



**MECHANICAL GENERAL NOTES:**

- A ALL RECTANGULAR RETURN AIR AND SUPPLY AIR DUCTWORK SHALL BE LINED WITH ACOUSTICAL LINER THE FIRST 15 FEET. IF CONCEALED, THE REMAINDER SHALL BE WRAPPED. IF EXPOSED, INTERNALLY LINE AS INDICATED ON PLANS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN GENERAL, MOUNT DUCTWORK AT 15'-0" AFF TO CLEAR ALL LIGHTS UNLESS OTHERWISE NOTED OR REQUIRED BY FIELD CONDITIONS.
- B CONICAL BELLMOUTH FITTINGS WITH MANUAL BALANCING DAMPER TO BE USED FOR ALL ROUND BRANCH TAPS ABOVE ACCESSIBLE LAY-IN CEILINGS. CONICAL BELLMOUTH FITTINGS WITHOUT MANUAL BALANCING DAMPERS TO BE USED FOR ALL ROUND BRANCH TAPS ABOVE INACCESSIBLE DRYWALL CEILINGS WITH BALANCING REQUIRED WITHIN 2 FT. OF DIFFUSER WITH PLASTER FRAME.
- C FLEX DUCT SHALL BE LIMITED TO 5'-0" IN LENGTH, NO DUCT BOARD ALLOWED, WIDTH OF DUCT SUPPORTS SHALL BE 2" WIDER THAN THE DUCT.
- D THE HVAC CONTRACTOR IS RESPONSIBLE FOR COORDINATING BOX-OUT LOCATIONS FOR ALL DRYWALL MOUNTED AIR DEVICES WITH GENERAL CONTRACTOR AND CEILING FRAMING.
- E MECHANICAL CONTRACTOR TO PROVIDE TENANT WITH AS-BUILT DRAWINGS AND EQUIPMENT SHOP DRAWINGS, INFORMATION ON THERMOSTATS, CONTROL WIRING DIAGRAMS AND OTHER PERTINENT INFORMATION AT COMPLETION OF PROJECT.
- F MECHANICAL CONTRACTOR IS TO PROVIDE AND INSTALL FIRE-RATED PIPE SLEEVES AND SEALS ON ALL EXISTING OR NEW PIPING THAT PENETRATES A FIRE-RATED PARTITION, WHERE REQUIRED BY CODE.
- G MECHANICAL CONTRACTOR IS TO PROVIDE AND INSTALL FIRE DAMPERS ON ALL EXISTING OR NEW DUCTWORK THAT PENETRATES A FIRE RATED PARTITION, WHERE REQUIRED BY CODE.
- H SEE ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS.
- I CONTRACTOR SHALL VERIFY SUFFICIENT SPACE TO RUN DUCTWORK, AND SHALL IDENTIFY ANY OBSTRUCTIONS THAT COULD HINDER THE ROUTING OF THE DUCTWORK.
- J THE CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT, PIPING AND DUCTWORK, NOT SHOWN TO REMAIN IS FULLY REMOVED AND NOT ABANDONED.
- K IT IS REQUIRED THAT THE MECHANICAL CONTRACTOR MUST VISIT THE JOB SITE TO BECOME FAMILIAR WITH MAJOR ITEMS SUCH AS STRUCTURAL ELEMENTS, PLUMBING LOCATIONS AND ELECTRICAL RUNS. ADDITIONALLY MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND DIMENSIONS OF SUCH ITEMS AS HVAC UNITS, DUCTWORK, ETC. PRIOR TO BID, AND CONTACT THE OWNERS CONSTRUCTION REP./ ARCHITECT/ ENGINEER AND REPORT ANY DIFFERENCES/ DISCREPANCIES IN THE DRAWINGS FOR A DECISION.
- L ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
- M UPON COMPLETION OF THE INSTALLATION OF THE AIR SYSTEM COMPONENTS, THE SUPPLY, RETURN, EXHAUST AND OUTSIDE AIR VOLUME FOR EACH AIR HANDLING UNIT, SUPPLY FAN AND EXHAUST FAN, AND THE SUPPLY, EXHAUST OR RETURN AIR VOLUME FOR EACH AIR DISTRIBUTION DEVICE SHALL BE ADJUSTED TO WITHIN 5% OF DESIGN AIR FLOW.
- N ALL AIR HANDLING UNITS SHALL BE EQUIPPED WITH DUCT SMOKE DETECTORS IN SUPPLY AND RETURN.
- O ALL NEW DUCTWORK SHALL BE INSULATED SHEETMETAL, EXTERNALLY WRAPPED INSULATION TO MEET OR EXCEED IECC REQUIREMENTS.

**2 MECHANICAL GENERAL NOTES**  
NOT TO SCALE

**MECHANICAL KEYED NOTES:**

- 1 PROVIDE NEW ROOFTOP UNIT IN LOCATION SHOWN. BALANCE TO THE SCHEDULED CFM, STENCIL PAINT TENANT NAME AND UNIT NUMBER ON UNIT. LANDLORD APPROVED ROOFING CONTRACTOR TO PERFORM ALL ROOF WORK AT THE GENERAL CONTRACTOR'S EXPENSE.
- 2 ELECTRICAL CONTRACTOR TO FURNISH NEW DUCT MOUNTED SMOKE DETECTOR. MECHANICAL CONTRACTOR TO INSTALL SMOKE DETECTORS IN RETURN AND/OR SUPPLY AIR DUCTWORK AND PROVIDE WIRING TO FAN INTERLOCK.
- 3 WHERE WINTER DESIGN TEMPERATURE IS BELOW 32F, PROVIDE NEW CEILING UNIT HEATER AND THERMOSTAT AS SCHEDULED. THERMOSTAT TO BE IN A CLEAR PLASTIC LOCK BOX.
- 4 MOUNT SUPPLY AIR SENSOR IN SUPPLY AIR DROP.
- 5 PROVIDE NEW ROOF MOUNTED EXHAUST FAN. INTERLOCK EXHAUST FAN WITH NEW EMS FOR CONTROL. EXTEND EXHAUST AIR DUCTWORK UP THRU ROOF IN PRE-FABRICATED INSULATED ROOF CURB TO FAN. ALL ROOF WORK TO BE DONE BY THE LANDLORD'S APPROVED ROOFING CONTRACTOR AT THE GENERAL CONTRACTOR'S EXPENSE.
- 6 MOUNT REMOTE SENSORS IN LOCATION SHOWN WITH THERMOSTATS LOCATED ALONG THE WALL AS SHOWN IN STOCK ROOM.
- 7 UNDERCUT DOOR 1" FOR TRANSFER AIR.

**3 MECHANICAL KEYED NOTES**  
NOT TO SCALE

**RTU-1, RTU-2, RTU-3, & RTU-4**

PER ASHRAE STANDARD 62.1-2004  
 - FOR AN RETAIL SALES SPACE, OUTSIDE AIR REQUIREMENTS ARE:  
 (NO. OF PEOPLE x 7.5 CFM/PERSON) + (0.12 x NET AREA SQUARE FOOTAGE).  
 NET OCCUPIABLE AREA IS = 12,000 SQ. FT. (EST.)  
 HENCE, WITH OCCUPANT DENSITY BASED ON A TOTAL OF 15 PEOPLE PER 1000 SQUARE FEET, THEN THE NUMBER OF PEOPLE IS  
 (12000 SQ. FT. / 1000 SQ. FT.) x 15 PEOPLE = 180.  
 HENCE, THE OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (180 x 7.5 CFM/PERSON) + (.12 x 12000 SQ. FT.) = 2790 CFM  
 USE 2800 CFM

**RTU-5**  
 - FOR THE STORAGE AREA, OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (0.12 x AREA SQUARE FOOTAGE)  
 HENCE, OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (0.12 x 1500 SQ. FT.) = 180 CFM

- FOR THE CORRIDORS AREA, OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (0.06 x AREA SQUARE FOOTAGE)  
 HENCE, OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (0.06 x 500 SQ. FT.) = 30 CFM

- FOR THE OFFICE/BREAK AREA, OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (NO. OF PEOPLE x 5 CFM/PERSON) + (0.06 x NET AREA SQUARE FOOTAGE).  
 ASSUMING 5 PEOPLE IN THE AREA  
 HENCE, OUTSIDE AIR REQUIREMENTS ARE AS FOLLOWS:  
 (5 PEOPLE x 5 CFM/PERSON) + (0.06 x 300 SQ. FT.) = 43 CFM

TOTAL OUTSIDE AIR REQUIREMENTS FOR RTU-5 SHALL BE  
 180 CFM + 30 CFM + 43 CFM = 253 CFM  
 USE 300 CFM

**7 OUTSIDE AIR CALCULATIONS**

**1 MECHANICAL FLOOR PLAN**  
1/8" = 1'-0"

SYMBOL	TYPE	DESCRIPTION	INSTALLATION TYPE	MANUFACTURER MODEL#
Ⓐ	CEILING SUPPLY	ALUMINUM, NOMINAL 24" X 24" FACE, NECK SIZE AS SCHEDULED, WITH OPPOSED BLADE DAMPER, BORDER FOR CEILING SPECIFIED, 4-WAY THROW UNLESS SPECIFIED OTHERWISE.	LAY-IN	TITUS P85AA
Ⓑ	CEILING RETURN/ EXHAUST	ALUMINUM, NOMINAL 24" X 24" FACE, NECK SIZE AS SCHEDULED, BORDER FOR CEILING SPECIFIED.	LAY-IN	TITUS PA8AA
Ⓒ	CEILING RETURN	ALUMINUM 12V/12" CORE GRID, 24"x48" FACE, SIZE AS INDICATED ON DRAWING.	DUCTSIDEWALL	TITUS 30FS
Ⓓ	GRILLE TRANSFER	ALUMINUM, NOMINAL 24" X 24" FACE WITH 40% FREE AREA MINIMUM.	LAY-IN	TITUS
Ⓔ	SUPPLY DIFFUSER	ALUMINUM ROUND DIFFUSER, TM844 TITUS	SIDEWALL	TITUS 55FL
Ⓚ	CEILING RETURN	STEEL, NOMINAL 24" X 48" FACE, 22" X 48" NECK SIZE, BORDER FOR CEILING SPECIFIED.	LAY-IN	TITUS PAR

- GENERAL DEVICE NOTES**
1. AIR DEVICE SCHEDULED TO BE MANUFACTURED BY TITUS, DOWCO, KRUEGER, METALLURGE, CARNES, J & J, NALOR, POWERS, AND TUTTLE & BAILEY ARE CONSIDERED EQUIVALENT MANUFACTURERS.
  2. UNLESS SCHEDULED OTHERWISE, AIR DEVICES SHALL BE WHITE OR OFF-WHITE IN COLOR.
  3. REFER TO NECK SIZE SCHEDULE FOR NECK SIZES OF ALL DIFFUSERS. (THEN OFF TO THE RIGHT OF THE AIR DEVICE SCHEDULE IS A NECK SIZE CHART).

**4 AIR DEVICE SCHEDULE**  
NOT TO SCALE

**HVAC DUCTWORK LEGEND**

SYMBOL	DESCRIPTION
RC	RETURN GRILLE
SR	SUPPLY REGISTER
CD	SQUARE CEILING DIFFUSER
S	LOW VOLTAGE SENSOR
Ⓜ	LOW VOLTAGE THERMOSTAT
SD	SUPPLY DUCT WITH ELBOW TURNED UP
SD	SUPPLY DUCT WITH ELBOW TURNED DOWN
RD	RETURN OR EXHAUST DUCT, ELBOW TURNED UP
RD	RETURN OR EXHAUST DUCT, ELBOW TURNED DOWN
FD	FLEXIBLE DUCTWORK CONNECTION
DM	DUCT WITH MANUAL DAMPER
EV	ELBOW WITH TURNING VANES
---	EXISTING WORK TO REMAIN
---	NEW WORK

**5 EXHAUST FAN SCHEDULE**  
NOT TO SCALE

UNIT NO.	NOM. TONS	SUPPLY AIR CFM	OUTSIDE AIR CFM	MTR HP	COOLING GTH MBTU	CSH MBTU	HEATING CAP. (MBH) INPUT	HEATING CAP. (MBH) OUTPUT	UNIT ELECTRICAL DATA	EER @ ARI	UNIT WEIGHT (LBS)	MODEL & MAKE		
RTU-1	12.5	4350	550	5	139	100	240	195	480/3/60	32.6	40	12.2	1750	LENNOX MODEL LGH150H4BH1G
RTU-2	12.5	5000	750	5	142	107	240	195	480/3/60	32.6	40	12.2	1750	LENNOX MODEL LGH150H4BH1G
RTU-3	12.5	5100	750	5	143	108	180	148	480/3/60	32.6	40	12.2	1750	LENNOX MODEL LGH150H4BM2G
RTU-4	12.5	4950	750	5	142	107	180	148	480/3/60	32.6	40	12.2	1750	LENNOX MODEL LGH150H4BM2G
RTU-5	7.5	2400	300	2	85	65	125	103	480/3/60	21.9	25	12	1600	LENNOX MODEL LGH092H4BS1G

- NOTES:**
1. FILTER SHALL BE 2" THICK PLEATED MEDIA TYPE MERV 10.
  2. SUMMER OUTDOOR AIR ENTERING CONDENSER TEMPERATURE IS 100°F DB
  3. WINTER OUTDOOR DESIGN CONDITIONS SHALL BE BASED ON 27°F.
  4. UNITS SHALL BE R-410A WITH CONDENSER COIL HAL GUARD GRILLE.
  5. UNITS SHALL BE PROVIDED WITH PREMIUM EFFICIENCY MOTORS.
  6. UNITS SHALL BE PROVIDED WITH BROWN-OUT AND PHASE LOSS PROTECTION
  7. PROVIDE MULTI-STAGE HEATING WHERE APPLICABLE. (2-STAGE MIN.)
  8. PROVIDE FACTORY-FURNISHED NON-FUSED SAFETY DISCONNECT.
- NOTES (CONT.):**
9. STAINLESS STEEL HEAT EXCHANGER
  10. 2-POSITION MOTORIZED OUTDOOR AIR DAMPER
  11. 24" MANUFACTURER FURNISHED ROOF CURB
  12. 120V GFCI POWERED OUTLET
  13. SINGLE POINT POWER CONNECTION
- \* WEIGHTS INCLUDE CURBS.

**6 ROOF TOP UNIT SCHEDULE**  
NOT TO SCALE

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MECHANICAL FLOOR PLANS  
**M1.1**