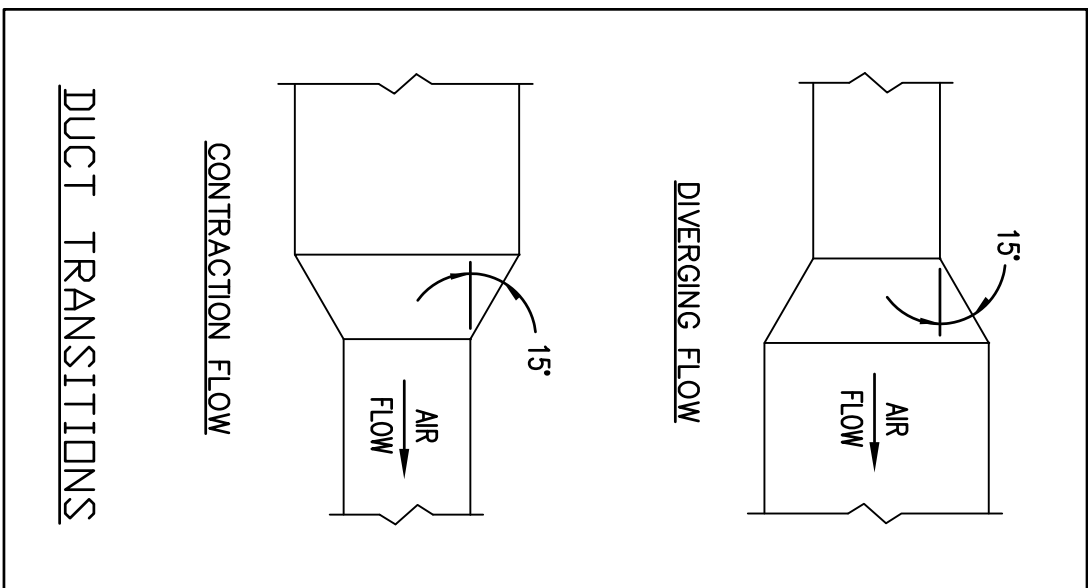
- THESE DRAWINGS ARE DIAGRAMATIC. ALL OFFSETS, FITTINGS, TRANSITIONS AND ACCESSORIES ARE NOT SHOWN. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL ITEMS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM. DO NOT SCALE DRAWINGS FOR INSTALLATION.
 - ALL WORK SHALL BE PERFORMED IN A FIRST CLASS WORKMANLIKE MANNER BY LICENSED CONTRACTORS.
 - THE CONTRACTOR SHALL OBTAIN AT HIS EXPENSE ALL NECESSARY FEES, PERMITS, AND TESTS.
 - ALL WORK SHALL CONFORM TO ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES. NO CONTRACTOR SHALL BID UNLESS FAMILIAR WITH THESE CODES. CORRECTION OF DEFECTS TO THIS WORK SHALL BE MADE PROMPTLY WITHOUT CHARGE TO THE OWNER. REPAIR AND REPLACEMENT FOR DAMAGE CAUSED BY THIS CONTRACTOR SHALL BE MADE PROMPTLY WITHOUT CHARGE TO THE OWNER.
 - ALL WORK OF THIS TRADE SHALL BE COORDINATE WITH ALL OTHER TRADES TO AVOID ANY INTERFERENCES THAT MAY DELAY PROGRESS OF CONSTRUCTION.
 - THE CONTRACTOR SHALL INCLUDE THE WORK OF ALL REQUIRED SUBCONTRACTORS IN HIS BIDDING PRICE. ALL TESTS, BALANCE, ETC., AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
 - EQUIPMENT SHALL BEAR A UL OR OTHER RECOGNIZED LABEL.
 - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND ACCESSORIES TO BE READY ACCESSIBLE FOR SERVICING, TESTING, BALANCING, AND REPLACEMENT.
 - THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE AGAINST DEFECTS IN ALL MATERIALS AND WORKMANSHIP FOR ONE YEAR FROM ACCEPTANCE, WITH FOUR ADDITIONAL YEARS ON COMPRESSORS.
 - THE CONTRACTOR SHALL PROVIDE THREE COPIES OF SUBMITTAL DATA, SHOP DRAWINGS, AND AT COMPLETION OF THE PROJECT TWO SETS OF OPERATION AND MAINTENANCE MANUALS FOR ALL PROJECT ITEMS.
 - PROVIDE ALL CONTROLS, STARTERS, CONTROL WIRING, DISCONNECTS AND OTHER ELECTRICAL EQUIPMENT AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
 - THE HVAC CONTRACTOR IS RESPONSIBLE FOR MAINTAINING, ON SITE, A RECORD OF ALL SERVICE CALLS. THE CONTRACTOR SHALL PROVIDE A NEATLY DRAWN COMPREHENSIVE AS-BUILT SET OF PLANS UPON COMPLETION, WHICH ARE SUITABLE FOR SUBMISSION TO THE BUILDING DEPARTMENT AND TO THE OWNER.
 - PRIOR TO ACCEPTANCE BY THE OWNER THE SYSTEMS SHALL BE TESTED AND BALANCED BY AN INDEPENDENT A/E/C OR NEEB CERTIFIED TEST & BALANCE FIRM, AND A TYPEWRITTEN COMPREHENSIVE REPORT SUBMITTED.
 - SUPPLY AND INSTALL DUCT MOUNTED SMOKE DETECTORS AS REQUIRED.
 - COORDINATE LOCATION OF CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH LIGHTS AND ARCHITECTURAL ELEMENTS.
 - ALL GRILLES TO BE TITUS OR METALLARE UNLESS OTHERWISE NOTED. SIZES AS SHOWN ON PLANS, ALUMINUM CONSTRUCTION.
 - ALL DUCT WORK SHALL BE BUILT AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND LOCAL BUILDING CODES.
 - ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
 - ALL OUTSIDE AIR DUCTWORK SHALL BE SHEETMETAL WITH EXTERIOR R-6 INSULATION. PROVIDE BLANKET TYPE INSULATION IN CONCEALED SPACES, AND BOARD TYPE IN EXPOSED AREAS.
 - ALL EXHAUST AIR DUCT SHALL BE GALVANIZED SHEET METAL CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
 - FLEXIBLE DUCT, WHERE SHOWN, SHALL BE ULL CLASS 1, R-6 INSULATION, DUCTBOARD, 1 IN. THICK, R-4.2 INSULATION.
 - LOW PRESSURE SUPPLY AND RETURN RECTANGULAR DUCTWORK IS RIGID ARE GREATER THAN 45 DEGREES.
 - PROVIDE BACKDRAFT DAMPERS FOR ALL EXHAUST FANS.
 - VERIFY ALL THERMOSTAT LOCATIONS WITH THE LANDLORD.
 - CONDENSATE DRAIN PIPING SHALL BE ABOVE GRADE COPPER DRAIN WASTE VENT PIPING. INSULATE ALL CONDENSATE PIPING W/3/4" MCQA MOLCOLON PIPE INSULATION.
 - CONDENSER WATER SUPPLY AND RETURN PIPING SHALL BE TYPE "1" COPPER. PROVIDE DIELECTRIC COUPLINGS FOR ALL CONNECTIONS BETWEEN DISSIMILAR MATERIALS. PROVIDE ISOLATOR PADS AT ALL HANGERS AND SUPPORTS.
- GENERAL DEMOLITION NOTES
- UNLESS OTHERWISE NOTED, ALL EQUIPMENT AND DUCTWORK IN THE PROJECT AREA, WHICH IS NOT INDICATED TO REMAIN, IS TO BE REMOVED. THE CONTRACTOR SHALL INVESTIGATE THE PROJECT AREA PRIOR TO BID TO DETERMINE ALL REQUIRED DEMOLITION.
 - EXISTING CONDITIONS SHOWN ON THIS DRAWING ARE TAKEN FROM ORIGINAL DRAWINGS AND FIELD INVESTIGATION. ALL EXISTING CONDITIONS MUST BE VERIFIED PRIOR TO BID. FIELD CONDITIONS SHALL GOVERN.
 - DEMOLITION WORK IS NOT SPECIFICALLY IDENTIFIED ON THESE PLANS, AND MAY BE DESCRIBED ON THE ARCHITECT'S PLANS. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED DEMOLITION WHETHER SHOWN ON THE PLANS OR NOT.
 - ALL MECHANICAL SYSTEMS SERVING OTHER SPACES OR FLOORS THAT RUN THROUGH THE PROJECT AREA SHALL REMAIN ACTIVE DURING CONSTRUCTION, SO AS NOT TO CAUSE ANY DISRUPTION TO THESE OTHER SPACES.
 - ALL ITEMS REMOVED UNDER THIS PROJECT SHALL BE DISPOSED OF OR TURNED OVER TO THE OWNER AT THE OWNER'S DISCRETION.
 - PROPERLY REMOVE AND DISPOSE OF ALL HVAC DUCTWORK AND AIR DISTRIBUTION DEVICES WHICH ARE TO BE REMOVED. CONSULT WITH OWNER AND OBTAIN THE OWNER'S APPROVAL PRIOR TO DISPOSAL OF REMOVED MATERIAL.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL PIPING AND DUCTS, NEW OR EXISTING, WITHIN THE PROJECT AREA, ARE PROPERLY SUPPORTED.
 - ALL OCCUPIED SPACES ARE TO REMAIN OPERATIONAL DURING BUSINESS HOURS THROUGHOUT THE DEMOLITION AND CONSTRUCTION PERIOD. COORDINATE ALL WORK AS DESCRIBED IN THE ARCHITECT'S DOCUMENTS.



CEILING DIFFUSER DETAIL



HEAT PUMP CONNECTION DETAIL



DUCT TRANSITIONS

HORIZONTAL HEAT PUMP A/C UNIT SCHEDULE ①

A/C UNIT TAG NO.	HP-1	HP-2	HP-1
MANUFACTURER	FHP	FHP	COLDFLOW
MODEL NO.	EC018	EC024	CP041H
TOTAL SENSIBLE M.B.H.	14.4	19.6	-
TOTAL COOLING M.B.H.	18.7	25.5	-
HEATING CAPACITY M.B.H.	24.0	30.0	-
SUPPLY AIR CFM/EXT. S.P.	600/0.5	800/0.3	1250/0.5
OUTSIDE AIR CFM	SEE CALCULATIONS	SEE CALCULATIONS	SEE CALCULATIONS
EER	13.0	13.8	-
COP	4.4	4.5	-
GPM	4.5	6.0	9.0
PIPE SIZE	3/4 FPT	3/4 FPT	-
UNIT SIZE (WxLxH)	22x43x17	22x43x19	-
OPERATING WEIGHT LBS.	180	205	-
MCA	8.9	10.0	-
MAX. FUSE SIZE	15	15	-
POWER VOLT-PH-HZ	277-1-60	277-1-60	480-3-60
COMPRESSORS	1	1	1
NO. OF COMPRESSORS	1	1	1
NO. OF STEPS	1.5	2.0	3.5
NOMINAL TONS	5.8	6.7	6.5
R.L.A. EACH	5.8	6.7	6.5
INDOOR FANS	1	1	1
NO. OF FAN(S)/MOTORS	1/4	1/4	-
FAN MOTOR H.P. EACH	1/4	1/4	2.4
FAN MOTOR F.L.A. EACH	1.6	1.6	2.4

ACCESSORIES AND NOTES:

PROVIDE HIGH TEMPERATURE & PRESSURE ANYON HOSE KIT WITH BALL VALVES, STAINLESS STEEL CLAMPS AND BRASS FITTINGS FOR ALL UNITS.

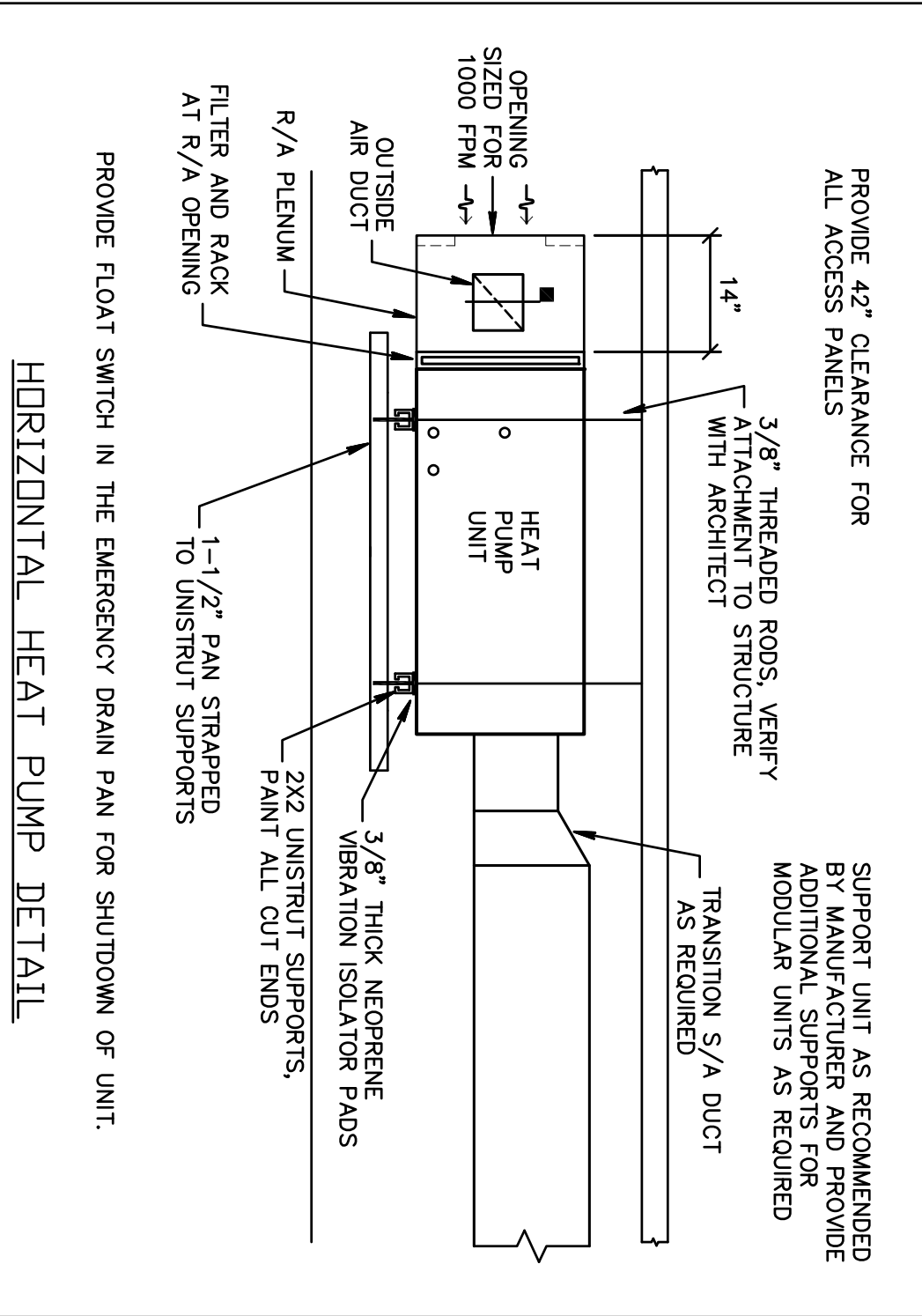
RATINGS SHOWN ARE AT 80DB, 67MB EAT AND 85° EXT

- EXISTING A/C UNIT TO REMAIN. PROVIDE ANY REQUIRED MAINTENANCE, THOROUGHLY CLEAN THE UNIT INSIDE AND OUT, INCLUDING ALL SURFACES, THE COILS AND ALL OTHER COMPONENTS. STRAIGHTEN ANY BENT COIL FINS AND REPLACE ANY MISSING HARDWARE. RE-INSTALL PER THESE PLANS AND DETAILS. PROVIDE NEW FILTERS AND R/A PLENUM, BALANCE AIR AND WATER FLOWS AND VERIFY PROPER OPERATION.

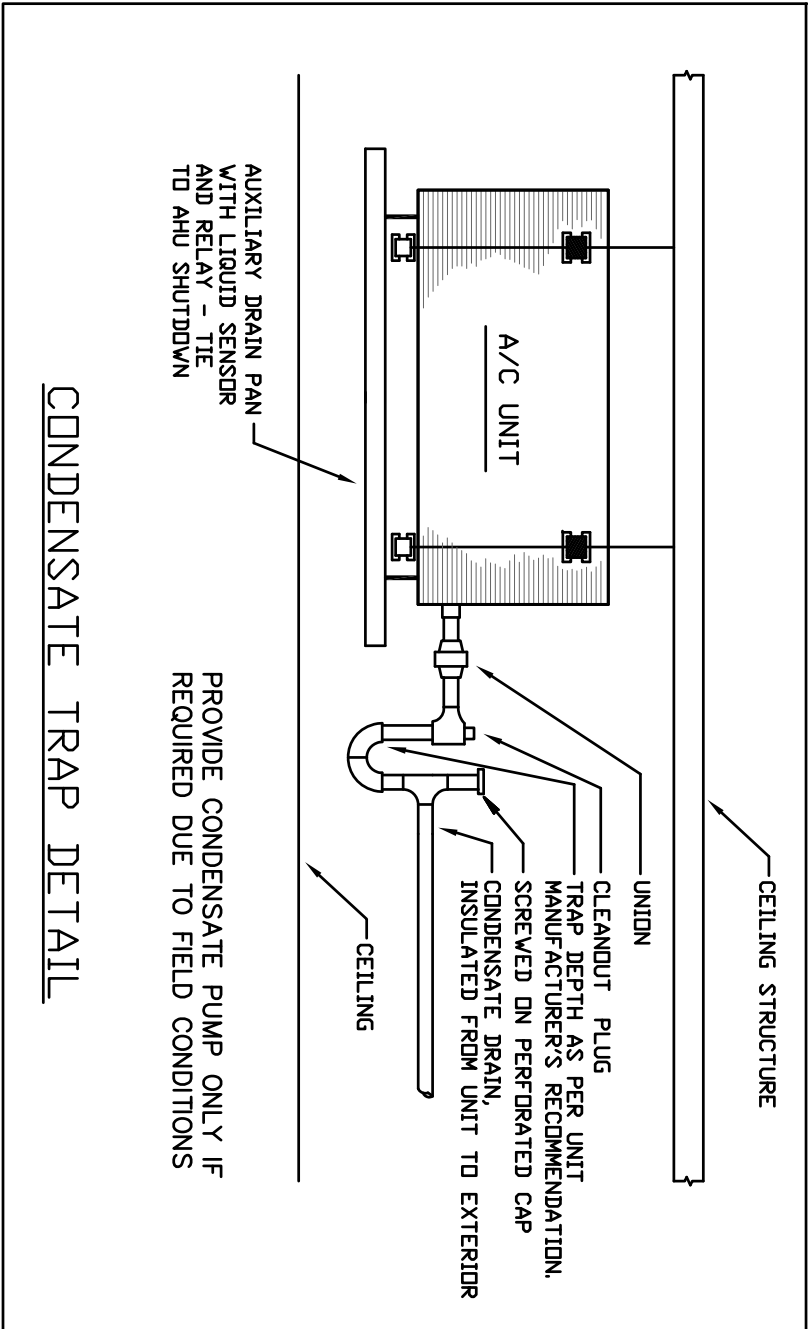
OUTSIDE AIR CALCULATIONS

ZONE TYPE	OFFICE	CONFERENCE	RECEPTION	CORRIDOR	CONFERENCE	CONFERENCE	OFFICE
SQUARE FEET OF AREA	110	300	180	60	232	296	94
CFM/SQ.FT. REQUIRED	0.06	0.06	0.06	0.06	0.06	0.06	0.06
TOTAL OCCUPANTS	1	15	5	0	12	15	1
CFM/PERSON REQUIRED	5	5	5	0	5	5	5
ZONE CFM	12	93	36	4	93	93	11
SYSTEM CFM				145	93		104

ABOVE PER ASHRAE 62.1, 2007



HORIZONTAL HEAT PUMP DETAIL



AIR DISTRIBUTION SCHEDULE

MARK	MAKE	MODEL	SIZE	NECK	MATERIAL	BORDER TYPE	MOUNTING TYPE	DAMPER	THROW	FINISH	REMARKS
A	TITUS	PA5-AA	24X24	6"ø	ALUMINUM	3	LAY-IN	AG-100	4 WAY	WHITE	SEE NOTES
B	TITUS	PA5-AA	24X24	8"ø	ALUMINUM	3	LAY-IN	AG-100	4 WAY	WHITE	SEE NOTES
C	TITUS	PA5-AA	24X24	10"ø	ALUMINUM	3	LAY-IN	AG-100	4 WAY	WHITE	SEE NOTES
RA	TITUS	PAR-AA	24X24	22X22	ALUMINUM	3	LAY-IN	-	-	WHITE	SEE NOTES
RB	TITUS	PAR-AA	24X12	22X10	ALUMINUM	3	LAY-IN	-	-	WHITE	SEE NOTES

PROVIDE SAME WITH OFF-WHITE FINISH TO ARCHITECT FOR APPROVAL.

PROVIDE ROUND FLEXIBLE DUCT RUN-OUT SIZED TO MATCH S/A DIFFUSER NECK UNLESS NOTED OTHERWISE.

PROVIDE PLENUM BOX ABOVE SUPPLY AND RETURN AIR GRILLES AS REQUIRED FOR DUCT CONNECTIONS. MINIMUM BOX HEIGHT IS 1/2 OF NECK WIDTH.

PROVIDE DAMPERS ONLY WHERE DUCT TAKE-OFF DAMPER IS NOT ACCESSIBLE.

Gilman & Associates, Inc.
MECHANICAL & ELECTRICAL ENGINEERS
807 NORTH LAKESIDE DRIVE
Lake Worth, FL 33460 CA.*090978
(561) 582-0210 Fax (561) 582-8212
RONALD D. GILMAN P.E. *379333

PROJ # 12-007

birse design inc.

5300 woodland lakes drive
palm beach gardens, FL 33418
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fax 772-409-8684
AA26001615

WASHTON LUKENS

FAIRWAY OFFICE CENTER
7108 FAIRWAY DR #170
PALM BEACH GARDENS, FL

PROJECT NUMBER 710830

REVISIONS

- 1
- 2
- 3
- 4
- 5

THE DESIGN AND CONSTRUCTION OF THIS PROJECT IS THE RESPONSIBILITY OF THE DESIGNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONSTRUCTION OF THE PROJECT IN ACCORDANCE WITH THE DESIGN.

DRAWN BY GD

CD

3/29/12

M-2