

**GENERAL MECHANICAL NOTES**

- A. ALL REFERENCES ON THE DRAWINGS AND IN THE SPECIFICATIONS TO "CONTRACTOR" AND "MECHANICAL CONTRACTOR" REFER TO THE TENANT'S MECHANICAL CONTRACTOR, UNLESS NOTED OTHERWISE.
- B. ALL WORK SHOWN AND SPECIFIED HEREIN SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE.
- C. THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID, INCLUDING ALL EXISTING EQUIPMENT, DUCTWORK, PIPING, STUB-INS, TAPS, ETC. NO CLAIMS FOR EXTRAS DUE TO LACK OF FAMILIARITY WITH SITE CONDITIONS WILL BE APPROVED.
- D. THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS FOR ALL DIVISIONS OF WORK AND SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL HIS SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.
- E. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL FIT THE WORK TO THE JOB, CAREFULLY INVESTIGATING STRUCTURAL, MECHANICAL, ELECTRICAL AND FINISH CONDITIONS AFFECTING THE WORK, AND SHALL FURNISH AND INSTALL ALL NECESSARY BENDS, OFFSETS, FITTINGS, JOINTS, ETC. WHETHER OR NOT SPECIFICALLY SHOWN OR CALLED FOR, AND SEE THAT THERE ARE NO INTERFERENCES BETWEEN THIS WORK AND THE WORK OF OTHER TRADES.
- F. PROVIDE ALL EQUIPMENT AND MATERIALS, AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY APPLICABLE CODES.
- G. INSTALL ALL MECHANICAL EQUIPMENT, MATERIALS AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, THE CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- H. ALL EQUIPMENT, MATERIALS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE LANDLORD CRITERIA.
- I. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS THAT ARE NOT DIMENSIONED ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS SHALL BE BASED ON SITE CONDITIONS. INSTALL ALL EQUIPMENT AS REQUIRED TO MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES.
- J. COORDINATE DIFFUSER, REGISTER AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN, LIGHTING, AND OTHER CEILING-MOUNTED ITEMS AND MAKE MINOR ADJUSTMENTS IN DIFFUSER LOCATIONS AND DUCTWORK AS REQUIRED.
- K. ALL ROOF CUTTING, PATCHING AND FLASHING REQUIRED TO INSTALL THE MECHANICAL SYSTEMS SHALL BE BY A LANDLORD-APPROVED ROOFING CONTRACTOR AT THIS CONTRACTOR'S EXPENSE. COORDINATE ROOF PENETRATIONS WITH LANDLORD AND GENERAL CONTRACTOR.

- L. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL CONNECTIONS TO LANDLORD'S BASE BUILDING SYSTEMS. RE-USE EXISTING CONNECTION POINTS WHERE POSSIBLE. COORDINATE ALL REQUIREMENTS IN FIELD WITH LANDLORD.
- M. NOTIFY TENANT'S PROJECT MANAGER IF ANY EXISTING DUCTWORK OR PIPING CONNECTION POINTS ARE SMALLER THAN SIZES SHOWN ON DRAWINGS.
- N. CONTRACTOR SHALL CLEAN AND SERVICE ALL EXISTING MECHANICAL EQUIPMENT THAT IS BEING RE-USED. REPAIR OR REPLACE UNIT COMPONENTS AS REQUIRED TO MAKE UNIT FULLY FUNCTIONAL, INCLUDING BUT NOT LIMITED TO: FANS, MOTORS, DRIVES, BELTS, BEARINGS, COILS, HEAT EXCHANGERS, REFRIGERATION, DAMPERS, DAMPER MOTORS, VALVES, AND OPERATING AND SAFETY CONTROLS. CHANGE FILTERS UPON COMPLETION OF SERVICE WORK AND JUST PRIOR TO JOB TURNOVER.
- O. EXISTING DUCTWORK MAY BE RE-USED WHERE EXISTING DUCT SIZES AND CONDITIONS MEET OR EXCEED THOSE SHOWN AND SPECIFIED. DUCT SIZES SHOWN ON DRAWINGS ARE MINIMUM REQUIRED SIZES. CLEAN ALL RE-USED DUCTWORK THOROUGHLY PRIOR TO CONNECTION TO NEW. INSULATE EXISTING DUCTWORK BEING RE-USED AS REQUIRED TO MEET SPECIFICATIONS FOR NEW DUCTWORK. DO NOT RE-USE LINED DUCTWORK.
- P. REMOVE ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, PIPING SYSTEMS, CONTROLS, ETC. NOT BEING RE-USED. DO NOT ABANDON IN PLACE. MAINTAIN SERVICES PASSING THROUGH SPACE TO OTHER TENANT SPACES.
- Q. CONTRACTOR MAY, AT HIS OPTION, INSTALL ROUND SPIRAL DUCTWORK OF EQUIVALENT CAPACITY IN LIEU OF RECTANGULAR DUCTWORK SHOWN AS LONG AS CEILING HEIGHTS ARE NOT AFFECTED.
- R. FIBERGLASS DUCTBOARD IS NOT ALLOWED.
- S. BRANCH DUCT RUNOUTS TO DIFFUSERS SHALL BE SAME SIZE AS DIFFUSER NECK, UNLESS SHOWN OTHERWISE.
- T. RIBD DUCTWORK SHALL BE UTILIZED FOR ALL RUNOUTS TO DIFFUSERS IN OPEN CEILING AREAS.
- U. ADJUST DISCHARGE PATTERN OF ADJUSTABLE-THROW DIFFUSERS TO FULL VERTICAL POSITION.
- V. CONTRACTOR SHALL BALANCE ALL HVAC SYSTEMS IN ACCORDANCE WITH THE MECHANICAL SPECIFICATIONS. SUBMIT COPIES OF TEST & BALANCE REPORT TO TENANT, LANDLORD AND ENGINEER.
- W. THE SPACE ABOVE THE CEILING IS DESIGNED AS A RETURN AIR PLENUM. ALL CONSTRUCTION MATERIALS ABOVE CEILING SHALL BE NON-COMBUSTIBLE AND SHALL HAVE MAXIMUM FLAME SPREAD/FUEL CONTRIBUTED/SMOKE DEVELOPED RATING OF 25/25/50 IN ACCORDANCE WITH UL 723, NFPA 90A AND ASTM E84. WRING SHALL BE LABELED PLENUM RATED PER NFPA 70, OR INSTALLED IN CONDUIT. THIS ALSO APPLIES TO ALL EXISTING MATERIALS.

**INTAKE HOOD SCHEDULE**

UNIT TAG	IH #	WG
UNIT SERVED	AHU-1-7	6
MANUFACTURER	GREENHECK	
MODEL NUMBER	GRS24	
TYPE (DOME, LOUVERED, FILTERS)	DOME	
THROAT SIZE (LxW)	3.24	
OVERALL HEIGHT	12.75	
OVERALL DIAMETER	38.25	
CFM	1800	
REMARKS	1800	

**KEY NOTES**

- 1. FURNISH AND INSTALL NEW SPLIT SYSTEM AIR HANDLER UNIT WITH ASSOCIATED CONDENSING UNIT ON ROOF. SUPPORT UNIT FROM STRUCTURE ABOVE WITH VIBRATION ISOLATING HANGERS. INSTALL REFRIGERANT PIPING BETWEEN AIR HANDLER UNIT AND CONDENSING UNIT. COORDINATE PIPE ROUTING WITH LANDLORD. SIZE PIPING PER MANUFACTURER'S INSTRUCTIONS.
- 2. REPLACE EXISTING AIR-COOLED CONDENSING UNIT ON ROOF WITH NEW CONDENSING UNIT. VERIFY LOCATION OF EXISTING UNIT. UTILIZE EXISTING ROOF SUPPORTS IF POSSIBLE. OR OTHERWISE PROVIDE NEW SLEEPS FLASHED INTO ROOFING SYSTEM. USE LANDLORD-APPROVED ROOFING CONTRACTOR FOR ALL ROOFING WORK ASSOCIATED WITH INSTALLATION OF NEW UNIT. SEE 5/M.O.
- 3. PROVIDE 2" DEEP GALVANIZED STEEL SECONDARY DRAIN PAN. EXTEND 1" PRIMARY AND OVERFLOW CONDENSATE PIPES TO DISCHARGE AT MOP SINK. PROVIDE 4" DEEP TRAP ON PRIMARY CONDENSATE PIPE. LABEL PIPES ACCORDINGLY.
- 4. FLUE GAS EXHAUST THROUGH ROOF. USE EXISTING OPENINGS AND MODIFY AS REQUIRED. SIZE PER MANUFACTURER'S RECOMMENDATION AND PROVIDE FLUE CAP. EXHAUST OUTLET SHALL BE A MINIMUM OF 10 FEET FROM ANY OUTDOOR AIR INTAKE.
- 5. COMBUSTION AIR INTAKE THROUGH REAR WALL OF BUILDING. USE EXISTING OPENINGS IF EXISTING AND MODIFY AS REQUIRED. SIZE PER MANUFACTURER'S RECOMMENDATION. ROUTE AS HIGH IN CEILING AS POSSIBLE. AIR INTAKE SHALL BE A MINIMUM OF 10 FEET FROM ANY EXHAUST DISCHARGE.
- 6. THERMOSTAT FOR UNIT INDICATED. INSTALL AT 4'-0" AFF. LABEL THERMOSTAT WITH UNIT NUMBER.
- 7. TEMPERATURE SENSOR FOR UNIT INDICATED. INSTALL AT 4'-0" AFF. LABEL SENSOR WITH UNIT NUMBER.
- 8. BELL MOUTH RETURN AIR INLET WITH VOLUME DAMPER. COVER AIR INLET WITH 1" W/M.
- 9. 18" X 16" OUTDOOR AIR DUCT UP TO INTAKE HOOD ON ROOF.
- 10. INSTALL AIR TRANSFER GRILLE AS HIGH AS POSSIBLE ABOVE CEILING. SEE CEILING ON STOCKROOM SIDE OF WALL.
- 11. FAN/LIGHT COMBINATION WITH INTEGRAL BACKDRAFT DAMPER PROVIDED BY ELECTRICAL CONTRACTOR. DUCTWORK BY MECHANICAL CONTRACTOR TO CFM.
- 12. 8" TOLERANT EXHAUST DUCT OUT THROUGH CEILING OPENING THROUGH REAR. MODIFY AS REQUIRED FOR INCREASE IN DUCT SIZE. TERMINATE WITH WIND CAP AND BIRDSCREEN. EXHAUST OUTLET SHALL BE A MINIMUM OF 10 FEET FROM ANY OUTDOOR AIR INTAKE.
- 13. CONNECT GAS PIPING TO AHU. PROMOTE SHUT-OFF VALVE, DIRT LEG AND UNION. IF INCOMING GAS PRESSURE EXCEEDS UNIT MANUFACTURER'S MAXIMUM ALLOWABLE GAS SUPPLY PRESSURE, PROVIDE MAXI-TROL 255 SERIES GAS PRESSURE REGULATOR.
- 14. EXTEND 3/4" GAS PIPING TO MAIN GAS LINE AND CONNECT TO MAIN GAS LINE WITH PIPE SIZES AS SHOWN ON DRAWING. ROUTE AS HIGH AS POSSIBLE IN CEILING TO EXISTING WALL OPENING AND CONNECT TO EXISTING GAS METER APPROXIMATELY 140 EQUIVALENT FEET OF PIPE LENGTH FROM FARTHEST UNIT. PIPE SIZES BASED ON LESS THAN 2 PSI GAS PRESSURE AND TOTAL PRESSURE DROP OF 0.5 IN WC. VERIFY METER CAPACITY IS SUFFICIENT FOR CONNECTED LOAD. COORDINATE METERING REQUIREMENTS WITH UTILITY CO. AND ARRANGE FOR NEW METER IF REQUIRED. IF EXISTING GAS PIPING IS THE CORRECT SIZE, IT MAY BE REUSED.

**CONDENSING UNITS ON ROOF. SHOWN FOR REFERENCE ONLY.**

**1 HVAC PLAN**  
3/16" = 1'-0"

**GRILLE AND DIFFUSER SCHEDULE**

TYPE	A	B	C	D	E	F	G
ITEM DESCRIPTION	SUPPLY LAY-IN	SUPPLY DUCT MOUNT	RETURN WALL MOUNT	SURFACE MOUNT	TRANSFER WALL MOUNT	SUPPLY SURFACE MOUNT	RETURN SURFACE MOUNT
MANUFACTURER	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS	TITUS
MODEL NUMBER	TMSA	350S	272RS	350FL	350FL	TMSA	350RL
REMARKS	STD. WHITE FINISH 24"x24" FACE WITH OPPOSED BLADE DAMPER	STD. WHITE FINISH 12"x12" WITH OPPOSED BLADE DAMPER	STD. WHITE FINISH 12"x12" WITH OPPOSED BLADE DAMPER	STD. WHITE FINISH DOUBLE DEFLECTION W/ OPPOSED BLADE DAMPER	STD. WHITE FINISH 12"x12" WITH "LAY-IN" TRM FRAME & OBD	STD. WHITE FINISH 12"x12" WITH "LAY-IN" TRM FRAME	STD. WHITE FINISH 12"x12" WITH "LAY-IN" TRM FRAME

**AIR HANDLING UNIT SCHEDULE**

UNIT TAG	AHU-1	AHU-2	AHU-3	AHU-4	AHU-5	AHU-6	AHU-7
AREA SERVED	SALES/STOCK	SALES/STOCK	SALES/STOCK	SALES/STOCK	SALES/STOCK	SALES/STOCK	SALES/STOCK
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
MODEL NUMBER	4PKC+58X2	4PKC+58X2	4PKC+58X2	4PKC+58X2	4PKC+58X2	4PKC+58X2	4PKC+58X2
TYPE	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL	HORIZONTAL
MIN OUTSIDE AIR CFM	260	260	260	260	260	260	260
SUPPLY FAN							
CFM	1800	1440	1800	1720	1400	1500	1450
ESP	0.75"	0.75"	0.75"	0.75"	0.75"	0.75"	0.75"
RPM	1075	1075	1075	1075	1075	1075	1075
HP	0.75	0.75	0.75	0.75	0.75	0.75	0.75
TYPE	FORWARD CURVED	FORWARD CURVED	FORWARD CURVED	FORWARD CURVED	FORWARD CURVED	FORWARD CURVED	FORWARD CURVED
CLASS (I, II, III, IV)	I	I	I	I	I	I	I
DIV COOLING COIL							
CFM	1800	1440	1800	1720	1400	1500	1450
EAT DB/WB	80.0/67.0	80.0/67.0	80.0/67.0	80.0/67.0	80.0/67.0	80.0/67.0	80.0/67.0
LAT DB/WB	57.9/56.8	57.9/56.8	57.9/56.8	57.9/56.8	57.9/56.8	57.9/56.8	57.9/56.8
SENSIBLE/TOTAL MBH	36.4/48.3	36.4/48.3	36.4/48.3	36.4/48.3	36.4/48.3	36.4/48.3	36.4/48.3
REFRIGERANT TYPE	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
GAS HEAT							
CFM	1800	1440	1800	1720	1400	1500	1450
EAT/LAT	70.0/99.3	70.0/99.3	70.0/99.3	70.0/99.3	70.0/99.3	70.0/99.3	70.0/99.3
INPUT/OUTPUT MBH	80.0/49.0	80.0/49.0	80.0/49.0	80.0/49.0	80.0/49.0	80.0/49.0	80.0/49.0
CONTROL STEPS	1	1	1	1	1	1	1
ELECTRICAL							
V-PH-CY	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60
STARTER	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16
DISCONNECT	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16
OPERATING WEIGHT (LBS)	185	185	185	185	185	185	185
REMARKS							

**CONDENSING UNIT SCHEDULE**

UNIT TAG	ACCU-1	ACCU-2	ACCU-3	ACCU-4	ACCU-5	ACCU-6	ACCU-7
LOCATION	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
MODEL NUMBER	4TRR4048	4TRR4048	4TRR4048	4TRR4048	4TRR4048	4TRR4048	4TRR4048
SERVICE	AHU-1	AHU-2	AHU-3	AHU-4	AHU-5	AHU-6	AHU-7
REFRIGERANT TYPE	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
NOMINAL CAPACITY (TON)	4	4	4	4	4	4	4
FEER	12.3	12.3	12.3	12.3	12.3	12.3	12.3
CIRCUITS (DUAL, SINGLE)	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE	SINGLE
COMPRESSOR							
TYPE	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
QUANTITY	1	1	1	1	1	1	1
UNLOADING %	0-100%	0-100%	0-100%	0-100%	0-100%	0-100%	0-100%
CONDENSER							
NUMBER OF FANS	1	1	1	1	1	1	1
HP	0.2	0.2	0.2	0.2	0.2	0.2	0.2
MBH (OUTPUT)	48.3	48.3	48.3	48.3	48.3	48.3	48.3
AMBIENT AIR TEMP	95.0	95.0	95.0	95.0	95.0	95.0	95.0
REFR SUCTION TEMP	45°F	45°F	45°F	45°F	45°F	45°F	45°F
REFRIGERANT PIPE SIZES							
LIQUID	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
SUCTOR	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
HOT GAS	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.	PER MANUF.
ELECTRICAL							
MCA	24	24	24	24	24	24	24
V-PH-CY	208/3	208/3	208/3	208/3	208/3	208/3	208/3
STARTER	DIV. 15	DIV. 15	DIV. 15	DIV. 15	DIV. 15	DIV. 15	DIV. 15
DISCONNECT	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16	DIV. 16
OPERATING WEIGHT (LBS)	189	189	189	189	189	189	189
REMARKS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS	PROVIDE UNIT WITH CONDENSER COIL HAIL GUARDS

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HVAC PLAN