GENERAL NOTES
(APPLY TO WORK PROVIDED UNDER DIV. 20):

1. PROVIDE LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE INSTALLATION OF THE COMPLETE MECHANICAL SYSTEMS AS SPECIFIED HEREIN AND INDICATED IN THE CONTRACT DOCUMENTS. OUTLINE DESCRIPTION AND DIAGRAMMATIC REPRESENTATION OF SYSTEM OPERATION AND EQUIPMENT DOES NOT LIMIT CONTRACTOR LIABILITY FOR FURNISHING AND INSTALLING COMPLETE AND OPERABLE SYSTEMS.
2. THE INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE CODE OF THE LOCAL AUTHORITY HAVING JURISDICTION.
3. "DRAWING NOTES" APPLY TO THE ENTIRE DRAWING ON WHICH THEY APPEAR, WHERE RELEVANT. "SPECIFIC NOTES" APPLY ONLY WHERE INDICATED WITH THE "SPECIFIC NOTE" SYMBOL. REFER TO LEGEND.
4. DUCTWORK TO BE SHEET METAL UNLESS NOTED OTHERWISE.
5. PROVIDE REQUIRED CLEARANCE FOR MAINTENANCE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS OR AS REQUIRED BY CODE FOR MECHANICAL EQUIPMENT.
6. VERIFY THAT EXISTING EQUIPMENT THAT IS TO REMAIN IS FULLY FUNCTIONAL AND OPERATIONAL.
7. COORDINATE WITH THE OWNER FOR SCHEDULING OF WORK.
8. WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
11. KEEP THE WORK SITE AND SURROUNDING AREA FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH GENERATED BY WORK FROM THIS CONTRACT. PROPERLY AND LEGALLY DISPOSE OF MATERIALS.
12. JOB SITE SAFETY SHALL BE IN STRICT ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
13. VISIT THE SITE AND CAREFULLY EXAMINE EXISTING CONDITIONS THAT MAY AFFECT THE BID.
14. EXISTING MECHANICAL WORK WHICH WILL NOT BE RENDERED OBSOLETE AND WHICH MAY BE DISTURBED DUE TO ANY CHANGES REQUIRED UNDER THIS CONTRACT SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION. OTHER MECHANICAL ITEMS RENDERED OBSOLETE SHALL BE ABANDONED WHERE CONCEALED AND REMOVED WHERE EXPOSED.
15. WHERE EXISTING MECHANICAL WORK INTERFERES WITH NEW WORK AND WHERE SUCH INSTALLATIONS ARE TO REMAIN IN USE, THE INSTALLATIONS SHALL BE DISCONNECTED AND RELOCATED AND/OR RECONNECTED TO COORDINATE WITH NEW WORK AS INDICATED IN THE CONTRACT DOCUMENTS AND AS SPECIFIED.
16. DO NOT DISCONTINUE ANY MECHANICAL SYSTEM SERVICE WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE USER AGENCY. THE MECHANICAL SYSTEM OUTAGES SHALL BE KEPT TO A MINIMUM.
17. PROVIDE SUBMITTALS (SHOP DRAWINGS) FOR REVIEW FOR NEW MATERIALS AND EQUIPMENT. PRIOR TO SUBMITTING, REVIEW SUBMITTALS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, CONFLICTS WITH OTHER TRADES, AND CONSTRUCTABILITY. IDENTIFY ANY DEVIATIONS IN SUBMITTALS FROM CONTRACT DOCUMENTS. ENGINEER'S REVIEW OF SUBMITTALS DOES NOT INCLUDE REVIEW OF DIMENSIONS, DETAILS, OR QUANTITIES. REVIEW DOES NOT WAIVE ANY REQUIREMENTS OF CONTRACT DOCUMENTS, INCLUDING REQUIREMENT TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
18. WHEN MOUNTING MECHANICAL WORK IN AREAS SUBJECT TO PEDESTRIAN TRAFFIC, MAINTAIN REQUIRED HEADROOM CLEARANCES.
19. MECHANICAL MATERIALS AND EQUIPMENT SHALL BE INSTALLED AS TO MAINTAIN THEIR RESPECTIVE UL RATING AND SHALL CONFORM TO FACTORY MUTUAL STANDARDS AS APPLICABLE.
20. MECHANICAL WORK SHALL BE CONCEALED IN FINISHED AREAS SHOWN ON THE ARCHITECTURAL DRAWINGS UNLESS NOTED OTHERWISE.
21. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIFFUSER LOCATIONS AND THE ELECTRICAL DRAWINGS FOR EXACT ELECTRICAL EQUIPMENT LOCATIONS. LOCATIONS OF MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING ARE SHOWN DIAGRAMMATICALLY. DETERMINE EXACT LOCATIONS IN THE FIELD.
22. WHERE NEW OR RELOCATED CONTROL DEVICES ARE SHOWN ON EXISTING WALLS, CUT WALL, INSTALL DEVICE AND CONDUIT, AND REPAIR WALL PROPERLY TO ITS ORIGINAL CONDITION.
23. SEALING FITTINGS AND APPROVED SEALING COMPOUND SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE CODE. SEAL AROUND PENETRATIONS OF FIRE-RATED WALLS WITH AN APPROVED SEALANT.
24. LOCATIONS OF DUCTWORK, AIR DEVICES, TEMPERATURE CONTROLS, AND EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECTURAL LAYOUTS, EQUIPMENT CUTS AND PLUMBING/ELECTRICAL/STRUCTURAL PLANS. NO WORK SHALL BE INSTALLED UNTIL THE LOCATIONS HAVE BEEN VERIFIED. BRING ANY DISCREPANCY TO THE ARCHITECTS ATTENTION PRIOR TO MANUFACTURING OF DUCTWORK OR INSTALLATION.
25. NORTH ARROWS ON THESE DRAWINGS INDICATE PLAN NORTH ONLY.
26. INSTALL A MANUAL VOLUME DAMPER IN EACH BRANCH DUCT THAT RUNS TO (1) AIR DEVICE.
27. PROVIDE PIPE SLEEVE FOR PIPING PENETRATIONS THROUGH RATED SLABS OR WALLS.
28. "WBD" INDICATES WEIGHTED BAROMETRIC RELIEF DAMPER (ADJUSTABLE).
29. DUCT JOINTS SHALL BE SEALED USING 3M MODEL 540 DUCT SEALER. EXCESS SEALER SHALL BE REMOVED FROM DUCTWORK AND JOINTS. PAINT SEALED JOINTS TO MATCH FINISH OF DUCTWORK.
30. IN AREAS WHERE WORK IS INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES OR WITHIN TRADES COVERED BY THIS DIVISION OF THE SPECIFICATIONS, PREPARE LARGER SCALE DRAWINGS CONSISTING OF PLANS AND SECTIONS TO SHOW HOW WORK IS TO BE INSTALLED IN RELATION TO WORK OF OTHER TRADES.
31. CLEAN EXISTING DUCTWORK AND AIR DEVICES IDENTIFIED IN THE DRAWINGS FOR REUSE. REBALANCE EXISTING SUPPLY AND RETURN AIR SYSTEMS TO THE AIRFLOWS INDICATED ON THE NEW WORK PLANS.

GENERAL DEMOLITION NOTES
(APPLY TO WORK PROVIDED UNDER DIV. 20):

1. DEMOLITION WORK IS GENERALLY INDICATED AS PART OF THESE NOTES AND THE NOTES INDICATED ON THE ARCHITECTURAL DEMOLITION PLANS.
2. VERIFY THAT EXISTING PIPING, EQUIPMENT, ETC. THAT IS CALLED FOR REMOVAL IS NO LONGER IN SERVICE BEFORE BEGINNING DEMOLITION.
3. THE DEMOLITION NOTES INDICATE THE MAIN COMPONENTS OF SYSTEMS AND EQUIPMENT THAT SHALL BE REMOVED UNDER THIS CONTRACT. IF SYSTEMS AND EQUIPMENT ARE FOUND DURING CONSTRUCTION THAT THE OWNER AUTHORIZES FOR REMOVAL BUT HAVE NOT BEEN SPECIFICALLY CALLED FOR DEMOLITION, REMOVE THE SYSTEMS AND EQUIPMENT.
4. WHEN THE WORK SPECIFIED HEREUNDER CONNECTS TO ANY EXISTING EQUIPMENT, PIPING, ETC., PERFORM NECESSARY ALTERATIONS, CUTTING, FITTING, ETC. OF THE EXISTING WORK AS MAY BE NECESSARY OR REQUIRED TO MAKE SATISFACTORY CONNECTIONS BETWEEN THE NEW AND EXISTING WORK AND LEAVE THE COMPLETE WORK IN A FINISHED AND WORKMANLIKE CONDITION.
5. WHEN THE WORK SPECIFIED UNDER OTHER DIVISIONS NECESSITATES RELOCATION OF EXISTING EQUIPMENT, PIPING, ETC. PERFORM WORK AND MAKE NECESSARY CHANGES TO EXISTING WORK AS MAY BE REQUIRED TO LEAVE THE COMPLETED WORK IN A FINISHED AND WORKMANLIKE CONDITION.
6. REMOVE FROM THE PREMISES AND DISPOSE OF EXISTING PIPING, MATERIAL, FIXTURES, EQUIPMENT, ETC. NOT REQUIRED FOR RE- USE OR RE-INSTALLATION.
7. DELIVER ON THE PREMISES WHERE DIRECTED EXISTING MATERIAL AND EQUIPMENT WHICH IS REMOVED AND IS DESIRED BY THE OWNER OR IS INDICATED TO REMAIN THE PROPERTY OF THE OWNER.
8. OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES.
9. PIPING ABANDONED IN CONCRETE SLABS, WALLS, OR OTHER INACCESSIBLE LOCATIONS SHALL BE LEFT EMPTY.

AUTOMATIC TEMPERATURE CONTROL NOTES:

GENERAL ATC NOTES:

A. OCCUPIED/UNOCCUPIED CONTROL SHALL BE DETERMINED BY BUILDING EMS. EACH PIECE OF EQUIPMENT SHALL HAVE AN INDEPENDENT OCCUPIED/UNOCCUPIED MODE SCHEDULE.

CONTROL SEQUENCE A - LOCKER ROOM SPLIT SYSTEM HEAT PUMP (FCU/CU):

A. OCCUPIED/UNOCCUPIED CONTROL SHALL BE AS DESCRIBED IN THE GENERAL SECTION. SPLIT SYSTEM HEAT PUMP UNITS SHOULD OPERATE ON THE SAME OCCUPIED/UNOCCUPIED SCHEDULE AS THE DOAS UNIT.
B. WHEN IN OCCUPIED/UNOCCUPIED MODE, THE UNITS SUPPLY FAN SHALL BE CONTINUOUSLY ENERGIZED.
C. WHEN IN MORNING WARM UP/COOL DOWN MODE, ON A DROP IN SPACE TEMPERATURE BELOW THE OCCUPIED/UNOCCUPIED MODE SET POINT (ADJUSTABLE), THE UNITS SUPPLY FAN AND HEATING CYCLE SHALL ENERGIZE.
D. WHEN IN OCCUPIED/UNOCCUPIED MODE, ON A RISE IN SPACE TEMPERATURE BELOW THE OCCUPIED/UNOCCUPIED MODE SET POINT (ADJUSTABLE), THE UNITS SUPPLY FAN AND COOLING CYCLE SHALL ENERGIZE.
E. UPON SENSING IMPROPER CONDITIONS, THE WATER LEVEL DETECTOR IN THE SECONDARY CONDENSATE PAN SHALL DE-ENERGIZE THE UNIT AND GENERATE ANALARM CONDITION.

CONTROL SEQUENCE B - LOCKER ROOM DOAS CONTROLS (DOAS-1)

A. OCCUPIED/UUNOCCUPIED CONTROL SHALL BE AS DESCRIBED IN THE GENERAL SECTION. DOAS UNIT SHOULD OPERATE ON THE SAME OCCUPIED/UNOCCUPIED SCHEDULE AS THE SPLIT SYSTEM HEAT PUMP UNITS.
B. UNIT SHALL OPERATE CONTINUOUSLY IN OCCUPIED MODE WITH THE SUPPLY FAN ENERGIZED, EXHAUST FAN ENERGIZED, RELIEF DAMPER OPEN, AND THE OUTSIDE AIR DAMPER OPEN.
C. UNIT SHALL BE PROVIDED WITH DUCT-MOUNTED TEMPERATURE SENSOR AND DUCT-MOUNTED HUMIDITY SENSOR. DUCT-MOUNTED STATS SHALL BE LOCATED WITHIN THE SUPPLY AIR DUCT.
D. UPON A RISE IN DISCHARGE AIR TEMPERATURE ABOVE THE COOLING SETPOINT (ADJUSTABLE) OF THE DUCT-MOUNTED THERMOSTAT, THE COOLING CYCLE SHALL BE ENERGIZED.
E. UPON A DROP IN DISCHARGE AIR TEMPERATURE BELOW THE HEATING SETPOINT (ADJUSTABLE) OF THE DUCT-MOUNTED THERMOSTAT, THE HEATING CYCLE SHALL BE ENERGIZED.
F. ON A CALL FOR DEHUMIDIFICATION, AS SENSED BY THE DUCT-MOUNTED HUMIDITY SENSOR THE UNIT SHALL ENERGIZE AND MODULATE THE UNIT'S DX COOLING CYCLE TO MAINTAIN RELATIVE HUMIDITY. IF THE DUCT TEMPERATURE DROPS BELOW THE COOLING SET POINT (ADJUSTABLE) AS SENSED BY THE DUCT-MOUNTED TEMPERATURE SENSOR, WHILE THE RELATIVE HUMIDITY SET POINT REMAINS UNSATISFIED, THE UNITS HOT GAS REHEAT CYCLE SHALL BE ENERGIZED AND MODULATE TO MAINTAIN THE COOLING SET POINT.
G. THE ENERGY RECOVERY WHEEL SHALL MODULATE BASED ON ITS FACTORY BUILT-IN CONTROLS.
H. PROVIDE SYSTEM WITH DUCT SMOKE DETECTORS AND ASSOCIATED CONTROLS FURNISHED BY DIVISION 26 AND INSTALLED BY DIVISION 20.

CONTROL SEQUENCE C - GYMNASIUM ROOFTOP UNIT CONTROLS (RTU-1 THRU RTU-4)

A. WHEN IN UNOCCUPIED MODE, THE SUPPLY, RETURN, AND RELIEF/POWER EXHAUST FAN(S) SHALL BE DE-ENERGIZED AND THE OUTSIDE AIR AND RELIEF AIR DAMPER(S) SHALL BE CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST DAMPERS CLOSED.
B. WHEN IN UNOCCUPIED MODE, ON A RISE IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, ABOVE THE UNOCCUPIED MODE SET POINT 77 DEGREES F (ADJUSTABLE), THE UNIT'S SUPPLY FAN, RETURN FAN, AND DX COOLING CYCLE SHALL BE ENERGIZED. THE UNIT'S DIGITAL SCROLL COMPRESSORS SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT OF 55 DEGREES F (ADJUSTABLE). THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL REMAIN CLOSED. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST AIR DAMPERS CLOSED. THE RETURN AIR DAMPER SHALL REMAIN OPEN.
C. WHEN IN UNOCCUPIED MODE, ON A DROP IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, BELOW THE UNOCCUPIED MODE SET POINT 63 DEGREES F (ADJUSTABLE), THE ROOFTOP UNIT'S SUPPLY AND RETURN FANS AND HEAT PUMP HEATING CYCLE ARE TO BE ENERGIZED. THE HEATING SECTION SHALL MODULATE TO MAINTAIN A DISCHARGE SUPPLY AIR TEMPERATURE SET POINT OF 65 DEGREES F (ADJUSTABLE). THE OUTSIDE AIR AND EXHAUST AIR DAMPERS CLOSED. THE RETURN AIR DAMPER SHALL REMAIN OPEN.
D. WHEN IN MORNING WARM UP/COOL DOWN MODE, THE SUPPLY AND RETURN FANS SHALL BE ENERGIZED, WITH THE OUTSIDE AIR AND RELIEF AIR DAMPERS CLOSED. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST DAMPERS CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN. THE POWER EXHAUST FAN IS TO BE DE-ENERGIZED. CHANGE OVER TO OCCUPIED MODE SHALL BE CONTROLLED VIA THE TIMECLOCK SCHEDULE.
E. UNIT SHALL OPERATE CONTINUOUSLY IN OCCUPIED MODE WITH THE SUPPLY FAN ENERGIZED, EXHAUST FAN ENERGIZED, RELIEF DAMPER OPEN, AND THE OUTSIDE AIR DAMPER OPEN TO MINIMUM (1400 CFM PER UNIT).
F. UNIT SHALL BE PROVIDED WITH ROOM TEMPERATURE SENSOR, ROOM HUMIDITY SENSOR, AND DUCT MOUNTED CO2 SENSORS. DUCT-MOUNTED DEVICES SHALL BE LOCATED WITHIN THE SUPPLY AIR DUCT.
G. UPON A RISE IN DISCHARGE AIR TEMPERATURE ABOVE THE COOLING SETPOINT OF THE DUCT-MOUNTED THERMOSTAT, THE COOLING CYCLE SHALL BE ENERGIZED.
H. UPON A DROP IN DISCHARGE AIR TEMPERATURE BELOW THE HEATING SETPOINT OF THE DUCT-MOUNTED THERMOSTAT, THE HEATING CYCLE SHALL BE ENERGIZED.
I. ON A CALL FOR DEHUMIDIFICATION, AS SENSED BY THE DUCT-MOUNTED HUMIDITY SENSOR THE UNIT SHALL ENERGIZE AND MODULATE THE UNIT'S DX COOLING CYCLE TO MAINTAIN RELATIVE HUMIDITY. IF THE DUCT TEMPERATURE DROPS BELOW THE COOLING SET POINT AS SENSED BY THE DUCT-MOUNTED TEMPERATURE SENSOR, WHILE THE RELATIVE HUMIDITY SET POINT REMAINS UNSATISFIED, THE UNITS HOT GAS REHEAT CYCLE SHALL BE ENERGIZED AND MODULATE TO MAINTAIN THE COOLING SET POINT.
J. UPON A RISE IN CO2 LEVELS IN THE SPACE AS SENSED BY THE SPACE CO2 SENSOR, ABOVE THE REQUIRED MAXIMUM, THE OUTSIDE AIR DAMPER SHALL MODULATE OPEN. THE DAMPER SHALL CONTINUE TO OPEN UNTIL THE CO2 LEVEL DROPS BELOW THE MAXIMUM OR THE OUTSIDE AIR DAMPER IS FULLY OPEN UPON A DROP IN SPACE CO2 LEVELS BELOW THE REQUIRED MINIMUM. THE OUTSIDE AIR DAMPER SHALL MODULATE CLOSED UNTIL THE CO2 LEVELS RISE TO WITHIN THE MINIMUM AND MAXIMUM LIMITS OR THE DAMPER IS AT THE MINIMUM POSITION.
K. THE ENERGY RECOVERY WHEEL SHALL MODULATE BASED ON ITS FACTORY BUILT-IN CONTROLS.
L. PROVIDE SYSTEM WITH DUCT SMOKE DETECTORS AND ASSOCIATED CONTROLS FURNISHED BY DIVISION 26 AND INSTALLED BY DIVISION 20.

CONTROL SEQUENCE D - OFFICE ROOFTOP UNIT CONTROLS (RTU-6)

A. WHEN IN UNOCCUPIED MODE, THE SUPPLY, RETURN, AND RELIEF/POWER EXHAUST FAN(S) SHALL BE DE-ENERGIZED AND THE OUTSIDE AIR AND RELIEF AIR DAMPER(S) SHALL BE CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST DAMPERS CLOSED.
B. WHEN IN UNOCCUPIED MODE, ON A RISE IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, ABOVE THE UNOCCUPIED MODE SET POINT 77 DEGREES F (ADJUSTABLE), THE UNIT'S SUPPLY FAN, RETURN FAN, AND DX COOLING CYCLE SHALL BE ENERGIZED. THE UNIT'S DIGITAL SCROLL COMPRESSORS SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT OF 55 DEGREES F (ADJUSTABLE). THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL REMAIN CLOSED. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST AIR DAMPERS CLOSED. THE RETURN AIR DAMPER SHALL REMAIN OPEN.
C. WHEN IN UNOCCUPIED MODE, ON A DROP IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, BELOW THE UNOCCUPIED MODE SET POINT 63 DEGREES F (ADJUSTABLE), THE ASSOCIATED DUCT HEATER WITH ELECTRIC REHEAT COIL SHALL BE ENERGIZED AS THE FIRST STAGE OF HEAT. IF THAT DUCT HEATER SYSTEM IS UNABLE TO SATISFY THE SPACE TEMPERATURE SET POINT REQUIREMENTS WITHIN 30 MINUTES (ADJUSTABLE) THEN THE ROOFTOP UNIT'S SUPPLY AND RETURN FANS AND HEAT PUMP HEATING CYCLE ARE TO BE ENERGIZED. THE HEATING SECTION SHALL MODULATE TO MAINTAIN A DISCHARGE SUPPLY AIR TEMPERATURE SET POINT OF 65 DEGREES F (ADJUSTABLE). THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL REMAIN CLOSED. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST AIR DAMPERS CLOSED. THE RETURN AIR DAMPER SHALL REMAIN OPEN.
D. WHEN IN MORNING WARM UP/COOL DOWN MODE, THE SUPPLY AND RETURN FANS SHALL BE ENERGIZED, WITH THE OUTSIDE AIR AND RELIEF AIR DAMPERS CLOSED. THE ASSOCIATED ERV IS TO BE DE-ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST DAMPERS CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN. THE POWER EXHAUST FAN IS TO BE DE-ENERGIZED. CHANGE OVER TO OCCUPIED MODE SHALL BE CONTROLLED VIA THE TIMECLOCK SCHEDULE.
E. WHEN IN OCCUPIED MODE, THE SUPPLY FAN SHALL RUN CONTINUOUSLY. THE RTU OUTSIDE AIR AND RELIEF DAMPERS (ASSOCIATED WITH ECONOMIZER MODE) ARE TO BE CLOSED. THE RTU SUPPLY AND RETURN FANS WILL VARY THE SUPPLY AIRFLOW AS REQUIRED TO MAINTAIN A CONSTANT SUPPLY AIR DUCT PRESSURE, AS SENSED BY A DUCT MOUNTED PRESSURE SENSOR LOCATED ON THE DRAWINGS.
F. WHEN IN OCCUPIED MODE, THE ERV ASSOCIATED WITH THE RTU IS TO BE ENERGIZED AND ITS ASSOCIATED OUTSIDE AIR AND EXHAUST DAMPERS OPEN. ALL OF THE VENTILATION AND EXHAUST AIRFLOW ASSOCIATED WITH THE AREAS SERVED BY THE RTU WILL PASS THROUGH THE ERV SYSTEM OUTSIDE OF THE PERIODS WHEN ECONOMIZER MODE IS ENGAGED. THE ERV SUPPLY AND EXHAUST FANS WILL RUN CONTINUOUSLY ENSURING THAT THE PROPER VENTILATION AND EXHAUST AIRFLOW IS PROVIDED.
G. WHEN IN OCCUPIED MODE, ON A RISE IN SUPPLY AIR TEMPERATURE ABOVE THE DESIGN SETPOINT, AS MEASURED BY A SUPPLY DUCT MOUNTED TEMPERATURE SENSOR, THE UNIT'S DX COOLING CYCLE SHALL BE ENERGIZED. THE UNIT'S DIGITAL SCROLL COMPRESSORS SHALL BE MODULATED TO MAINTAIN A DISCHARGE AIR TEMPERATURE SET POINT OF 55 DEGREES F (ADJUSTABLE).
H. WHEN IN OCCUPIED MODE, ON A DROP IN SUPPLY AIR TEMPERATURE BELOW THE DESIGN SETPOINT DIFFERENTIAL AS SENSED BY A SUPPLY DUCT MOUNTED TEMPERATURE SENSOR, THE UNIT'S HEAT PUMP HEATING CYCLE SHALL BE ENERGIZED. THE UNIT'S HEATING SECTION SHALL BE MODULATED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (ADJUSTABLE).
I. ON A RISE IN SPACE AIR RELATIVE HUMIDITY, AS SENSED BY A RETURN DUCT MOUNTED HUMIDITY SENSOR LOCATED IN THE UNIT'S MAIN RETURN DUCT, THE UNIT'S DX COOLING CYCLE SHALL BE ENERGIZED TO MAINTAIN RELATIVE HUMIDITY SET POINT (ADJUSTABLE). IF THE SUPPLY AIR TEMPERATURE DROPS BELOW THE COOLING SET POINT TEMPERATURE, AS SENSED BY A DUCT MOUNTED TEMPERATURE SENSOR, WHILE THE RELATIVE HUMIDITY REMAINS UNSATISFIED, THE UNIT'S HOT GAS HEATEAT CYCLE SHALL ENERGIZE AND MODULATE TO MAINTAIN THE COOLING SET POINT (ADJUSTABLE).
J. WHEN OUTSIDE AIR CONDITIONS ALLOW, AS DETERMINED BY THE BUILDING'S ENTHALPY SENSOR, THE ERV SUPPLY FAN SHALL BE DE-ENERGIZED AND THE OUTSIDE AIR DAMPER AND RELIEF AIR DAMPERS SHALL MODULATE OPEN. THE POWER EXHAUST SHALL ENERGIZE TO ALLOW ECONOMIZER FREE COOLING. THE ERV EXHAUST FAN IS TO REMAIN ENERGIZED WITH THE ERV SUPPLY FAN IS OFF. THE POWER EXHAUST IS TO BALANCED TO ENSURE BUILDING PRESSURE BALANCE IS MAINTAINED. THE RETURN AIR DAMPER IS TO BE MODULATED CLOSED.
K. PROVIDE SYSTEM WITH DUCT SMOKE DETECTORS AND ASSOCIATED CONTROLS FURNISHED BY DIVISION 26 AND INSTALLED BY DIVISION 20.

AUTOMATIC TEMPERATURE CONTROL NOTES (CONT.):

CONTROL SEQUENCE E - CLASSROOM VAV ROOFTOP UNIT CONTROLS (RTU-7)

A. WHEN IN UNOCCUPIED MODE, THE SUPPLY (AND RELIEF/POWER EXHAUST) FAN(S) SHALL BE DE-ENERGIZED AND THE OUTSIDE AIR (AND RELIEF AIR) DAMPER(S) SHALL BE CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN.
B. WHEN IN UNOCCUPIED MODE, ON A RISE IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, ABOVE THE UNOCCUPIED MODE SET POINT (ADJUSTABLE), THE UNITS SUPPLY FAN AND DX COOLING CYCLE SHALL BE ENERGIZED. THE UNITS DIGITAL SCROLL COMPRESSORS SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (ADJUSTABLE). THE OUTSIDE AIR (AND RELIEF AIR) DAMPER(S) SHALL REMAIN CLOSED. THE RETURN AIR DAMPER SHALL REMAIN OPEN.
C. WHEN IN MORNING WARM UP/COOL DOWN MODE, THE SUPPLY FAN SHALL BE ENERGIZED, WITH THE OUTSIDE AIR (AND RELIEF AIR) DAMPER(S) CLOSED. THE RETURN AIR DAMPER SHALL BE OPEN. CHANGE OVER TO OCCUPIED MODE SHALL BE CONTROLLED VIA THE TIMECLOCK SCHEDULE.
D. WHEN IN OCCUPIED MODE, THE SUPPLY (AND RELIEF/POWER EXHAUST) FAN(S) SHALL RUN CONTINUOUSLY WITH THE OUTSIDE AIR DAMPER TO ITS PROPER MINIMUM POSITION AND THE RETURN AIR (AND RELIEF AIR) DAMPER(S) CORRESPONDINGLY POSITIONED AS DETERMINED BY THE TEST AND BALANCE PROCEDURE. THE OUTSIDE AIR, RETURN AIR, (AND RELIEF AIR) DAMPERS SHALL BE MODULATED TO MAINTAIN THE UNIT'S MINIMUM OUTSIDE AIR QUANTITY REGARDLESS OF THE UNITS CURRENT SUPPLY AIR QUANTITY. THE DAMPERS SHALL MODULATE LINEARLY BETWEEN THE MAXIMUM TOTAL SUPPLY AIR AND MINIMUM TOTAL SUPPLY AIR BASED ON INPUT FROM THE SUPPLY FAN VARIABLE FREQUENCY DRIVE.
E. THE EMS SHALL MONITOR SUPPLY AIR DUCT PRESSURE, SENSED BY A DUCT MOUNTED PRESSURE SENSOR AS LOCATED ON THE DRAWINGS. THE VARIABLE FREQUENCY DRIVE SHALL MODULATE THE SUPPLY FAN TO MAINTAIN A CONSTANT SUPPLY AIR DUCT PRESSURE.
F. THE EMS SHALL MONITOR SPACE PRESSURE, SENSED BY A SPACE MOUNTED PRESSURE SENSOR AS LOCATED ON THE DRAWINGS. THE VARIABLE FREQUENCY DRIVE SHALL MODULATE THE RELIEF FAN TO MAINTAIN A POSITIVE SPACE PRESSURE.
G. WHEN IN OCCUPIED MODE, ON A RISE IN DISCHARGE AIR TEMPERATURE AS SENSED BY A DUCT MOUNTED TEMPERATURE SENSOR LOCATED IN THE MAIN SUPPLY DUCT, THE UNITS DX COOLING CYCLE SHALL BE ENERGIZED. THE UNITS DIGITAL SCROLL COMPRESSORS SHALL BE MODULATED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (ADJUSTABLE).
H. WHEN IN OCCUPIED MODE, ON A DROP IN DISCHARGE AIR TEMPERATURE AS SENSED BY A DUCT MOUNTED TEMPERATURE SENSOR LOCATED IN THE MAIN SUPPLY DUCT, THE UNITS HEAT PUMP HEATING CYCLE SHALL BE ENERGIZED. THE UNITS DIGITAL SCROLL COMPRESSORS SHALL BE MODULATED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (ADJUSTABLE).
I. ON A RISE IN SUPPLY AIR RELATIVE HUMIDITY, AS SENSED BY A DUCT MOUNTED HUMIDITY SENSOR LOCATED IN THE UNITS MAIN SUPPLY DUCT, THE UNITS DX COOLING CYCLE SHALL BE ENERGIZED TO MAINTAIN RELATIVE HUMIDITY SET POINT (ADJUSTABLE). IF THE SUPPLY AIR TEMPERATURE DROPS BELOW THE COOLING SET POINT, AS SENSED BY A DUCT MOUNTED TEMPERATURE SENSOR, WHILE THE RELATIVE HUMIDITY REMAINS UNSATISFIED, THE UNITS HOT GAS REHEAT CYCLE SHALL BE ENERGIZED AND MODULATE TO MAINTAIN THE COOLING SET POINT (ADJUSTABLE).
J. THE ENERGY RECOVERY WHEEL SHALL MODULATE VIA A VFD BASED ON ITS BUILT IN CONTROLS TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT (ADJUSTABLE).
K. WHEN OUTSIDE AIR CONDITIONS ALLOW, AS DETERMINED BY THE UNITS ENTHALPY SENSOR, THE OUTSIDE AIR (AND RELIEF AIR) DAMPER(S) SHALL MODULATE OPEN TO ALLOW ECONOMIZER FREE COOLING. THE ENERGY RECOVERY WHEEL SHALL BE DE-ENERGIZED.
L. THE EMS SHALL MONITOR THE PRESSURE DROP ACROSS THE FILTERS IN THE UNIT. UPON REACHING A PRESSURE DIFFERENTIAL SET POINT (ADJUSTABLE), THE EMS SHALL GENERATE AN ALARM CONDITION INDICATING THE FILTERS NEED TO BE REPLACED.
M. UPON SENSING IMPROPER CONDITIONS, DUCT SMOKE DETECTORS, FURNISHED BY DIVISION 20 AND INSTALLED BY DIVISION 26 SHALL DE-ENERGIZE THE SUPPLY (AND RELIEF/POWER EXHAUST) FAN(S), AND CLOSE THE OUTSIDE AIR (AND RELIEF AIR) DAMPER(S).

CONTROL SEQUENCE E - CLASSROOM VAV BOX UNIT CONTROLS (VAV-1 THRU VAV-5)

A. WHEN IN UNOCCUPIED MODE, THE UNIT SUPPLY FAN SHALL BE DE-ENERGIZED AND THE VARIABLE AIR VOLUME DAMPER SHALL BE CLOSED.
B. WHEN IN UNOCCUPIED MODE, ON A RISE IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, ABOVE THE UNOCCUPIED MODE SET POINT (ADJUSTABLE), THE SUPPLY FAN SHALL BE ENERGIZED AND THE VARIABLE AIR VOLUME DAMPER SHALL OPEN.
C. WHEN IN UNOCCUPIED MODE, ON A DROP IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, BELOW THE UNOCCUPIED MODE SET POINT (ADJUSTABLE), THE SUPPLY FAN SHALL BE ENERGIZED AND THE VARIABLE AIR VOLUME DAMPER SHALL OPEN.
D. WHEN IN UNOCCUPIED MODE, ON A DROP IN SPACE TEMPERATURE AS SENSED BY A SPACE TEMPERATURE SENSOR, BELOW THE UNOCCUPIED MODE SET POINT (ADJUSTABLE), THE SUPPLY FAN AND THE VAV BOXES ELECTRIC REHEAT COIL (MODULATING) SHALL BE ENERGIZED. THE VARIABLE AIR VOLUME DAMPER SHALL REMAIN CLOSED.
E. WHEN IN MORNING WARM UP/COOL DOWN MODE, THE SUPPLY FAN SHALL BE ENERGIZED, WITH THE VARIABLE AIR VOLUME DAMPER OPEN. CHANGE OVER TO OCCUPIED MODE SHALL BE CONTROLLED VIA THE TIMECLOCK SCHEDULE. (IF USING THE RTU FOR MORNING WARM UP).
F. WHEN IN OCCUPIED MODE, THE SUPPLY FAN SHALL RUN CONTINUOUSLY.
G. WHEN IN OCCUPIED MODE, ON A RISE IN SPACE TEMPERATURE, AS SENSED BY A SPACE TEMPERATURE SENSOR, ABOVE THE OCCUPIED MODE SET POINT (ADJUSTABLE), THE UNIT'S CONTROLS SHALL BE ENABLED WHICH SHALL CALCULATE A NEW VOLUME (CFM) SET POINT. THE UNIT'S CONTROLS SHALL OPEN THE VARIABLE AIR VOLUME DAMPER UNTIL THE NEW CALCULATED VELOCITY, AS SENSED BY A VELOCITY SENSOR, IS REACHED.
H. WHEN IN OCC