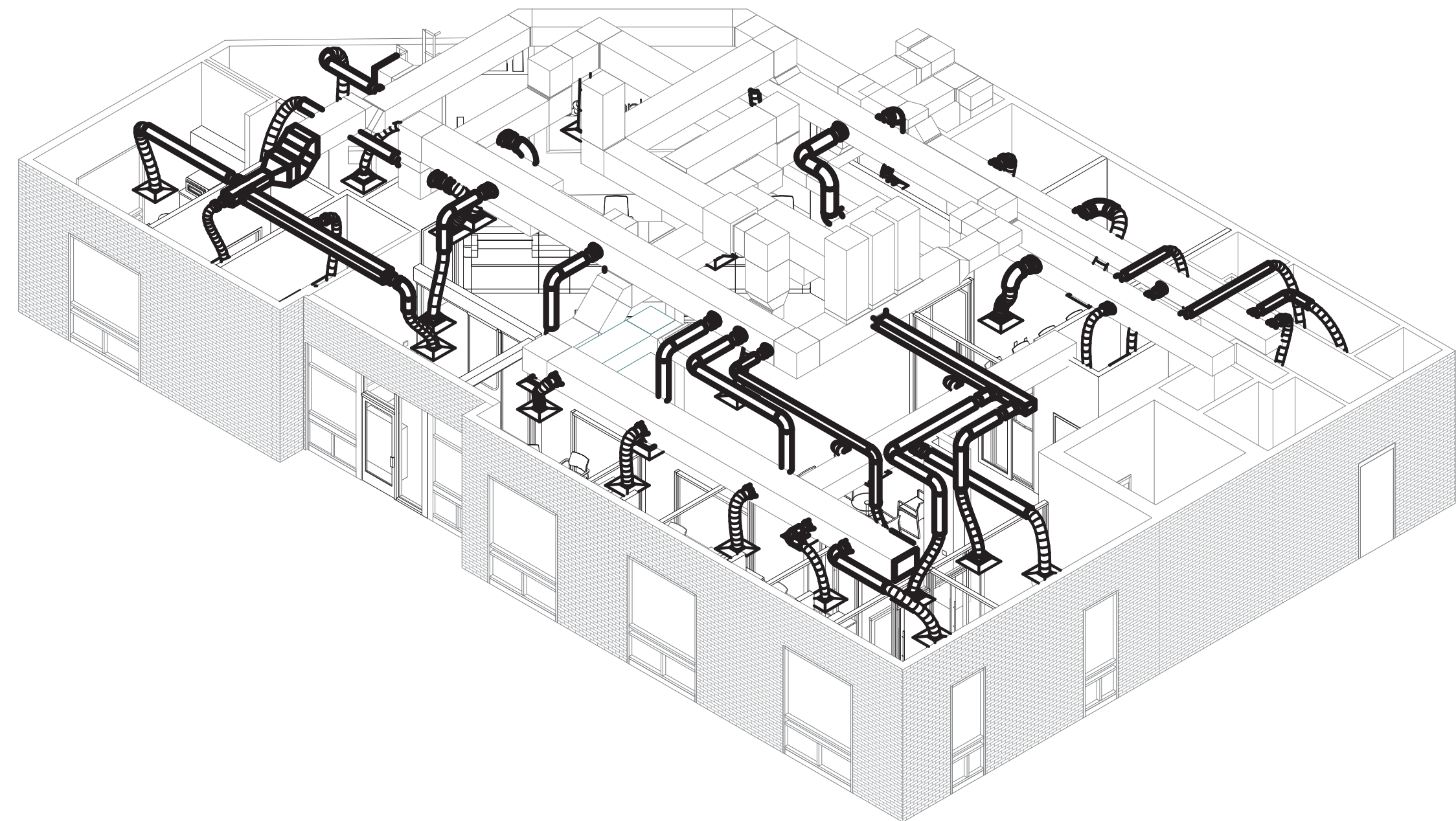


MECHANICAL PLAN SCALE: 1/8" = 1'-0"

MECHANICAL LEGEND

- Legend items: EXISTING SUPPLY AIR DIFFUSER, EXISTING RETURN AIR GRILLE, EXISTING DUCT, EXISTING DUCT TAKE-OFF, EXISTING VOLUME DAMPER, EXISTING FLEX DUCT, EXISTING THERMOSTAT, EXISTING UNIT, O.A. OUTDOOR AIR, R.A. RETURN AIR, NEW SUPPLY AIR DIFFUSER, NEW RETURN AIR GRILLE, NEW DUCT, NEW DUCT TAKE-OFF, NEW CEILING EXHAUST FAN, NEW VOLUME DAMPER, NEW FLEX DUCT, NEW THERMOSTAT, S.A. SUPPLY AIR.



3D MECHANICAL VIEW SCALE:

MECHANICAL PLAN KEY NOTES

- MECHANICAL CONTRACTOR SHALL SURVEY THE EXISTING MECHANICAL DUCTWORK SYSTEMS AND REPORT BACK TO THE ARCHITECT TO CONFIRM THERE ARE NO MAJOR DISCREPANCIES WITH THE DESIGN INTENT. ALL EXISTING DUCTS SHOWN ARE THE APPROXIMATE LOCATION BASED OFF FIELD DOC. CONTRACTOR SHALL VERIFY EXACT SIZE & LOCATION IN FIELD. EXISTING BRANCH DUCTS ARE TO BE REPURPOSED, IF DUCTS ARE DETERMINED BY THE ARCHITECT AND MECHANICAL CONTRACTOR TO BE IN DISREPAIR THEY SHALL BE REMOVED AND CAPPED AT THE MAIN DUCT, AND NEW BRANCH DUCTS SHALL BE PROVIDED WITH NEW BALANCING DAMPERS AT NEW TAP OFF OF MAIN DUCT. PROVIDE NEW BALANCING DAMPERS ON EXISTING BRANCH DUCTS LOCATED AT TAP OFF OF MAIN DUCT IF NONE EXIST CURRENTLY. PROVIDE INSULATED FLEX DUCT FROM EXISTING TAP AND CONNECT TO DIFFUSERS. INSTALLATION OF FLEX DUCTS SHALL COMPLY WITH SECTION 603 OF THE 2015 IMC W/ 2018 UCC & RAC AMENDMENTS. ADJUSTING, BALANCING, TESTING & INSPECTION: a. ALL ALTERED HYDRONIC AND AIR SYSTEMS SHALL BE BALANCED AND TESTED TO MEET THE PROPOSED FLOW PROVIDED AT EACH TERMINAL TESTING, BALANCING AND ADJUSTING SHALL BE PERFORMED BY FIRMS IN COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) AND SHALL COMPLY WITH SECTION 603 OF THE IMC. b. THE PROPOSED TESTING PROGRAM SHALL BE SUBMITTED TO THE ARCHITECT AT LEAST TWO WEEKS PRIOR TO THE SCHEDULED TEST TO ASSURE AGREEMENT AS TO PERSONAL AND INSTRUMENTATION REQUIRED, AND THE SCOPE OF TESTING PROGRAM. FINAL TEST REPORT SHALL BE ON PREPARED FORMS IN COMPLIANCE WITH NEBB AND IMC. DEMO & REMOVE EXISTING BRANCH DUCTS THAT WILL NOT BE UTILIZED AS PART OF THE PROPOSED HVAC MODIFICATIONS.

- 1. EXISTING HVAC UNIT FOR REFERENCE. MODIFY RETURN AIR DUCT TO PROVIDE HOLDING FRAMES FOR NEW 4" THICK MERV-14 FILTER & HALO-LED IN-DUCT AIR PURIFIER BY 'RGP'. 2. RELOCATED THERMOSTAT TO CONTROL EXISTING HVAC UNITS. PROVIDE NEW 7 DAY PROGRAMMABLE DIGITAL THERMOSTAT IF EXISTING THERMOSTAT IS DEEMED IN POOR CONDITION. MOUNT 44" A.F.F. TO TOP OF DEVICE. 3. DEMO & REMOVE EXISTING EXHAUST FAN SYSTEM IN OLD BATHROOM. TRACE WIRING BACK TO SOURCE. CAP EXHAUST OUTLET WATER TIGHT. 4. NEW TAP OFF EXISTING DUCTWORK. PROVIDE NEW BALANCING DAMPER, FLEX DUCT TRANSITIONS ETC. TO ALLOW FOR PROPER FUNCTION. 5. NEW CEILING MOUNTED EXHAUST FAN - EF-1. 'GREENHECK' MODEL No. SP-B150. CONFIRM CONDITION OF EXHAUST DUCTWORK & DISCHARGE POINT IF ONE EXISTS. ROUTE DUCT THROUGH ROOF AND PROVIDE ALUMINUM ROOF CAP WITH BIRD SCREEN & BACKDRAFT DAMPER IF EXHAUST DUCTWORK & DISCHARGE DO NOT EXIST. PROVIDE THE FOLLOWING: A. CONTROL FAN WITH OCCUPANCY SENSOR. FAN TO RUN FOR 20 MINUTES WHEN SENSOR IS ACTIVATED THEN TURNS OFF. B. DISCONNECT SWITCH C. HANGING VIBRATION ISOLATOR KIT D. DEMO & REMOVE ABANDON AIR HANDLING EQUIPMENT AND ASSOCIATED DUCT SYSTEM IF DEEMED NOT IN WORKING ORDER. COORDINATE WITH OWNER / LANDLORD.

AIR TERMINAL SCHEDULE table with columns: WT, QTY., SIZE, NECK SIZE, DESCRIPTION, MFG., MODEL, NOTES. Rows include SD-1, SD-2, SD-3, and RG.

AIR TERMINAL NOTES

- 1. AIR PATTERN ALL DIRECTIONS UNLESS OTHERWISE NOTED ON PLAN. 2. COLOR PER M&T BANK STANDARDS.

MECHANICAL SPECIFICATIONS

PIPE AND FITTINGS:

ALL PIPING AND FITTINGS SECTION, APPLICATION, AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE FOLLOWING STANDARDS: AMERICAN SOCIETY FOR TESTING STANDARDS (ASTM), AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

HYDRONIC PIPES, TUBES, AND FITTINGS:

COPPER TUBE AND FITTINGS: DRAWN TEMPER COPPER TUBING: ASTM B 88, TYPE L ANNEALED TEMPER COPPER TUBING: ASTM B 88, TYPE K. WROUGHT-COPPER FITTINGS: ASME B16.22 WROUGHT-COPPER UNIONS: ASME B16.22 SOLDER FILLER METALS: ASTM B 32, 95-5 TIN ANTIMONY. BRAZING FILLER METALS: AWS B 3, CLASSIFICATION BAG-1 (SILVER).

REFRIGERATION/CONDENSATE PIPING INSULATION:

REFRIGERATION PIPING: "ARMAFLEX" INSULATION 1.5" THICK. CONDENSATE DRAIN PIPING: 1/2" "ARMAFLEX" INSULATION. MANUFACTURERS: OWEN-CORNING, CERTAINTED, ARMSTRONG. ENCASE ALL EXPOSED PIPE INSULATION OUTDOORS WITH PVC PIPE COVERS. THICKNESS SHALL BE 20 MIL. WITH WEATHERPROOF CONSTRUCTION. BOND ALL PVC SEAMS IN OCCUPIED ROOMS WITH POLYCO VP ADHESIVE, OR EQUAL. BOND ADHESIVE SHALL CONFORM TO ASTM D-2654.

DUCTWORK AND ACCESSORIES:

TYPE SYSTEM: LOW PRESSURE. ALL DUCTWORK AND FITTINGS, SELECTIONS, APPLICATIONS AND INSTALLATION SHALL BE IN ACCORDANCE WITH "SMACNA" - "HVAC DUCT CONSTRUCTION STANDARDS". CONSTRUCTION: LOW PRESSURE DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL SHEETS. DUCTWORK SHALL CONFORM ACCURATELY TO THE DIMENSIONS INDICATED, AND SHALL BE STRAIGHT AND SMOOTH ON THE INSIDE WITH JOINTS NEATLY FINISHED. DUCTS SHALL BE SECURE AND ANCHORED TO THE BUILDING STRUCTURAL COMPONENTS AND FRAMING, AND SHALL BE FABRICATED AND SUPPORTED IN SUCH A MANNER TO PREVENT VIBRATION AND PULSATION UNDER OPERATING CONDITIONS. BUTTUN PUNCH OR EPLC CONNECTIONS IN STANDING SEAMS SHALL BE SPACED AT NOT GREATER THAN 6-INCH ON CENTERS. LONGITUDINAL LOCKS OR SEAMS TERMED "BUTTUN PUNCH SNAP LOCK" ARE ACCEPTABLE IN LIEU OF PITTSBURG LOCKS. ELBOWS SHALL BE RADIUS TYPE WITH A CENTER RADIUS OF 1-1/2 TIMES THE WIDTH OR DIAMETER OF THE DUCT. WHERE SPACE DOES NOT PERMIT, THE USE OF SHORT RADIUS ELBOWS HAVING A MINIMUM RADIUS OF 1.0 TIMES THE WIDTH OR DIAMETER OF THE DUCT OR SQUARE ELBOWS WITH FACTORY FABRICATED TURNING VANES MAY BE USED. ALL DUCT JOINTS AND TRANSVERSE AND LONGITUDINAL SEAMS SHALL BE SEALED WITH A LATEX TYPE DUCT SEALER APPROVED BY THE ENGINEER. FITTINGS, SQUARE ELBOWS, FITTINGS, AND BRANCH TAKE-OFFS SHALL BE DESIGNED AND CONSTRUCTED AS SPECIFIED IN SMACNA. ALL GENERAL VENTILATION ITEMS SHALL COMPLY WITH NFPA BULLETIN 90A, SLEEVED AND FRAMED OPENINGS: SPACE BETWEEN THE SLEEVED OR FRAMED OPENING AND THE DUCT AND THE DUCT INSULATION SHALL BE PACKED WITH MINERAL WOOL OR OTHER APPROVED MATERIAL TO MEET THE REQUIREMENTS OF WALL CONSTRUCTION FOR SMOKE OR FIRE CONTROL.

ACOUSTICAL DUCT LINING:

LOCATION: RETURN AIR DUCTS, AIR TRANSFER DUCTS, OR AS INDICATED ON THE PLANS. TYPE: 1" THICK, 1.5LB DENSITY FIBERGLASS DUCT LINER MATERIAL. IN ACCORDANCE WITH FED. SPEC. HH-1545, TYPES I AND II. APPLICATION: APPLY WITH RETAINING PIN AND GALVANIZED SHEET METAL DISCS AS PER THE MANUFACTURERS RECOMMENDATIONS. GENERAL DUCT DIMENSIONS INDICATED ON THE DRAWINGS ARE FOR INSIDE CLEAR DIMENSIONS. LININGS IN AIR DUCTS AND EQUIPMENT SHALL MEET THE EROSION TEST METHOD DESCRIBED IN UNDERWRITERS LABORATORIES INC. PUBLICATION NO. 181.

TABLE 403.3.1.1 - MINIMUM VENTILATION RATES. Table with columns: OCCUPANCY CLASSIFICATION, OCCUPANT DENSITY #/1,000 FT², PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, Rₚ CFM/PERSON, AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, Rₐ CFM/FT².

SECTION 403.3.1.1.1 BREATHING ZONE OUTDOOR AIRFLOW REQUIREMENTS

Vₒₓ = RₚPₓ + RₐAₓ Rₚ - PEOPLE OUTDOOR AIR RATE: THE OUTDOOR AIRFLOW RATE REQUIRED PER PERSON. Pₓ - ZONE POPULATION: THE NUMBER OF PEOPLE IN THE SPACE OR SPACES IN THE ZONE. Rₐ - AREA OUTDOOR AIR RATE: THE OUTDOOR AIRFLOW RATE REQUIRED PER UNIT AREA. Aₓ - ZONE FLOOR AREA: THE NET OCCUPIABLE FLOOR AREA OF THE SPACES IN THE ZONE.

SECTION 403.3.1.1.2 ZONE AIR DISTRIBUTION EFFECTIVENESS REQUIREMENTS

ACTUAL ZONE AIR DISTRIBUTION EFFECTIVENESS = 0.8 - FOR CEILING SUPPLY OF WARM AIR AND CEILING RETURN

- VESTIBULE 100 = 105 SF OCCUPANT DENSITY --(1,000 FT²) = 0 OCC. Vₒₓ = 5(1 OCC.) + 0.06(105 SF)/0.8 Vₒₓ = 8 CFM REQ'D 10 CFM PROVIDED. OPEN CONSULT 102 = 100 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(100 SF)/0.8 Vₒₓ = 12.5 CFM REQ'D 15 CFM PROVIDED. OFFICE 104 = 114 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(114 SF)/0.8 Vₒₓ = 13.5 CFM REQ'D 15 CFM PROVIDED. OFFICE 106 = 116 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(116 SF)/0.8 Vₒₓ = 13.7 CFM REQ'D 15 CFM PROVIDED. CONFERENCE ROOM 111 = 193 SF OCCUPANT DENSITY 50/1,000 FT² = 10 OCC. Vₒₓ = 5(10 OCC.) + 0.06(193 SF)/0.8 Vₒₓ = 94.5 CFM REQ'D 65 CFM PROVIDED. ATM ROOM 114 = 99 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(99 SF)/0.8 Vₒₓ = 12.4 CFM REQ'D 15 CFM PROVIDED. LOBBY 101 = 1,061 SF OCCUPANT DENSITY 10/1,000 FT² = 11 OCC. Vₒₓ = 5(11 OCC.) + 0.06(1,061 SF)/0.8 Vₒₓ = 135 CFM REQ'D 140 CFM PROVIDED. OFFICE 104 = 114 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(114 SF)/0.8 Vₒₓ = 13.5 CFM REQ'D 15 CFM PROVIDED. OFFICE 107 = 102 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(102 SF)/0.8 Vₒₓ = 12.7 CFM REQ'D 15 CFM PROVIDED. WORK ROOM 112 = 141 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(141 SF)/0.8 Vₒₓ = 15.5 CFM REQ'D 20 CFM PROVIDED. BREAK ROOM 115 = 161 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(161 SF)/0.8 Vₒₓ = 12.4 CFM REQ'D 15 CFM PROVIDED. OPEN CONSULT 102 = 100 SF OCCUPANT DENSITY 5/1,000 FT² = 1 OCC. Vₒₓ = 5(1 OCC.) + 0.06(100 SF)/0.8 Vₒₓ = 12.5 CFM REQ'D 15 CFM PROVIDED. PRINT/COPY 105 = 73 SF OCCUPANT DENSITY 4/1,000 FT² = 1 OCC. Vₒₓ = 4(1 OCC.) + 0.06(73 SF)/0.8 Vₒₓ = 9.5 CFM REQ'D 10 CFM PROVIDED. COUPON ROOM 110 = 36 SF OCCUPANT DENSITY --(1,000 FT²) = 0 OCC. Vₒₓ = 4(0 OCC.) + 0.06(36 SF)/0.8 Vₒₓ = 2.7 CFM REQ'D 5 CFM PROVIDED. TELLER AREA 113 = 313 SF OCCUPANT DENSITY 10/1,000 FT² = 4 OCC. Vₒₓ = 5(4 OCC.) + 0.06(313 SF)/0.8 Vₒₓ = 45.5 CFM REQ'D 45 CFM PROVIDED.

RTU VENTILATION REQUIRED = 445 CFM RTU VENTILATION PROVIDED = 450 CFM

INSULATION - DUCTWORK - CONCEALED LOCATIONS:

PROVIDE ALL LABOR, MATERIALS, ETC. REQUIRED TO PRODUCE A COMPLETELY FINISHED INSULATION SYSTEM FOR THE FOLLOWING: SUPPLY AIR DUCTWORK. FLAME AND SMOKE RATINGS: PROVIDE COMPOSITE MECHANICAL INSULATION (INSULATION JACKETS, COVERINGS, SEALERS, MASTICS, AND ADHESIVES WITH FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE DEVELOPMENT RATING OF 150 OR LESS, AS TESTED BY SNS/ASTM E84 (NFA 255) METHODS. SUPPLY DUCT INSULATION: MAKE: OWENS CORNING, CERTAINTED, KEENE. TYPE: BLANKET FIBERGLASS IN CONCEALED AREAS, RIGID TYPE IN EXPOSED AREAS. PROVIDE WITH FIRE RETARDANT JACKET. APPLICATION: SEAT JOINTS AND LAB WITH VAPOR BARRIER MASTIC AND VAPOR JOINT STRIPS. BLANKET INSULATION ON DUCTS WITH MECHANICAL FASTENERS AT NO MORE THAN 18" O.C. RIGID INSULATION WILL BE IMPALED ON PINS LOCATED NO LESS THAN 12" O.C. THE PINS SHALL BE COVERED WITH BENHAMIINFOSTER 30-35 MASTIC AND CAPS. SCHEDULE (UNLESS OTHERWISE NOTED): R-6 FOR SUPPLY DUCTWORK.

AIR DEVICES:

SEE SCHEDULES ON THE PLANS. ACCEPTABLE MANUFACTURERS: PRICE, ANEMOSTAT, TITUS.

ADJUSTING, BALANCING, TESTING, AND INSPECTION:

TESTING, BALANCING, AND ADJUSTING: ALL HYDRONIC AND AIR SYSTEMS SHALL BE BALANCED. TESTING, BALANCING, AND ADJUSTING SHALL BE PERFORMED BY FIRMS IN COMPLIANCE WITH THE PARAGRAPH ON PERFORMANCE. FIELD TESTS: PROPOSED TESTING PROGRAM SHALL BE SUBMITTED TO THE ARCHITECT AT LEAST TWO WEEKS PRIOR TO THE SCHEDULED TEST TO ASSURE AGREEMENT AS TO PERSONAL AND INSTRUMENTATION REQUIRED, AND THE SCOPE OF TESTING PROGRAM. FINAL TEST REPORT SHALL BE ON PREPARED FORMS.

VERIFICATION OF DIMENSIONS:

THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL DETAILS OF THE WORK, VERIFY ALL DIMENSIONS IN THE FIELD, AND SHALL ADVISE THE ARCHITECT OF ANY DISCREPANCY BEFORE PERFORMING WORK.

COORDINATION:

HEATING CONTRACTOR SHALL COORDINATE ALL WORK AND MATERIALS WITH OTHER CONTRACTORS. THIS WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: ELECTRICAL WORK: PROVIDE WIRING DIAGRAMS, MOTOR STARTER RECOMMENDATIONS (INCLUDING: TYPE, SIZE, AND FUSING REQUIREMENTS), LOCATION OF STARTERS AND DISCONNECT SWITCHES.

GUARANTEE:

ON FINAL COMPLETION, FURNISH TO OWNER, A WRITTEN GUARANTEE COVERING THE COMPLETE INSTALLATION FOR A PERIOD OF (1) YEAR FROM THE DATE OF WORK STATING IN EFFECT THAT ANY DEFECTS IN MATERIALS OR WORKMANSHIP OCCURRING DURING TERMS OF SAID GUARANTEE SHALL BE MADE GOOD BY THE CONTRACTOR WITHOUT THE EXPENSE OF THE OWNER.



OWNER: M&T BANK

PROJECT: M&T CHESTNUT RIDGE NY 770 CHESTNUT RIDGE RD. CHESTNUT RIDGE, NY 10917



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Table with columns: ISSUE DATE, DESCRIPTION. Rows: 04/22/2022 CHECK SET, 04/28/2022 PERMIT SET

SEAL/SIGNATURE



DocuSigned by: [Signature]

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SHEET TITLE: MECHANICAL PLAN, NOTES, SCHEDULES, SPECIFICATION & DETAILS

PROJECT NUMBER: 2022-007

PLOT DATE: 4/28/2022 2:22:21 PM

SHEET

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