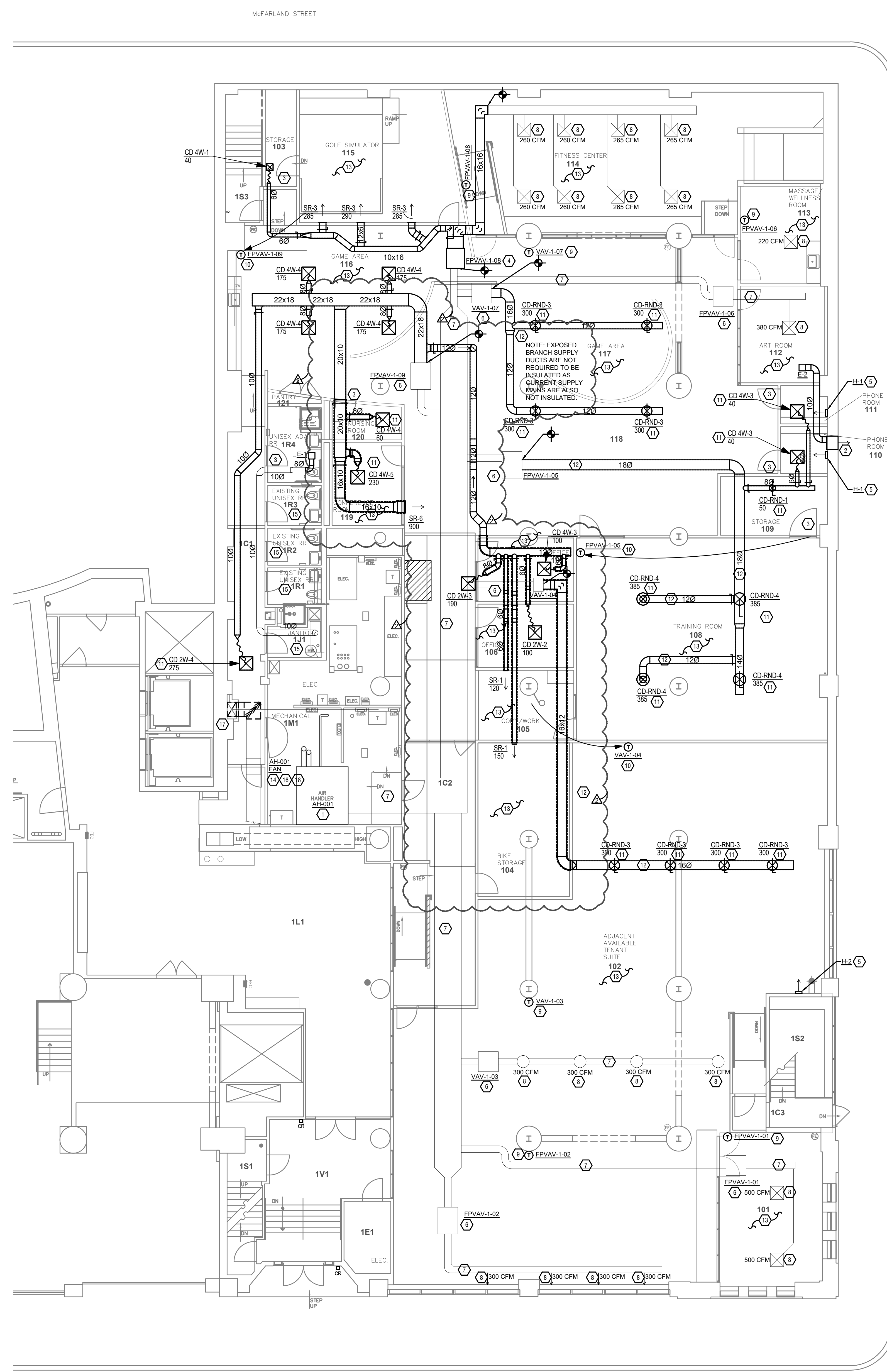


Project: Director's 10100 - 10100 10105 - The Quad - 302 W. 3rd Street Cincinnati, OH - Construction Documents 10105-M100-MECHANICAL-FLOOR-PLAN.dwg - EBS - Rev. Date/Time: Sep. 28, 2023 - 10:16am - By: Scott Silvey
 THESE DRAWINGS AND SPECIFICATIONS ARE NOT AUTHORIZED TO BE USED AS CONTRACT DOCUMENTS. THESE DRAWINGS HAVE BEEN PREPARED IN ACCORDANCE WITH ANY CONTRACTUAL AGREEMENT THAT MAY EXIST WITH AN OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR, ETC.
 EBS ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR THE COMPLIANCE OR CONDITION OF EXISTING EQUIPMENT AND WIRING.



MECHANICAL FLOOR PLAN
 1
 M100 SCALE: 1/8" = 1'-0"

SYMBOLS LEGEND - HVAC	
⊖	THERMOSTAT
⊖	LINE VOLTAGE THERMOSTAT
⊖	MOTOR SENSOR
⊖	CO2 SENSOR
⊖	HUMIDISTAT
⊖	CEILING DIFFUSER
⊖	SIDE WALL GRILL
⊖	RETURN WALL GRILL
⊖	AIR FLOW DIRECTION
14x10	DUCTWORK
14x10	USED DUCTWORK
⊖	TYPICAL SUPPLY DUCT DN
⊖	TYPICAL RETURN DUCT DN
⊖	TYPICAL EXHAUST DUCT
⊖	TURNING WAIVES
⊖	FLEXIBLE DUCT, 8'-0" LONG MAX.
⊖	TYPICAL ROUND DUCT DN
⊖	ROUND DUCT UP
⊖	DUCT SMOKE DETECTOR
⊖	FIRE DAMPER
⊖	MMD MANUAL VOLUME DAMPER
⊖	MMD MOTOR OPERATED DAMPER
⊖	ANNUNCIATOR PANEL
⊖	DROPPED CEILING/SOFFIT
⊖	DUCT CONTINUATION
⊖	CONDENSATE PIPING
⊖	CONNECTION POINT

- KEYED SHEET NOTES**
- EXISTING AIR HANDLING UNIT TO REMAIN, AND BE REUSED IN THE NEW WORK. ALL DEMOLITION WORK IS NOT SHOWN. REMOVE ALL EXISTING HVAC NOT REUSED AS A PART OF THE NEW WORK. PROVIDE BELTS AND SHEAVES TO RE-BALANCE AIR FLOW RATES SHOWN IN SCHEDULES. MECHANICAL CONTRACTOR TO VERIFY WORKING CONDITION OF EXISTING EQUIPMENT AND PERFORM ROUTINE MAINTENANCE. CLEAN COILS. CHECK CHILLED WATER FLOW AND ELECTRICAL COMPONENTS. REPORT ANY DEFICIENCIES TO GENERAL CONTRACTOR.
 - ROUTE EXHAUST TO EXTERIOR WALL. PROVIDE LOUVER THROUGH EXISTING WALL, WITH INSULATED PLENUM, SLOPED TOWARDS THE OUTDOORS. SEE ARCHITECT AND CODE A.H.J. BEFORE PENETRATION FOR EXACT LOCATION, MODEL, AND COLOR COORDINATION. ALL EXHAUST SHALL MEET THE FOLLOWING REQUIREMENTS:
 - 3' FROM PROPERTY LINE.
 - 3' FROM OPERABLE OPENINGS INTO BUILDING.
 - 10' FROM MECHANICAL AIR INTAKE.
 - UNDERCUT DOOR 1" FOR TRANSFER AIR. REFER TO KEYED SHEET NOTE #13.
 - RELOCATE FAN POWERED VAV BOX TO NEW LOCATION SHOWN. MODIFY FRONT END BUILDING AUTOMATION SYSTEM AS REQUIRED. BALANCE TO AIR FLOW RATE SHOWN (TOTAL OF ALL DOWNSTREAM AIR DEVICES).
 - PROVIDE HEATER. VERIFY LOCATION WITH ALL OTHER TRADES.
 - EXISTING TERMINAL UNIT TO REMAIN. BALANCE TO AIR FLOW RATE SHOWN (TOTAL OF ALL DOWNSTREAM AIR DEVICES).
 - EXISTING DUCTWORK TO REMAIN.
 - EXISTING AIR DEVICE TO REMAIN. BALANCE TO AIR FLOW RATE SHOWN.
 - EXISTING THERMOSTAT TO REMAIN.
 - RELOCATE THERMOSTAT AND MODIFY EXISTING BUILDING MANAGEMENT SYSTEM AS REQUIRED. COORDINATE FINAL LOCATION WITH ARCHITECT / OWNER PRIOR TO INSTALLATION. FOR THERMOSTATS INSTALLED ON EXPOSED BRICK WALLS, PROVIDE CONDUIT FOR THERMOSTAT WIRE. FOR THERMOSTATS INSTALLED ON EXTERIOR WALLS, INSULATE BACKSIDE OF THERMOSTAT. FOR THERMOSTATS IN COMMON AREAS, PROVIDE LOCKING COVER. COORDINATE BUILDING MANAGEMENT SYSTEM MODIFICATIONS WITH OWNER'S REPRESENTATIVE, AND SUB CONTRACT THE CURRENT VENDOR FOR THE EXISTING BUILDING MANAGEMENT SYSTEM.
 - PROVIDE NEW AIR DEVICE AND DUCTWORK. AIR DEVICE COLOR SHALL MATCH THE ADJACENT PAINTED DUCTWORK OR CEILING COLOR. COORDINATE LOCATION WITH LIGHTS, ALL OTHER TRADES, AND OWNER'S REPRESENTATIVE. BALANCE TO AIR FLOW RATE SHOWN.
 - IN EXPOSED CEILING AREAS, PROVIDE PAINT GRIP DOUBLE WALL INSULATED SPIRAL DUCT. COORDINATE EXACT LOCATION WITH ARCHITECT, LIGHTS, AND ALL OTHER TRADES.
 - PROVIDE TRANSFER DUCTS (MAXIMUM OF 250 FPM VELOCITY) AND GRILLES, AS REQUIRED TO TRANSFER ALL SUPPLY AIR IN THIS SPACE, BACK TO RETURN AIR OPENING ON EXISTING AIR HANDLING UNIT. PROVIDE DUCTS WITH SOUND ATTENUATION LINER. COORDINATE EXACT SIZE AND LOCATIONS WITH ARCHITECT AND OWNER'S REPRESENTATIVE.
 - BALANCE EXISTING FAN TO ACHIEVE AIR QUANTITIES SHOWN.
 - ROOM NOT IN SCOPE. EXHAUST SYSTEM TO REMAIN.
 - ROTATE FAN 90 MOTOR IS IN MECHANICAL ROOM. CHANGE OUT SPRING ISOLATORS AS NECESSARY TO HANDLE ANY OVERLOADING THAT MAY TAKE PLACE DUE TO EXTRA MOTOR WEIGHT SHIFTING THE CENTER OF GRAVITY.
 - REMOVE EXISTING OUTSIDE AIR DUCTWORK FROM 90 ELBOW DOWN TO DUCT AT THE FLOOR. REMOVE GRILLE AND MOTOR OPERATED DAMPER. ROTATE 90 ELBOW SO IT FACES INTO MECHANICAL ROOM.
 - PROVIDE NEW TIMECLOCK TO CONTROL FAN ON A TIME-OF-DAY SCHEDULE. FAN SHALL RUN DURING OCCUPIED HOURS WITH THE ABILITY TO MANUALLY OVERRIDE THE FAN ON/OFF.

MECHANICAL SCOPE OF WORK

THE SCOPE OF THIS PROJECT IS TO MODIFY AND PROVIDE NEW HVAC TO AN EXISTING TENANT SPACE IN EXISTING BUILDING. REMOVE ALL EXISTING HVAC SYSTEMS AND ASSOCIATED ITEMS THAT ARE NOT REUSED IN NEW WORK.

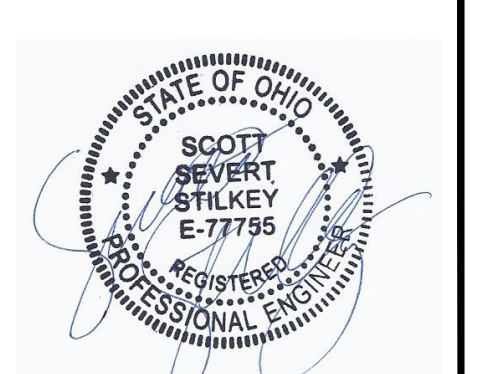
CODES REFERENCED

- 2017 OHIO MECHANICAL CODE (2015 IMC)
- 2017 OHIO BUILDING CODE (2015 IBC)
- 2017 OHIO ENERGY CODE (2015 ASHRAE 2010)

HVAC DESIGN CONDITIONS

COOLING	HEATING
OUTDOOR: 93 DB / 75 WB	OUTDOOR: 0 DB
INDOOR: 74	INDOOR: 72

- GENERAL NOTES**
- THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO COVER THE SCOPE OF THE WORK AND TO INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE SIZE AND LOCATION OF EQUIPMENT, DUCTS, PIPES, ETC. THEY ARE NOT INTENDED TO SHOW EVERY OFFSET, FITTING, AND COMPONENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND VERIFYING ALL CONDITIONS AND DIMENSIONS. DO NOT SCALE THE DRAWINGS. CONTRACTOR TO VERIFY EXISTING SUPPLY AND RETURN DUCTWORK AND PIPING, SYSTEMS, SIZE, AND DUCT AND PIPE TYPE PRIOR TO MAKING CONNECTIONS.
 - FOR FULL SCHEDULES, SPECIFICATIONS, AND COMPLETE LISTING SEE SCHEDULES & SPECIFICATIONS SHEETS.
 - COORDINATE ROUTING OF ALL WORK WITH OTHER TRADES.
 - COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER CONNECTIONS TO ALL MECHANICAL EQUIPMENT.
 - INSTALL ALL EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. MAINTAIN ALL CODE RECOMMENDED CLEARANCES FOR ACCESS AND MAINTENANCE.
 - REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS, AND FINAL CEILING DIFFUSER LOCATIONS.
 - MAINTAIN ALL CODE REQUIRED SERVICE CLEARANCES. FOLLOW CLEARANCE TO COMBUSTIBLE DISTANCE PER MANUFACTURER'S INSTRUCTIONS.
 - PROVIDE BACKDRAFT DAMPERS FOR ALL EXHAUST SYSTEMS AND EITHER LOUVER, BRICK VENT, OR CAPS AT ALL EXTERIOR BUILDING PENETRATIONS.
 - ROUTE ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK ABOVE DROP CEILING OR IN BULKHEADS. COORDINATE ROUTING WITH ARCHITECTURAL DRAWINGS. DUCTS SHALL BE RUN BELOW THE RATED FLOOR/CEILING. PROVIDE FIRE, SMOKE, AND FIRE / SMOKE RATED DAMPERS ON ALL PENETRATIONS TO RATED WALLS, CEILINGS, AND FLOORS. PROVIDE RADIATION DAMPERS ON ALL AIR DEVICES, FANS, ETC. THAT PENETRATE THE MEMBRANE OF THE RATED FLOOR/CEILING ASSEMBLY. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.
 - ROUTE ALL AIR CONDITIONER CONDENSATE TO NEARBY FLOOR DRAIN. PROVIDE MINIMUM SLOPE OF 1/8" PER FOOT. SIZE CONDENSATE PER SECTION 307.2 OF THE OHIO MECHANICAL CODE.
 - PROVIDE AN APPROVED THROUGH PENETRATION FIRESTOP FOR ALL PIPING INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479. FIRESTOP SHALL HAVE A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCHES OF WATER AND SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE WALL OR FLOOR PENETRATED.
 - ANY EQUIPMENT THAT IS SUBSTITUTED SHALL FIT IN THE SPACE PROVIDED WITH ADEQUATE ROOM FOR SERVICING, INCLUDING SUBSTITUTE EQUIPMENT NAMED IN THE SPECIFICATIONS. SUBMIT A 1/4" SCALE DRAWING OF ALL EQUIPMENT SUBSTITUTED FOR APPROVAL PRIOR TO INSTALLATION, INCLUDING, BUT NOT LIMITED TO, STRUCTURAL AND ARCHITECTURAL IMPACT, CLEARANCE REQUIREMENTS AND UTILITY REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE ALL NEW ELECTRICAL AND PLUMBING REQUIREMENTS WITH THE ELECTRICAL AND PLUMBING CONTRACTORS.
 - PROVIDE ALL NECESSARY MODIFICATIONS TO BUILDING MANAGEMENT SYSTEM, CONTROL WIRING, ETC. PROVIDE COMPLETE CONTROL SYSTEM, AND LEAVE UNITS IN OPERATING CONDITION.
 - MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
 - MECHANICAL CONTRACTOR TO VERIFY WORKING CONDITION OF EXISTING EQUIPMENT AND PERFORM ROUTINE MAINTENANCE. CLEAN COILS. CHECK REFRIGERANT LEVELS AND ELECTRICAL COMPONENTS. REPORT ANY DEFICIENCIES TO GENERAL CONTRACTOR.



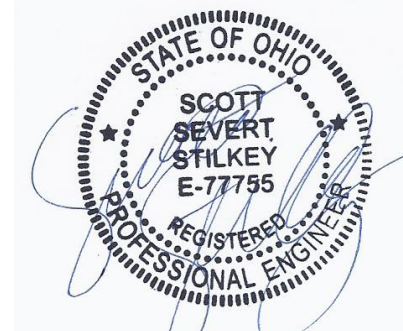
ISSUANCES

DATE	NO.	DESCRIPTION
02/24/2023	1	60% REVIEW
02/17/2023	2	90% REVIEW
02/24/2023	3	PERMIT
02/17/2023	4	BULLETIN 01
02/29/2023	5	BULLETIN 02

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DRAWN BY SRB	CHECKED BY SSS
PROJECT NO.: 10125	
SCALE: AS NOTED	
DATE: 02-24-2023	
DRAWING TITLE MECHANICAL FLOOR PLAN	
SHEET NO. M100	



ISSUANCE DATE	NO.	DESCRIPTION
02/10/2023	1	60% REVIEW
02/17/2023	1	90% REVIEW
02/24/2023	1	PERMIT
03/01/2023	1	BULLETIN 01
03/09/2023	2	BULLETIN 02

DIFFUSER, GRILLE, AND REGISTER SCHEDULE

CALLOUT	DESCRIPTION	FACE SIZE (IN)	INLET SIZE (IN)	MODEL	NOTES
CD 2W-2	2-WAY THREE CONE DIFFUSER	24x24	60	TITUS PAS	ADJUSTABLE DISCHARGE PATTERN
CD 2W-3	2-WAY THREE CONE DIFFUSER	24x24	80	TITUS PAS	ADJUSTABLE DISCHARGE PATTERN
CD 2W-4	2-WAY THREE CONE DIFFUSER	24x24	100	TITUS PAS	ADJUSTABLE DISCHARGE PATTERN
CD 4W-1	4-WAY THREE CONE DIFFUSER	12x12	60	TITUS TMS	REMOVABLE CORE FROM FACE OF DIFFUSER. INSULATE BACK OF DIFFUSER.
CD 4W-3	4-WAY THREE CONE DIFFUSER	24x24	60	TITUS TMS	REMOVABLE CORE FROM FACE OF DIFFUSER. INSULATE BACK OF DIFFUSER.
CD 4W-4	4-WAY THREE CONE DIFFUSER	24x24	80	TITUS TMS	REMOVABLE CORE FROM FACE OF DIFFUSER. INSULATE BACK OF DIFFUSER.
CD 4W-5	4-WAY THREE CONE DIFFUSER	24x24	100	TITUS TMS	REMOVABLE CORE FROM FACE OF DIFFUSER. INSULATE BACK OF DIFFUSER.
CD-RND-1	ROUND THREE CONE DIFFUSER	11 1/80	60	TITUS TMR	TWO HORIZONTAL DISCHARGE PATTERNS
CD-RND-2	ROUND THREE CONE DIFFUSER	14 3/40	80	TITUS TMR	TWO HORIZONTAL DISCHARGE PATTERNS
CD-RND-3	ROUND THREE CONE DIFFUSER	18 1/40	100	TITUS TMR	TWO HORIZONTAL DISCHARGE PATTERNS
CD-RND-4	ROUND THREE CONE DIFFUSER	220	120	TITUS TMR	TWO HORIZONTAL DISCHARGE PATTERNS
SR-1	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	8x8	6x6	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.
SR-3	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	14x8	12x6	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.
SR-6	STEEL DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION.	22x14	20x12	TITUS 300RL	STEEL OPPOSED-BLADE DAMPER OPERABLE FROM THE FACE OF THE GRILLE.

- NOTES FOR ALL AIR DEVICES:**
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR MOUNTING TYPE
 - DUCT RUN-OUT SAME SIZE AS NECK UNLESS NOTED OTHERWISE
 - PLASTER FRAME WHERE LOCATED IN GYPSUM CEILING
 - PAINT DUCTWORK THAT IS VISIBLE BEHIND AIR DEVICES MATTE BLACK
 - AIR DEVICES SHALL BE ALUMINUM IN HIGH MOISTURE AREAS
 - DO NOT CONNECT AIR DEVICE DIRECTLY TO DUCT. PROVIDE FULL SIZE TAKE-OFF WITH BALANCING DAMPER AND 45 DEGREE FLARED OUT CONNECTION TO MAIN OR BRANCH DUCT.
 - WHERE AIR DEVICES ARE LOCATED IN A FIRE RATED ASSEMBLY, PROVIDE CEILING RADATION DAMPERS, FIRE DAMPER, FIRE RATED INSULATION, AS REQUIRED PER CODE
 - WHERE DAMPER IN DUCTWORK IS NOT ACCESSIBLE, PROVIDE METROPOLITAN AIR TRANSFER (MAT) MODEL RT-150 SERIES CABLE ACTUATED DAMPER DRIVE SYSTEM, OR APPROVED EQUAL.
 - PROVIDE SIMILAR AIR DEVICES STYLE AND COLOR, FOR OWNERS REPRESENTATIVE APPROVAL, BEFORE ORDERING FINAL AIR DEVICES.
 - FOR RETURN GRILLES OPEN FOR PLENUM RETURNS, PROVIDE ACOUSTIC LINED 2" ELBOWS, MAXIMUM OF 250 FPM VELOCITY. ALL WALLS THAT GO ALL THE WAY TO DECK WHERE REQUIRED FOR RETURN TRANSFER AIR BACK TO MAIN HVAC EQUIPMENT, AND PROVIDE GRILLES WHERE INSTALLED IN FINISHED SPACE
 - IF SHOWN ON NOT, PROVIDE TRANSFER DUCT / GRILLES, AS REQUIRE TO MAKE UP AIR FOR ROOM AT A MAXIMUM OF 250 FPM VELOCITY, AND WITH SOUND ATTENUATION LINER. TRANSFER AIR REQUIRED TO BE EXHAUST & RETURN, MINUS THE SUPPLY AIR. FOR DOORS THAT DO NOT NEED TO BE FIRE, SMOKE, OR SOUND RATED, DOOR CAN BE UNDERGUT 1" FOR A MAXIMUM OF 50 CFM TRANSFER AIR, EXCEPT WHERE PROHIBITED BY CODE.
 - ADD INSULATION TO THE BACK OF ALL AIR DEVICES WHERE DUCTWORK ALSO REQUIRES INSULATION.

MECHANICAL SPECIFICATIONS

- GENERAL
 - REFER TO ARCHITECTURAL DRAWINGS, GENERAL NOTES, INSTRUCTIONS TO BIDDERS, GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, BASE BUILDING SPECIFICATIONS AND DRAWINGS, SHOP DRAWING MANUALS AND AS-BUILT PLANS, EXCEPT AS NOTED HEREIN, WHICH APPLY IN ALL RESPECTS TO THIS SECTION. THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BIDDING THE WORK.
 - USE OF DRAWINGS AND SPECIFICATIONS
 - BASE BUILDINGS AND SPECIFICATIONS ARE INTENDED TO CONVEY DESIGN INTENT ONLY. ALL MEANS AND METHODS SEQUENCES, TECHNIQUES, AND PROCEDURES OF CONSTRUCTION AS WELL AS ANY ASSOCIATED SAFETY PRECAUTIONS AND PROGRAMS, AND ALL INCIDENTAL AND TEMPORARY DEVICES REQUIRED TO CONSTRUCT THE PROJECT AND TO PROVIDE COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEM ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
 - STANDARDS
 - EQUIPMENT AND MATERIALS SHALL CONFORM WITH APPROPRIATE PROVISIONS OF AGA, ARI, ASME, ASTM, CSPI, UL, NEMA, ANSI, SMACNA, ASHRAE, NFPA, NEC, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY. ALL EQUIPMENT MUST BEAR UL LABEL.
 - LICENSE / EXPERIENCE
 - CONTRACTOR MUST BE LICENSED BY THE STATE TO INSTALL HVAC SYSTEMS/EQUIPMENT. CONTRACTOR MUST ALSO HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE AND HAVE INSTALLED AT LEAST 10 SUCCESSFUL PROJECT INSTALLATIONS OF SIMILAR SIZE AND SCOPE. REFERENCES MUST BE PROVIDED UPON REQUEST.
 - CODES
 - ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. THE MECHANICAL CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AT A MINIMUM WITHOUT ANY EXTRA COST TO THE OWNER. IN CASE OF CONFLICT BETWEEN THE DRAWINGS/SPECIFICATIONS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY.
 - PERMITS AND FEES
 - THE MECHANICAL CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, FEES, TAXES, AND INSPECTIONS NECESSARY TO COMPLETE THE MECHANICAL WORK. FURNISH CERTIFICATE OF APPROVAL FOR WORK FROM INSPECTION AUTHORITY TO OWNER BEFORE FINAL ACCEPTANCE FOR WORK. CERTIFICATE OF FINAL INSPECTION AND APPROVAL SHALL BE SUBMITTED WITH THE CONTRACTORS REQUEST FOR PAYMENT. NO FINAL PAYMENT WILL BE APPROVED WITHOUT THIS CERTIFICATE.
 - SITE EXAMINATION
 - THE MECHANICAL CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS OF WORK WHERE EQUIPMENT, DUCTWORK, AND PIPING WILL BE INSTALLED AND SHALL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE MECHANICAL WORK PRIOR TO BID. CONTRACTOR SHALL ALSO EXAMINE THE DRAWINGS AND SPECIFICATIONS OF OTHER BRANCHES OF WORK INCLUDING REFERENCING THEM FOR DETAILS OF NEW OR EXISTING BUILDING CONDITIONS. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO INCLUDE ALL REQUIRED WORK IN BID.
 - ALL WORK SHALL BE DONE AT TIMES CONVENIENT TO THE OWNER AND ONLY DURING NORMAL WORKING HOURS, UNLESS SPECIFIED OTHERWISE.
 - MECHANICAL CONTRACTOR SHALL TAKE THEIR OWN MEASUREMENTS AND BE RESPONSIBLE FOR THEM.
 - ACCESS PANELS ARE NOT SHOWN ON DRAWINGS. DURING SITE EXAMINATION, CONTRACTOR SHALL IDENTIFY ALL AREAS WHERE ACCESS PANELS ARE REQUIRED. REPORT TO GENERAL CONTRACTOR DESIGNATION OF WHO FURNISHES AND WHO INSTALLS ACCESS PANELS MUST BE COORDINATED WITH GENERAL CONTRACTOR PRIOR TO STARTING WORK.
 - MECHANICAL CONTRACTOR RESPONSIBLE FOR SITE INVESTIGATION PRIOR TO BID TO REVEAL FULL SCOPE OF WORK.
 - CONTRACTOR COORDINATION
 - COORDINATION DRAWINGS SHOWING SYSTEM AND COMPONENT INSTALLATION LAYOUT, ROUTING, DETAILS, ETC. SHALL BE PRODUCED BY THE MECHANICAL CONTRACTOR AND UNDER THE SUPERVISION OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER, OR APPROPRIATE PARTY AS APPLICABLE.
 - ALL SYSTEMS INSTALLED BY EACH SUB-CONTRACTOR SHALL BE COORDINATED WITH ONE ANOTHER AND APPROVED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER, ETC. PRIOR TO INSTALLATION AND/OR FABRICATION.
 - IF QUESTIONS CONCERNING DESIGN INTENT ARISE DURING COORDINATION, EBS CAN ASSIST WHERE APPROPRIATE.
 - THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. DO NOT SCALE DISTANCES OFF THE MECHANICAL DRAWINGS. USE ACTUAL BUILDING DIMENSIONS.
- SHOP DRAWINGS / SUBMITTALS
- SUBMIT TO THE ARCHITECT ELECTRONIC COPIES OF COMPLETE AND CERTIFIED SHOP DRAWINGS, DESCRIPTIVE DATA, PERFORMANCE DATA AND RATINGS, DIAGRAMS AND SPECIFICATIONS ON ALL SPECIFIED EQUIPMENT, INCLUDING ACCESSORIES, AND MATERIALS FOR REVIEW. THE MAKE, MODEL NUMBER, TYPE, FINISH AND ACCESSORIES OF ALL EQUIPMENT AND MATERIALS SHALL BE REVIEWED AND APPROVED BY THE MECHANICAL CONTRACTOR AND GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE ARCHITECT FOR THEIR REVIEW AND APPROVAL. SHOP DRAWINGS NOT APPROVED BY THE MECHANICAL CONTRACTOR/VENDOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS AND APPLICABLE CODES.
- SHOP DRAWINGS SHALL BE REQUIRED FOR THE FOLLOWING:
 - HVAC EQUIPMENT
 - FANS
 - DIFFUSERS, REGISTERS, GRILLES, DAMPERS, LOUVERS, AND ALL SHEET METAL ACCESSORIES
 - TEMPERATURE CONTROLS
 - SHEET METAL COORDINATION DRAWINGS
 - DUCT SEALANTS FOR LEED PROJECTS
 - AIR BALANCE REPORT
 - PRODUCTS INSTALLED BY THE MECHANICAL CONTRACTOR AND PROVIDED BY OTHERS MUST BE SUBMITTED FOR REVIEW PRIOR TO PURCHASING. PRODUCTS SHALL NOT BE SELECTED BASED ON PERMIT DRAWINGS WITHOUT EXPRESS PERMISSION - PRODUCTS SHALL BE SELECTED BASED ON CONSTRUCTION DRAWINGS.
- RECORD DRAWING
- THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CREATING RECORD DRAWINGS WHERE REQUIRED. DRAWINGS SHALL BE PRODUCED IN AUTOCAD 2004 FORMAT OR LATER.
- TESTING
- ALL MECHANICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION.
 - ALL MECHANICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION.
- FIRE STOPPING
- PROVIDE FIRE STOPPING AT ALL PENETRATIONS THROUGH RATED SEPARATIONS PER LOCAL CODES & REGULATIONS & PER UL RECOMMENDATIONS FOR ASSEMBLIES ENCOUNTERED IN THE PROJECT.
 - THE FIRE STOPPING MATERIAL SHALL MEET THE INTEGRITY OF THE FIRE RATED WALL, FLOOR, CEILING & ROOF BEING PENETRATED. REFER TO ARCHITECTS DRAWINGS FOR WALL, FLOOR, CEILING & ROOF FIRE RATINGS PRIOR TO BIDDING WORK.
 - REFER TO ARCHITECTS DRAWINGS FOR WALL, FLOOR, CEILING, AND ROOF FIRE RATINGS PRIOR TO BIDDING WORK.
- ACCESS PANELS
- PROVIDE CEILING AND WALL ACCESS PANEL QUANTITIES & LOCATIONS TO THE GENERAL CONTRACTOR PRIOR TO BIDDING. ACCESS PANELS ARE REQUIRED FOR ALL CONTROL DEVICES, CONTROLS DEVICES, HEAT EXCHANGERS AND HVAC SYSTEM COMPONENTS THAT UTILIZE ENERGY, WHERE ACCESS PANELS ARE USED, THE ACCESS PANEL SHOULD BE SIZED TO ALLOW ACCESSIBILITY FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT DISABLING THE FUNCTION OF A FIRE-RESISTANCE-RATED ASSEMBLY OR REMOVING PERMANENT CONSTRUCTION, OTHER APPLIANCES, VENTING SYSTEMS OR ANY OTHER PIPING OR DUCTS NOT CONNECTED TO THE APPLIANCE BEING INSPECTED, SERVICED, REPAIRED OR REPLACED. THERE SHALL BE NO EXTRAS FOR HAVING TO ADD ACCESS PANELS AFTER BIDS ARE AWARDED.
- PROVIDE ACCESS PANELS, DOORS, ETC. WHERE REQUIRED TO ALLOW FOR COMPLETE REMOVAL OF APPLIANCES WITHOUT THE REMOVAL OF PERMANENT BUILDING CONSTRUCTION MATERIALS.
- CUTTING AND PATCHING
- NEATLY DO ALL CUTTING AS REQUIRED AND PATCH ALL CUT SURFACES TO MATCH BUILDING CONSTRUCTION. THE CONTRACTOR SHALL EMPLOY AND PAY A TRADE TRAINED AND QUALIFIED TO PERFORM THE REQUIRED PATCHING WORK. ALL SURFACES DISTURBED SHALL BE RESTORED WITH LIKE MATERIALS TO THE SATISFACTION OF THE OWNER. ALL PENETRATIONS THROUGH ROOF SHALL BE MADE BY BONDED ROOFER. MECHANICAL CONTRACTOR SHALL PAY ALL FEES REQUIRED.
- FLASHING & COUNTERFLASHING
- ROOF FLASHING SHALL BE FURNISHED AND INSTALLED BY THE ROOFING CONTRACTOR. ROOF COUNTERFLASHING SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. COORDINATE WORK WITH ROOFING CONTRACTOR AND PAY ALL FEES.
- OBTAIN APPROVAL FROM GENERAL CONTRACTOR, CONSTRUCTION MANAGER, OWNER AND/OR ROOFING CONTRACTOR PRIOR TO MAKING ANY PENETRATIONS SO THAT WARRANTIES ARE NOT COMPROMISED OR VOIDED.
- WARRANTY
- THE MECHANICAL CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN EQUIPMENT, MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER. THE MECHANICAL CONTRACTOR WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE TO THE OWNER.
- RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE EQUIPMENT, MATERIALS AND WORKMANSHIP.
- MECHANICAL WORK
- THE MECHANICAL CONTRACTOR SHALL PROVIDE NEW HVAC EQUIPMENT, FANS, DUCTWORK, PIPING, AIR DEVICES, CONTROLS AS INDICATED ON DRAWINGS AND AS SPECIFIED. STARTUP AND 1ST YEAR PARTS AND LABOR WARRANTY SHALL BE INCLUDED AND MANUFACTURERS EXTENDED WARRANTIES, EQUIPMENT AND APPLIANCES SHALL BE INSTALLED AS REQUIRED BY THE TERMS OF THEIR APPROVAL, IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING, THE MANUFACTURERS INSTALLATION INSTRUCTIONS, AND THE APPLICABLE CODE.
- OWNERS INSTRUCTIONS
- PROVIDE TWO SETS OF COMPLETE OPERATING AND MAINTENANCE INSTRUCTIONS WITH DRAWINGS, TYPEWRITTEN INSTRUCTIONS AND OPERATING SEQUENCES AND DESCRIPTIVE DATA SHEETS, ASSEMBLE EACH SET IN A HARD-BOUND COVER. PROVIDE PDF FILES OF ALL DOCUMENTATION.
- FINALE
- PUT ALL EQUIPMENT IN SERVICE AND DEMONSTRATE THAT ALL CONDITIONS OF THE CONTRACT HAVE BEEN FULFILLED. REMOVE ALL TOOLS, DEBRIS, ETC. COORDINATED BY WORK UNDER THIS CONTRACT. SUBMIT ALL WARRANTIES, TEST REPORTS, OPERATING AND MAINTENANCE MANUALS FOR HVAC SYSTEMS, LOG SHEETS AND CHARTS, AND QUALITY SPECIFIED, PREVIOUSLY SPECIFIED, PREVIOUSLY SPECIFIED, FORMS, ETC. REQUIRED BY INSPECTORS TO THE SATISFACTION OF THE OWNER. PROVIDE AS-BUILT RECORD DRAWINGS (IN AUTOCAD 2007 OR LATER) SHOWING AN ACCURATE ACCOUNT OF THE FINAL INSTALLED SYSTEMS. SYSTEMS INCLUDING, BUT NOT LIMITED TO, ALL EQUIPMENT AND ASSOCIATED CONTROLS, DUCTWORK/PIPING, AIR DEVICES, ETC.

GENERAL										COOLING										ELECTRICAL DATA				DUCT	
TAG	AREA SERVED	MANUFACTURER	NOTES	SACFM	ESP	OA CFM	BHP	HP	HP	TOTAL BTU	SENSBL E BTU	NOMINAL TONS	EAT (DB/WB)	LAT (DB/WB)	EWT (DEG. F)	LWT (DEG. F)	GPM	VOLTS / PH	MCA	MOCIP	SMOKE DETECTOR				
251001	1ST FLOOR	MC QUAY	SEE BELOW	14,000	2	1800	16.4	20.0	20.0	402,651	325,140	35	78.4 / 63.4	55.0 / 53.7	43.0	53.2	78.9								

- TESTING, BALANCING AND ADJUSTING
 - THE INDIVIDUAL PERFORMING THE AIR BALANCING SHALL BE A CERTIFIED TEST AND BALANCER AND A MEMBER OF NEBB OR AME. USING CALIBRATED EQUIPMENT, THE CERTIFIED AIR BALANCE CONTRACTOR SHALL ACCURATELY BALANCE THE SYSTEMS TO PROVIDE AIR QUANTITIES AS INDICATED ON THE DRAWINGS AND IN THE SCHEDULES/SPECIFICATIONS, OPERATE AUTOMATIC CONTROL SYSTEMS, AND VERIFY SET POINTS DURING BALANCING.
- SEQUENCE OF OPERATION
 - HEATERS
 - H-X HEATER SHALL BE CONTROLLED FROM THE INTEGRAL THERMOSTAT OR WALL THERMOSTAT AS SHOWN IN THE EQUIPMENT SCHEDULE NOTES. WHEN THE TEMPERATURE OF THE SPACE DROPS BELOW THE THERMOSTAT SETPOINT, THE HEATER FAN SHALL RUN AND THE ELECTRIC HEATING ELEMENT SHALL ENGAGE TO MAINTAIN TEMPERATURE SETPOINT.
- EXHAUST FANS
 - E-X EXHAUST FAN SHALL RUN PER EQUIPMENT SCHEDULE NOTES.
- AIR HANDLING UNIT
 - AH-X
 - COORDINATE OPERATION OF EXISTING AIR HANDLER VAV SYSTEM WITH LANDLORD AND LANDLORDS EXISTING BUILDING MANAGEMENT SYSTEM.

HEATER SCHEDULE											
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	HEAT-MBH	HEAT-KW	FUEL	VOLT/PHASE	MOUNTING	WEIGHT	NOTES
H-1	WALL HEATER	REFER TO PLANS	BERKO	FRA1512F	1.1	1.5	ELECTRIC	120/1	WALL	22	1.2
H-2	WALL HEATER	REFER TO PLANS	BERKO	FRA2020F	3.6	4	ELECTRIC	208/3	WALL	30	1.2

FAN SCHEDULE													
TAG	TYPE	AREA SERVED	MANUFACTURER	MODEL	DRIVE	CFM	ESP	WATTS	RPM	VOLT/PHASE	MOUNTING	WEIGHT	NOTES
E-1	EXHAUST	RESTROOM / SHOWER	GREENHECK	SP-AG0-130-VG	DIRECT	120	0.35	12	1041	115/1	CEILING	12	1
E-2	EXHAUST	ARTROOM	GREENHECK	SP-A1050-VG	DIRECT	400	0.25	40	1250	115/1	CEILING	50	1

LOUVER SCHEDULE												
TAG	SERVES	DESCRIPTION	MANUFACTURER	MODEL NO.	INLET SIZE (INCHES)	FREE AREA	AIR FLOW (CFM)	VELOCITY (FPM)	PRESSURE DROP (IN. WC.)	NOTES		
LV-1	EXHAUST AIR	EXTRUDED ALUMINUM STATIONARY LOUVER	RUSIGN	ELF375DX	24	12	4	0.74	520	703	0.98	1, 2, 3, 4

MECHANICAL EXHAUST SCHEDULE										
ROOM NUMBER	ROOMNAME	OCCUPANCY CLASSIFICATION	AREA (ft2)	EXHAUST FLOW RATE (CFM/ft2)	EXHAUST RATE PER FIXTURE (CFM)	LOWER CONTINUOUS RATE	HIGHER INTERMITTENT RATE	QTY OF FIXTURES	TOTAL EXHAUST AIRFLOW REQ. (CFM)	NOTES
SEE PLANS	COMMERCIAL BATHROOM	PUBLIC SPACES - TOILET ROOM	-	-	50 / 70	NO	YES	1	70	
SEE PLANS	SHOWER	PUBLIC SPACES - SHOWER ROOM (PER HEAD)	-	-	20 / 50	NO	YES	1	50	
SEE PLANS	ART ROOM	EDUCATION - ART CLASSROOM	177	0.7	-	-	-	-	123.9	

DUCT INSULATION SCHEDULE									
EQUIPMENT	AIR DISTRIBUTION TYPE				ADDITIONAL NOTES				
	SA	RA	OA	EAREL					
ALL	R-3.5		R-3.5		R-3.5 BETWEEN ISOLATION DAMPER AND PENETRATION OF BUILDING EXTERIOR OR A MINIMUM OF 5" FROM EXTERIOR PENETRATION OF BUILDING EXTERIOR				

DUCT INSULATION REQUIREMENTS ARE BASED ON TABLE 6.8.2B OF ASHRAE 90.1 2010 ENERGY CODE.

PROVIDE DUCTWORK OF SUFFICIENT THICKNESS TO MEET THE INSTALLED R VALUE REQUIREMENTS LISTED ABOVE.

MECHANICAL VENTILATION SCHEDULE* (AH-001) FIRST FLOOR																	
SYSTEM TAG	ROOM NUMBER	ROOMNAME	AREA A2 (ft2)	OCCUPANCY DENSITY (PEOPLE/1000 ft2)	RATE Rp (CFM/PERSON)	PEOPLE	TOTAL Rp P2 (CFM)	RATE Ra (CFM/ft2)	TOTAL Ra A2 (CFM)	BREATHING ZONE OUTDOOR AIRFLOW Vbz (CFM)	ZONE EFFECTIVENESS (EZ)	ZONE OUTDOOR AIRFLOW Voz (CFM)	REQUIRED SUPPLY AIRFLOW (CFM)	OUTSIDE AIR PRIMARY AIR RATIO, (Zp)	REQUIRED OA (CFM)	REQUIRED OUTDOOR AIR %	REMARKS
FPVAV-1.01 & FPVAV-1.02 & VAV-1.03 & VAV-1.04	101	ADJACENT TENANT	338	5	2	10	0.06	20	30	0.8	37.9	0.04	128	12.8%			
FPVAV-1.01 & FPVAV-1.02 & VAV-1.03 & VAV-1.04	102	ADJACENT TENANT	3,910	5	20	100	0.06	235	481.3	0.8	318.3	3,600	0.12	461	12.8%		
FPVAV-1.05	108	TRANNIS	953	50	48	240	0.06	57	267	0.8	371.5	1,800	0.23	205	12.8%		
FPVAV-6	112	ART ROOM	177	20	10	4	0.06	32	72	0.8	89.8	360	0.24	40	12.8%		
FPVAV-6	113	MESSAGE	173	5	1	5	0.06	10	19.2	0.8	22.0	0.09	28	12.8%			
FPVAV-8	114	FITNESS CENTER	1,070	10	20	11	0.06	64	284	0.8	355.3	2,100	0.17	269	12.8%		
FPVAV-8	115	GOLF SIMULATOR	458	5	3	15	0.06	27	42	0.8	53.1	800	0.06	110	12.8%		
FPVAV-8	103	STORAGE	74	0	0	0	0.06	4	4	0.8	5.8	40	0.14	5	12.8%		
VAV-1.07 & FPVAV-1.09	104	BIKE STORAGE	300	0	0	0	0.06	18	18	0.8	22.5	150	0.15	19	12.8%		
VAV-1.07 & FPVAV-1.09	119	CONFERENCE	129	50	5	7	0.06	8	43	0.8	53.4	240	0.23	29	12.8%		
VAV-1.07 & FPVAV-1.09	105	CORRIDOR	1,370	0	0	0	0.06	82	0.8	0.8	102.8	845	0.11	121	12.8%		
VAV-1.07 & FPVAV-1.09	116	CORRIDOR	293	0	0	0	0.06	18	18	0.8	22.0	275	0.08	35	12.8%		
VAV-1.07 & FPVAV-1.09	118	GAME AREA	854	5	5	9	0.06	51	96	0.8	120.3	700	0.17	90	12.8%		
VAV-1.07 & FPVAV-1.09	117	GAME AREA	1,770	5	22	110	0.06	106	216	0.8	270.3	1,350	0.20	173	12.8%		
VAV-1.07 & FPVAV-1.09	120	NURSING	50	5	1	5	0.06	3	8	0.8	10.0	80	0.17	8	12.8%		
VAV-1.07 & FPVAV-1.09	106	OFFICE	153	5	1	5	0.06	9	14	0.8	17.7	150	0.12	19	12.8%		
VAV-1.07 & FPVAV-1.09	107	OFFICE	153	5	1	5	0.06	9	14	0.8	17.7	150	0.12	19	12.8%		
VAV-1.07 & FPVAV-1.09	110	PHONE ROOM	38	5	1	5	0.06	2	7	0.8	9.1	60	0.15	8	12.8%		
VAV-1.07 & FPVAV-1.09	111	PHONE ROOM	49	5	1	5	0.06	3	8	0.8	9.9	60	0.17	8	12.8%		
VAV-1.07 & FPVAV-1.09	109	STORAGE EAST	138	0	0	0	0.06	8	8	0.8	10.4	70	0.15	9	12.8%		
TOTALS:			12,450		132	845		768	1613		2016.8	14,000	0.24	1,762			

* ALL VENTILATION CALCULATIONS PERFORMED PER CHAPTER 403 OF THE OHIO MECHANICAL CODE.

YOU (CFM UNCORRECTED OUTDOOR AIR INTAKE) = 1,613
 E% (SYSTEM VENTILATION EFFICIENCY) = 0.8
 VOA (CFM OUTDOOR AIR INTAKE REQUIRED) = 1,762

The Quad - 302 W. 3rd Street Cincinnati, OH - Construction Documents 10/25 - 100% MECHANICAL SCHEDULES AND SPECIFICATIONS - EBS - Bid Date/Time: Sep. 28, 2023 - 10:00am - By: Scott Shroyer
 THESE DRAWINGS AND SPECIFICATIONS ARE NOT CONTRACT DOCUMENTS. THESE DRAWINGS HAVE BEEN PREPARED IN ACCORDANCE WITH ANY CONTRACTUAL AGREEMENT THAT MAY EXIST WITH AN OWNER, CONSTRUCTION MANAGER, OR ARCHITECT.
 EBS ACCEPTS NO RESPONSIBILITY FOR THE COMPLI