INSULATION 24.4.2.2. OUTER JACKET OF METALIZED FIRE-RESISTANT VAPOUR BARRIER. 24.4.2.3 SUITABLE FOR UP TO 500 PA POSITIVE STATIC PRESSURE AND/OR 250 PA NEGATIVE STATIC PRESSURE 24.4.2.4. ULC LABELED, CLASS 1, DUCT CONNECTOR CONNECT TO DUCTWORK USING TWO WRAPS OF DUCT TAPE AND STAINLESS STEEL WORM DRIVE 24.4.2.5. CLAMPS OR PANDUIT ADJUSTABLE DIAMETER CLAMPS OR THERMAFLEX DUCT STRAP 24.5. PROVIDE BACKDRAFT DAMPERS WHERE INDICATED ON THE DRAWINGS. 24.5.1. MINIMUM REQUIREMENTS: 16 GAUGE GALVANIZED STEEL OR ALUMINUM CHANNEL FRAME 24.5.1.2. 16 GAUGE ALUMINUM BLADES, COMPLETE WITH STIFFENING RIBS/BENDS. 24.5.1.3. FULL BLADE LENGTH SHAFTS; BRASS, BALL OR NYLON BEARINGS. 24.5.1.4. FELT OR NEOPRENE ANTI-CHATTER BLADE STRIPS. 24.5.1.5. BLADE CONNECTING LINKAGE WITH EYELET AND PIN BEARINGS. MAXIMUM BLADE LENGTH OF 760 MM USE MULTIPLES FOR LARGER DIMENSIONS. 24.5.1.6. 24.5.1.7. MANUFACTURER'S LABEL. 24.5.1.8. WHERE A BALANCED BACKDRAFT DAMPER (BBD) IS INDICATED THE DAMPER SHALL INCORPORATE AN ADJUSTABLE COUNTERBALANCE WEIGHT AND LEVER. 24.5.1.9. MAXIMUM PRESSURE DROP ACROSS DAMPER AT 4 M/S SHALL BE 45 PA. 24.5.1.10. STANDARD OF ACCEPTANCE: RUSKIN, GREENHECK, AIR CONTROL PRODUCTS 24.6. PROVIDE BALANCE DAMPERS WITH LOCKING QUADRANT ON EACH RUN OUT TO A GRILLE OR DIFFUSER AND 24.6.1. IDENTIFY THE AIRFLOW DIRECTION AND BLADE ROTATION AND OPEN AND CLOSED POSITION. 24.6.2. PROVIDE SHEET METAL BRIDGE TO RAISE QUADRANT TYPE OPERATORS ABOVE THE INSULATION THICKNESS. PROVIDE OPEN END BEARINGS WHERE BRIDGES ARE USED. 24.6.3. THE DAMPER OPERATING LEVER SHALL BE ARRANGED PARALLEL WITH THE DAMPER BLADE. 24.7.1. PROVIDE WIRE MESH SCREENS IN ALL AIR INTAKE OPENINGS WHERE NOTED ON THE DRAWINGS. 24.7.2. SCREENS SHALL BE CONSTRUCTED FROM ALUMINUM WIRE 16 GAUGE DIAMETER. 24.7.3. SCREEN MESH SHALL BE 12.5MM. 24.8. PROVIDE FIRE DAMPERS WHERE INDICATED ON THE DRAWINGS. 24.8.1. FIRE DAMPERS SHALL BE ULC TESTED AND LABELED. FIRE DAMPERS SHALL BE CURTAIN TYPE, FUSIBLE LINK ACTUATED, WEIGHTED TO CLOSE AND LOCK IN CLOSED POSITION WHEN RELEASED OR HAVING NEGATOR-SPRING-CLOSING OPERATOR FOR MULTI-LEAF TYPE IN HORIZONTAL POSITION WITH VERTICAL AIR FLOW. CURTAIN FIRE DAMPERS SHALL HAVE BLADES RETAINED IN A RECESS SO FREE AREA OF CONNECTING DUCTWORK IS NOT REDUCED. STANDARD OF ACCEPTANCE: RUSKIN, NAILOR HART, CONTROLLED AIR. 24.8.2. INSTALL IN ACCORDANCE WITH THE SMACNA FIRE, SMOKE AND RADIATION DAMPER INSTALLATION GUIDE FOR HVAC SYSTEMS - LATEST EDITION. 24.8.3. SIZE SO THAT THE FREE AREA OF THE DUCT IS MAINTAINED THROUGH THE ASSEMBLY. 24.8.4. INSTALL IN GALVANIZED STEEL SLEEVE, RETAINED IN PLACE WITH RETAINING ANGLES ON ALL FOUR SIDES AT 24.8.5. CONNECT DUCTWORK TO DAMPER SLEEVES USING BREAK-AWAY DUCT JOINTS ON ALL FACES. 24.8.6. FIRE DAMPERS MUST BE INSTALLED WITHIN WALL THICKNESS OF FIRE SEPARATION. 24.8.7. USE ULC APPROVED FIRE STOP SEALANT TO CAULK ALL JOINTS BETWEEN THE FIRE DAMPER SLEEVE ANGLES AND THE SLEEVE AND BETWEEN THE FIRE DAMPER SLEEVE ANGLES AND THE FIRE SEPARATION 24.9. DUCT AND PLENUM ACCESS 24.9.1. PROVIDE ACCESS DOORS AND PANELS AS FOLLOWS: 24.9.1.1. DOORS: WHERE SHOWN ON THE DRAWINGS. 24.9.1.2. PANELS 24.9.1.2.1. EVERY 12M ON ALL DUCTWORK 24.9.1.2.2. AT THE BASE OF EACH DUCT RISER. 24.9.1.2.3. BOTH SIDES OF EQUIPMENT BLOCKING THE DUCT, (E.G. AIR FLOW MEASURING STATIONS, COILS) AT OR TO ONE SIDE OF OTHER EQUIPMENT IN DUCT, (E.G. BACKDRAFT DAMPERS, BALANCING DAMPERS SERVING MULTIPLE INLETS/OUTLETS, FIRE DAMPERS PANELS NEED NOT BE PROVIDED WHERE ACCESS IS AVAILABLE THROUGH A DOOR OR A REGISTER 24.9.1.2.5. MOUNTED ON THE SIDE OF THE DUCT. PRODUCTS DOORS - CONSTRUCT IN ACCORDANCE WITH SMACNA DUCT STANDARDS FIG. 6-12 EXCEPT FOR 24.9.1.3.1. LATCH TYPE. 40MM THICK INSULATION 24.9.1.3.2. PANELS - NAILOR, VENTLOK, 25MM THICK INSULATION. 24.9.1.3.3. GASKETS - NEOPRENE OR FOAM RUBBER. 24.9.1.4. HARDWARE 24.9.1.4.1. PANELS UP TO 150X300MM - 2 SASH LOCKS. PANELS - 380X500MM - 4 SASH LOCKS. DOORS - PIANO HINGE AND VENTLOK 310 LATCHES C/W FRONT AND INSIDE HANDLES AND FRONT 24.9.1.4.3 DOOR PULL 24.9.1.5. INSTALLATION: 24.9.1.5.1. SEAL FRAMES AIRTIGHT 24.9.1.5.2. INSTALL SO AS TO NOT INTERFERE WITH AIRFLOW. INSTALL TO PROVIDE FASIEST POSSIBLE ACCESS FOR SERVICING AND CLEANING 24.9.1.5.3 DO NOT USE SHEET METAL SCREWS FOR ATTACHING ACCESS PANELS TO DUCTWORK ROUND DUCTS [330MM/13"] AND LARGER SHALL INCLUDE A SHORT COLLAR FOR THE INSTALLATION OF 24.9.1.5.5. ACCESS PANELS. SMALL RECTANGULAR DUCTS SHALL BE TRANSITIONED FOR THE INSTALLATION OF ACCESS PANELS. 24.9.1.5.6. 24.9.1.6. PROVIDE THERMAL BREAKS AT ALL ROOF AND WALL PENETRATIONS PROVIDE FLEXIBLE CANVAS DUCT CONNECTIONS ON ALL FAN EQUIPMENT 5. PIPING INSTALLATION 25.1. REAM PIPE ENDS. CLEAN SCALE AND DIRT, INSIDE AND OUTSIDE BEFORE AND AFTER ASSEMBLY. 25.2. DURING CONSTRUCTION, PROTECT ALL OPENINGS IN PIPING AND EQUIPMENT, BY CAPPING OR PLUGGING TO PREVENT ENTRY OF DIRT

25.3. CONNECT TO EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION UNLESS OTHERWISE

26.3. CHEMICALLY CLEAN AND FLUSH ALL NEW HYDRONIC PIPING PRIOR TO RECONNECTION TO EQUIPMENT

25.5. ALIGN AND INDEPENDENTLY SUPPORT PIPING CONNECTIONS ADJACENT TO EQUIPMENT TO PREVENT PIPING

25.4. ARRANGE PIPING CONNECTIONS TO ALLOW EASE OF ACCESS AND FOR REMOVAL OF EQUIPMENT.

STRESSES BEING TRANSFERRED

26.2. REPAIR ALL LEAKS AS REQUIRED FOR ZERO LOSS.

6. PIPE TESTING AND CLEANING

25.6. CONSTRUCT PIPING TO ALLOW FOR EXPANSION AND CONTRACTION.

26.1. HYDROSTATICALLY TEST ALL PIPES AS PER CODE PRIOR TO INSULATING.

26.5. PROVIDE CHEMICAL TREATMENT TO MATCH EXISTING AS REQUIRED TO REFILL SYSTEM. 27.1. AS APPLICABLE, USE THE LATEST EDITION OF THE LOCAL APPLICABLE BUILDING CODE AS A REFERENCE STANDARD IF SUFFICIENT DETAIL/INFORMATION IS NOT SPECIFIED HEREIN. 27.2. EXTERNAL DUCT INSULATION - INTERIOR USE 27.2.1. MATERIAL: COMMERCIAL-GRADE FIBERGLASS THERMAL WITH INTEGRAL VAPOUR BARRIER. 27.2.2. TEMPERATURE RANGE: 4°C TO 120°C. 27.2.3. THERMAL CONDUCTIVITY AT MEAN TEMPERATURE: 0.040 W/M/°C, 24°C. 27.2.4. ACCEPTABLE MANUFACTURERS: KNAUF FSK DUCT WRAP, MANSON ALLEY-WRAP FSK, OWENS-CORNING FIBERGLAS COMMERCIAL-GRADE ALL-SERVICE DUCT WRAP 27.2.5. INSTALLED R-VALUE: 5.6 HR-FT2-°F/BTU (BASED ON 50MM NOMINAL THICKNESS) 27.2.7. FACING: FOIL-REINFORCED-KRAFT (FRK) VAPOR-RETARDING 27.2.8. SEAMS: 50MM FACING TAB. 27.2.9. BASE PRODUCT: OWENS-CORNING FIBERGLAS COMMERCIAL-GRADE ALL-SERVICE DUCT WRAP 27.3. ACOUSTIC DUCT LINER 27.3.1. INTERNAL FLEXIBLE GLASS FIBRE ACOUSTICAL INSULATION WITH SEALER COATING ON ONE FACE. 27.3.2. THERMAL CONDUCTIVITY AT MEAN TEMPERATURE 24°C. - 0.040 W/M/°C 27.3.3. ACCEPTABLE MANUFACTURERS: CERTAINTEED ULTRALITE #150, KNAUF DUCT LINER M, MANSON AKOUSTI-LINER 27.4. INSULATION ACCESSORIES 27.4.1. ALL INSULATION ACCESSORIES (ADHESIVES, TAPE, COATINGS, ETC.) SHALL BE APPROVED FOR THE SPECIFIC APPLICATION. 27.5. DUCT INSULATION SCHEDULE: 27.5.1. PROVIDE 50MM THERMAL INSULATION FOR OUTSIDE AIR DUCTS. 27.5.2. PROVIDE 50MM THERMAL INSULATION FOR EXHAUST DUCTS FOR 3M FROM ROOF OR WALL PENETRATION. 27.5.3. PROVIDE 50MM THERMAL INSULATION FOR ALL INTERIOR SUPPLY DUCTS. 27.5.4. PROVIDE ACOUSTIC DUCT LINER WHERE NOTED ON DRAWINGS (25MM MINIMUM, 50MM NOTED). 28 INSULATION - PIPING & FOUIPMENT 28.1. AS APPLICABLE, USE THE LATEST EDITION OF THE LOCAL APPLICABLE BUILDING CODE AS A REFERENCE STANDARD IF SUFFICIENT DETAIL/INFORMATION IS NOT SPECIFIED HEREIN. 28.2. APPLY THE FOLLOWING MATERIALS OVER THE ENTIRE LENGTH OF THE SYSTEM INCLUDING VALVES, TANKS AND 28.2.1. COLD PIPING: RIGID FIBROUS GLASS INSULATION WITH VAPOUR BARRIER AND FACTORY APPLIED GENERAL PURPOSE JACKETS, "K" VALUE AT 24°C MAXIMUM 0.035 W/M/k 28.2.2. HOT PIPING: RIGID FIBROUS GLASS INSULATION WITH FACTORY APPLIED GENERAL PURPOSE JACKET MOULDED TO CONFORM TO PIPING, "K" VALUE AT 24°C MAXIMUM 0.035 W/M/K 28.2.3. HOT EQUIPMENT: SAME AS HOT PIPING INSULATION, "K" VALUE AT 24°C MAXIMUM 0.035 W/M/K 28.2.4. RECOVERY JACKET: ULC LABELLED THERMOCANVAS FLAME SPREAD LESS THAN 25. SMOKE DEVELOPED LESS 28.2.5. COLD EQUIPMENT: COMMERCIAL GRADE ELASTOMERIC THERMAL INSULATION, "K" VALUE AT 24°C MAXIMUM 28.3. INSULATION ACCESSORIES 28.3.1. ALL INSULATION ACCESSORIES (ADHESIVES, TAPE, COATINGS, ETC.) SHALL BE APPROVED FOR THE SPECIFIC APPLICATION. 28.3.2. INSTALL FLEXIBLE FOAMED ELASTOMERIC OR FLEXIBLE CLOSED CELL PREFORMED PIPING INSULATION. SECURE LONGITUDINAL AND BUTT JOINTS WITH ADHESIVE. INSULATE ALL FITTINGS AND COMPONENTS. TO OBTAIN THE SPECIFIED THICKNESS, APPLY IN LAYERS WITH STAGGERED JOINTS. 28.4. INSULATION TERMINATION POINTS 28.4.1. TERMINATE INSULATION 75MMBACK FROM ALL UNINSULATED FITTINGS TO PROVIDE WORKING CLEARANCE AND TERMINATE INSULATION AT 90° AND FINISH WITH REINFORCED SCRIM CLOTH AND VAPOUR BARRIER MASTIC SYSTEM, COVER ONTO PIPE AND OVER THE INSULATION VAPOUR BARRIER, ON CONCEALED HOT SERVICES TERMINATE INSULATION 75MM BACK FROM ALL UNINSULATED FITTINGS, CUT OFF AT 90° AND APPLY REINFORCED SCRIM CLOTH AND BREATHER MASTIC SYSTEM 28.4.2. CUT BACK INSULATION AT 45° AND FINISH WITH A SILICONE CAULKING SEALANT AROUND THE BASE OF THERMOMETER WELLS, PRESSURE GAUGES, FLOW SWITCHES AND PRESSURE AND CONTROL SENSORS. 28.5.1. INSULATE PLUMBING VENTS FOR 2.5M FROM ROOF PENETRATION WITH COLD PIPING INSULATION, DO NOT USE FLEXIBLE DUCT WRAP INSULATION. 28.5.2. INSULATE ALL VALVES AND PIPE MOUNTED EQUIPMENT 28.5.3. PROVIDE 40MM INSULATION FOR ALL HEATING PIPING PIPES 50MM AND SMALLER, 50MM FOR ALL HEATING PIPING GREATER THAN 50MM 28.5.4. PROVIDE 25MM INSULATION FOR ALL DOMESTIC HOT WATER AND HOT WATER RECIRCULATION PIPES 50MM AND SMALLER. 40MM FOR ALL DOMESTIC HOT WATER HOT WATER AND RECIRCULATION PIPES GREATER THAN 28.5.5. PROVIDE 25MM INSULATION FOR ALL DOMESTIC COLD WATER PIPE 29 REFRIGERATION SYSTEMS 29.1. DO REFRIGERATION SYSTEM WORK IN ACCORDANCE WITH LATEST VERSION OF APPLICABLE LOCAL PRESSURE VESSELS SAFETY ACT AND REGULATIONS ("REFRIGERATION CODE"), CSA B52 AND ANSI B31.5. 29.2. PROVIDE PROCESSED TUBING FOR REFRIGERATION INSTALLATION, DEOXIDIZED, DEHYDRATED AND SEALED. 29.2.1. HARD COPPER TUBE, TYPE L, TO ASTM B88M. $29.3. \quad \text{ANNEALED COPPER TUBE TO ASTM B280, WITH MINIMUM WALL THICKNESS.} \ [\text{AS PER CSA B52}].$ 29.4. SERVICE: 29.4.1. DESIGN PRESSURE 2070 KPA/300 PSIG AND TEMPERATURE 121°C. 29.5. BRAZED: 29.5.1. WROUGHT COPPER TO ANSI B16.22 OR CAST BRONZE TO MIL-F-1183E. 29.6. FLARE: 29.6.1. BRONZE OR BRASS, FOR REFRIGERATION, TO ANSI B16.26. 29.7. LONG RADIUS TYPE FOR ELBOWS AND RETURN BENDS. 29.8. BRAZING MATERIALS SHALL BE SIL-FOS-15 PHOSPHOR-COPPER-SILVER ALLOY FOR COPPER PIPING JOINTED BY COPPER FITTINGS AND SILVER SOLDER FOR BRASS FITTINGS 29.9. FLEXIBLE CONNECTIONS: 29.9.1. 10MM NOMINAL OR LESS SHALL BE MADE USING COILED SOFT COPPER TUBING 29.9.2. FOR LARGER SIZES, USE SEAMLESS FLEXIBLE BRONZE HOSE WITH BRONZE WIRE BRAID COVERING, USE FACTORY SEALED NEOPRENE JACKET UNIT WHERE FREEZING MAY OCCUR. 29.10. EACH REFRIGERANT SYSTEM SHALL BE TESTED BEFORE OPERATION WITH DRY NITROGEN GAS TO A PRESSURE

NOT LESS THAN 1.5 TIMES THE SYSTEM WORKING PRESSURE. DURING THE TEST, EACH JOINT SHALL BE TESTED

REMAIN ISOLATED FROM SYSTEM.

FOR LEAKS WITH A SOLUTION OF SOAP AND WATER, COMPRESSORS WITH REFRIGERANT HOLDING CHARGE SHALL

26.4. THOROUGHLY FLUSH ALL NEW DOMESTIC WATER PIPING.

30. DUCT MOUNTED HEATING COILS

31. DUCT MOUNTED COOLING COILS

32. ROOFTOP UNITS

32.2. SEE SCHEDULE

33.2. SEE SCHEDULE.

34. CONDENSING UNITS

34.2. SEE SCHEDULE

35. CONTROLS GENERAL

35.1.1. MATCH EXISTING

31.1. ACCEPTABLE MANUFACTURERS

31.1.1. DAIKIN, GREENHECK, TRANE

32.1. ACCEPTABLE MANUFACTURERS

33. ENERGY RECOVERY VENTILATORS

33.1. ACCEPTABLE MANUFACTURERS

34.1. ACCEPTABLE MANUFACTURERS

35.1. ACCEPTABLE MANUFACTURERS

PEER TO PEER LAN TRUNK

35.6. SPACE TEMPERATURE SENSOR

OCCUPIED MODE.

35.7. MIXED AIR TEMPERATURE SENSORS

OF THE AIR STREAM.

35.9. PUMP AND FAN STATUS INDICATION

35.8. WATER FLOW SWITCHES

35.10. CONTROL DAMPERS

APPLICABLE.

PER THE SEQUENCE OF OPERATIONS DESCRIBED HEREIN

35.5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING ITEMS:

35.5.4. SHOP DRAWINGS, AS-BUILT DIAGRAMS AND OPERATING MANUALS.

35.8.1. WATER FLOW SWITCH SHALL HAVE STAINLESS STEEL PADDLES.

EXCESS TORQUE FOR THE DAMPER AREA CONTROLLED

35.9.1. ADJUSTABLE SETPOINT CURRENT SENSING RELAY.

REMAINDER OF THE CONTROL SYSTEM.

THE BUILDING OR TENANT GROUP SCHEDULE

NETWORK COMMUNICATIONS.

36 CONTROLS - SEQUENCE OF OPERATION

36.4. ROOFTOP UNITS (RTU-x)

FROM VAV BOXES

FROM VAV BOXES.

TEMPERATURE SETPOINTS.

35.5.5. DEMONSTRATION AND INSTRUCTION FOR THE OWNER.

35.5.1. ALL CONDUIT AND WIRING FOR THE LOW VOLTAGE CONTROL SYSTEM.

35.5.3. ALL PROGRAMMING, COMMISSIONING AND TUNING OF THE COMPLETE CONTROL SYSTEM.

35.6.1. SENSORS SHALL BE THERMISTOR TYPE AND SHALL CONTAIN A SLIDE ADJUSTMENT FOR SETPOINT

35.12.1 FIFLD PROGRAMMABLE USING FITHER OPERATORS CONTROL LANGUAGE OR FIKON PROGRAMMING

36.4.3. COOLING: THE SUPPLY FAN SHALL OPERATE AND THE DX COOLING COIL SHALL CYCLE TO MAINTAIN

FROM THE RTUS, WITH ELECTRIC REHEAT COILS MODULATING AS NEEDED TO MAINTAIN ZONE

PRE-PROGRAMMED OR "CANNED" PROGRAMMING IS NOT ACCEPTABLE.

OFF AND EXTERIOR ISOLATION DAMPERS CLOSED DURING UNOCCUPIED MODE.

(GRADUATED WARMER-COOLER), PUSH BUTTON OVER-RIDE TO TEMPORARILY RETURN THE ZONE TO

34.1.1. CARRIER, DAIKIN, TRANE

32.1.1. TRANE, CARRIER, PRICE MECHANICAL

33.1.1. TEMPEFF, PRICE SOLUTIONAIRE (REGENCORE)

30.1. ACCEPTABLE MANUFACTURERS

30.1.1. THERMOLEC, DAIKIN, GREENHECK

30.3. REFER TO SCHEDULES FOR SELECTIONS.

30.2. AIR PRESSURE DROPS SHALL BE LIMITED TO 50 PA UNLESS NOTED OTHERWISE

31.2. AIR PRESSURE DROPS SHALL BE LIMITED TO 50 PA UNLESS NOTED OTHERWISE.

35.2. CONTROL SYSTEM SHALL BE AN ELECTRONIC SYSTEM. THE SYSTEM ARCHITECTURE SHALL UTILIZE INTELLIGENT DISTRIBUTED CONTROL MODULES, LOCATED AT EACH PIECE OF EQUIPMENT, WHICH WILL COMMUNICATE ON A 35.3. THE SYSTEM SHALL PROVIDE DIRECT DIGITAL CONTROL, ENERGY MANAGEMENT AND BUILDING AUTOMATION FOR THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS BASED UPON HEATING AND COOLING DEMANDS AS Legend 35.4. THE INSTALLATION SHALL BE PERFORMED BY CONTRACTORS SPECIALIZING IN THIS TYPE OF CONTROL SYSTEM INSTALLATION AND SETUP AND SHALL SEAMLESSLY INTEGRATE WITH THE EXISTING BUILDING CONTROLS 35.5.2. SUPPLY OF CONTROL VALVES AND EXTERNAL CONTROL DAMPERS AND OPERATORS TO THE MECHANICAL 35.7.1. AVERAGING TYPE THERMISTORS DUCT TEMPERATURE SENSOR WITH MULTIPLE PASSES ACROSS THE FACE 35.10.1. LOW LEAKAGE OUTSIDE AIR DAMPER C/W SIDE SEALS AND EDGE SEALS, OPPOSED OR PARALLEL BLADE AS 35.11.1. GEAR DRIVE DIRECT COUPLED WITH SPRING RETURN ELECTRONIC ACTUATORS SIZED FOR A MINIMUM OF 15% 35.12.2. EACH CONTROLLER SHALL BE CAPABLE OF OPERATING STAND-ALONE WITHOUT ADVERSELY AFFECTING THE 35.12.3. SHOULD ANY CONTROLLER FAIL, THE REMAINDER OF THE CONTROL SYSTEM SHALL NOT BE AFFECTED. 35.12.4. ZONE CONTROLLERS SHALL HAVE A DEFAULT PROGRAM WHICH WILL START OPERATING UPON THE LOSS OF 35.12.5. EACH ZONE SHALL BE CAPABLE OF HAVING ITS OWN OCCUPANCY SCHEDULE AS WELL AS OPERATING FROM 36.1. ENERGY RECOVERY VENTILATOR (ERV-1) SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS. ERV SHALL BE 36.2. VENTILATION DUCT HEATING COILS (DHC-x) SHALL MODULATE TO SUPPLY VENTILATION AIR AT 75°F (ADJUSTABLE). 36.3. VENTILATION DUCT COOLING COILS (CC-x) SHALL MODULATE TO SUPPLY VENTILATION AIR AT 55°F (ADJUSTABLE). 36.4.1. DURING UNOCCUPIED HOURS, RTU-x SHALL CYCLE ON AND OFF TO MEET ROOM TEMPERATURE SETPOINTS. 36.4.2. HEATING: THE SUPPLY FAN SHALL OPERATE AND THE HEATING COIL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE OF 71°F (ADJUSTABLE), THE FAN SHALL OPERATE AT VARIABLE SPEED BASED ON DEMAND DISCHARGE AIR TEMPERATURE OF 55°. THE FAN SHALL OPERATE AT VARIABLE SPEED BASED ON DEMAND COOLING: VARIABLE AIR VOLUME BOXES SHALL ADJUST AIRFLOW TO EACH ZONE IN RESPONSE TO ROOM FEMPERATURE SENSOR SETPOINTS. ADJUSTMENTS SHALL BE BASED ON SUPPLY AIR TEMPERATURE HEATING: VARIABLE AIR VOLUME BOXES SHALL ADJUST AIRFLOW TO EACH ZONE IN RESPONSE TO ROOM TEMPERATURE SENSOR SETPOINTS. ADJUSTMENTS SHALL BE BASED ON SUPPLY AIR TEMPERATURE



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WINNIPEG TRANSIT MAINTENANCE FACILITY OFFICE REDEVELOPMENT

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