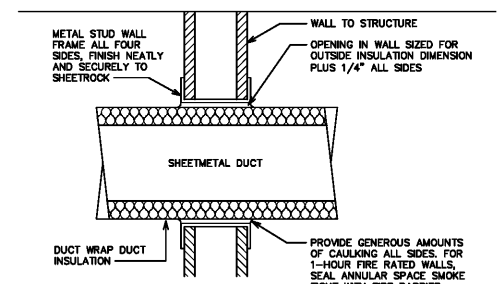
GENERAL NOTES:

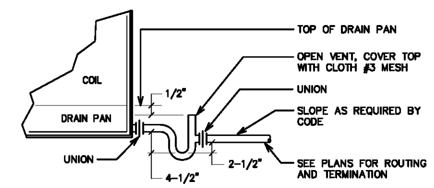
GENERAL NOTES APPLY TO THIS ENTIRE SET

1. DUCTWORK SHOWN ON DRAWINGS IS DIAGRAMMATIC. FIELD COORDINATE ACTUAL ROUTING AND SIZING. INFORM THE ARCHITECT IMMEDIATELY WITH CONFLICTS WITH EXISTING LIGHTING, STRUCTURAL COMPONENTS, PIPING, CONDUIT, THE. SOME TRADES MAY HAVE TO BE RELOCATED, AND THE CONTRACTOR SHALL HAVE THESE COSTS INCLUDED IN THE BID PRICE.
2. PATCH HOLES LEFT IN WALLS AND ROOF DUE TO MECHANICAL ITEMS REMOVED AND/OR ADDED. WALL AND ROOF SHALL MATCH EXISTING IN CONSTRUCTION, MATERIALS AND APPEARANCE.
3. FIELD COORDINATE THE LOCATIONS FOR NEW CEILING MOUNTED DIFFUSERS WITH NEW OR EXISTING CEILING GRID, LIGHT FIXTURES, SPRINKLER HEADS, ETC.
4. SEE SPECIFICATIONS FOR MECHANICAL EQUIPMENT REQUIREMENTS, ACCESSORIES AND CONTROLS.
5. COORDINATE ALL THERMOSTAT LOCATIONS WITH THE ARCHITECT PRIOR TO INSTALLATION.
6. ALL EXPOSED EDGES OF DUCT LINER ARE TO BE COATED WITH MULTIPLE LAYERS OF ADHESIVE TO PREVENT FIBER SEPARATION. PROVIDE METAL NOSING CONFORMING TO SMACNA OVER ANY TRANSVERSE LINER EDGES FACING AND EXPOSED TO AIRSTREAM, ESPECIALLY ADJACENT TO ANY FAN DISCHARGE.
7. MAINTAIN MANUFACTURER'S PUBLISHED SERVICE/OPERATING CLEARANCES AROUND ALL MECHANICAL EQUIPMENT.
8. REFRIGERANT LINES SHALL BE ROUTED CONCEALED WITHIN BUILDING STRUCTURE TO RESPECTIVE DX COIL. MINIMIZE BENDS, USE ONLY LONG RADIUS ELS. PIPING SHALL BE SIZED BY THE EQUIPMENT MANUFACTURER AND A COPY OF THEIR CALCULATIONS AND SIZES SHALL BE SUBMITTED WITH THE EQUIPMENT.
9. ROUND DUCTWORK RUNOUT SIZES EQUAL SCHEDULED DIFFUSER NECK SIZES, TYPICAL U.N.O.



DUCT PENETRATION at WALLS TO STRUCTURE

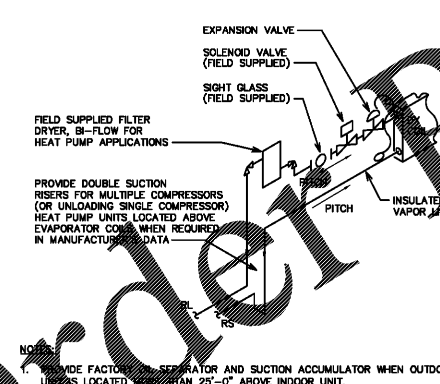
NO SCALE



NOTE: APPLIES TO ALL COOLING COILS

CONDENSATE DRAIN TRAP DETAIL

NO SCALE



NOTES:

1. PROVIDE FACTORY OIL SEPARATOR AND SUCTION ACCUMULATOR WHEN OUTDOOR UNIT IS LOCATED MORE THAN 25'-0" ABOVE INDOOR UNIT.
2. SIZE AND INSTALL REFRIGERANT LINES AND PIPING COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

DX COIL CONNECTION DETAIL

NO SCALE

DIFFUSERS, REGISTERS AND GRILLES

MARK	NECK SIZE	
S-1A	6"ø	SQUARE STEEL 3-CONE CEILING SUPPLY DIFFUSER
S-1B	8"ø	• 24x24 UNIFORM MODULE/FACE SIZE – UNLESS NOTED • INTEGRAL ROUND NECK, PROVIDE OPTIONAL EXTENDED DEPTH. • FULLY ADJUSTABLE 4-WAY DISCHARGE AIR PATTERN.
S-1C	10"ø	• COORDINATE BORDER AND FRAME WITH CEILING TYPE : LAY-IN TYPE 3 FULL FACE OR GYPBOARD TYPE 1 FULL FACE.
S-1D	12"ø	• TITUS TMS OR EQUAL.

MARK	NECK SIZE	
S-2A	8"ø	ROUND STEEL CONE SUPPLY DIFFUSER • 4-CONE FULLY ADJUSTABLE DIFFUSER. • NECK SIZE AS SCHEDULED. • FACTORY PAINTED FLAT BLACK, INSIDE AND OUT. • PRICE SERIES RCDA OR EQUAL.

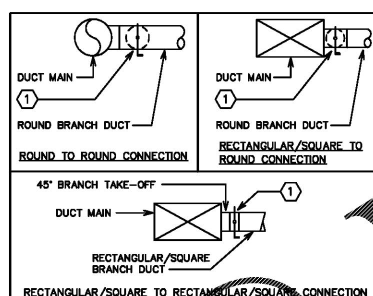
MARK	FACE SIZE (IN)	NECK SIZE (IN)	DUCT CONN. (IN)
R/E-1A	24x24	22x22	8"ø
R/E-1B	24x24	22x22	10"ø
R/E-1C	24x24	22x22	12"ø
R/E-1D	24x24	22x22	14"ø
R/E-1E	24x24	22x22	16"ø
R/E-1F	24x12	22x10	8"ø

ALUMINUM EGGCRATE FLUSH FACE GRILLE
- 1/2"x1/2"x1/2" INTEGRAL ALUMINUM EGGCRATE CORE.
- TYPE TB BORDER AND FRAME WITH EXPOSED PERIMETER FRAME FOR LAY-IN INSTALLATIONS (L); TYPE F, 1-1/4" STANDARD FLAT BORDER AND FRAME WITH TYPE "C" CONCEALED FASTENING FOR SURFACE MOUNT INSTALLATIONS (S).
- PROVIDE ADAPTER RIGIDLY CONNECTED TO GRILLE NECK (SIZE AS SCHEDULED), WITH INTEGRAL DUCT CONNECTION (SIZE AS SCHEDULED) IN TOP OF ADAPTER. ADAPTER SHALL BE JER-AIR MODEL SRT-B: 6" HIGH, 26 GA SHEETMETAL, FLAT BLACK INTERIOR.
- PRICE SERIES 80 OR EQUAL.

MARK	NECK SIZE WIDTH x HEIGHT
R-2A	30x30
R-2B	18x12

HEAVY DUTY STEEL GYM GRILLE
- 14 GA HEAVY DUTY STEEL ALL WELDED CONSTRUCTION.
- 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, 0° DEFLECTION.
- SURFACE MOUNT BORDER AND FRAME (TYPE F, 1-1/4" STANDARD FLAT), WITH TYPE "C" CONCEALED FASTENING.
- PRICE MODEL 97 OR EQUAL.

NOTES:
1. PROVIDE ONLY ALUMINUM DEVICES (INCLUDING DAMPERS) FOR TOILET ROOMS AND WET AREAS.
2. ALL DEVICES SHALL BE PROVIDED WITH CONCEALED FASTENING. VISIBLE SCREWS ARE NOT ACCEPTABLE.
3. PROVIDE FULL-FACE DEVICES ONLY; PANEL-MOUNTED WILL NOT BE ACCEPTED FOR ANY DEVICES.
4. ALL DEVICES SHALL BE FACTORY PAINTED POWDER COAT B12 WHITE, U.N.O.
5. ALL CEILING-MOUNTED SUPPLY DIFFUSERS SHALL BE 4-WAY (FIELD ADJUSTABLE) DISCHARGE, U.N.O.
6. ALL DEVICES SPECIFIED AS ADJUSTABLE, SHALL BE ADJUSTABLE WITHOUT USING SPECIAL TOOLS.
7. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. E=EXHAUST AIR; R=RETURN AIR; L = LAY-IN FRAME; S = SURFACE MOUNT FRAME. ST = STEEL, AL = ALUMN, SS = STAINLESS STEEL



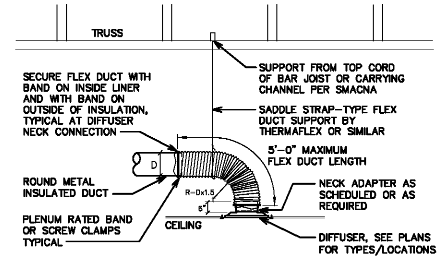
(1) FOR ACCESSIBLE CEILINGS (LAY-IN OR ACCESS DOOR PROVIDED): PROVIDE MANUAL DAMPER WITH LOCKING QUADRANT WITH 2" STAND-OFF BRACKET. PROVIDE NO AIR SCOOPS, AND MIN. 26 GAUGE CONSTRUCTION.

FOR INACCESSIBLE CEILINGS (GYPBOARD): PROVIDE FOR EACH TAKE-OFF: GREENHECK MODEL RBDR-50 REMOTE POWERED BALANCING DAMPER WITH OPTIONAL WALL PLATE, PLENUM RATED CONTROL CABLE (LENGTH AS REQUIRED, FIELD COORDINATE) AND HAND-HELD BATTERY POWERED PLUG-IN BALANCING REMOTE. INSTALL WALL PLATES ONLY WHERE INDICATED ON THE DRAWINGS, OR AS SPECIFICALLY DIRECTED BY THE ARCHITECT.

DETAIL APPLIES TO SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR SYSTEMS, AS APPLICABLE.

BRANCH DUCT CONNECTION DETAIL

NO SCALE



NOTES:
1. DETAIL APPLIES TO DUCT MAINS ROUTED BELOW THE TRUSSES.
2. D = DIFFUSER NECK SIZE (IN INCHES) AS SCHEDULED.
3. INSTALLATION FOR RETURN DEVICES SIMILAR, LESS FLEX DUCT.

TYPICAL DIFFUSER CONNECTION DETAIL

NO SCALE

PACKAGED GAS/ELECTRIC PAD MOUNTED UNIT SCHEDULE

MARK	NOM. TONS	TYPE	COOLING MBH TOT	COOLING MBH SEN	COOLING E.A.T. DB°F	COOLING E.A.T. WB°F	COOLING MIN SEER	GAS HEATING INPUT MBH	GAS HEATING OUTPUT MBH	SUPPLY FAN CFM	SUPPLY FAN E.S.P. IN.WC.	SUPPLY FAN HP	OCCUPIED MODE OA CFM	OPERATING WEIGHT LBS.	BASIS OF DESIGN
PMU-1	5	HD	56	42	78	65	15.2	72	59	1800	0.7	1.5	255	700	CARRIER 48HCDB006
PMU-2	4	HD	44	31	79	66	15.6	72	59	1300	0.7	1	255	690	CARRIER 48HCDB005
PMU-3	5	HD	53	40	78	65	15.2	72	59	1650	0.7	1.5	255	700	CARRIER 48HCDB006
PMU-4	4	HD	46	33	79	66	15.6	72	59	1330	0.7	1	255	690	CARRIER 48HCDB005
PMU-5	5	HD	55	40	78	65	15.2	72	59	1800	0.7	1.5	255	700	CARRIER 48HCDB006
PMU-6	7.5	HD	80	67	77	65	15.0	150	120	3000	0.7	1.5	255	1900	CARRIER 48HCDB008

TYPE
VD = VERTICAL DISCHARGE & RETURN   HD = HORIZONTAL DISCHARGE & RETURN

NOTES (APPLIES TO ALL UNITS)
1. REQUIRED COOLING UNIT CAPACITIES ARE AT 95°F DB AMBIENT OAT.
2. SEE SPECIFICATIONS FOR REQUIRED ADDITIONAL ACCESSORIES.
3. PROVIDE AND INSTALL IN EACH UNIT, ONE BI-POLAR IONIZATION UNIT FOR EACH 2,400 CFM OF SUPPLY AIR. UNIT SHALL BE MOUNTED DOWNSTREAM OF THE FILTER, UPSTREAM OF THE COOLING COIL, AND POWERED FROM THE UNIT'S 24VAC CONTROL TRANSFORMER. SEE SPECIFICATIONS.

SPLIT SYSTEM HEAT PUMP SCHEDULE

MARK	COOLING MBH TOTAL	COOLING MBH SEN	COOLING E.A.T. DB°F	COOLING E.A.T. WB°F	COOLING MIN. SEER/EER	HEATING ELECT HEAT KW	HEATING REV. CYCLE MBH	HEATING COP	HEATING HSPF	INDOOR UNIT SA CFM	INDOOR UNIT OA CFM	INDOOR UNIT HP	BASIS OF DESIGN – CARRIER HORIZONTAL AIR HANDLER	BASIS OF DESIGN – CARRIER HEAT PUMP
AH-1/HP-1	52	42	77	64	14.0/11.5	10	45	2.5	8.2	1900	140	3/4	CBX27UH-048	TPA048S4-230

NOTES (APPLIES TO ALL UNITS)
1. FAN SIZE BASED ON 0.7" E.S.P.
2. PROVIDE AND INSTALL IN EACH UNIT: BI-POLAR IONIZATION DEVICE, MOUNTED DOWNSTREAM OF THE FILTER, UPSTREAM OF THE COOLING COIL, AND POWERED FROM THE UNIT'S 24VAC CONTROL TRANSFORMER. SEE SPECIFICATIONS.
3. REQUIRED UNIT COOLING CAPACITIES ARE AT 95°F DB AMBIENT OAT. REVERSE CYCLE HEATING IS AT ARI LOW TEMPERATURE.
4. SEE SPECIFICATIONS FOR REQUIRED ACCESSORIES AND CONTROLS.
5. UNITS SHALL BE INSTALLED ON 14" HIGH ROOF CURB PROVIDED BY THE EQUIPMENT MANUFACTURER.

DUCTLESS SPLIT SYSTEM SCHEDULE

MARK	TYPE	TOTAL COOLING CAPACITY BTUH	TOTAL HEATING CAPACITY BTUH	CFM	SEER	DEHUMIDIFYING PTS/HR	BASIS OF DESIGN – MITSUBISHI INDOOR UNIT MODEL NUMBER	INDOOR UNIT TYPE	OUTDOOR UNIT MODEL NUMBER
FCU-1/CU-1	COOLING ONLY	12,000	N/A	425	15.2	2.0	PKA-A12HA6	HIGH WALL	PUY-A12NHA6
FCU-2/CU-2	COOLING ONLY	12,000	N/A	425	15.2	2.0	PKA-A12HA6	HIGH WALL	PUY-A12NHA6

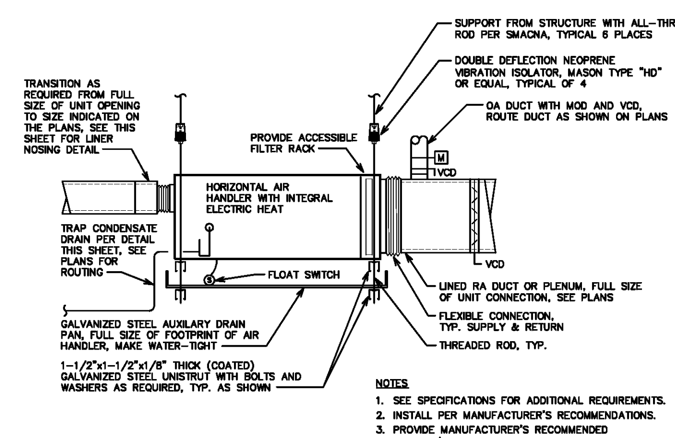
NOTES (APPLIES TO ALL UNITS)
1. REQUIRED UNIT COOLING CAPACITIES ARE AT 95°F DB AMBIENT OAT. REVERSE CYCLE HEATING IS AT ARI LOW TEMPERATURE.
2. SEE SPECIFICATIONS FOR REQUIRED ACCESSORIES, UNIT OPTIONS AND CONTROLS.
3. IF THE STANDARD CONDENSATE LIFT MECHANISM PROVIDED WITH THE UNIT IS NOT CAPABLE OF DISCHARGING THE CONDENSATE ONTO THE ROOF AS DETAILED, THE CONTRACTOR SHALL PROVIDE AN AUTOMATIC CONDENSATE REMOVAL PUMP – UL LISTED, 1/2 GALLON HIGH IMPACT ABS TANK, 3 INLET DRAIN HOLES, REMOVABLE 3/8" BARBED CHECK VALVE, REVERSIBLE TANK COVER, THERMAL OVERLOAD PROTECTION, HIGH PERFORMANCE MOTOR, SAFETY SWITCH, STAINLESS STEEL SHAFT, 6 FT. POWER CORD WITH 3-PRONG PLUG, 20 FT. OF 3/8" ID TUBING, 10 FT. MIN. LIFT. "LITTLE GIANT" VCMA SERIES OR EQUAL.

FAN SCHEDULE

MARK	FAN DATA CFM	E.S.P. IN.WC.	MAX SONES	HP	RPM	DRIVE	SERVES	FAN TYPE	CONTROL	BASIS OF DESIGN GREENHECK
F-TE-1	850	0.5"	7.5	1/4VG	1399	DIRECT	BOYS TOILET/LOCKERS	INLINE EXHAUST FAN	LIGHT SWITCH	SQ-100-VG

ELECTRIC HEATER SCHEDULE

MARK	TYPE	KW	CFM	NOTES	MOUNTING HEIGHT	BASIS OF DESIGN
EUH-A	ELECTRIC UNIT HEATER	10	700	WALL MOUNT BRACKET	8'-0" AFF	Q-MARK MUH SERIES



NOTES
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE MANUFACTURER'S RECOMMENDED SERVICE/OPERATING CLEARANCES.

TYPICAL HORIZONTAL AIR HANDLER INSTALLATION DETAIL

NO SCALE

HVAC LEGEND

HVAC DUCT SYMBOLS

SYMBOL	DESCRIPTION
12x6	DUCT (WIDTH x DEPTH)
(12x6)	INDICATES DUCT ROUTED IN TRUSS SPACE
	DUCT TURNED UP (SUPPLY OR DISCHARGE)
	DUCT TURNED DOWN (SUPPLY OR DISCHARGE)
	DUCT TURNED UP (RETURN OR EXHAUST)
	DUCT TURNED DOWN (RETURN OR EXHAUST)
	DUCT SIZE TRANSITION
	END OF DUCT RUN
	DUCT TURN WITH RADIUS ELBOW
	SQUARE TURN WITH VANE ELBOW
	LINED DUCTWORK
FD	FIRE DAMPER IN HORIZONTAL DUCT
FD	FIRE DAMPER IN VERTICAL DUCT
M	MOTOR OPERATED DAMPER
	FLEXIBLE AIR DUCT
VCD	VOLUME CONTROL DAMPER
	SPIN-IN FITTING WITH MANUAL VOLUME CONTROL DAMPER
SD	SMOKE DETECTOR IN HORIZONTAL DUCT
T	THERMOSTAT
H	HUMIDISTAT
S-1A 100	SCHEDULED DEVICE / AIR DISTRIBUTION DEVICE / CFM (AIR FLOW)

ABBREV	DESCRIPTION
IN.WC.	INCHES OF WATER COLUMN
CFM	CUBIC FEET PER MINUTE
OA	OUTSIDE AIR
SA	SUPPLY AIR
RA	RETURN AIR
TA	TRANSFER AIR
A/C	ABOVE CEILING
CTE	CONNECT TO EXISTING
MOD	MOTOR OPERATED DAMPER
TYP	TYPICAL
CLG	CEILING
DWG	DRAWING
OED	OPEN ENDED DUCT
UNO	UNLESS NOTED OTHERWISE
CD	CONDENSATE DRAIN
ESP	EXT STATIC PRESSURE
MBH	BTU per HOUR x 1000
DB	DRY BULB
WB	WET BULB
HP	HORSEPOWER
KW	KILOWATT
VCD	VOLUME CONTROL DAMPER

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BRR MECHANICAL ENGINEERS INC

NO	DESCRIPTION	DATE

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4555 DALLAS ACWORTH HWY DALLAS, GA 30132
(FACILITY CODE: 710-3052)

PAULDING COUNTY SCHOOLS

HVAC LEGEND, SCHEDULES AND DETAILS

DATE 08/08/2018
PROJECT NO. 17129

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