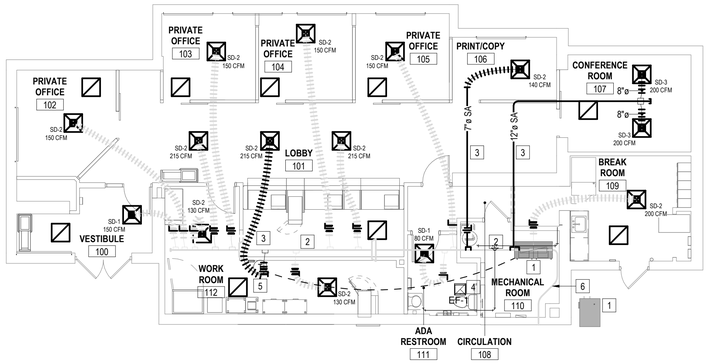

1 MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

MECHANICAL LEGEND

- NEW SUPPLY AIR DIFFUSER PER SCHEDULE
- NEW RETURN AIR GRILLE PER SCHEDULE
- NEW CEILING EXHAUST FAN PER SCHEDULE
- NEW BALANCING DAMPER
- NEW FLEX DUCT
- EXISTING/REPURPOSED FLEX DUCT
- (T) NEW/RELCOATED THERMOSTAT

TABLE 403.3.1.1 - MINIMUM VENTILATION RATES

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1,000 FT²	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT²
OFFICES			
CONFERENCE ROOMS	50	5	.06
MAIN ENTRY LOBBIES	10	5	.06
OFFICE SPACES	5	5	.06
RECEPTION AREAS	30	5	.06
WORKROOMS			
COPY, PRINTING ROOMS	4	5	.06

SECTION 403.3.1.1.1.1 BREATHING ZONE OUTDOOR AIRFLOW REQUIREMENTS

$V_{bz} = R_pP_z + R_aA_z$
R_p - PEOPLE OUTDOOR AIR RATE: THE OUTDOOR AIRFLOW RATE REQUIRED PER PERSON.
P_z - ZONE POPULATION: THE NUMBER OF PEOPLE IN THE SPACE OR SPACES IN THE ZONE.
R_a - AREA OUTDOOR AIR RATE: THE OUTDOOR AIRFLOW RATE REQUIRED PER UNIT AREA.
A_z - ZONE FLOOR AREA: THE NET OCCUPIABLE FLOOR AREA OF THE SPACES IN THE ZONE.

SECTION 403.3.1.1.1.2 ZONE AIR DISTRIBUTION EFFECTIVENESS REQUIREMENTS
ACTUAL ZONE AIR DISTRIBUTION EFFECTIVENESS = 0.8 - FOR CEILING SUPPLY OF WARM AIR AND CEILING RETURN

$V_{oz} = V_{bz}/E_z$
V_{oz} = ZONE OUTDOOR AIRFLOW RATE
E_z = ZONE AIR DISTRIBUTION EFFECTIVENESS

VESTIBULE 100 = 90 SF
OCCUPANT DENSITY ---/1,000 FT² = 0 OCC.
V_{bz} = 5(0 OCC.) + 0.06(90 SF)/0.8
V_{bz} = 7 CFM REQ'D
10 CFM PROVIDED

LOBBY 101 = 612 SF
OCCUPANT DENSITY 10/1,000 FT² = 6 OCC.
V_{bz} = 5(6 OCC.) + 0.06(612 SF)/0.8
V_{bz} = 76 CFM REQ'D
80 CFM PROVIDED

OFFICE 102 = 125 SF
OCCUPANT DENSITY 5/1,000 FT² = 1 OCC.
V_{bz} = 5(1 OCC.) + 0.06(125 SF)/0.8
V_{bz} = 15 CFM REQ'D
20 CFM PROVIDED

OFFICE 103 = 105 SF
OCCUPANT DENSITY 5/1,000 FT² = 1 OCC.
V_{bz} = 5(1 OCC.) + 0.06(105 SF)/0.8
V_{bz} = 12.9 CFM REQ'D
15 CFM PROVIDED

OFFICE 104 = 106 SF
OCCUPANT DENSITY 5/1,000 FT² = 1 OCC.
V_{bz} = 5(1 OCC.) + 0.06(106 SF)/0.8
V_{bz} = 13 CFM REQ'D
15 CFM PROVIDED

OFFICE 105 = 106 SF
OCCUPANT DENSITY 5/1,000 FT² = 1 OCC.
V_{bz} = 5(1 OCC.) + 0.06(106 SF)/0.8
V_{bz} = 13 CFM REQ'D
15 CFM PROVIDED

PRINT/COPY 106 = 86 SF
OCCUPANT DENSITY 4/1,000 FT² = 1 OCC.
V_{bz} = 4(1 OCC.) + 0.06(86 SF)/0.8
V_{bz} = 10.5 CFM REQ'D
15 CFM PROVIDED

CONFERENCE ROOM 107 = 150 SF
OCCUPANT DENSITY 50/1,000 FT² = 8 OCC.
V_{bz} = 5(8 OCC.) + 0.06(150 SF)/0.8
V_{bz} = 51.25 CFM REQ'D
60 CFM PROVIDED

BREAK ROOM 109 = 147 SF
OCCUPANT DENSITY 50/1,000 FT² = 8 OCC.
V_{bz} = 5(8 OCC.) + 0.06(147 SF)/0.8
V_{bz} = 51 CFM REQ'D
60 CFM PROVIDED

WORK ROOM 112 = 229 SF
OCCUPANT DENSITY 5/1,000 FT² = 1 OCC.
V_{bz} = 5(1 OCC.) + 0.06(229 SF)/0.8
V_{bz} = 22.2 CFM REQ'D
25 CFM PROVIDED

RTU VENTILATION **REQUIRED = 315 CFM**
RTU VENTILATION **PROVIDED = 320 CFM**

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.
- MODIFY EXISTING FLEX DUCTS & CONNECT TO NEW AIR TERMINALS AS INDICATED. PROVIDE BALANCING DAMPER IF NONE EXISTS & BALANCE TO LISTED CFM.
- ALL EXISTING DUCTS SHOWN ARE THE APPROXIMATE LOCATION BASED OFF FIELD DOC.
- 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.
- 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 2020 MECHANICAL CODE OF NEW YORK STATE.
- 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 (NEEB) AND SHALL COMPLY WITH SECTION 603 OF THE 2020 MECHANICAL CODE OF NEW YORK STATE.
  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 NEEB & THE 2020 MECHANICAL CODE OF NEW YORK STATE.

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 'RGF'.
2. APPROXIMATE LOCATION OF EXISTING DUCT. CONTRACTOR SHALL VERIFY EXACT SIZE & LOCATION IN FIELD.
3. NEW TAP OFF MAIN DUCTWORK. PROVIDE NEW BALANCING DAMPER, FLEX DUCT & DIFFUSER.
4. 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
5. RELOCATED THERMOSTAT TO CONTROL EXISTING HVAC UNITS. PROVIDE NEW 7 DAY PROGRAMMABLE DIGITAL THERMOSTAT IF EXISTING THERMOSTAT IS DEEMED IN POOR CONDITION OR DAMAGED. MOUNT 44" A.F.F. TO TOP OF DEVICE.
6. EXISTING FRESH AIR DUCT TO HVAC UNIT FOR REFERENCE.

AIR TERMINAL SCHEDULE

WT	QTY.	SIZE	NECK SIZE	DESCRIPTION	MFG.	MODEL	NOTES
SUPPLY							
SD-1	2	24"x24"	6"ø	SUPPLY	PRICE	SCD	SEE BELOW
SD-2	11	24"x24"	8"ø	SUPPLY	PRICE	SCD	SEE BELOW
SD-3	2	24"x24"	8"ø	SUPPLY	ACUTHERM	TK-HC-8	SEE BELOW
RETURN							
RG	9	24"x24"	12"x12"	RETURN	PRICE	535D	SEE BELOW

AIR TERMINAL NOTES

1. AIR PATTERN ALL DIRECTIONS UNLESS OTHERWISE NOTED ON PLAN.
2. COLOR PER M&T BANK STANDARDS.
3. SD-2: TRANSITION FROM EXISTING 7" FLEX DUCT TO 8" AIR TERMINAL DUCT INLET AS MAY BE REQUIRED.
4. SD-3: GC SHALL COORDINATE W/ OWNER TO ADJUST THE HEATING & COOLING SET POINTS AS MAY BE REQUIRED. GC SHALL ADJUST THERMA-FUSER SET POINTS 6 MONTHS AFTER INSTALLATION IF REQUIRED BY OWNER.

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).

DUCTWORK AND ACCESSORIES:

TYPE SYSTEM: LOW PRESSURE. ALL DUCTWORK AND FITTINGS, SELECTIONS, APPLICATIONS AND INSTALLATION SHALL BE IN ACCORDANCE WITH "SMANCA" - "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. BUTTON PUNCH OR BOLD CONNECTIONS IN STANDING SEAMS SHALL BE SPACED AT NOT GREATER THAN 6-INCH ON CENTERS. LONGITUDINAL LOCKS OR SEAMS TERMED " BUTTON 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.

EXHAUST FANS:

SEE SCHEDULES ON THE PLANS.
ACCEPTABLE MANUFACTURERS: GREENHECK, COOK OR APPROVED EQUAL.

TEMPERATURE CONTROLS:

ACCEPTABLE MANUFACTURER: JCI, HONEYWELL.

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.

M&T Bank

OWNER
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#	ISSUE DATE	DESCRIPTION
	04/22/2022	CHECK SET
1	04/28/2022	PERMIT SET

SEAL/SIGNATURE

SHEET TITLE
MECHANICAL PLANS, SCHEDULES & NOTES

PROJECT NUMBER
2022-009

PLOT DATE
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