MEP GENERAL CONDITIONS

1. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE AN INSTALLATION COMPLETE IN EVERY RESPECT. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL INCLUDE ALL LABOR, MATERIALS, AND SUPERVISION ESSENTIAL TO PROVIDE COMPLETE FUNCTIONING SYSTEMS AS DESCRIBED IN THE CONTRACT DOCUMENTS. IN THE EVENT THAT ADDITIONAL DETAILS OR SPECIAL CONSTRUCTION IS REQUIRED FOR WORK INDICATED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SAME AS WELL AS TO PROVIDE MATERIAL AND EQUIPMENT USUALLY FURNISHED WITH SUCH SYSTEMS OR REQUIRED TO COMPLETE THE INSTALLATION AT NO EXPENSE TO THE OWNER.
2. DEVIATIONS TO THE INTENDED DESIGN OR THE SCOPE OF THE WORK MUST BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING WORK. FAILURE TO DO SO MAY RESULT IN THE WORK TO BE REMOVED AT NO COST TO THE OWNER.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES, STANDARDS, AND AMENDMENTS AND/OR OTHER AUTHORITIES THAT MAY HAVE JURISDICTION PERTAINING TO THE WORK. IN ADDITION, ALL WORK SHALL CONFORM TO THE STANDARDS AND PRACTICES OF THE OWNER.
4. ALL EQUIPMENT INSTALLED ON THIS PROJECT SHALL BE NEW AND UNUSED UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL REMOVE ALL SHIPPING LABELS, DIRT, PAINT SPOTS, GREASE, AND STAINS FROM ALL EQUIPMENT. DEBRIS SHALL BE REMOVED AS IT ACCUMULATES. UPON COMPLETION OF HIS WORK, THE CONTRACTOR SHALL CLEAN ALL EQUIPMENT. NO LOOSE PARTS OR SCRAPS OF EQUIPMENT SHALL BE LEFT ON THE PREMISES.
5. ALL MATERIALS SALVAGED FOR THE OWNER SHALL BE STORED BY CONTRACTOR UNTIL END OF PROJECT THEN RETURNED TO THE OWNER.
6. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE AS DEFINED BY THE CONTRACT. THE CONTRACTOR SHALL REPAIR OR REPLACE, AT HIS/HER OWN EXPENSE WHEN ORDERED TO DO SO, ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIAL OR WORKMANSHIP WITHIN SAID PERIOD OF TIME. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR SERVICE INTENDED, AS INTERPRETED BY THE ENGINEER. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMAN IN A NEAT, WORKMANLIKE MANNER. ALL MATERIALS, TOOLS, COSTS, AND SERVICES NECESSARY TO COMPLETELY INSTALL ALL WORK SHALL BE PROVIDED BY THE CONTRACTOR.
7. ALL SAFETY EXPOSURES OR VIOLATIONS SHALL BE RECTIFIED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROTECTION OF PERSONS AND PROPERTY, PROVIDING SAFE WORKING CONDITIONS THROUGHOUT THE WORK PROGRESS, PROVIDING TEMPORARY COVERINGS FOR OPENINGS THROUGH WALLS OR FLOORS, AND PROVIDING TEMPORARY BARRIERS, PARTITIONS AND/OR DUST BARRIERS WHERE REQUIRED TO MAINTAIN OSHA AND THE OWNER'S SAFETY STANDARDS AND TO PREVENT DAMAGE TO PROPERTY. ALL AREAS ADJACENT TO THE CONSTRUCTION AREA OR AFFECTED BY THE CONSTRUCTION MUST BE PROTECTED FROM DAMAGE, CLEANED, AND RESTORED TO THE ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE OWNER. THE CONTRACTOR SHALL PROVIDE PROTECTIVE CLOTHING AND EYEWEAR FOR ALL PERSONNEL WHO ARE REQUIRED TO HANDLE HAZARDOUS CHEMICAL PRODUCTS OR WORK IN HAZARDOUS LOCATIONS.
8. DO NOT DISTURB ASBESTOS CONTAINING MATERIALS (ACM). IF ACM ARE ENCOUNTERED OR SUSPECTED DURING THE COURSE OF WORK, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE OWNER AND ACCOMMODATE FURTHER NECESSARY ABATEMENT BY THE OWNER. ASBESTOS ABATEMENT SHALL OCCUR PRIOR TO CONTRACTOR COMMENCING OR CONTINUING DEMOLITION OR CONSTRUCTION OPERATIONS.
9. CONTRACTOR SHALL DIRECT ALL QUESTIONS TO THE OWNER. THE CONTRACTOR SHALL VERIFY ALL WORKING CONDITIONS SUCH AS STARTING TIME, NOISE AND VIBRATION LIMITATIONS, CONFINED SPACE, ETC. THROUGH THE OWNER AND APPROVAL SHALL BE RECEIVED TO START WORK.
10. THE CONTRACTOR SHALL VISIT THE JOBSITE AND VERIFY THE SCOPE OF WORK REQUIRED INCLUDING ALL EXISTING CONDITIONS, LOCATIONS, DIMENSIONS, AND QUANTITIES AS SHOWN AND NOTED ON THE DRAWINGS AND THE EXTENT AND EFFECT OF EXISTING SYSTEMS. NOTIFY THE OWNER IF ANY OF THE WORK CANNOT BE SAFELY ACCESSED.
11. THE CONTRACTOR SHALL ENSURE FULL COORDINATION WITH OTHER TRADES AND CONTRACTORS TO ACCOMPLISH THE WORK AS SHOWN AND NOTED IN THESE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL COMPARE THE DRAWINGS OF OTHER TRADES AND REPORT ANY DISCREPANCIES TO THE OWNER.
12. NOT ALL EXISTING UTILITIES ARE SHOWN FOR CLARITY OF THE DRAWING. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND SHALL PERFORM FIELD MEASUREMENTS PRIOR TO FABRICATION AND/OR PURCHASE OF ANY MATERIAL. CONTACT THE OWNER SHOULD EXISTING CONDITIONS BE DIFFERENT FROM THE DESIGN DRAWINGS. CONFLICTS ARISING DUE TO LACK OF COORDINATION SHALL BE THE RESPONSIBILITY AND AT THE EXPENSE OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, LICENSES, CLEARANCES AND CERTIFICATES FROM THE OWNER AND LOCAL AUTHORITIES HAVING JURISDICTION AS REQUIRED PRIOR TO THE COMMENCEMENT OF THE WORK.
14. THE CONTRACTOR SHALL TRAIN HIS/HER EMPLOYEES AND SUBCONTRACTORS AS REQUIRED BY THE OWNER, IN THE RECOGNITION AND AVOIDANCE OF UNSAFE CONDITIONS, AND IN THE REGULATIONS AND HAZARDS WHICH APPLY TO THE AREA IN WHICH THE WORK WILL TAKE PLACE.
15. ANY REQUIRED CHANGES TO THE DRAWINGS RESULTING FROM THE ACCEPTANCE OF ALTERNATIVES AND/OR SUBSTITUTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL.
16. SUBMITTALS
    - A. ALL SUBMITTALS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMITTING TO THE ENGINEER. ALL SUBMITTALS NOT REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW. AFTER REVIEW HAS BEEN COMPLETED, SUBMIT A COPY OF EACH SUBMITTAL TO THE OWNER WITH THE APPROVAL SEAL OF THE ENGINEER AND THE CONTRACTOR. SUBMITTALS SHALL BE APPROVED PRIOR TO STARTING ANY WORK.
    - B. SUBMIT MATERIAL SAFETY DATA SHEETS AND MANUFACTURER'S CURRENT RECOMMENDED METHOD OF INSTALLATION TO THE OWNER FOR ALL MATERIALS USED TO PERFORM THE WORK INDICATED BY THESE DOCUMENTS. ALL CHEMICALS OR CHEMICAL COMPOUNDS PROPOSED FOR USE ON THE PROPERTY INCLUDING, BUT NOT LIMITED TO PAINT THINNERS, SOLVENTS, ADHESIVES, SEALANTS, CLEANING COMPOUNDS, EPOXIES, ETC. MUST BE APPROVED BY THE OWNER.
    - C. PROVIDE PRODUCT DATA SUBMITTALS ON ALL MAJOR EQUIPMENT, COMPONENTS, AND MATERIALS SPECIFIED IN THESE PLANS FOR ENGINEER'S AND OWNER'S REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION. SUBMIT CATALOG DATA SHOWING MANUFACTURER'S NAME AND CONTACT INFORMATION, ALL STANDARD FEATURES, AMPERAGE, VOLTAGE, A/C RATINGS, DIMENSIONS, WEIGHTS, LISTINGS & PRODUCT LABELS, MATERIAL TYPES, FINISHES AND CLEARLY INDICATING WHICH OPTIONAL FEATURES WILL BE PROVIDED. EACH SUBMITTAL SHALL INCLUDE A COPY OF THE RELEVANT EQUIPMENT OR MATERIALS SCHEDULE ON THE PLANS AND SPECIFICATION SECTION WITH EACH LINE ITEM MARKED COMPLIES OR DOES NOT COMPLY WITH THE REQUIREMENTS.
        - C1. WHERE MULTIPLE SIZES ARE LISTED, INDICATE SIZES TO BE USED.
        - C2. WHERE MULTIPLE PRODUCTS ARE SHOWN ON THE SAME PAGE, INDICATE WHICH PRODUCTS TO BE USED.
        - C3. INCLUDE ALL RELEVANT ELECTRICAL DIAGRAMS INCLUDING SCHEMATIC AND INTERCONNECTION DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.
    - D. PROVIDE SHOP DRAWINGS SHOWING ALL DUCTWORK, PIPING AND CONDUIT 2" AND ABOVE, AND ALL MAJOR EQUIPMENT AND HOUSEKEEPING PADS. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER, IN LIEU OF THE PREPARATION OF SHOP DRAWINGS IS FORBIDDEN. SHOP DRAWINGS RECEIVED BEARING THE ENGINEER'S TITLE AND SEAL SHALL BE PROMPTLY REJECTED.
    - E. ALL SUBMITTALS SHALL BE PROVIDED IN PDF FORMAT.
17. SHOULD ANY ERRORS, OMISSIONS, CONFLICTS, OR AMBIGUITIES EXIST IN THE DRAWINGS, THE CONTRACTOR SHALL BRING THESE TO THE ATTENTION OF THE OWNER IMMEDIATELY FOR ADJUSTMENT IN WRITING BEFORE SIGNING THE CONTRACT OR PROCEEDING WITH THE WORK. OTHERWISE, HE/SHE SHALL AT HIS/HER OWN EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECT CAUSED BY SUCH UNINTENTIONAL ERROR.
18. CONTRACTOR SHALL CHECK ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS FOR ACCURACY, AND CONFIRM THAT THE WORK IS BUILDABLE AS SHOWN AND MEETS ALL APPLICABLE CODES BEFORE PROCEEDING WITH CONSTRUCTION. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATION ISSUES, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE OWNER BEFORE PROCEEDING WITH THE WORK IN QUESTION OR RELATED WORK.
19. THE CONTRACTOR SHALL NOT FABRICATE OR INSTALL ITEMS AS SHOWN ON THE DRAWINGS IF THERE ARE DISCREPANCIES OR CONFLICTS BETWEEN THE EXISTING CONDITIONS AND THE INFORMATION SHOWN ON THE DRAWINGS UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED. PRIOR TO FABRICATION OR INSTALLATION, THE CONTRACTOR SHALL IMMEDIATELY CALL SUCH DISCREPANCIES OR CONFLICTS TO THE ATTENTION OF THE OWNER AND THE ENGINEER.
20. ALL WORK NOTED "NIC" OR "NOT IN CONTRACT" IS TO BE ACCOMPLISHED BY ANOTHER CONTRACTOR AND IS NOT TO BE PART OF THE CONSTRUCTION AGREEMENT.
21. IN CASES OF A DIFFERENCE BETWEEN THE MINIMUM REQUIREMENTS OF THE VARIOUS LAWS, CODES, AUTHORITIES, AND THE DOCUMENTS; THE WORK SHALL MEET THE GREATER OR MORE STRINGENT REQUIREMENTS.
22. THE SEQUENCE OF CONSTRUCTION AND ANY SERVICE OUTAGES SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER.
23. WORK AREAS SHALL BE KEPT CONTINUOUSLY, AT ALL TIMES, FREE OF DEBRIS AND NON-HAZARDOUS MATERIAL TO THE SATISFACTION OF THE OWNER. ALL EXISTING PIPING AND CONDUITS SHALL HAVE TEMPORARY PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE OWNER. AFTER PROJECT COMPLETION, THE SITE SHALL BE CLEANED UP AND RESTORED TO ITS ORIGINAL CONDITION OR BETTER PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE OWNER.
24. THE DRAWINGS ARE DIAGRAMMATIC ONLY AND DO NOT GIVE FULLY DIMENSIONED LOCATIONS OF VARIOUS ELEMENTS OF WORK OR INDICATE ALL OFFSETS THAT MAY BE REQUIRED. DETERMINE EXACT LOCATIONS FROM FIELD MEASUREMENTS. MAKING ADJUSTMENTS TO FIELD CONDITIONS IS CONSIDERED A PART OF THE WORK REQUIRED.
25. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
26. CONTRACT CLOSEOUT: INCLUDE THE FOLLOWING:
    - A. RECORD DRAWINGS
        - A.1. THE CONTRACTOR SHALL MAINTAIN TWO SETS OF CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES SO THAT ALL CHANGES BETWEEN THE DRAWINGS AND THE ACTUAL CONSTRUCTION CAN BE NOTED ON THE DRAWINGS. THIS INCLUDES ALL DEVIATIONS FROM THE ORIGINAL CONTRACT. THE CONTRACTOR SHALL INDICATE ALL CHANGES FROM THE ORIGINAL PLANS MADE DURING THE INSTALLATION OF THE WORK IN RED INK ON TWO SETS OF PRINTS. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL SIGN AND DATE THE DRAWINGS CERTIFYING THAT THEY ARE AN ACCURATE REFLECTION OF THE ACTUAL CONSTRUCTION.
    - B. OPERATIONS AND MAINTENANCE DATA: SUBMIT O&M DATA IN PDF FORMAT WITH COVER PAGE AND INDEX. INCLUDE THE FOLLOWING FOR EACH PIECE OF EQUIPMENT: MAINTENANCE INSTRUCTIONS, PARTS LIST, OPERATING INSTRUCTIONS, WARRANTY DOCUMENTS AND FINAL APPROVED SUBMITTAL.
    - C. TEST & BALANCE REPORTS IN PDF FORMAT.

MEP GENERAL CONDITIONS (CONT.)

27. ALL STRUCTURAL ENGINEERING AS IT PERTAINS TO ATTACHING MEP ELEMENTS INCLUDING BUT NOT LIMITED TO EQUIPMENT, PIPE, DUCTWORK AND CONDUIT TO THE BUILDING STRUCTURE AND ROOF SHALL BE PROVIDED BY THE STRUCTURAL ENGINEER UNLESS NOTED OTHERWISE. DESIGN SHALL INCLUDE SUPPORTS AND WIND-LOADING AND SEISMIC RESTRAINTS FOR ALL MEP ELEMENTS INSTALLED ON THE ROOF. DESIGN SHALL ALSO INCLUDE DESIGN OF SEISMIC RESTRAINTS FOR ALL HANGERS AND SUPPORTS OF MEP ELEMENTS. CONTRACTOR SHALL SUBMIT DESIGN REACTION FORCES TO THE PROJECT STRUCTURAL ENGINEER FOR REVIEW.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING WORK AS REQUIRED TO INSTALL THE SYSTEMS AS SHOWN ON THE DRAWINGS. ANY CUTTING THRU STRUCTURAL MEMBERS OR FLOORS SHALL FIRST BE APPROVED BY THE OWNER AND STRUCTURAL ENGINEER. ALL PATCHING AT WALLS SHALL BE THE SAME MATERIAL AS THE WALL AND TOUCHED UP WITH PAINT. ALL NEW WALL AND FLOOR PENETRATIONS SHALL BE MADE AT 90 DEGREE ANGLES. THERE SHALL BE NO DRILLING INTO THE FLOOR FROM ABOVE OR BELOW WITHOUT FIRST CONTACTING THE OWNER, AND STRUCTURAL ENGINEER.
29. PRIOR TO ANY CUTTING OR TRENCHING, VERIFY WITH OWNER, UTILITY COMPANIES, AND LANDLORD THAT ALL AVAILABLE INFORMATION IS KNOWN REGARDING UNDERGROUND OBSTRUCTIONS. TAKE CAUTION WHEN TRENCHING NOT TO DISTURB ANY EXISTING UTILITIES. NOTIFY OWNERS REPRESENTATIVE IMMEDIATELY UPON UNCOVERING UNKNOWN UTILITIES FOR FURTHER DIRECTION. REFER TO CIVIL-SITE DRAWINGS FOR BURIED PIPE TRENCHING AND BACKFILL SPECIFICATIONS AND DETAILS.
30. CONTRACTOR TO PROVIDE START-UP AND COMMISSIONING SUPPORT SERVICES FOR ALL NEW SYSTEMS AND EQUIPMENT, AS WELL AS TRAINING SERVICES FOR THE OWNER'S MAINTENANCE PERSONNEL IN THE USE OF THESE SYSTEMS AND EQUIPMENT. CONTRACTOR SHALL ALSO ASSIST TEST & BALANCE CONTRACTOR AND THE COMMISSIONING AGENT AS REQUIRED.
31. CONTRACTOR TO COORDINATE FINAL INSPECTION OF THE WORK WITH THE OWNER AND ENGINEER, AND DEMONSTRATE PROPER FUNCTIONALITY OF ALL NEW SYSTEMS.
32. CONTRACTOR TO COORDINATE ALL SYSTEM OUTAGES WITH THE OWNER; PROVIDE MINIMUM TWO WEEKS NOTICE.

GENERAL MEP NOTES

1. ALL NEW OPENINGS THROUGH FLOORS, ROOF, STRUCTURAL WALLS, AND STRUCTURAL MEMBERS (WHERE APPROVED BY THE OWNER) AND INSTALLATION OF ROOF-MOUNTED EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECT AND DESIGNED BY THE STRUCTURAL ENGINEER. PENETRATIONS THROUGH SHEAR WALLS ARE PROHIBITED.
2. DUCT, PIPE AND CONDUIT ROOF PENETRATIONS:
    - 2.A. ALL DUCT, PIPE, AND CONDUIT ROOF PENETRATIONS SHALL BE THROUGH AN INSULATED, FACTORY-MANUFACTUREDFULLY-WELDED GALVANIZED STEEL ROOF CURBS. CURBS MUST EXTEND 14" ABOVE THE FINISHED SURFACE OF THE ROOF AND SHALL BE SLOPED TO MATCH ROOF, SHALL MATCH ROOF MANUFACTURER’S REQUIREMENTS, AND SHALL BE INSTALLED TO MAINTAIN ROOF WARRANTY. ATTACH CURB TO ROOF PER STRUCTURAL ENGINEER'S DESIGN. IF DESIGN IS NOT INCLUDED IN PROJECT STRUCTURAL ENGINEER'S SCOPE, THE DESIGN SHALL BE PERFORMED BY THE CONTRACTOR'S LICENSED STRUCTURAL ENGINEER.
    - 2.B. ENTIRE ASSEMBLY SHALL BE DESIGNED TO WITHSTAND ALL IBC AND ASCE-7 WINDLOADING REQUIREMENTS FOR BUILDINGS LESS THAN 60' HIGH (revise if >60' high) . THIS SPECIFICALLY APPLIES TO THE ATTACHMENT TO THE ROOF AND THE REQUIRED RESTRAINTS NECESSARY TO COMPLY WITH IBC AND ASCE-7, AS WELL AS ASSOCIATED DUCTWORK, PIPING, AND EQUIPMENT PLATFORMS ABOVE THE ROOF.
    - 2.C. CONTRACTOR SHALL PROVIDE STAINLESS STEEL FLASHING TO SEAL BETWEEN THE DUCT / PIPE AND THE ROOF CURB.
    - 2.D. FLUES AND VENT STACKS SHALL MAINTAIN CLEARANCE FROM COMBUSTIBLE CONSTRUCTION AND INSULATED ASSEMBLIES IN ACCORDANCE WITH THE VENT MANUFACTURER'S INSTRUCTIONS. TOP WITH BIRD PROOF FLUE CAP.
    - 2.E. THE WEIGHT OF ALL DUCTS PENETRATING THE ROOF SHALL BE SUPPORTED FROM BELOW-ROOF STRUCTURE, NOT AT THE ROOF CURB.
    - 2.F. COORDINATE LOCATIONS OF EXISTING AND NEW ROOF PENETRATIONS TO MINIMIZE NUMBER OF OPENINGS. ELECTRICAL AND REFRIGERANT LINES ARE TO USE THE SAME PENETRATIONS WHERE POSSIBLE.
    - 2.G. COORDINATE ALL ROOF WORK WITH OWNERS ROOFING CONTRACTOR TO MAINTAIN THE WARRANTY.
3. PIPE AND CONDUITS PENETRATING FIRE-RATED FLOORS AND WALLS:
    - 3.A. A UL-RATED FIRESTOP SYSTEM SHALL BE INSTALLED AT ALL PIPE PENETRATIONS THROUGH SMOKE AND/OR FIRE-RATED FLOORS AND WALLS. FIRESTOP SYSTEM SHALL BE SUITABLE FOR THE FLOOR AND WALL TYPE, MATERIALS OF CONSTRUCTION, AND PIPE MATERIALS; RATINGS SHALL MATCH FIRE BARRIER RATINGS. ONLY PRODUCTS BY A SINGLE MANUFACTURER SHALL BE USED ON THE PROJECT; APPROVED MANUFACTURERS ARE STI, 3M AND HILTI. INSTALLERS SHALL BE CERTIFIED BY THE FIRESTOP SYSTEM MANUFACTURER. CONTRACTOR TO PROVIDE INVENTORY OF ALL PENETRATIONS.
    - 3.B. PIPE WEIGHT SHALL BE SUPPORTED AT THE FLOOR OR FROM HANGERS TO EITHER SIDE OF THE WALL OR FLOOR; PIPE WEIGHT SHALL NOT BE SUPPORTED BY THE WALL.
    - 3.C. INSULATION AND VAPOR BARRIER SHALL BE CONTINUOUS THROUGH THE PENETRATION.
    - 3.D. FLOOR PENETRATIONS SHALL BE SEALED WATER TIGHT AT THE TOP OF THE FLOOR.
4. PIPE AND CONDUITS PENETRATING NON-FIRE RATED FLOORS AND WALLS INCLUDING SLAB ON GRADE:
    - 4.A. WEIGHT SHALL BE SUPPORTED AT THE FLOOR OR FROM HANGERS ABOVE OR BELOW THE FLOOR. PIPE WEIGHT SHALL NOT BE SUPPORTED BY THE WALL.
    - 4.B. INSULATION AND VAPOR BARRIER SHALL BE CONTINUOUS THROUGH THE FLOOR.
    - 4.C. FLOOR PENETRATION SHALL BE SLEEVED WITH MINIMUM 16 GA. GALVANIZED STEEL EXTENDING 2" ABOVE THE SLAB AND SEALED WATER TIGHT.
    - 4.D. WHERE FLOOR OR WALL PENETRATIONS ARE EXPOSED IN OCCUPIED SPACES, ESCUTCHEON PLATES SHALL BE INSTALLED TO COVER THE OPENING.
    - 4.E. PENETRATIONS THROUGH EXTERIOR WALLS TO BE SEALED WATERTIGHT.
5. NO ASBESTOS CONTAINING MATERIALS SHALL BE USED IN ANY OF THE NEW CONSTRUCTION.
6. ALL INSULATING MATERIALS AND ALL MATERIALS USED IN PLENUMS SHALL BE PLENUM RATED AND SHALL CONFORM TO ASTM E 84, HAVING A MAXIMUM FLAME SPREAD OF <25 AND A MAXIMUM SMOKE DEVELOPED RATING OF <50.
7. EQUIPMENT SCHEDULED ON THE DRAWINGS IS BASED UPON EQUIPMENT OF MANUFACTURER NOTED. EQUIPMENT FROM ANOTHER MANUFACTURER MAY BE USED PROVIDED THAT THE CONTRACTOR SUBMIT PROOF THAT THE EQUIPMENT TO BE USED IS EQUAL TO OR BETTER THAN THAT SCHEDULED ON THE DRAWINGS AND IS APPROVED BY THE OWNER AND ENGINEER. PRICE SPECIFIED ITEM AS WELL AS PROPOSED SUBSTITUTION.
8. INVERTER READY MOTORS SHALL BE PROVIDED WITH AEGIS SHAFT GROUNDING RING, COOLBLUE INDUCTIVE ABSORBERS, OR CERAMIC BEARINGS AND CLASS F 105° C RISE INSULATION. REFERENCE NEMA MG1 PART 31.
9. PROVIDE TEFC MOTORS FOR ALL WET LOCATIONS AND ALL OUTDOOR LOCATIONS.
10. LOCATION OF NEW EQUIPMENT IS APPROXIMATE WHERE SHOWN. IF THERE IS A CONFLICT WITH AN EQUIPMENT LOCATION SHOWN ON THE PLANS, DO NOT PROCEED UNTIL THE ENGINEER APPROVES A NEW LOCATION.
11. INSTALL ALL NEW EQUIPMENT WITH MANUFACTURER-RECOMMENDED CLEARANCES ON ALL SIDES FOR SERVICE AND MAINTENANCE AS WELL AS REMOVAL OF INDIVIDUAL COMPONENTS WITHOUT REMOVING THE ENTIRE UNIT. PROVIDE NEC-REQUIRED CLEARANCE IN FRONT OF LINE VOLTAGE CONTROL PANELS; MINIMUM 3'.
12. DUCTWORK, PIPING, CONDUIT, CABLING, ETC. SHOWN ON EACH PLAN IS RUN ABOVE THE CEILING ON THE FLOOR WHERE IT IS SHOWN UNLESS OTHERWISE NOTED.
13. DUCTWORK, PIPING, CONDUIT, CABLING, ETC. SHOWN ON DRAWINGS SHALL BE COORDINATED WITH AIR DISTRIBUTION DEVICES, SPECIAL CEILING, FLOOR, AND STRUCTURE CONSTRUCTION, ETC. PROVIDE ADDITIONAL RISES AND DROPS TO THOSE INDICATED ON THE DRAWINGS AS REQUIRED TO COORDINATE WITH ARCHITECTURAL, STRUCTURAL OR MEP ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS. ALL UTILITIES SHALL BE ROUTED IN AN ORDERLY MANNER, GROUPED TOGETHER WHEREVER POSSIBLE, AND LOCATED SO AS TO CONSERVE BUILDING SPACE.
14. COORDINATION OF ALL TRADES IN CEILING SPACES TO ALLOW AN 8-INCH CLEAR PLANE FOR LOCATION OF LIGHTS IS OF UTMOST IMPORTANCE TO MAXIMIZE FUTURE FLEXIBILITY. REALIZING THAT THIS IS NOT POSSIBLE IN ALL CASES, DUE TO CEILING ELEVATION AND STRUCTURAL LIMITATIONS, MAXIMUM EFFORT SHALL BE GIVEN TO MAINTAINING THE 8-INCH LIGHTING PLANE UNLESS NOTED OTHERWISE.
15. MAINTAIN MINIMUM VERTICAL CLEARANCE OF 7'-6" FROM THE FLOOR TO THE BOTTOM OF DUCTWORK , PIPING, AND ASSOCIATED HANGERS AND SUPPORTS UNLESS NOTED OTHERWISE ON THE PLANS.
16. POWDER ACTUATED FASTENERS ARE NOT ALLOWED.
17. PROVIDE AND INSTALL MINIMUM $2\frac{1}{2}$" LONG X $\frac{3}{4}$" WIDE ENGRAVED PHENOLIC PLASTIC EQUIPMENT TAGS, BLACK LETTERS ON WHITE BACKGROUND, FOR ALL EQUIPMENT TO MATCH TAGS INDICATED ON PLANS. IF EXISTING TAGS ARE PRESENT EITHER FROM THE MANUFACTURER OR EXISTING CONDITIONS, COVER OR PAINT OVER THE OLD TAG AS REQUIRED TO ELIMINATE CONFLICTING TAG NAMES. LABEL THERMOSTATS TO MATCH UNIT DESIGNATION. INDICATE ELECTRICAL PANEL AND CIRCUIT BREAKER NUMBER IDENTIFICATION ON NAMEPLATE IN SMALLER LETTERS IN PARENTHESES.
18. U.N.O, PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED MEP EQUIPMENT. INCLUDING EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, BASE RAILS AND CONCRETE INERTIA BASES. CONTRACTOR TO COORDINATE LOCATIONS AND SIZES. REFER TO DETAIL ON THIS SHEET.
19. THE CONTRACTOR SHALL CONSULT THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL, AND OTHER DRAWINGS RELATED TO THIS PROJECT FOR ADDITIONAL WORK TO BE PROVIDED.

MEP RESPONSIBILITY MATRIX

	FURNISH	INSTALL	POWER
			120V & UP
HANGERS & SUPPORTS, INCLUDING DESIGN	ALL	ALL	
DUCT SMOKE DETECTORS	MC	MC	EC
STARTERS, DISCONNECTS - FWE	FWE	FWE	EC
STARTERS, DISCONNECTS - NOT FWE	EC	EC	EC
HEAT TRACE	MC	MC	EC
DAMPERS - FWE - PACKAGED EQUIPMENT	FWE	FWE	
DAMPERS - FWE - AHU'S	FWE	FWE	
DAMPERS - SEPARATE FROM EQUIPMENT		MC	

NOTES:

1. FOLLOW THE RESPONSIBILITIES SHOWN ABOVE UNLESS NOTED OTHERWISE ON THE PLANS.
2. ABBREVIATIONS

FWE: FURNISHED WITH EQUIPMENT	FA: FIRE ALARM CONTRACTOR	EC: ELECTRICAL CONTRACTOR
ALL: ALL CONTRACTORS, BY DISCIPLINE	MC: MECHANICAL CONTRACTOR	

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THE GENERAL CONTRACTOR AND/OR ALL SUB–CONTRACTORS WORKING FROM THESE PLANS AND SPECIFICATIONS ARE NOT TO SCALE SUCH INFORMATION BUT TO CONTACT THE ARCHITECT OR HIS REPRESENTATIVE REGARDING MEASUREMENTS, IF SUCH MEASUREMENTS DO NOT APPEAR CORRECT, ADD UP PROPERLY OR SCALE CORRECTLY TO THE INDICATED SIZE.

ENGINEER

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EEA Project No.	20256574
State of Registration	Florida
Firm Registration No.	26645

PROJECT NUMBER 250486	DATE: 02.25.26
DRAWN BY: SL	CHECK BY: JTS
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF:	JTS

REVISION LOG:	
ISSUED FOR CLIENT	02.25.26
ISSUED FOR LL PERMIT + BID	03.06.23

CARRIAGE GATE SHOPPING CENTER
3425 THOMASVILLE RD
SPACE 7
TALLAHASSEE, FL 32309

DRAWING NO.

M-100

MEP GENERAL NOTES

JEREMY T. SMITH

EEA CONSULTING ENGINEERS

BID DOCUMENT ONLY

Not Intended for Construction or Permit. This document is released under the authority of:

Registrant's Name:
Jeremy T. Smith
Serial No.
041482

DATE: 02/25/26
PROJECT NO: 250486
LOCATION: CARRIAGE GATE, TALLAHASSEE FL
PLOT SCALE: 1:1

MECHANICAL SYMBOLS AND ABBREVIATIONS

NOTE: ALL SYMBOLS AND ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. PROVIDE ALL PERMITS, INSPECTIONS, LICENSES AND FEES. FURNISH ALL LABOR, EQUIPMENT, SUPPLIES, AND MATERIALS NECESSARY TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS.

2. THE DRAWINGS AND SPECIFICATIONS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPES, FIXTURES, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DO NOT SCALE THE DRAWINGS FOR DIMENSIONS. TAKE ALL DIMENSIONS, MEASUREMENTS, EQUIPMENT LOCATIONS, LEVELS, ETC. FROM THE ARCHITECTURAL DRAWINGS, FIELD MEASUREMENTS, AND FROM THE EQUIPMENT TO BE FURNISHED. PIPING MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES OR TO AVOID CONFLICTS WITH OTHER TRADES. THE DESIGN INTENT (I.E. PITCHES, VELOCITIES, PRESSURE DROPS, VOLTAGE DROPS, ETC.) CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ARCHITECT. THE COST OF THESE DEVIATIONS TO AVOID INTERFERENCE'S SHALL BE PART OF THE ORIGINAL CONTRACT BID.

3. CONFER AND COOPERATE WITH ALL OTHER TRADES TO COORDINATE THEIR WORK. COORDINATION SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, MATERIALS AND EQUIPMENT ROUTED IN CEILING AND WALL CAVITIES, EQUIPMENT ARRANGEMENT IN MECHANICAL SPACES, INCLUDING EQUIPMENT CLEARANCE REQUIREMENTS, ELEVATIONS AND DIMENSIONS OF STRUCTURAL MEMBERS AND OPENINGS, ETC. NOTIFY THE ARCHITECT OF ANY CONFLICTS.

4. BASE FINAL INSTALLATION OF MATERIALS AND EQUIPMENT ON ACTUAL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE. FIELD MEASURE FOR MATERIALS AND EQUIPMENT REQUIRING EXACT FIT. NO EXTRAS WILL BE GIVEN FOR THE CONTRACTOR'S FAILURE TO FIELD COORDINATE.

5. THE OWNER OR ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR FOR MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM THE WORK.

6. LOCATE ALL EQUIPMENT THAT MUST BE SERVICED, OPERATED, OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, MOTORS, CONTROLLERS, SWITCHGEAR, AND DRAIN POINTS IF REQUIRED FOR BETTER ACCESSIBILITY. FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE ALLOWED TO PROVIDE FOR BETTER ACCESSIBILITY. ANY CHANGES SHALL BE APPROVED BY THE ARCHITECT AND CONSTRUCTION MANAGER/GENERAL CONTRACTOR PRIOR TO MAKING THE CHANGE.

7. PROVIDE ACCESS DOORS, WALL OPENINGS, ROOF OPENINGS, OR ANY OTHER CONSTRUCTION REQUIREMENT NEEDED TO ACCOMMODATE THE MECHANICAL EQUIPMENT. LOCATIONS OF THESE OPENINGS SHALL BE SUBMITTED IN SUFFICIENT TIME TO BE INSTALLED IN THE NORMAL COURSE OF WORK.

8. COORDINATE ELECTRICAL REQUIREMENTS OF APPROVED MECHANICAL EQUIPMENT WITH THE ELECTRICAL SUB-CONTRACTOR PRIOR TO THE PURCHASE AND INSTALLATION OF ANY ELECTRICAL EQUIPMENT, DEVICES, WIRING, OR CONDUIT.

9. PROVIDE GENERAL CONTROL WIRING, THERMOSTATS, MOTORIZED DAMPERS AND CONDUIT ASSOCIATED WITH HVAC EQUIPMENT. COORDINATE THE LOCATION OF ALL THERMOSTATS, ROOM SENSORS, ETC. WITH THE ARCHITECT AND ALL OTHER TRADES PRIOR TO INSTALLATION. IF A CONFLICT WITH MILLWORK, LIGHT SWITCHES, WINDOWS, ETC. EXISTS, NOTIFY THE ARCHITECT OF THE POTENTIAL INTERFERENCE PRIOR TO INSTALLATION. INSTALL THERMOSTATS WITH PROTECTIVE LOCKING COVER, CENTERED AT 4'-0" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED. COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND THE TEXAS ACCESSIBILITY'S STANDARD (TAS).

10. ALL DIMENSIONS SHOWN ON THE DRAWINGS FOR DUCTWORK ARE NET INSIDE CLEAR DIMENSIONS. FOR RECTANGULAR DUCT, THE FIRST FIGURE OF THE DUCT SIZE INDICATES THE DIMENSION OF THE FACE SHOWN. VERIFY THAT THE DUCTWORK SPECIFIED WILL FIT IN THE SPACE AVAILABLE USING THE ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS AS REFERENCE PRIOR TO FABRICATION AND INSTALLATION.

11. PROVIDE TURNING VANES ON ALL RECTANGULAR SUPPLY, EXHAUST, AND RETURN DUCTWORK INCLUDING THE TOP AND BOTTOM OF VERTICAL DUCTS UNLESS OTHERWISE INDICATED.

12. PROVIDE A LOCKING QUADRANT VOLUME DAMPER AT THE TAP OF EACH RUN-OUT TO DIFFUSERS FOR BALANCING PURPOSES, UNLESS OTHERWISE INDICATED. THE RUN-OUT DUCT SIZE IS THE SAME SIZE AS THE DIFFUSER OR GRILLE NECK SIZE, UNLESS OTHERWISE INDICATED.

13. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL FIRE RATED WALLS AND CEILINGS. PROVIDE FIRE DAMPERS AND/OR COMBINATION FIRE/SMOKE DAMPERS IN DUCTWORK AT ALL LOCATIONS WHERE DUCTS PASS THROUGH FIRE RATED ASSEMBLY. MECHANICAL SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING FIRE AND FIRE/SMOKE DAMPERS. COORDINATE CONSTRUCTION REQUIREMENTS AND PROVISIONS FOR CONNECTIONS TO FIRE ALARM SYSTEM.

14. ALL DUCTWORK SHALL BE SHEET METAL FABRICATED IN ACCORDANCE WITH SMACNA STANDARDS. ALL DUCTWORK ASSOCIATED WITH CONSTANT VOLUME SYSTEMS SHALL BE CONSTRUCTED TO 2" W.G. AND SEALED TO SMACNA CLASS A. SEAL ALL SEAMS WITH MASTIC SEALANT UL 181 LISTED FOR THE APPLICATION USED. SEALANT SHALL BE DESIGNED FOR USE ON METAL DUCT AND FLEXIBLE DUCT.

15. SUPPLY AND RETURN DUCTWORK LOCATED OUTSIDE, EXPOSED TO AMBIENT CONDITIONS, SHALL BE INTERNALLY LINED WITH 2" DUCT LINER. DUCTWORK SHALL BE WELDED STAINLESS STEEL. LINER SHALL BE FOIL-FACED, SUITABLE FOR HEALTHCARE APPLICATION; OTHERWISE USE DOUBLE WALL CONSTRUCTION. BREAK SHEET METAL IN A MANNER TO PREVENT STANDING WATER ON HORIZONTAL SURFACES. SEAL ALL SEAMS WITH MASTIC SEALANT UL 181 LISTED FOR THE APPLICATION USED. SEALANT SHALL BE DESIGNED FOR USE ON METAL DUCT AND FLEXIBLE DUCT.

16. ALL RECTANGULAR AND ROUND SUPPLY AND RETURN DUCTWORK LOCATED IN EXPOSED INTERIOR AREAS SHALL BE INTERNALLY LINED WITH DUCT LINER AND EXTERNALLY PAINTED. REFER TO ARCHITECT FOR COLOR SELECTION.

17. INSTALL DX PIPING AS SPECIFIED, INCLUDING FILTER/DRYER, SIGHT GLASS, ISOLATION/CHARGING VALVES, AND ALL APPURTENANCES PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATION SHALL BE ACCOMPLISHED IN A NEAT AND ORDERLY FASHION, AS APPROVED BY THE ENGINEER. COORDINATE FOR ROUTING OF DX PIPING, UP INSIDE OF WALLS, ETC. AS REQUIRED, TERMINATING AT AHU's. PROVIDE BRACING/ISOLATION AS REQUIRED TO PREVENT VIBRATION OF DX PIPING INSIDE WALLS, ETC. SIZE, ROUTE, AND INSULATE DX PIPING PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATION REQUIREMENTS.

18. PROVIDE VIBRATION ISOLATORS FOR MOTOR DRIVEN EQUIPMENT, UNLESS OTHERWISE NOTED. PROVIDE ISOLATION AS INDICATED OR AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

19. SOME PIPES AND DUCTS SHOWN ON EACH FLOOR PLAN MAY BE SHOWN WITH AN OFFSET FOR CLARITY.

20. SEAL ALL PIPE AND DUCT PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS WITH AN APPROVED FIRE PROOFING MATERIAL.

21. ALL EQUIPMENT SHALL HAVE IDENTIFICATION TAGS. TAGS SHALL BE PLASTIC LAMINATE, WHITE FACE WITH 1/2" TALL BLACK LETTERS. THE TAG SHALL MATCH THE UNIT DESIGNATIONS SHOWN ON THE SCHEDULES.

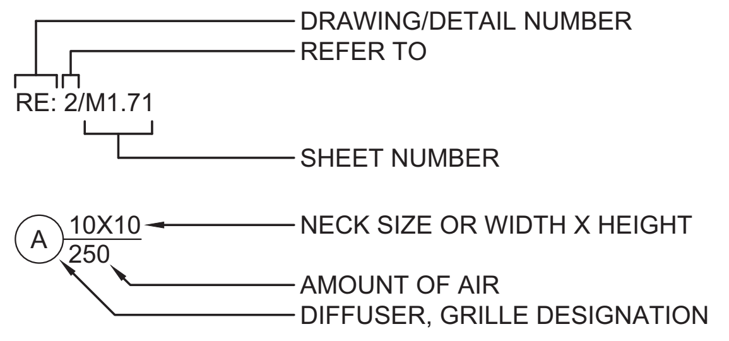
22. EXPAND OR REDUCE DUCTS AT EQUIPMENT CONNECTIONS BASED ON THE EQUIPMENT PURCHASED, WITH TRANSITIONS NOT TO EXCEED 30 DEGREES. SIZES SHOWN ON SCHEDULES, ETC. ARE FOR GUIDANCE ONLY. ASPECT RATIO SHALL BE NO GREATER THAN 4:1, PER SMACNA'S GUIDELINES.

23. ALL DUCTS WITH A DIMENSION GREATER THAN 12" PASSING THRU A NON-RATED WALL SHALL HAVE THE OPENING FRAMED IN WITH METAL STUDS. COORDINATE OPENING SIZE AND LOCATION WITH OTHER TRADES.

24. ALL INSULATING MATERIALS AND ALL MATERIALS USED IN PLENUMS SHALL BE PLENUM RATED AND SHALL CONFORM TO ASTM E 84,HAVING A MAXIMUM FLAME SPREAD OF <25 AND A MAXIMUM SMOKE DEVELOPED RATING OF <50.

25. THE OWNER SHALL BE RESPONSIBLE TO HIRE A COMMISSIONING AGENT, IN ACCORDANCE WITH LOCAL REQUIREMENTS, TO PERFORM ALL PORTIONS OF COMMISSIONING SET FORTH IN THE 2023 FBC - ENERGY CONSERVATION 8TH EDITION CODE WITH AMENDMENTS REQUIRED BY THE LOCAL AHJ. A COMMISSIONING PLAN SHALL BE DEVELOPED BY THE PROJECT'S COMMISSIONING AUTHORITY.

DRAWING/DETAIL REFERENCE



SYMBOLS

SYMBOL	DESCRIPTION
20X20	SUPPLY AIR DUCT UP
20X20	RETURN AIR DUCT UP
20X20	EXHAUST AIR DUCT UP
20X20	SUPPLY AIR DUCT DN
20X20	RETURN AIR DUCT DN
20X20	EXHAUST AIR DUCT DN
18"Ø	ROUND SUPPLY AIR DUCT UP
18"Ø	ROUND RETURN AIR DUCT UP
18"Ø	ROUND EXHAUST AIR DUCT UP
18"Ø	ROUND SUPPLY AIR DUCT DN
18"Ø	ROUND RETURN AIR DUCT DN
18"Ø	ROUND EXHAUST AIR DUCT DN
	RECTANGULAR DUCT SQUARE ELBOW WITH TURNING VANES
W R=3W/2	RECTANGULAR DUCT RADIUS ELBOW
20X20 16X20	TRANSITION CONCENTRIC UNLESS TOP LEVEL (TOP LVL) OR BOTTOM LEVEL (BOT LVL) IS NOTED
Ⓣ	THERMOSTAT (OR) TEMP SENSOR
	MANUAL VOLUME DAMPER

BASIS OF MECHANICAL DESIGN

PRIMARY MECHANICAL CODES :
MECHANICAL : 2023 FBC - MECHANICAL 8TH EDITION (AMENDED IMC 2021)
ENERGY: 2023 FBC - ENERGY CONSERVATION 8TH EDITION (AMENDED IECC 2021)

PROJECT DESIGN VALUES :
OUTDOOR DESIGN TEMPERATURE (SUMMER): 96.2°F (DRYBULB), 76.4°F (WETBULB)
AMBIENT TEMPERATURE AT CONDENSING UNITS: 100°F (DRYBULB, SUMMER)
OUTDOOR DESIGN TEMPERATURE (WINTER): 26.9°F (DRYBULB)
INDOOR DESIGN TEMPERATURE (SUMMER): 75°F (DRYBULB), 50% (RELATIVE HUMIDITY)
INDOOR DESIGN TEMPERATURE (WINTER): 68°F (DRYBULB)
OUTSIDE AIR REQUIREMENTS: 2023 FBC - MECHANICAL 8TH EDITION (AMENDED IMC 2021)

NEW VOLUME DAMPER CABLE CONTROLS

TYPE	DESCRIPTION
VD-1	PROVIDE VOLUME DAMPER MODEL 5020CC FROM YOUNG REGULATOR. THE VOLUME DAMPER SHALL BE ADJUSTABLE FROM THE FACE OF THE DIFFUSER BY USE OF THE BOWDEN CABLE CONTROL SYSTEM (#270-275 CONTROLLER) MANUFACTURED BY YOUNG REGULATOR COMPANY OR APPROVED EQUIVALENT. DAMPER MUST BE INSTALLED WITHIN 30 FEET FROM THE FACE OF THE DIFFUSER. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR. YOUNG REGULATOR (440) 232-9700.

NEW SENSOR SCHEDULE

Ⓣ RTU /AHU	ALL NEW THERMOSTATS SHOWN SHALL BE ELECTRONIC, PROGRAMMABLE TYPE CAPABLE OF TIME-OF-DAY SCHEDULING WITH MINIMUM OF 7 DAY PROGRAMS AND 4 CYCLES PER DAY, AUTOMATIC HEATING/COOLING CHANGEOVER, AND SETPOINT CONTROL. INCLUDE WIFI CAPABILITY WHERE SHOWN ON PLANS. THERMOSTAT SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM. THERMOSTAT TO BE MOUNTED AT 48" AFF. THERMOSTAT SHALL BE TOUCH SCREEN, HONEYWELL VISION PRO 8000 IF POSSIBLE. VERIFY COMPATIBILITY WITH UNIT, PRIOR TO BID.
Ⓢ	NEW COMPATIBLE BUTTON PROBE SENSOR. MOUNT ON WALL AND WIRE BACK TO TSTAT IN MANAGERS OFFICE.

CARRIER HEAT RTU SCHEDULE

Design conditions	Summer		Winter
	DB	WB	DB
Outdoor Air	96.2	76.4	26.9
Space Temp	72	61.8	68

RTU SCHEDULE

General					Fan						Cooling							Electric Heating			AHRI		Electrical		
Mark	Model	Size (Tons)	WEIGHT (LB) +/- 5%	Refrigerant	Airflow (CFM)			Duct Config	Motor (BHP)	ESP (IWG)	EAT		LAT		CU Amb. (°F)	Capacity (MBH)		EAT	LAT	kW	SEER	SEER2	MCA (A)	MOCP (A)	V/PH
					SA	OA	%OA				DB	WB	DB	WB		Total	Sens.	DB	DB						
RTU-1	50GEQM05A2A5-0A1A0	4.0	709.0	R-454B	1,500	220	15%	VERTICAL	0.79	0.80	76.0	64.2	56.2	54.2	100.0	44.5	31.9	61	93.0	6.0	17.0	16.0	50.0	60	230/3

FACTORY PROVIDED AND INSTALLED OPTIONS:

1. THERMAL EXPANSION VALVE (TXV)
2. CRANKCASE HEATERS.
3. THROUGH THE BASE ELECTRIC.
4. NON-FUSED DISCONNECTS.
5. HINGED ACCESS PANELS.
6. ECONOMIZER WITH BAROMETRIC RELIEF WITH DRY BULB CONTROL.
7. MICROPROCESSOR CONTROL OPTION.
8. HAIL GUARDS.
9. PROVIDE WITH MINIMUM TWO STAGE OF HEATING/COOLING

CONTRACTOR INSTALLED ACCESSORIES/OPTIONS:

14. FLEXIBLE CONNECTION ON SUPPLY AND RETURN DUCTWORK CONNECTIONS FULL SIZE OF OPENINGS.
15. (3) SETS OF 2" DEEP PLEATED MERV 13 RATED FILTERS (SUCH AS FAR 30/30 FILTERS).
16. 4" HIGH BLACK STENCIL LETTERS ON ALL HVAC INDICATING. HVAC UNIT NUMBER. VERIFY ADDITIONAL REQUIREMENTS WITH LANDLORD.

CARRIER HEAT PUMP SPLIT UNIT SCHEDULE

General				Fan			Cooling								Heat Pump Heating			AHRI			Electrical				
Mark	AHU-1	CU-1	Size (Tons)	Airflow (CFM)			EAT		LAT		OD Amb. (°F)	Capacity (MBH)		Refrigerant type	EAT	LAT	Cap. (MBH)	Cap. (MBH)	EER2	SEER2	AHU-1		CU-1		
				SA	OA	%OA	DB	WB	DB	WB		Total	Sens.		DB	DB					MCA (A)	MOCP (A)	MCA (A)	MOCP (A)	V/PH
AHU/CU-1	FJ5ANXB24L00	27SCA524A003	2.0	750	120	16%	75.9	64.1	55.9	54.7	100	21.2	16.2	R-454B	70	99	23.54	21.2	12.0	15.2	3.60	15	13.50	20	208/1

FACTORY PROVIDED AND INSTALLED OPTIONS:

1. THERMAL EXPANSION VALVE (TXV).
2. ELECTROMECHANICAL CONTROLS.
3. HAIL GUARDS.
4. 5-YEAR COMPRESSOR PARTS WARRANTY.
6. VARIABLE SPEED ECM SUPPLY FAN MOTOR FOR ENHANCED MODE.
7. 1" FILTER.
8. SINGLE POINT POWER KIT.
9. 2 STAGE COMPRESSOR.

CONTRACTOR PROVIDED AND INSTALLED ITEMS:

10. FLEXIBLE CONNECTION ON SUPPLY AND RETURN DUCTWORK CONNECTIONS FULL SIZE OF OPENINGS.

CONTRACTOR NOTES:

11. PROVIDE MAKE AND MODEL SPECIFIED OR ENGINEER APPROVED EQUAL.
12. INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
13. CONTRACTOR SHALL SUBMIT REFRIGERANT PIPING SHOP DRAWINGS TO THE HVAC MANUFACTURER FOR REFRIGERANT PIPE SIZES, COMPONENTS, AND REFRIGERANT CHARGE. CAPACITY LOSSES SHALL
14. CONTRACTOR TO PROGRAM HVAC EQUIPMENT THERMOSTAT, INITIAL OPERATION HOURS AND TEMPERATURE SET POINTS.
15. CONTRACTOR IS RESPONSIBLE FOR CLEAN HVAC COILS AT THE END OF CONSTRUCTION. PROVISIONS SHOULD BE TAKEN TO KEEP COILS CLEAN, AND IF COILS GET DIRTY, THEN CONTRACTOR IS RESPONSIBLE FOR CLEANING THEM.
16. CONTRACTOR SHALL REPLACE FILTERS JUST PRIOR TO AIR-BALANCE, AFTER ANY HEAVY SANDING, AND ONCE AGAIN AFTER FINAL CLEANING IS COMPLETE.

AIR DEVICE SCHEDULE

MARK	SERVES	FACE SIZE	MOUTING	MATERIAL	MANUFACTURER MAKE AND MODEL (BASIS OF DESIGN)	MAX NC	NOTES
S1	SUPPLY	24x24	LAY-IN CEILING	ALUMINUM	KRUEGER 5PLQ	35	1, 2, 3, 4, 6
S2	SUPPLY	12x12	CEILING	ALUMINUM	KRUEGER 5PLQ	35	1, 2, 3, 4, 6
S3	SUPPLY	12"	CEILING	ALUMINUM	INVIAIR R1801100	30	1, 2, 3, 6, 9
LS	SUPPLY	SEE PLANS	CEILING	ALUMINUM	KRUEGER DFL-20	35	1, 2, 3, 5, 6, 8
R1	RETURN	24x24	CEILING	ALUMINUM	KRUEGER S580	35	1,6,7
R2	RETURN	12x12	CEILING	ALUMINUM	KRUEGER S580	35	1,6,7

NOTES:

1. UNITS SHALL BE FURNISHED WITH APPROPRIATE FRAMES, ETC. FOR MOUNTING IN RESPECTIVE CEILING/WALL TYPES AND CONDITIONS OR APPROVED EQUAL
2. SELECT DIFFUSER PER NECK SIZE. SEE PLANS.
3. TRANSITION FROM BACK OF AIR DEVICE TO DUCT SIZE SHOWN ON PLANS.
4. FOUR-WAY THROW UNLESS OTHERWSE NOTED.
5. LINEAR SLOT DIFFUSER WITH 1-SLOT, 2" WIDE SLOT WITH HT BLADES. PROVIDE WITH FACTORY FABRICATED INSULATED PLENUM BOX. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
6. ARCHITECT TO SELECT AIR DEVICE FINISH FROM MANUFACTURER'S FULL COLOR CATALOG PRIOR TO ORDERING.
7. PROVIDE WITH 35 DEGREE DEFLECTION.
8. EE BEVELED FRAME FOR MUD-IN. CONNECTED FOR A SEAMLESS LOOK WITH MITERED END CAPS.
9. PROVIDE WITH REMOVABLE FACE. SUBSTITUTION IS NOT ACCEPTABLE.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	CFM	LOCATION	ESP	RPM	VOLTAGE / PHASE	HP (WATTS)	NOTES
EF-1	GREENHECK	SP-A110	75	CEILING	0.3	950	115/1	17	1,2,3,4

NOTES:

1. PROVIDE BACKDRAFT DAMPER, VIBRATION ISOLATORS & DISCONNECT SWITCH.
2. INTERLOCK WITH LIGHT SWITCH/OCCUPANCY SENSOR.
3. CEILING FAN SUSPENDED FROM STRUCTURE ABOVE.
4. PROVIDE UNIT WITH HANGING VIBRATION ISOLATORS KIT

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THE GENERAL CONTRACTOR AND/OR ALL SUB–CONTRACTORS WORKING FROM THESE PLANS AND SPECIFICATIONS ARE NOT TO SCALE SUCH INFORMATION BUT TO CONTACT THE ARCHITECT OR HIS REPRESENTATIVE REGARDING MEASUREMENTS, IF SUCH MEASUREMENTS DO NOT APPEAR CORRECT, ADD UP PROPERLY OR SCALE CORRECTLY TO THE INDICATED SIZE.

ENGINEER

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EEA Project No.	20256574
State of Registration	Florida
Firm Registration No.	26645

PROJECT NUMBER 250486	DATE: 02.25.26
DRAWN BY: SL	CHECK BY: JTS
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF:	JTS

REVISION LOG:	
ISSUED FOR CLIENT	02.25.26
ISSUED FOR LL PERMIT + BID	03.06.23

CARRIAGE GATE SHOPPING CENTER
3425 THOMASVILLE RD
SPACE 7
TALLAHASSEE, FL 32309

DRAWING NO.

M-101

MECHANICAL LEGEND, NOTES, AND SCHEDULES

JEREMY T. SMITH

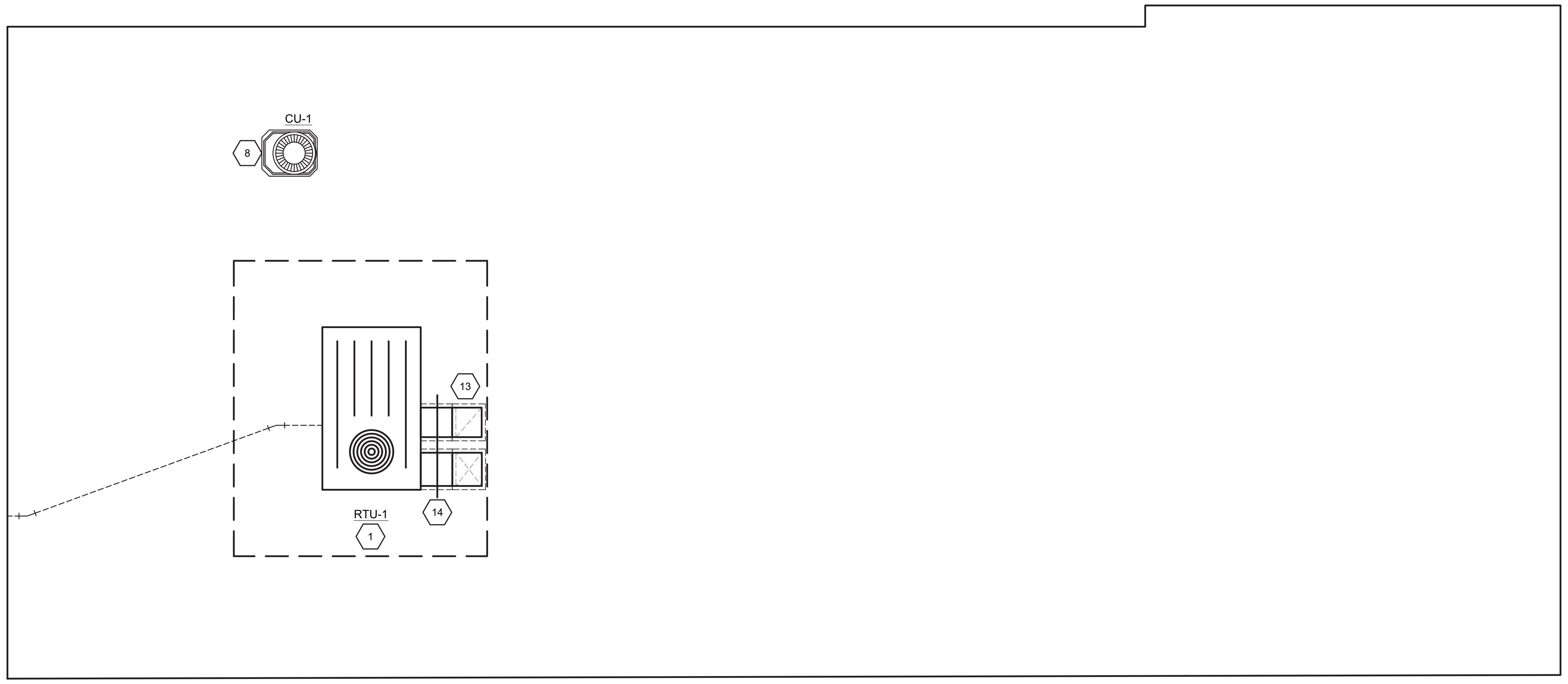
EEA CONSULTING ENGINEERS

BID DOCUMENT ONLY

Not Intended for Construction or Permit. This document is released under the authority of:

Registrant's Name:
Jeremy T. Smith
Serial No.
041482

DATE: 02/25/26
PROJECT NO: 250486
LOCATION: CARRIAGE GATE, TALLAHASSEE FL
PLOT SCALE: 1:1



2 MECHANICAL ROOF PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES

A. THE GENERAL CONTRACTOR IS RESPONSIBLE AT THE BEGINNING OF THE PROJECT TO MEASURE THE SPACE WHILE REVIEWING THE ARCHITECT'S DRAWINGS TO VERIFY THAT THE INFORMATION CONTAINED IN THE MECHANICAL DOCUMENTS, ON WHICH HE/SHE QUOTED TO THE CLIENT, ARE COMPATIBLE WITH THE WORK TO BE PERFORMED AND THAT ALL SPACES ARE SUFFICIENT IN SIZE FOR THE WORK TO BE COMPLETED INCLUDING WIDTHS, LENGTHS, HEIGHTS, ETC.

B. ALL MECHANICAL EQUIPMENT / DUCTWORK TO BE MOUNTED / INSTALLED TIGHT TO STRUCTURE.

C. DUCTWORK MOUNTING SHALL CONFORM TO SMACNA STANDARDS FOR HANGERS AND SUPPORTS.

D. ALL SUPPLY/RETURN DUCTWORK SHALL BE INTERNALLY LINED IF IT'S NOT EXTERNALLY INSULATED.

E. ALL ROOF REPAIRS MUST BE PERFORMED BY LANDLORDS CONTRACTOR AT TENANTS EXPENSE.

F. ENTIRE ROOFTOP EQUIPMENT AND CURB ASSEMBLY SHALL BE DESIGNED TO WITHSTAND ALL IBC AND ASCE-7, AS WELL AS ASSOCIATED DUCTWORK ABOVE THE ROOF. ROOFTOP EQUIPMENT MANUFACTURER AND CURB/CURB INTERFACE AND THE REQUIRED RESTRAINTS NECESSARY TO COMPLY WITH IBC AND ASCE-7, AS WELL AS ASSOCIATED DUCTWORK ABOVE THE ROOF. ROOFTOP EQUIPMENT MANUFACTURER AND CURB MANUFACTURER TO COORDINATE AND SUBMIT COMPLIANCE WITH THESE REQUIREMENTS.

KEY NOTES

1 INSTALL NEW RTU PER MANUFACTURER'S IOM AND MAINTAIN CLEARANCES. TRANSITION DUCT TO FULL SIZE CONNECTION AT UNIT AS REQUIRED. REFER TO DETAIL 3/M-103. SHOWN LOCATION IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION. ROUTE INSULATED COPPER CONDENSATE DRAIN THRU THE UNIT BASE . CONENCT TO EXISTING CONDENSATE DRAIN. UNIT OUTSIDE AIR INTAKE SHALL BE MINIMUM 10'-0" AWAY FROM ANY EXHAUST AND/OR PLUMBING VENT.

2 PROVIDE NEW TOILET EXHAUST FAN PER SCHEDULE ON M-101. INTERLOCK FAN WITH LIGHT SWITCH. CONNECT NEW 6"Ø EXHAUST DUCT TO EXISTING DUCT AND EXISTING LOUVER ON WALL. IF EXISTING DUCT IS LESS THAN 6"Ø, CONTRACTOR SHALL MAKE ALL REQUIRED MODIFICATIONS.

3 1-SLOT ROUND DIFFUSER. COORDINATE DIFFUSER LOCATION WITH TRACK LIGHTS, SPEAKERS AND EXISTING STRUCTURE. TRACK LIGHTS AND SPEAKER LOCATIONS SHALL NOT HAVE TO BE RELOCATED WITHOUT PRIOR APPROVAL FROM ARCHITECT AND/OR WARBY PARKER PM. MECHANICAL CONTRACTOR SHALL COORDINATE DIFFUSER LAYOUTS WITH ALL SUB-CONTRACTORS AND TRADES, PRIOR TO ANY FABRICATION OF DUCTWORK.

4 REFER TO SHEET M-101 FOR THERMOSTAT SPECIFICATION.

5 PROVIDE NEW COMPATIBLE BUTTON PROBE TEMPERATURE SENSOR. MOUNT ON WALL AT LOCATION SHOWN AT 60" AFF. WIRE BACK TO THERMOSTAT LOCATED AT MANAGER'S OFFICE. RUN THE WIRE IN CONDUIT. PROVIDE WITH INSULATED BACK PLATE.

6 PROVIDE BOWDEN CABLE CONTROLS AS SHOWN (VD-1). COORDINATE EXACT VOLUME DAMPER LOCATION IN FIELD. SEE M-101 FOR PRODUCT SPECIFICATIONS.

7 FLEXIBLE DUCT ALLOWED FOR FINAL CONNECTION TO DIFFUSER ONLY (TYP.). FLEXIBLE DUCT NOT TO EXCEED 5'-0" IN TOTAL LENGTH.

8 INSTALL CU-1 ON MECHANICAL EQUIPMENT STAND (MIAMI-DADE APPROVED), EQUIVALENT TO MIRO CONDENSER STAND AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. ROUTE REFRIGERANT PIPING FROM CU TO AHU PER MANUFACTURER'S RECOMENDATIONS.

9 PROVIDE MANUAL VOLUME DAMPER WITH LOCKING QUADRANT IN EASILY ACCESSIBLE LOCATION WHEN POSSIBLE. TYPICAL FOR AREA WITH REMOVABLE TILE CEILING.

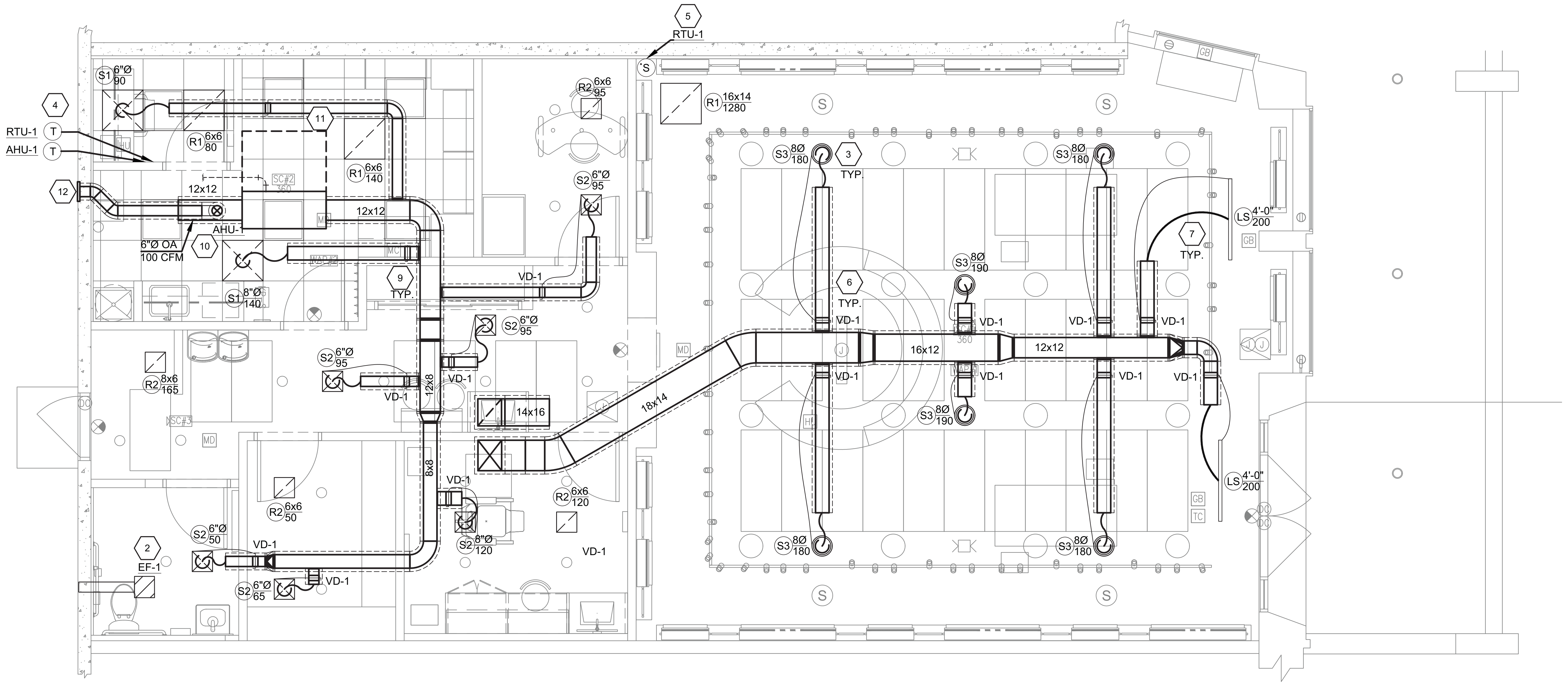
10 NEW AHU AS SPECIFIED ON SCHEDULE. SUSPEND UNIT FROM STRUCTURE ABOVE WITH ALL-THREAD AND VIBRATION ISOLATORS. ROUTE 3/4" INSULATED COPPER CONDENSATE DRAIN LINE TRAPPED PER DETAIL TO THE NEAREST STORM DRAIN OR TO APPROVED DISPOSAL POINT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING IF A CONDENSATE PUMP IS REQUIRED. PROVIDE SECONDARY CONDENSATE DRAIN PAN AND FLOAT SWITCH FOR EQUIPMENT WITH COOLING COILS SUSPENDED ABOVE CEILING, WITH FLOAT SWITCH WIRED TO SHUT OFF UNIT. INSTALL RETURN AIR PLENUM FULL SIZE OF UNIT OPENING AND CONNECT OUTSIDE AIR DUCT AS SHOWN ON PLAN. SHOWN LOCATION IS APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATION IN FIELD.

11 DASHED LINE AROUND HVAC EQUIPMENT REPRESENTS MANUFACTURER'S RECOMMENDED CLEARANCES FOR EQUIPMENT MAINTENANCE. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO MAINTAIN SERVICE CODE REQUIRED CLEARANCES THE FULL HEIGHT OF THE UNIT IN THIS AREA AND TO PROVIDE ACCESS TO THESE AREAS.

12 ROUTE Ø6" OUTSIDE AIR DUCT THROUGH WALL AND CONNECT TO EXISTING LOUVER . PROVIDE WITH 120/1 MOTORIZED DAMPER INTERLOCK WITH THE AHU-1 AND VOLUME DAMPER. BALANCE OA TO AIR SPECIFIED ON SCHEDULE.

13 OUTDOOR AIR SHALL BE THERMADUCT WITH MINIMUM R-12.

14 MIAMI-DADE APPROVED DUCT SUPPORT.



1 MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

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TAD

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THE GENERAL CONTRACTOR AND/OR ALL SUB–CONTRACTORS WORKING FROM THESE PLANS AND SPECIFICATIONS ARE NOT TO SCALE SUCH INFORMATION BUT TO CONTACT THE ARCHITECT OR HIS REPRESENTATIVE REGARDING MEASUREMENTS, IF SUCH MEASUREMENTS DO NOT APPEAR CORRECT, ADD UP PROPERLY OR SCALE CORRECTLY TO THE INDICATED SIZE.

ENGINEER

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EEA Project No.	20256574
State of Registration	Florida
Firm Registration No.	26645

PROJECT NUMBER 250486	DATE: 02.25.26
DRAWN BY: SL	CHECK BY: JTS
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF:	JTS

REVISION LOG:	
ISSUED FOR CLIENT	02.25.26
ISSUED FOR LL PERMIT + BID	03.06.23

CARRIAGE GATE SHOPPING CENTER
3425 THOMASVILLE RD
SPACE 7
TALLAHASSEE, FL 32309

DRAWING NO.

M-102

MECHANICAL PLAN

JEREMY T. SMITH

EEA CONSULTING ENGINEERS

BID DOCUMENT ONLY

Not Intended for Construction or Permit. This document is released under the authority of:

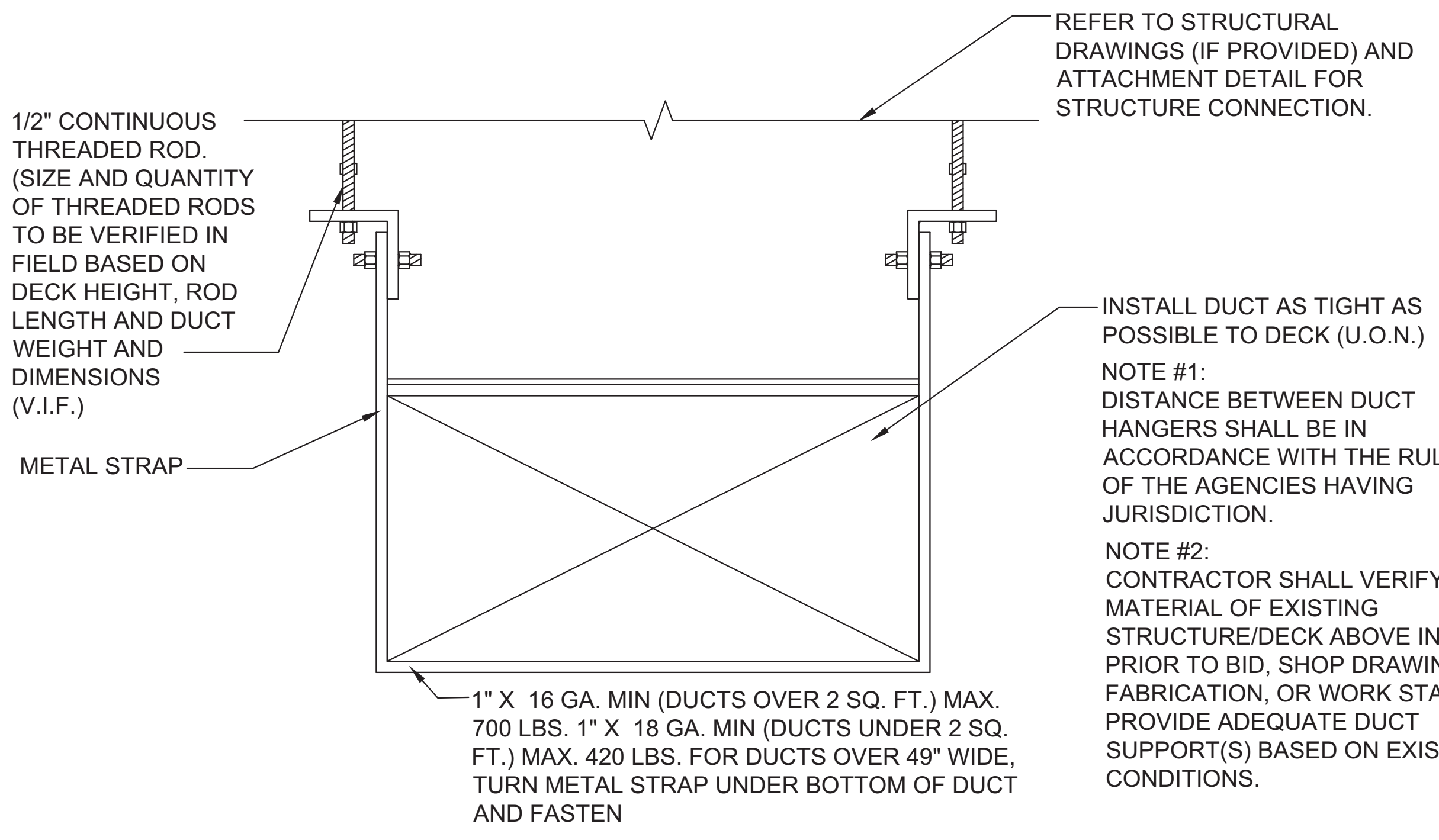
Registrant's Name:
Jeremy T. Smith
Serial No.
041482

DATE: 02/25/26

PROJECT NO: 250486

LOCATION: CARRIAGE GATE, TALLAHASSEE FL

PLOT SCALE: 1:1

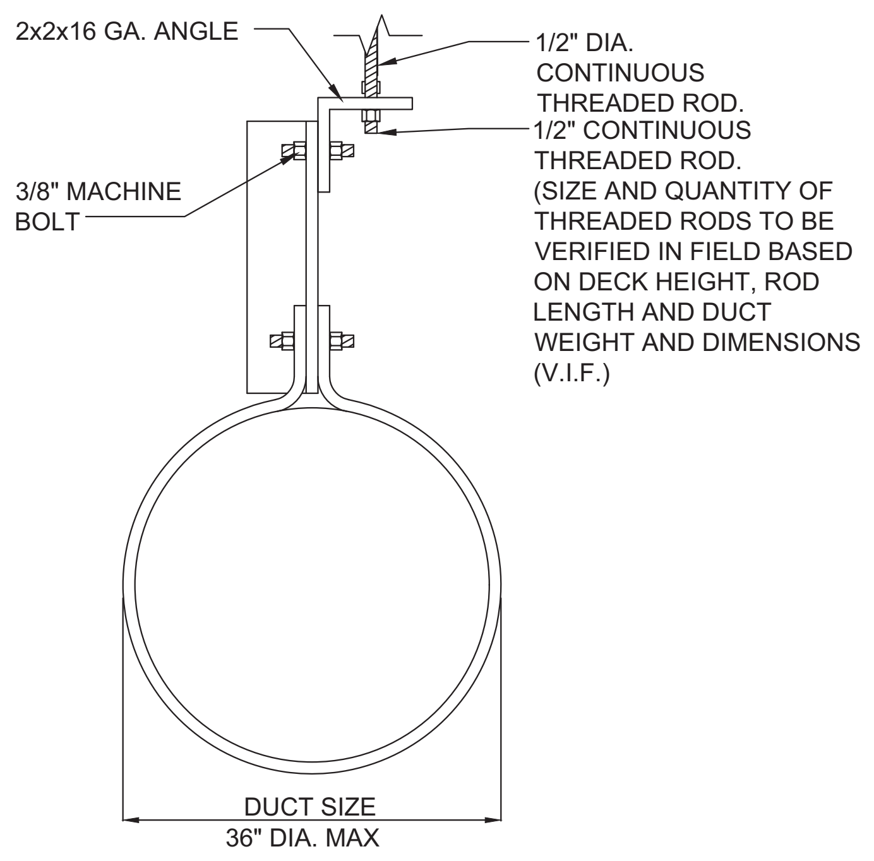


NOTE #1:
DISTANCE BETWEEN DUCT HANGERS SHALL BE IN ACCORDANCE WITH THE RULES OF THE AGENCIES HAVING JURISDICTION.

NOTE #2:
CONTRACTOR SHALL VERIFY MATERIAL OF EXISTING STRUCTURE/DECK ABOVE IN FIELD PRIOR TO BID, SHOP DRAWINGS, FABRICATION, OR WORK START. PROVIDE ADEQUATE DUCT SUPPORT(S) BASED ON EXISTING CONDITIONS.

DUCTWORK SUPPORT DETAIL
NOT TO SCALE

MAX. SIDE INCHES	RECTANGULAR DUCTS MIN. GALV. SHT. GAUGE	ALUMINUM MIN. B & S GAUGE
THROUGH 12	26 (0.022 IN.)	24 (0.020 IN.)
13 THROUGH 30	24 (O.028 IN.)	22 (0.025 IN.)
31 THROUGH 54	22 (0.034 IN.)	20 (0.032 IN.)
55 THROUGH 84	20 (0.040 IN.)	18 (0.040 IN.)
OVER 84	18 (0.052 IN.)	16 (0.051 IN.)



MAX WEIGHT PER FOOT = 16 LBS.

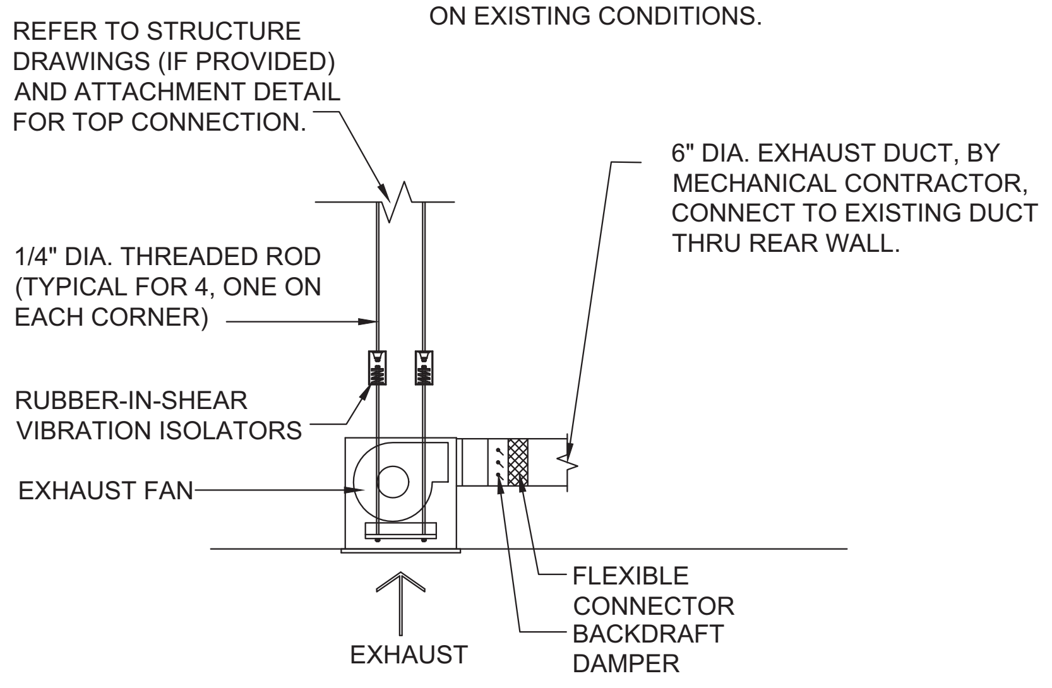
ROUND DUCT SUPPORT DETAIL
NOT TO SCALE

DIAMETER INCHES	SPIRAL SEAM DUCT STEEL MIN. GALV. SHT. GAUGE	ROUND DUCTS LONGITUDINAL SEAM DUCT STEEL MIN. GALV. SHT. GAUGE	FITTINGS STEEL MIN. GALV. SHT. GAUGE
THROUGH 12	28 (0.019 IN.)	26 (0.022 IN.)	26 (0.022 IN.)
13 THROUGH 18	26 (0.022 IN.)	24 (0.028 IN.)	24 (0.028 IN.)
19 THROUGH 28	24 (0.028 IN.)	22 (0.034 IN.)	22 (0.034 IN.)
29 THROUGH 36	22 (0.034 IN.)	20 (0.040 IN.)	20 (0.040 IN.)
37 THROUGH 52	20 (0.040 IN.)	18 (0.052 IN.)	18 (0.052 IN.)

1 DUCT SUPPORT DETAIL
SCALE: N.T.S

NOTE #1:
CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADEQUATE CONNECTION TO STRUCTURE / DECK ABOVE BASED ON CONDITIONS.

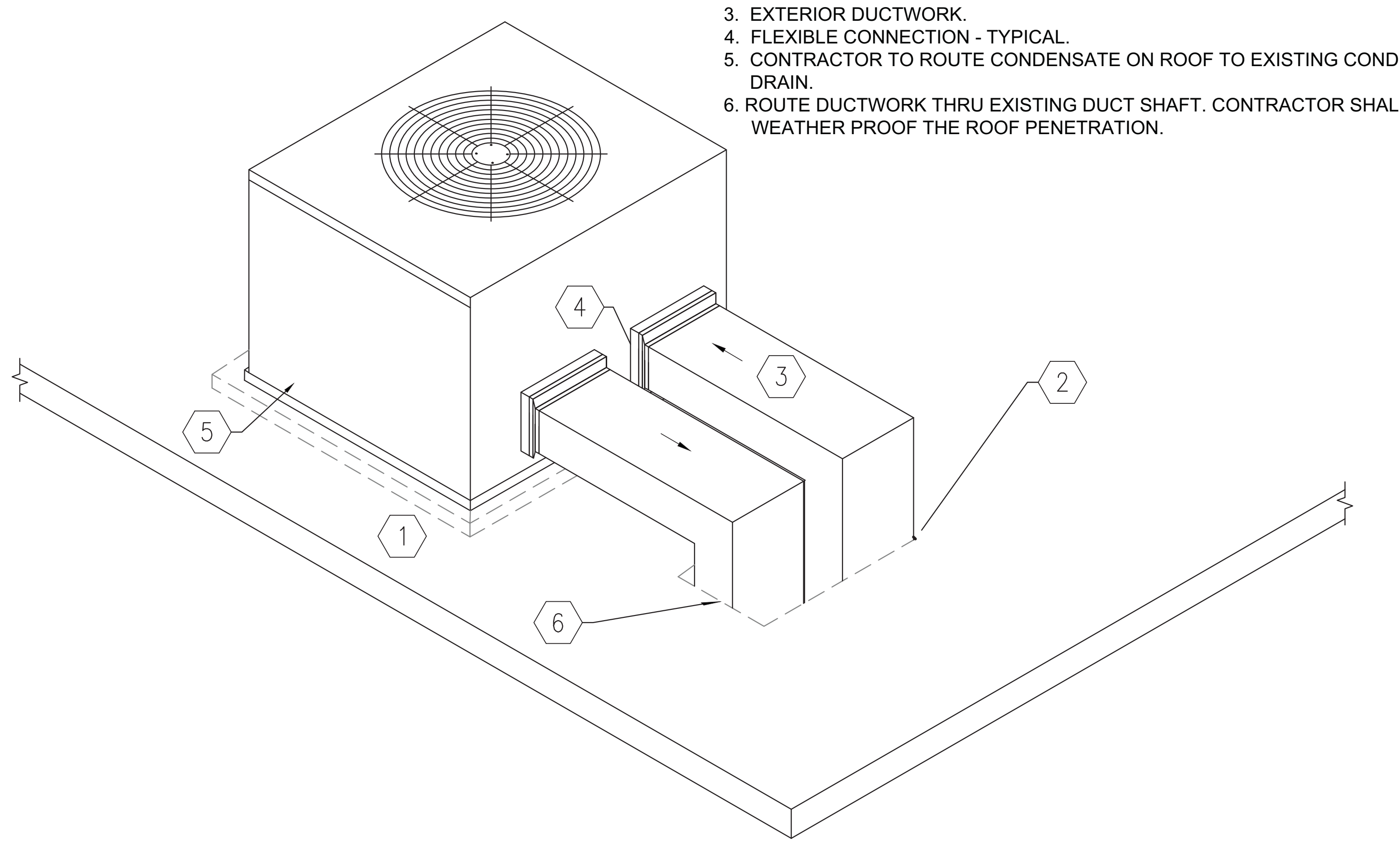
NOTE #2:
CONTRACTOR SHALL VERIFY MATERIAL OF EXISTING STRUCTURE/DECK ABOVE IN FIELD PRIOR TO BID, SHOP DRAWINGS, FABRICATION, OR WORK START. PROVIDE ADEQUATE SUPPORT(S) BASED ON EXISTING CONDITIONS.



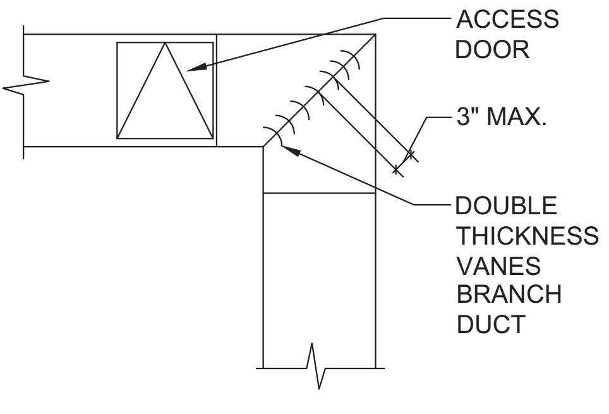
2 EXHAUST FAN DETAIL
SCALE: N.T.S

NOTES:

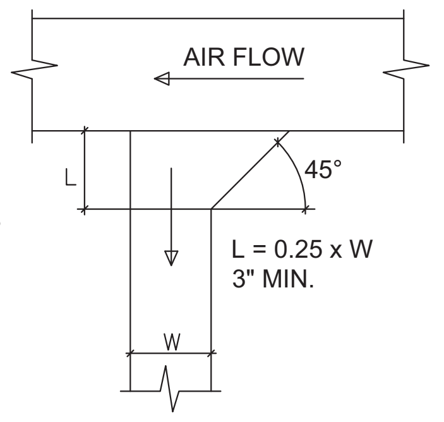
1. EXISTING EQUIPMENT SUPPORT.
2. EXISTING ROOF PENETRATION. ALL ROOF WORK MUST BE PERFORMED BY LANDLORD'S APPROVED ROOFING CONTRACTOR AT TENANT'S GC EXPENSE.
3. EXTERIOR DUCTWORK.
4. FLEXIBLE CONNECTION - TYPICAL.
5. CONTRACTOR TO ROUTE CONDENSATE ON ROOF TO EXISTING CONDENSATE DRAIN.
6. ROUTE DUCTWORK THRU EXISTING DUCT SHAFT. CONTRACTOR SHALL WEATHER PROOF THE ROOF PENETRATION.



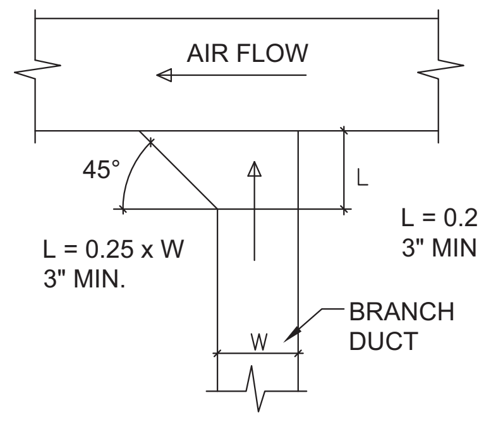
3 ROOFTOP HVAC DETAIL
SCALE: N.T.S



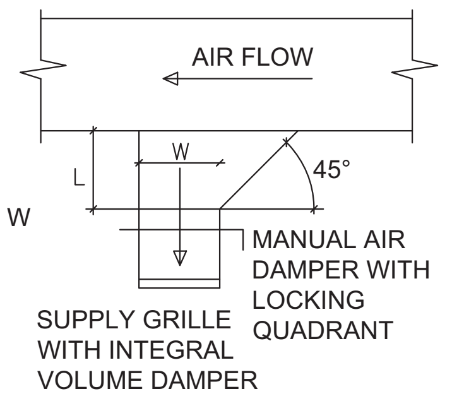
SQUARE ELBOW



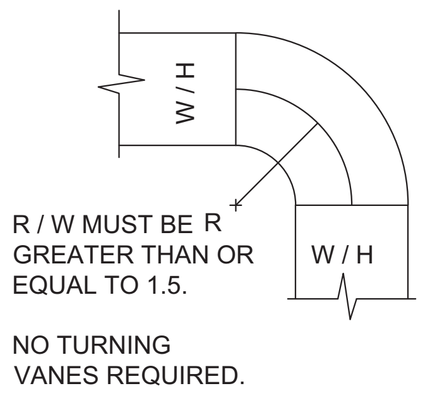
SUPPLY TAP



RETURN TAP



SUPPLY TAP WITH SUPPLY GRILLE

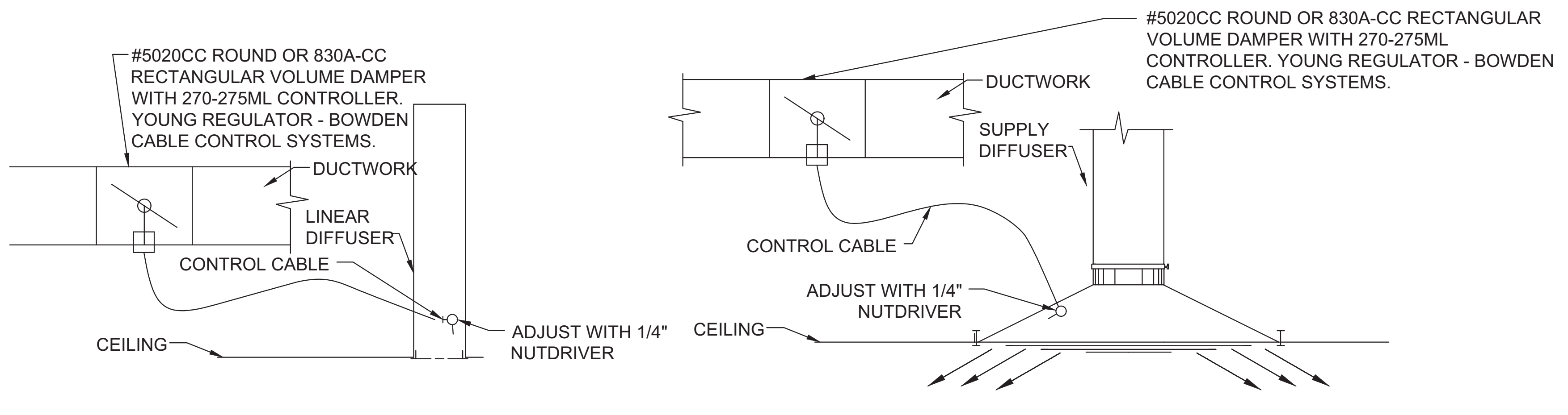


R / W MUST BE GREATER THAN OR EQUAL TO 1.5.

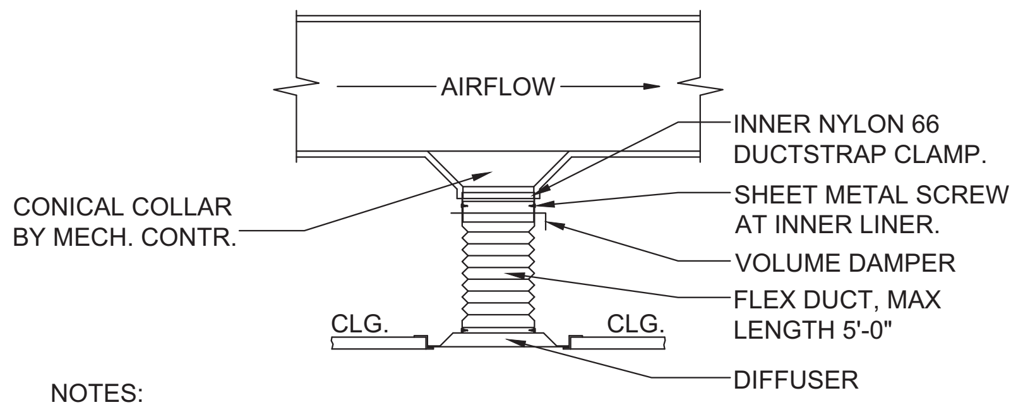
NO TURNING VANES REQUIRED.

ALTERNATE RECTANGULAR ELBOW

4 STANDARD DUCTWORK DETAIL
SCALE: N.T.S

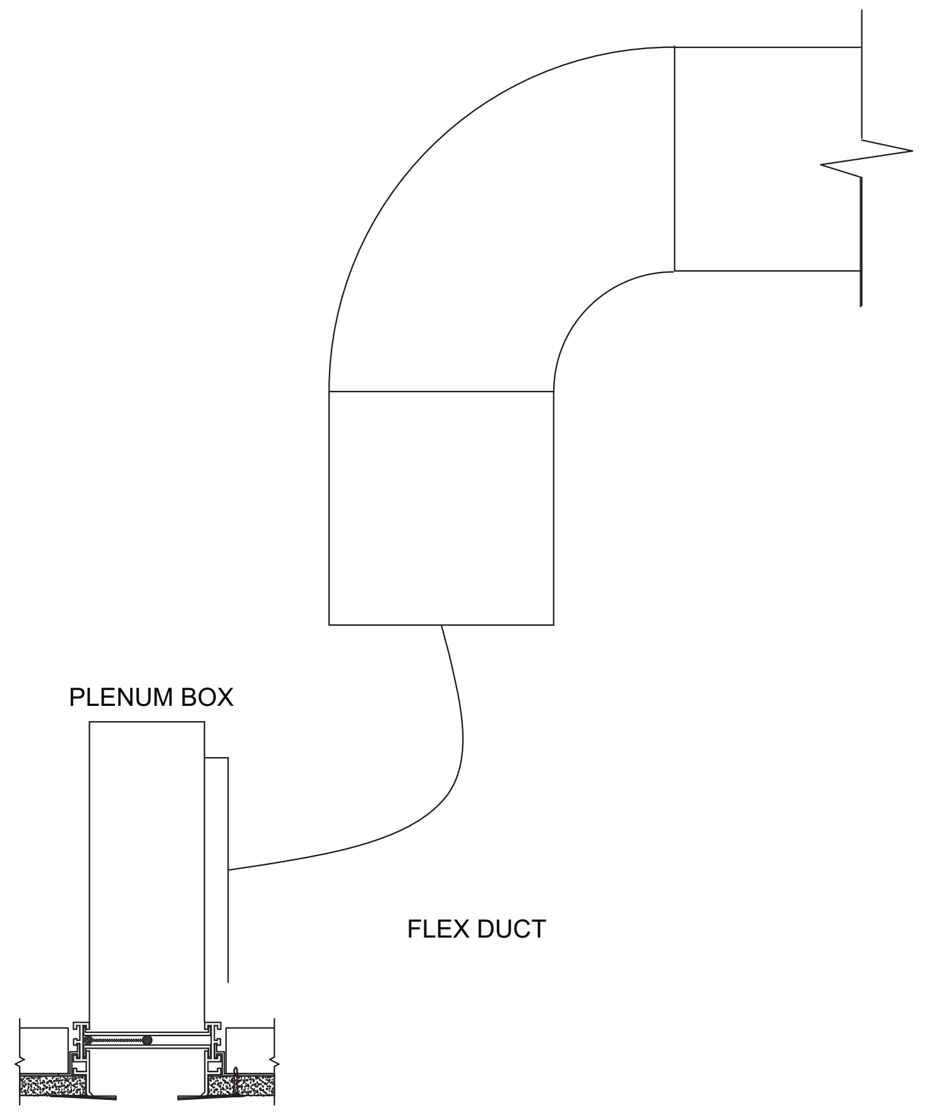


5 CABLE VOLUME DAMPER
SCALE: N.T.S

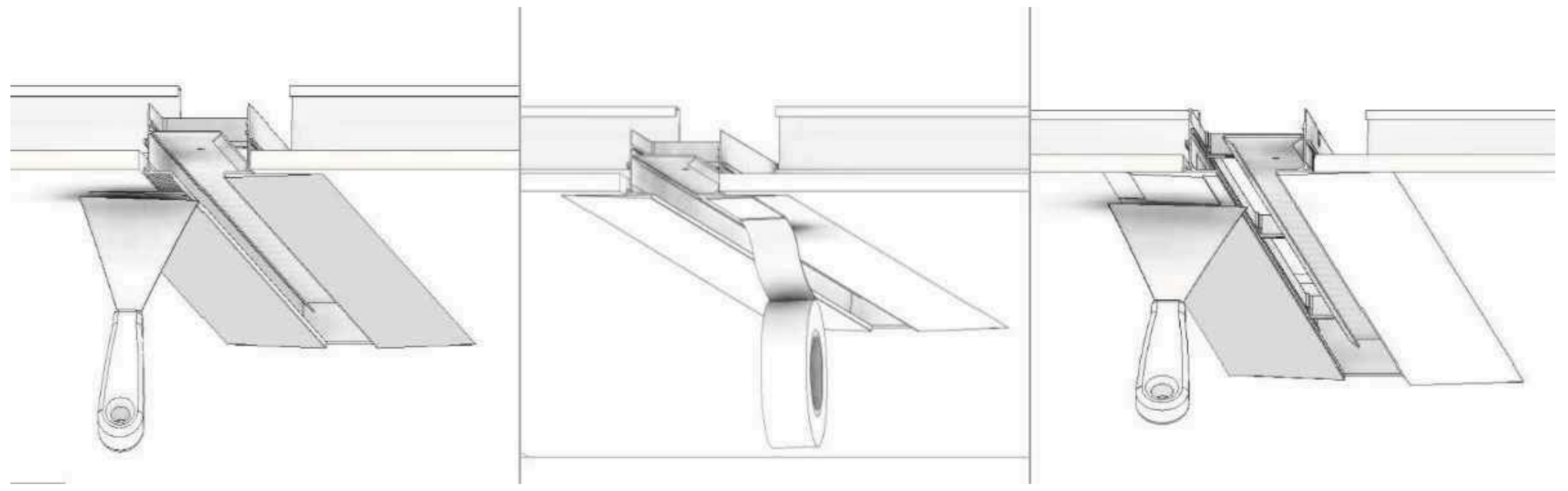


NOTES:
FLEXIBLE DUCT IS TO BE USED FOR VERTICAL DROPS ONLY. RUNOUTS AND ELBOWS ARE TO BE SHEETMETAL DUCT. THE MECHANICAL CONTRACTOR MUST PROVIDE ADAPTERS FOR DIFFUSERS WITH SQUARE AND RECTANGULAR NECKS AS REQUIRED. INNER LINER TO BE SECURED TO COLLAR BY NYLON STRAP AND THREE SHEET METAL SCREWS TO PREVENT LINER FROM SLIPPING OFF COLLAR. MAXIMUM FLEX DUCT IS 5 FEET. CUT SMALL SLIT IN LINER AT DAMPER ADJUSTMENT W/STRING OR WIRE MARKER TO SHOW LOCATION.

6 BOTTOM DISCHARGE DETAIL
SCALE: N.T.S

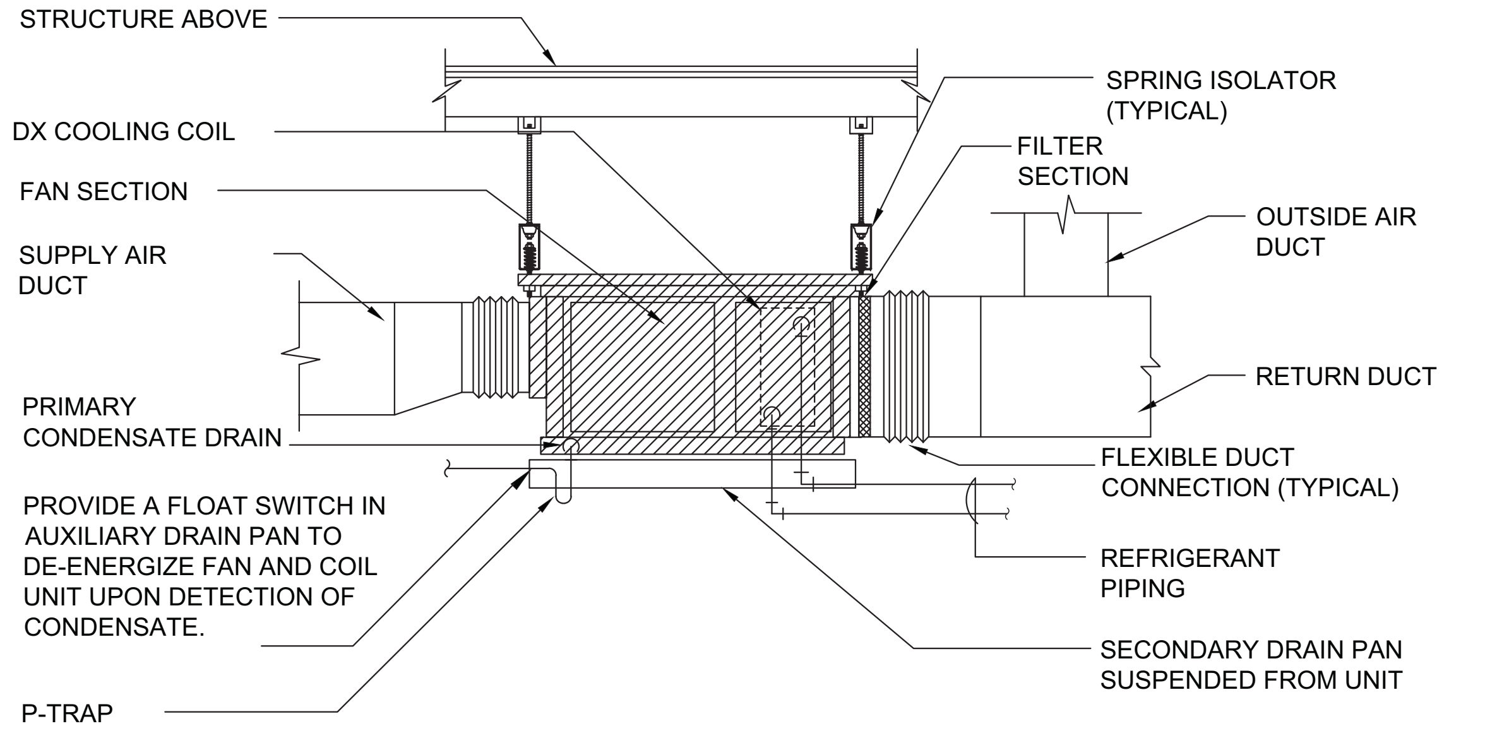


7 LINEAR DIFFUSER DUCT CONNECTION
SCALE: N.T.S

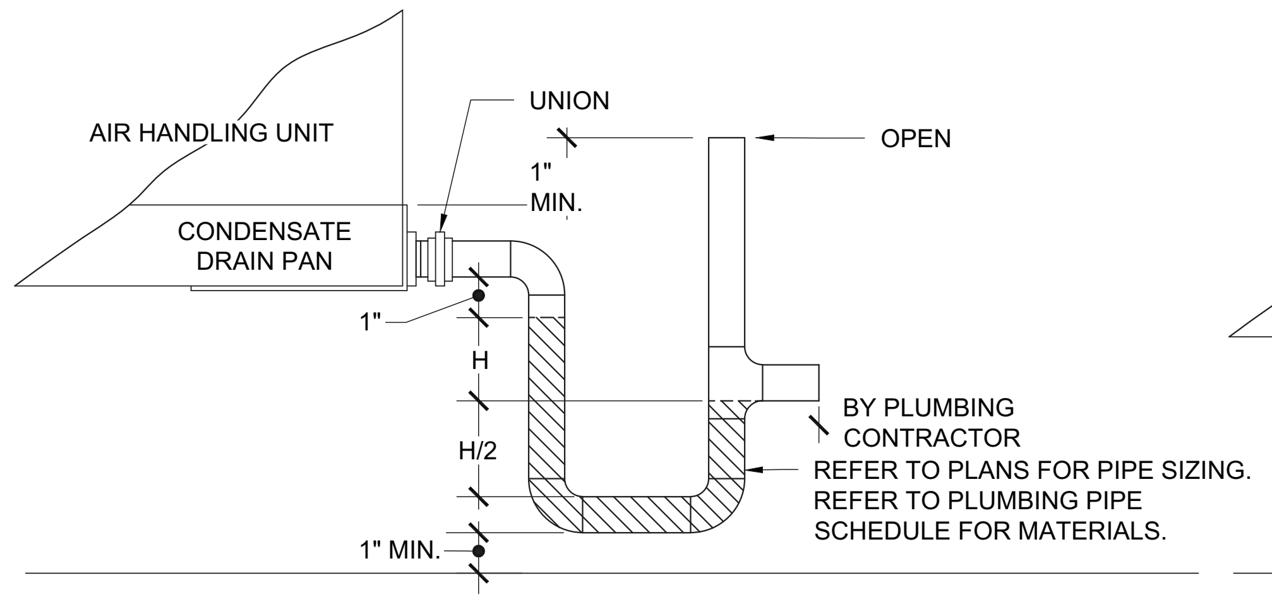


NOTES: CONTRACTOR SHALL TAPE AND SPACKLE THE DIFFUSER'S FRAME TO THE CEILING TO CONCEAL THE FLANGE. THE TAPE SHOULD COVER THE ALUMINUM PERIMETER FLANGE OF THE LINEAR DIFFUSER, AS WELL AS OVERLAP ONTO THE DRYWALL TO ENSURE A SMOOTH TRANSITION. FINISH THE INSTALLATION BY SANDING THE SURFACE SMOOTH, PRIMING IT AND PAINTING IT.

8 LINEAR DIFFUSER MOUNTING FRAME STYLE EE
SCALE: N.T.S

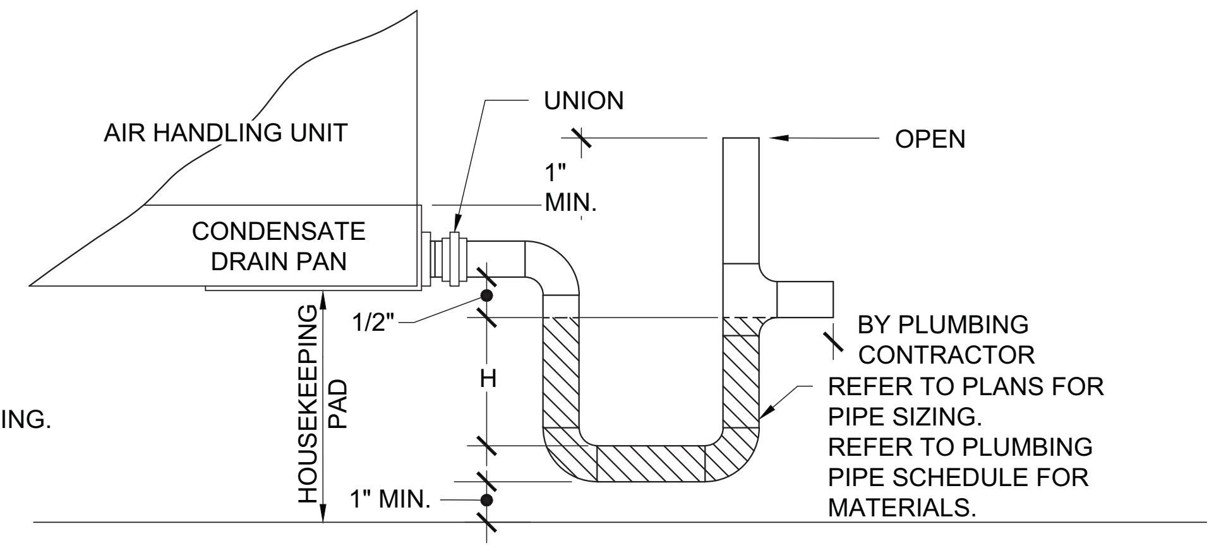


9 SUSPENDED AIR HANDLER UNIT DETAIL
SCALE: N.T.S



DRAW-THROUGH UNIT DRAIN

NOTE: H = FAN INLET PRESSURE (IN. WC.)



BLOW-THROUGH UNIT DRAIN

NOTE: H = FAN OUTLET PRESSURE (IN. WC.)

10 CONDENSATE DRAIN DETAIL
SCALE: N.T.S

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ENGINEER

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EEA Project No. 20256574
State of Registration Florida
Firm Registration No. 26645

PROJECT NUMBER	DATE:
250486	02.25.26
DRAWN BY:	CHECK BY:
SL	JTS
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF:	JTS

REVISION LOG:	
ISSUED FOR CLIENT	02.25.26
ISSUED FOR LL PERMIT + BID	03.06.23

CARRIAGE GATE SHOPPING CENTER
3425 THOMASVILLE RD
SPACE 7
TALLAHASSEE, FL 32309

DRAWING NO.
M-103
MECHANICAL DETAILS

JEREMY T. SMITH

EEA CONSULTING ENGINEERS

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Registrant's Name:
Jeremy T. Smith
Serial No.
041482

DATE: 02/25/26
PROJECT NO: 250486
LOCATION: CARRIAGE GATE, TALLAHASSEE FL
PLOT SCALE: 1:1

MECHANICAL SPECIFICATIONS

23 00 00 - GENERAL MECHANICAL REQUIREMENTS

1. GENERAL

1.1. SUMMARY

1.1.1. SECTION INCLUDES:

1.1.1.1. GENERAL REQUIREMENTS.

1.1.1.2. DEFINITIONS.

1.1.1.3. CONTRACTOR QUALIFICATIONS.

1.1.1.4. SAFETY.

1.1.1.5. QUALITY CONTROL.

1.1.1.6. SUBMITTALS.

1.1.1.7. SUBSTITUTIONS.

1.1.1.8. SUSTAINABLE DESIGN. *THIS WILL NOT BE ON EVERY PROJECT

1.1.1.9. DELIVERY, STORAGE, AND HANDLING.

1.1.1.10. SEQUENCING AND SCHEDULING.

1.1.1.11. UTILITY CONNECTIONS AND PERMITS.

1.1.1.12. COMPLETION OF WORK.

1.1.1.13. GUARANTEE AND WARRANTIES.

1.1.1.14. MAINTENANCE AND SERVICE.

1.1.1.15. PROJECT RECORD DOCUMENTS.

1.1.1.16. MAINTENANCE DOCUMENTS AND INSTRUCTIONS.

1.1.1.17. DIELECTRIC FITTINGS.

1.1.1.18. ASBESTOS.

1.1.1.19. DEMOLITION.

1.1.1.20. ROUGH-IN.

1.1.1.21. MECHANICAL INSTALLATIONS.

1.1.1.22. CUTTING AND PATCHING.

1.1.1.23. EARTHWORK. (THIS IS NOT ALWAYS INCLUDED IN PROJECTS)

1.2. GENERAL REQUIREMENTS

1.2.1. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO PROVIDE AN INSTALLATION COMPLETE IN EVERY RESPECT. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL INCLUDE ALL LABOR, MATERIALS, AND SUPERVISION ESSENTIAL TO PROVIDE COMPLETE FUNCTIONING SYSTEMS AS DESCRIBED IN THE CONTRACT DOCUMENTS.

1.2.2. CONFLICT RESOLUTION: WHERE CONFLICTS MAY EXIST BETWEEN THE MINIMUM REQUIREMENTS OF VARIOUS LAWS, CODES, AUTHORITIES, AND/OR WITHIN THE CONTRACT DOCUMENTS, THE HIGHER QUALITY, GREATER QUANTITY, MORE RESTRICTIVE AND/OR MORE EXPENSIVE REQUIREMENT SHALL BE THE BASIS OF CONTRACTOR PRICING AND THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR THE RESOLUTION OF THE ISSUE PRIOR TO EXECUTING THE WORK IN QUESTION.

1.2.3. SHOULD ANY ERRORS, OMISSIONS, CONFLICTS, OR AMBIGUITIES EXIST IN THE DRAWINGS, THE CONTRACTOR SHALL BRING THESE TO THE ATTENTION OF THE ENGINEER/OWNER IMMEDIATELY FOR ADJUSTMENT IN WRITING BEFORE SIGNING THE CONTRACT OR PROCEEDING WITH THE WORK. OTHERWISE, HE SHALL AT HIS OWN EXPENSE, SUPPLY THE PROPER MATERIALS AND LABOR TO MAKE GOOD ANY DAMAGE OR DEFECT CAUSED BY SUCH UNINTENTIONAL ERROR.

1.2.4. CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS FOR ACCURACY, AND CONFIRMING THAT THE WORK IS BUILDABLE AS SHOWN AND MEETS ALL APPLICABLE CODES BEFORE PROCEEDING WITH CONSTRUCTION. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATION ISSUES, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER/OWNER BEFORE PROCEEDING WITH THE WORK IN QUESTION OR RELATED WORK.

1.2.5. FIELD CONDITIONS: THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOBSITE AND VERIFYING THE SCOPE OF WORK REQUIRED INCLUDING ALL EXISTING CONDITIONS, LOCATIONS, DIMENSIONS, AND QUANTITIES AS SHOWN AND NOTED ON THE DRAWINGS AND THE EXTENT AND EFFECT OF EXISTING SYSTEMS.

1.2.6. DEVIATIONS TO THE INTENDED DESIGN OR THE SCOPE OF THE WORK MUST BE APPROVED BY THE PROJECT ENGINEER PRIOR TO COMMENCING WORK. FAILURE TO DO SO MAY RESULT IN THE WORK TO BE REMOVED AT NO COST TO THE OWNER.

1.2.7. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES, STANDARDS, AND AMENDMENTS AND/OR OTHER AUTHORITIES THAT MAY HAVE JURISDICTION PERTAINING TO THE WORK. IN ADDITION, ALL WORK SHALL CONFORM TO THE STANDARDS AND PRACTICES OF THE OWNER.

1.3. COORDINATION:

1.3.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING FULL COORDINATION WITH OTHER TRADES AND CONTRACTORS TO ACCOMPLISH THE WORK AS SHOWN AND NOTED IN THESE CONTRACT DOCUMENTS.

1.3.2. THE CONTRACTOR SHALL NOT PURCHASE, FABRICATE OR INSTALL ITEMS AS SHOWN ON THE DRAWINGS IF THERE ARE DISCREPANCIES OR CONFLICTS BETWEEN THE EXISTING CONDITIONS AND THE INFORMATION SHOWN ON THE DRAWINGS UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.

1.3.3. DUCTWORK, PIPING, CONDUIT, CABLING, ETC. SHOWN ON DRAWINGS SHALL BE COORDINATED WITH AIR DISTRIBUTION DEVICES, SPECIAL CEILING, FLOOR, AND STRUCTURE CONSTRUCTION, ETC. PROVIDE ADDITIONAL RISES AND DROPS TO THOSE INDICATED ON THE DRAWINGS AS REQUIRED TO COORDINATE WITH ARCHITECTURAL, STRUCTURAL OR MEP ELEMENTS SHOWN ON THE CONTRACT DOCUMENTS. ALL UTILITIES SHALL BE ROUTED IN AN ORDERLY MANNER, GROUPED TOGETHER WHEREVER POSSIBLE, AND LOCATED SO AS TO CONSERVE BUILDING SPACE. DUCTWORK, PIPING, CONDUIT, CABLING, ETC. SHOWN ON EACH PLAN IS RUN ABOVE THE CEILING ON THE FLOOR WHERE IT IS SHOWN UNLESS OTHERWISE NOTED.

1.3.4. COORDINATE LOCATIONS OF NEW AND EXISTING ROOF PENETRATIONS TO MINIMIZE NUMBER OF OPENINGS. ROOF PENETRATIONS SHALL BE MADE WITHIN ROOF CURB. ELECTRIC AND REFRIGERANT LINES TO USE SAME PENETRATIONS WHERE POSSIBLE.

1.3.5. RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN THEIR SET OF CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES SO THAT ALL CHANGES BETWEEN THE DRAWINGS AND THE ACTUAL CONSTRUCTION CAN BE NOTED ON THE DRAWINGS. THIS INCLUDES ALL DEVIATIONS FROM THE ORIGINAL CONTRACT. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL SIGN AND DATE THE DRAWINGS CERTIFYING THAT THEY ARE AN ACCURATE REFLECTION OF THE ACTUAL CONSTRUCTION. RECORD DRAWINGS ARE TO BE DELIVERED TO THE OWNER. NOTE THAT THE FINAL INVOICE FOR THE CONTRACT WILL NOT BE PAID BY THE OWNER UNTIL FINAL RECORD DRAWINGS ARE RECEIVED.

1.3.6. ALL WORK NOTED "NIC" OR "NOT IN CONTRACT" IS TO BE ACCOMPLISHED BY ANOTHER CONTRACTOR AND IS NOT TO BE PART OF THE CONSTRUCTION AGREEMENT.

1.4. CONTRACTOR QUALIFICATIONS

1.4.1. GENERAL: THE FIRM THAT PERFORM THE INSTALLATION OF THE WORK UNDER THIS DIVISION OF SPECIFICATIONS SHALL BE THE FIRM THAT MAINTAINS AN ESTABLISHED, EXPERIENCED ORGANIZATION WITH A PERMANENT, MANNED OFFICE WITHIN A RADIUS OF 150 MILES OF THE PROJECT LOCATION.

1.4.2. CONTRACTOR'S PROFICIENCY: THE FIRM'S PROFICIENCY IN THE INSTALLATION, START_UP, ADJUSTMENT AND MAINTENANCE OF SPECIFIED SYSTEMS SHALL HAVE BEEN DEMONSTRATED BY THE SUCCESSFUL PERFORMANCE OF WORK ON AT LEAST THREE SYSTEMS AS SPECIFIED HEREIN IN THE LAST THREE YEARS.

1.5. SAFETY

1.5.1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY STANDARDS INCLUDING, BUT NOT LIMITED TO OSHA STANDARDS AND OWNER'S REQUIREMENTS.

1.5.2. WORK AREAS SHALL BE KEPT CONTINUOUSLY, AT ALL TIMES, FREE OF DEBRIS, HAZARDOUS, AND NON-HAZARDOUS MATERIAL TO THE SATISFACTION OF THE GENERAL CONTRACTOR/OWNER. AFTER PROJECT COMPLETION, THE SITE SHALL BE CLEANED UP AND RESTORED TO ITS CONDITION OR BETTER PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE GENERAL CONTRACTOR/OWNER.

1.6. QUALITY CONTROL

1.6.1. COMPLY WITH MANUFACTURERS' INSTRUCTIONS, INCLUDING EACH STEP IN SEQUENCE.

1.6.2. SHOULD MANUFACTURERS' INSTRUCTIONS CONFLICT WITH CONTRACT DOCUMENTS, REQUEST CLARIFICATION FROM ENGINEER BEFORE PROCEEDING.

1.7. SUBMITTALS

1.7.1. CONTRACTOR SHALL PROVIDE PRODUCT DATA SUBMITTALS, IN .PDF FORMAT, ON ALL MAJOR EQUIPMENT, COMPONENTS, AND MATERIALS SPECIFIED IN THESE PLANS FOR ENGINEER'S AND OWNER'S REVIEW AND ACCEPTANCE PRIOR TO INSTALLATION.

1.7.2. EACH SUBMITTAL SHALL INCLUDE THE PROJECT TITLE, ARCHITECT, ENGINEER, CONTRACTOR'S NAMES, SPECIFICATION SECTION NUMBER AND TITLE, SUBMITTAL NUMBER FOR TRACKING AND SHALL BE LIMITED TO A SINGLE DIVISION 23 SPECIFICATION SECTION.

1.7.3. CONTRACTOR REVIEW: THE CONTRACTOR SHALL CHECK DATA CAREFULLY TO ENSURE COMPLIANCE WITH THESE SPECIFICATIONS PRIOR TO SUBMITTING.

1.7.4. SUBMITTAL DATA FOR SECTION 23 00 00 - GENERAL MECHANICAL REQUIREMENTS:

1.7.4.1. SHOP DRAWINGS: THE CONTRACTING TEAM SHALL CREATE SHOP DRAWINGS NECESSARY TO INSTALL THE MECHANICAL SYSTEMS PER THE CONTRACT DOCUMENTS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE AE TEAM FOR REVIEW PRIOR TO PURCHASING OR INSTALLATION OF MATERIALS. INDICATE ASSEMBLY, UNIT DIMENSIONS, WEIGHT LOADING, REQUIRED CLEARANCES, CONSTRUCTION DETAILS, FIELD CONNECTION DETAILS, AND ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS.

1.7.5. SUBMITTAL DATA FOR OTHER DIVISION 23 SPECIFICATION SECTIONS SHALL INCLUDE:

1.7.5.1. COMPLIANCE DATA: INDICATING THE PRODUCT'S COMPLIANCE WITH STANDARDS REFERENCED IN THESE SPECIFICATIONS.

1.7.6. PUBLISHED LITERATURE: CLEARLY INDICATE MAKE, MODEL, OPTIONS, DIMENSIONS, WEIGHTS, CAPACITIES, RATINGS, HORSEPOWER, GAGES, AND FINISHES OF MATERIALS, AND ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS.

1.7.7. PERFORMANCE DATA: PERFORMANCE DATA INCLUDING FAN CURVES, PUMP CURVES, AND EQUIPMENT OUTPUT CAPACITIES COMPLETE WITH RATING CONDITIONS AS SCHEDULED ON CONTRACT DRAWINGS.

1.7.7.1. SOUND POWER LEVEL DATA: EQUIPMENT SOUND POWER LEVEL AT 63, 125, 250, 500, 1000, 2000, 4000, AND 8000 HZ OCTAVE BAND CENTER FREQUENCIES PLUS DB A WEIGHTED SOUND LEVEL.

1.7.8. ELECTRICAL REQUIREMENTS: POWER SUPPLY WIRING INCLUDING WIRING DIAGRAMS FOR INTERLOCK AND CONTROL WIRING, CLEARLY INDICATING FACTORY-INSTALLED AND FIELD-INSTALLED WIRING.

1.7.9. MANUFACTURER'S INSTRUCTIONS: INCLUDE INSTALLATION INSTRUCTIONS.

1.7.10. CALCULATIONS: DESIGN AND/OR DESIGN CALCULATIONS WHERE REQUIRED IN OTHER DIVISION 23 SECTIONS.

1.8. SUBSTITUTIONS

1.8.1. BASIS OF DESIGN: MODEL NUMBERS INDICATED ON THE DRAWINGS ARE THE BASIS OF DESIGN. THE CONTRACTOR MAY REQUEST SUBSTITUTION OF EQUAL EQUIPMENT FROM ALTERNATE MANUFACTURERS PROVIDED SAID EQUIPMENT MEETS ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS, HAS LIKE ELECTRICAL CHARACTERISTICS (E.G., SAME VOLTAGE, PHASE, FUSING/CIRCUIT BREAKER REQUIREMENTS, SINGLE OR MULTIPLE POINTS OF CONNECTION AS INDICATED ON THE ELECTRICAL DRAWINGS), AND WILL FIT IN THE AVAILABLE SPACES IN THE BUILDING AS SHOWN.

1.8.2. IF THE CONTRACTOR CHOOSES TO PROVIDE EQUIPMENT WHICH MEETS ALL REQUIREMENTS, BUT HAS DIFFERENT CONNECTION SIZES AND/OR LOCATIONS, DIFFERENT WEIGHT OR FOOTPRINT, OR ELECTRICAL CHARACTERISTICS, ETC., THEY SHALL BEAR ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THAT SUBSTITUTION INCLUDING AE TEAM LABOR TO MODIFY THE DESIGN DOCUMENTS. ALL REQUIRED MODIFICATIONS SHALL BE COORDINATED WITH THE ENGINEER, THE GENERAL CONTRACTOR (G.C.), AND AFFECTED SUBCONTRACTORS OF OTHER TRADES.

1.8.3. SUBSTITUTIONS: SUBSTITUTIONS OF SPECIFIED ITEMS WILL BE CONSIDERED UNTIL 10 DAYS PRIOR TO BID OPENING.

1.9. DELIVERY, STORAGE, AND HANDLING

1.9.1. PACKING AND SHIPPING: DELIVER PRODUCTS TO THE PROJECT IN MANUFACTURER'S ORIGINAL SHIPPING PACKAGING, PROPERLY IDENTIFIED WITH ALL INFORMATION NEEDED FOR IDENTIFICATION.

1.9.2. STORAGE AND PROTECTION: DURING CONSTRUCTION MAINTAIN ALL DELIVERED MATERIALS AND EQUIPMENT IN AN ORDERLY MANNER AND PROTECT FROM DAMAGE.

1.10. SEQUENCING AND SCHEDULING

1.10.1. CAREFULLY EXAMINE THE SITE, CIVIL, STRUCTURAL, ARCHITECTURAL, PLUMBING, HVAC, CONTROLS, FIRE PROTECTION, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. COORDINATE ALL WORK WITH OTHER DISCIPLINES TO AVOID CONFLICTS AND DELAY OF INSTALLATION SCHEDULE.

1.11. UTILITY CONNECTIONS AND PERMITS

1.11.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING AND PAYING FOR ALL PERMITS, LICENSES, CLEARANCES AND CERTIFICATES FROM THE OWNER AND LOCAL AUTHORITIES HAVING JURISDICTION AS REQUIRED PRIOR TO THE COMMENCEMENT OF THE WORK.

1.11.2. PRIOR TO ANY CUTTING OR TRENCHING, VERIFY WITH OWNER, UTILITY COMPANIES, AND LANDLORD THAT ALL AVAILABLE INFORMATION IS KNOWN REGARDING UNDERGROUND OBSTRUCTIONS. TAKE CAUTION WHEN TRENCHING NOT TO DISTURB ANY EXISTING UTILITIES. NOTIFY OWNERS REPRESENTATIVE IMMEDIATELY UPON UNCOVERING UNKNOWN UTILITIES FOR FURTHER DIRECTION.

1.12. COMPLETION OF WORK

1.12.1. EXECUTE FINAL CLEANING PRIOR TO FINAL INSPECTION.

1.12.2. REMOVE WASTE AND SURPLUS MATERIALS, RUBBISH, AND CONSTRUCTION FACILITIES FROM THE SITE.

1.12.3. CONTRACTOR TO PROVIDE START-UP AND COMMISSIONING SERVICES FOR ALL NEW SYSTEMS AND EQUIPMENT, AS WELL AS TRAINING SERVICES FOR THE OWNER'S MAINTENANCE PERSONNEL IN THE USE OF THESE SYSTEMS AND EQUIPMENT. ADJUST OPERATING PRODUCTS AND EQUIPMENT TO ENSURE SMOOTH AND CORRECT OPERATION.

1.12.4. AT THE COMPLETION, AN INSPECTION SHALL BE MADE AND THE ENTIRE SYSTEM SHALL BE SHOWN TO BE IN SPECIFIED WORKING CONDITION. A TEST AND BALANCE REPORT APPROVED BY THE ENGINEER AND A SET OF SPECIFICATIONS AND DRAWINGS WITH ALL FIELD MARKUPS WILL BE AVAILABLE DURING THE INSPECTION.

1.13. GUARANTEE AND WARRANTIES

1.13.1. ALL DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) WARRANTY PERIODS BEGIN AT SUBSTANTIAL COMPLETION, OR THE DATE SPECIFIED IN THE OWNER-CONTRACTOR AGREEMENT.

1.13.2. WARRANTIES: PROVIDE MANUFACTURER'S EQUIPMENT WARRANTIES PRIOR TO FINAL INSPECTION. LENGTH OF WARRANTY PERIOD SHALL BE AS SPECIFIED IN INDIVIDUAL DIVISION 23 SPECIFICATION SECTIONS.

1.13.3. GUARANTEE: ALL EQUIPMENT AND MATERIALS FURNISHED AND ALL WORK PERFORMED UNDER THIS DIVISION OF SPECIFICATIONS SHALL BE GUARANTEED TO BE FREE OF DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE SPECIFIED IN A ABOVE. UPON NOTICE FROM THE OWNER OF FAILURE OF ANY PART OF THE GUARANTEED EQUIPMENT DURING THE GUARANTEE PERIOD, THE AFFECTED PART OR PARTS SHALL BE PROMPTLY REPLACED WITH NEW PARTS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL LABOR REQUIRED TO PERFORM GUARANTEE SHALL BE INCLUDED AS PART OF THE COMPLETE GUARANTEE WARRANTY.

1.14. MAINTENANCE AND SERVICE

1.14.1. MAINTENANCE: THE CONTRACTOR SHALL MAINTAIN ALL SYSTEMS INSTALLED UNDER THIS SECTION OF SPECIFICATIONS FOR ONE YEAR FROM DATE OF ENGINEER'S [ARCHITECT'S] FINAL CERTIFICATE.

1.15. PROJECT RECORD DOCUMENTS

1.15.1. MAINTAIN ON SITE ONE SET OF THE FOLLOWING RECORD DOCUMENTS; RECORD ACTUAL REVISIONS TO THE WORK:

1.15.2. DRAWINGS.

1.15.3. SPECIFICATIONS.

1.15.4. ADDENDA.

1.15.5. CHANGE ORDERS AND OTHER MODIFICATIONS TO THE CONTRACT.

1.15.6. REVIEWED SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

1.15.7. MANUFACTURER'S INSTRUCTION FOR ASSEMBLY, INSTALLATION, AND ADJUSTING.

1.15.8. CONTRACT CLOSE_OUT RECORD DOCUMENTS: PREPARE CONSTRUCTION RECORD DOCUMENTS, IN AUTOCAD OR REVIT FILES PROVIDED BY THE ENGINEER, TO INCLUDE ALL ADDENDA AND CHANGE ORDERS.

1.16. MAINTENANCE DOCUMENTS AND INSTRUCTION

1.16.1. MAINTENANCE TRAINING: AFTER PLACING SYSTEMS IN OPERATION, PROVIDE 2 MEMBERS OF OWNER'S MAINTENANCE STAFF WITH 16 HOURS OF OPERATION AND MAINTENANCE TRAINING FOR ALL SYSTEMS INCLUDED IN THIS SECTION OF SPECIFICATIONS.

1.16.2. MAINTENANCE MANUALS: ONE HARD COPY AND ONE .PDF BOUND AND INDEXED OPERATING AND MAINTENANCE MANUALS SHALL BE PREPARED BY THE CONTRACTOR AND DELIVERED TO OPERATING PERSONNEL.

2. PRODUCTS

2.1. NOT APPLICABLE

3. EXECUTION

3.1. ASBESTOS

3.1.1. NO ASBESTOS CONTAINING MATERIALS SHALL BE USED IN ANY OF THE NEW CONSTRUCTION.

3.2. DEMOLITION

3.2.1. GENERAL: PROVIDE DEMOLITION OF EXISTING MECHANICAL WORK IN REMODELED AREAS OF THE EXISTING BUILDING AND AS DESCRIBED ON THE DRAWINGS. DISPOSE OF REMOVED EQUIPMENT AND MATERIALS IN A WAY TO MAXIMIZE RECYCLING CONTENT.

3.2.2. SALVAGE EQUIPMENT AND MATERIALS: EXISTING EQUIPMENT AND MATERIALS DESIGNATED FOR SALVAGE BACK TO THE OWNER OR REINSTALLATION SHALL BE TESTED FOR PROPER OPERATION PRIOR TO REMOVAL FROM ITS INSTALLED LOCATION.

3.2.3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE G.C.

3.2.4. CONTRACTOR SHALL COORDINATE WITH THE G.C. ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.

3.2.5. EACH CONTRACTOR SHALL VERIFY SCOPE OF WORK WITH THE G.C. FOR THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND ASSOCIATED ROOF CURBS NOT BEING REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE.

3.2.6. THE CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK, AND EQUIPMENT PRIOR TO REMOVAL.

3.2.7. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK MUST BE REMOVED AND ALL ROOFS, WALLS, AND FLOORS AFFECTED BY DEMOLITION SHALL BE PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE.

3.2.8. EXISTING ABANDONED PIPES, DUCTS, OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE SHALL BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY SHALL NOT BE REUSED IN THIS PROJECT. IF REQUIRED BY LANDLORD OR CODES, ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION WITH THE G.C. PRIOR TO BID AND INCLUDE IN BID PROPOSAL AS DIRECTED BY THE G.C.

3.3. MECHANICAL INSTALLATIONS

3.3.1. GENERAL: INSTALLATION SHALL BE AS SPECIFIED IN INDIVIDUAL DIVISION 23 SPECIFICATION SECTIONS AND IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONFLICT BETWEEN MANUFACTURER'S PRINTED INSTRUCTIONS AND THESE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

3.3.2. EQUIPMENT: ALL EQUIPMENT INSTALLED ON THIS PROJECT SHALL BE NEW AND UNUSED UNLESS NOTED OTHERWISE. LABEL EACH UNIT WITH PLAN NUMBER, NOMINAL AIRFLOW, AND MAXIMUM AND MINIMUM FACTORY-SET AIRFLOWS.

3.3.3. INSTALLATION: INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM TO APPROVED SUBMITTAL DATA, INCLUDING COORDINATION DRAWINGS, TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT PORTIONS OF THE WORK ARE SHOWN ONLY IN DIAGRAMMATIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE ENGINEER.

3.3.3.1. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE.

3.3.3.2. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT GIVING RIGHT_OF_WAY PRIORITY TO SYSTEMS REQUIRED TO BE INSTALLED AT A SPECIFIED SLOPE.

3.3.3.3. COORDINATE CONNECTION OF MECHANICAL SYSTEMS WITH EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES. PROVIDE REQUIRED CONNECTION FOR EACH SERVICE.

3.3.3.4. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS.

3.4. CLEANING:

3.4.1. UPON COMPLETION OF INSTALLATION, PIPING, DUCTS, AND EQUIPMENT SHALL BE THOROUGHLY CLEARED OF DIRT, GREASE, RUST AND OIL, PRIMED WHERE NECESSARY, AND LEFT READY FOR PAINTING. VACUUM CLEAN THE INSIDE AND OUTSIDE OF PLENUMS AND EQUIPMENT CABINETS.

3.5. PAINTING AND FINISHING:

3.5.1. CONTRACTOR SHALL CLEAN, SPOT PRIME, AND ENTIRELY REPAINT, WITH ORIGINAL COLOR ANY FACTORY FINISHED EQUIPMENT WHICH HAS RUSTED OR BEEN DAMAGED.

3.5.2. WHEN PAINTING OR REPAINTING EQUIPMENT, DO NOT PAINT OVER ANY MANUFACTURER'S NAMEPLATES AND/OR LABELS.

3.6. LUBRICATION AND PACKING:

3.6.1. LUBRICATE EQUIPMENT WITH CORRECT GRADE, TYPE, AND QUANTITY OF LUBRICATION BEFORE PLACING EQUIPMENT INTO SERVICE. DAMAGES CAUSED BY NOT PROVIDING PROPER LUBRICATION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

3.7. FILTERS

3.7.1. NEW, CLEAN AIR FILTERS TO BE INSTALLED AFTER TESTING AND BEFORE DELIVERY TO OWNER.

END OF SECTION 23 00 00

23 33 00 - AIR DUCT ACCESSORIES

GENERAL

3.8. SUMMARY

3.8.1. SECTION INCLUDES:

3.8.1.1. MANUAL VOLUME DAMPERS.

3.8.1.2. CONTROL DAMPERS.

3.8.1.3. FIRE DAMPERS.

3.8.1.4. COMBINATION FIRE AND SMOKE DAMPERS.

3.8.1.5. TURNING VANES.

3.8.1.6. FLEXIBLE CONNECTORS.

3.8.1.7. DUCT ACCESSORY HARDWARE.

3.9. ACTION SUBMITTALS

3.9.1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

3.10. CLOSEOUT SUBMITTALS

3.10.1. OPERATION AND MAINTENANCE DATA: FOR AIR DUCT ACCESSORIES TO INCLUDE IN OPERATION AND MAINTENANCE MANUALS.

3.11. MAINTENANCE MATERIAL ATTICKSTOCK

3.11.1. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

3.11.2. FUSIBLE LINKS: FURNISH QUANTITY EQUAL TO 10 PERCENT OF AMOUNT INSTALLED.

4. PRODUCTS

4.1. PERFORMANCE REQUIREMENTS

4.1.1. COMPLY WITH NFPA 90A AND NFPA 90B.

4.1.2. COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESSES, AND DUCT CONSTRUCTION METHODS UNLESS OTHERWISE INDICATED. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.

4.1.3. DAMPER ACTUATOR - ELECTRIC (ONLY IF NECESSARY):

4.1.3.1. ELECTRIC - 24 V AC.

4.1.3.2. UL 873 PLENUM RATED.

4.1.3.3. TWO POSITION WITH FAIL-SAFE SPRING RETURN.

4.1.3.3.1. SUFFICIENT MOTOR TORQUE AND SPRING TORQUE TO DRIVE DAMPER FULLY CLOSED WITH ADEQUATE FORCE TO ACHIEVE REQUIRED DAMPER SEAL.

4.1.3.3.2. MINIMUM 90-DEGREE DRIVE ROTATION.

4.1.3.4. CLOCKWISE OR COUNTERCLOCKWISE DRIVE ROTATION AS REQUIRED FOR APPLICATION.

4.1.3.5. ENVIRONMENTAL OPERATING RANGE:

4.1.3.5.1. TEMPERATURE: MINUS 40 TO PLUS 130 DEG F.

4.1.3.5.2. HUMIDITY: 5 TO 95 PERCENT RELATIVE HUMIDITY NONCONDENSING.

4.1.3.6. ENVIRONMENTAL ENCLOSURE: NEMA 2.

4.1.3.7. ACTUATOR TO BE FACTORY MOUNTED AND PROVIDED WITH A SINGLE-POINT WIRING CONNECTION.

4.2. MANUAL VOLUME DAMPERS

4.2.1. STANDARD, STEEL, MANUAL VOLUME DAMPERS:

4.2.1.1. PERFORMANCE:

4.2.1.1.1. LEAKAGE RATING CLASS III: LEAKAGE NOT EXCEEDING 40 CFM/SQ. FT. AGAINST 1-INCH WG DIFFERENTIAL STATIC PRESSURE.

4.2.1.2. CONSTRUCTION:

4.2.1.2.1. LINKAGE OUT OF AIRSTREAM.

4.2.1.2.2. SUITABLE FOR HORIZONTAL OR VERTICAL AIRFLOW APPLICATIONS.

4.2.1.3. FRAMES:

4.2.1.3.1. HAT-SHAPED, 16-GAUGE-THICK, GALVANIZED SHEET STEEL.

4.2.1.3.2. MITERED AND WELDED CORNERS.

4.2.1.3.3. FLANGES FOR ATTACHING TO WALLS AND FLANGELESS FRAMES FOR INSTALLING IN DUCTS.

4.2.1.4. BLADES:

4.2.1.4.1. MULTIPLE OR SINGLE BLADE.

4.2.1.4.2. PARALLEL- OR OPPOSED-BLADE DESIGN.

4.2.1.4.3. STIFFEN DAMPER BLADES FOR STABILITY.

4.2.1.4.4. GALVANIZED STEEL; 16 GAUGE THICK.

4.2.1.5. BLADE AXLES: GALVANIZED STEEL.

4.2.1.6. BEARINGS:

4.2.1.6.1. MOLDED SYNTHETIC.

4.2.1.6.2. DAMPERS MOUNTED WITH VERTICAL BLADES TO HAVE THRUST BEARING AT EACH END OF EVERY BLADE.

4.2.1.7. TIE BARS AND BRACKETS: GALVANIZED STEEL.

4.2.1.8. LOCKING DEVICE TO HOLD DAMPER BLADES IN A FIXED POSITION WITHOUT VIBRATION.

4.3. FIRE DAMPERS

4.3.1. TYPE: DYNAMIC; RATED AND LABELED IN ACCORDANCE WITH UL 555 BY AN NRTL. CURTAIN TYPE WITH BLADES OUTSIDE AIRSTREAM; FABRICATED WITH ROLL-FORMED GALVANIZED STEEL; WITH MITERED AND INTERLOCKING CORNERS; FACTORY- OR FIELD-INSTALLED, GALVANIZED SHEET STEEL SLEEVES; ROLL-FORMED GALVANIZED SHEET STEEL; ALL GAUGES TO BE IN ACCORDANCE WITH UL LISTING. REPLACEABLE, 165 DEG F RATED, FUSIBLE LINKS.

4.3.2. FIRE RATING: AS NECESSARY PER LOCAL CODE REQUIREMENTS, AND THE RATING OF WALL, FLOOR, OR PARTITION.

4.3.3. GENERAL REQUIREMENTS:

4.3.3.1. MULTIBLADE WITH LINKAGE OUT OF AIRSTREAM, FABRICATED WITH ROLL-FORMED GALVANIZED STEEL; WITH MITERED AND INTERLOCKING CORNERS; FACTORY- OR FIELD-INSTALLED, GALVANIZED SHEET STEEL SLEEVES; ROLL-FORMED GALVANIZED SHEET STEEL; ALL GAUGES TO BE IN ACCORDANCE WITH UL LISTING. ROLL-FORMED, HORIZONTAL, V-GROOVE, GALVANIZED SHEET STEEL BLADES WITH SEALS, ELECTRIC RESETTABLE DEVICE AND SWITCH PACKAGE, FACTORY INSTALLED, RATED.

4.3.3.2. LABEL TO INDICATE CONFORMANCE TO UL 555 AND UL 555S BY AN NRTL.

4.3.3.3. LABEL TO INDICATE CONFORMANCE TO NFPA 80 AND NFPA 90A BY AN NRTL.

4.3.3.4. UNLESS OTHERWISE INDICATED, USE PARALLEL-BLADE CONFIGURATION.

4.3.4. DAMPER ACTUATOR - ELECTRIC:

4.3.4.1. ELECTRIC - 120 V AC.

4.3.4.2. UL 873, PLENUM RATED.

4.3.4.3. DESIGNED TO OPERATE IN SMOKE-CONTROL SYSTEMS COMPLYING WITH UL 555S REQUIREMENTS.

4.3.4.4. TWO POSITION WITH FAIL-SAFE SPRING RETURN.

4.3.4.4.1. SUFFICIENT MOTOR TORQUE AND SPRING TORQUE TO DRIVE DAMPER FULLY OPEN AND FULLY CLOSED WITH ADEQUATE FORCE TO ACHIEVE REQUIRED DAMPER SEAL.

4.3.4.4.2. MAXIMUM 15-SECOND FULL-STROKE CLOSURE.

4.3.4.4.3. MINIMUM 90-DEGREE DRIVE ROTATION.

4.3.4.5. CLOCKWISE OR COUNTERCLOCKWISE DRIVE ROTATION AS REQUIRED FOR APPLICATION.

4.3.4.6. ENVIRONMENTAL OPERATING RANGE:

4.3.4.6.1. TEMPERATURE: MINUS 40 TO PLUS 130 DEG F.

4.3.4.6.2. HUMIDITY: 5 TO 95 PERCENT RELATIVE HUMIDITY NONCONDENSING.

4.3.4.6.3. ENVIRONMENTAL ENCLOSURE: NEMA 2.

4.3.4.6.4. ACTUATOR TO BE FACTORY MOUNTED AND PROVIDED WITH SINGLE-POINT WIRING CONNECTION.

4.4. CORRIDOR DAMPERS

4.4.1. GENERAL REQUIREMENTS:

4.4.1.1. LABEL TO INDICATE CONFORMANCE TO UL 555 AND UL 555S BY AN NRTL.

4.4.1.2. LABEL TO INDICATE CONFORMANCE TO NFPA 90A BY AN NRTL.

4.5. TURNING VANES

4.5.1. MANUFACTURED TURNING VANES FOR METAL DUCTS: FABRICATE CURVED BLADES OF GALVANIZED SHEET STEEL; SUPPORT WITH BARS PERPENDICULAR TO BLADES SET; SET INTO VANE RUNNERS SUITABLE FOR DUCT MOUNTING.

4.5.2. GENERAL REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE"; FIGURE 4-3, "VANES AND VANE RUNNERS," AND FIGURE 4-4, "VANE SUPPORT IN ELBOWS."

4.5.3. VANE CONSTRUCTION:

4.5.4. SINGLE WALL FOR DUCTS UP TO 48 INCHES WIDE AND DOUBLE WALL FOR LARGER DIMENSIONS.

4.6. REMOTE DAMPER OPERATORS

4.6.1. DESCRIPTION: CABLE SYSTEM DESIGNED FOR REMOTE MANUAL DAMPER ADJUSTMENT, SS CABLE, RECESSED WALL BOX W/COVER PLATE, OR CONCEALED CABLE TUCKED INTO AIR DEVICE.

4.7. DUCT-MOUNTED ACCESS DOORS

4.7.1. DUCT-MOUNTED ACCESS DOORS: FABRICATE ACCESS PANELS IN ACCORDANCE WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE"; FIGURE 7-2 (7-2M), "DUCT ACCESS DOORS AND PANELS," AND FIGURE 7-3, "ACCESS DOORS - ROUND DUCT." MINIMUM SIZE 18X18 OR 324 SQ. IN.

4.8. FLEXIBLE CONNECTORS

4.8.1. FIRE-PERFORMANCE CHARACTERISTICS: ADHESIVES, SEALANTS, FABRIC MATERIALS, AND ACCESSORY MATERIALS SHALL HAVE FLAME-SPREAD INDEX NOT EXCEEDING 25 AND SMOKE-DEVELOPED INDEX NOT EXCEEDING 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84. MATERIALS: FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS, COATINGS AND ADHESIVES: COMPLY WITH UL 181, CLASS 1.

4.9. MATERIALS

4.9.1. GALVANIZED SHEET STEEL: COMPLY WITH ASTM A653/A653M.

4.9.1.1. GALVANIZED COATING DESIGNATION: G90.

4.9.1.2. EXPOSED-SURFACE FINISH: MILL PHOSPHATIZED.

4.9.2. STAINLESS STEEL SHEETS: COMPLY WITH ASTM A480/A480M, TYPE 304, AND HAVING A NO. 2 FINISH.

4.9.3. ALUMINUM SHEETS: COMPLY WITH ASTM B209, ALLOY 3003, TEMPER H14; WITH MILL FINISH FOR CONCEALED DUCTS AND STANDARD, ONE-SIDE BRIGHT FINISH FOR EXPOSED DUCTS.

4.9.4. EXTRUDED ALUMINUM: COMPLY WITH ASTM B221, ALLOY 6063, TEMPER T6.

4.9.5. REINFORCEMENT SHAPES AND PLATES: GALVANIZED-STEEL REINFORCEMENT WHERE INSTALLED ON GALVANIZED SHEET METAL DUCTS; COMPATIBLE MATERIALS FOR ALUMINUM AND STAINLESS STEEL DUCTS.

4.9.6. TIE RODS: GALVANIZED STEEL, 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS; 3/8-INCH MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36 INCHES.

5. EXECUTION

5.1. INSTALLATION

5.1.1. INSTALL DUCT ACCESSORIES IN ACCORDANCE WITH APPLICABLE DETAILS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" FOR METAL DUCTS.

5.1.2. INSTALL DUCT ACCESSORIES OF MATERIALS SUITED TO DUCT MATERIALS; USE GALVANIZED-STEEL ACCESSORIES IN GALVANIZED-STEEL AND FIBROUS-GLASS DUCTS, STAINLESS STEEL ACCESSORIES IN STAINLESS STEEL DUCTS, AND ALUMINUM ACCESSORIES IN ALUMINUM DUCTS.

5.1.3. SET DAMPERS TO FULLY OPEN POSITION BEFORE TESTING, ADJUSTING, AND BALANCING.

5.1.4. INSTALL TEST HOLES AT FAN INLETS AND OUTLETS AND ELSEWHERE AS INDICATED AND AS NEEDED FOR TESTING AND BALANCING.

5.1.5. INSTALL FIRE AND SMOKE DAMPERS IN ACCORDANCE WITH UL LISTING AND MANUFACTURER'S INSTRUCTIONS.

5.1.6. INSTALL DUCT ACCESS DOORS ON SIDES OF DUCTS TO ALLOW FOR INSPECTING, ADJUSTING, AND MAINTAINING ACCESSORIES AND EQUIPMENT AT THE FOLLOWING LOCATIONS:

5.1.6.1. ON BOTH SIDES OF DUCT COILS.

5.1.6.2. UPSTREAM FROM DUCT FILTERS.

5.1.6.3. AT OUTDOOR-AIR INTAKES AND MIXED-AIR PLENUMS.

5.1.6.4. AT DRAIN PANS AND SEALS.

5.1.6.5. ADJACENT TO AND CLOSE ENOUGH TO FIRE OR SMOKE DAMPERS, TO RESET OR REINSTALL FUSIBLE LINKS. ACCESS DOORS FOR ACCESS TO FIRE OR SMOKE DAMPERS HAVING FUSIBLE LINKS SHALL BE PRESSURE RELIEF ACCESS DOORS AND SHALL BE OUTWARD OPERATION FOR ACCESS DOORS INSTALLED UPSTREAM FROM DAMPERS AND INWARD OPERATION FOR ACCESS DOORS INSTALLED DOWNSTREAM FROM DAMPERS.

5.1.6.6. FOR GREASE DUCTS, INSTALL AT LOCATIONS AND SPACING AS REQUIRED BY NFPA 96.

5.1.6.7. CONTROL DEVICES REQUIRING INSPECTION.

5.1.6.8. ELSEWHERE AS INDICATED.

5.1.7. INSTALL ACCESS DOORS WITH SWING AGAINST DUCT STATIC PRESSURE.

5.1.8. LABEL ACCESS DOORS INDICATE THE PURPOSE OF ACCESS DOOR.

5.1.9. INSTALL FLEXIBLE CONNECTORS TO CONNECT DUCTS TO EQUIPMENT.

5.1.10. FOR FANS DEVELOPING STATIC PRESSURES OF 5 INCHES WG AND MORE, COVER FLEXIBLE CONNECTORS WITH LOADED VINYL SHEET HELD IN PLACE WITH METAL STRAPS.

5.1.11. INSTALL DUCT TEST HOLES WHERE REQUIRED FOR TESTING AND BALANCING PURPOSES.

END OF SECTION 23 33 00

23 31 13 - METAL DUCTS

1. GENERAL

1.1. SUMMARY

1.1.1. SECTION INCLUDES:

1.1.1.1. SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS.

1 **MECHANICAL SPECIFICATIONS**

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ENGINEER

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EEA Project No.	20256574
State of Registration	Florida
Firm Registration No.	26645

PROJECT NUMBER 250486	DATE: 02.25.26
DRAWN BY: SL	CHECK BY: JTS
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF:	JTS

REVISION LOG:	
ISSUED FOR CLIENT	02.25.26
ISSUED FOR LL PERMIT + BID	03.06.23

CARRIAGE GATE SHOPPING CENTER
3425 THOMASVILLE RD
SPACE 7
TALLAHASSEE, FL 32309

DRAWING NO.

M-104

MECHANICAL SPECIFICATIONS

JEREMY T. SMITH

EEA CONSULTING ENGINEERS

BID DOCUMENT ONLY

Not Intended for Construction or Permit. This document is released under the authority of:

Registrant's Name: Jeremy T. Smith

Serial No. 041482

DATE: 02/25/26

PROJECT NO: 250486

LOCATION: CARRIAGE GATE, TALLAHASSEE FL

PLOT SCALE: 1:1

4.3.4.2. UL 873, PLENUM RATED.

4.3.4.3. DESIGNED TO OPERATE IN SMOKE-CONTROL SYSTEMS COMPLYING WITH UL 555S REQUIREMENTS.

4.3.4.4. TWO POSITION WITH FAIL-SAFE SPRING RETURN.

4.3.4.4.1. SUFFICIENT MOTOR TORQUE AND SPRING TORQUE TO DRIVE DAMPER FULLY OPEN AND FULLY CLOSED WITH ADEQUATE FORCE TO ACHIEVE REQUIRED DAMPER SEAL.

4.3.4.4.2. MAXIMUM 15-SECOND FULL-STROKE CLOSURE.

4.3.4.4.3. MINIMUM 90-DEGREE DRIVE ROTATION.

4.3.4.5. CLOCKWISE OR COUNTERCLOCKWISE DRIVE ROTATION AS REQUIRED FOR APPLICATION.

4.3.4.6. ENVIRONMENTAL OPERATING RANGE:

4.3.4.6.1. TEMPERATURE: MINUS 40 TO PLUS 130 DEG F.

4.3.4.6.2. HUMIDITY: 5 TO 95 PERCENT RELATIVE HUMIDITY NONCONDENSING.

4.3.4.6.3. ENVIRONMENTAL ENCLOSURE: NEMA 2.

4.3.4.6.4. ACTUATOR TO BE FACTORY MOUNTED AND PROVIDED WITH SINGLE-POINT WIRING CONNECTION.

4.4. CORRIDOR DAMPERS

4.4.1. GENERAL REQUIREMENTS:

4.4.1.1. LABEL TO INDICATE CONFORMANCE TO UL 555 AND UL 555S BY AN NRTL.

4.4.1.2. LABEL TO INDICATE CONFORMANCE TO NFPA 90A BY AN NRTL.

4.5. TURNING VANES

4.5.1. MANUFACTURED TURNING VANES FOR METAL DUCTS: FABRICATE CURVED BLADES OF GALVANIZED SHEET STEEL; SUPPORT WITH BARS PERPENDICULAR TO BLADES SET; SET INTO VANE RUNNERS SUITABLE FOR DUCT MOUNTING.

4.5.2. GENERAL REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE"; FIGURE 4-3, "VANES AND VANE RUNNERS," AND FIGURE 4-4, "VANE SUPPORT IN ELBOWS."

4.5.3. VANE CONSTRUCTION:

4.5.4. SINGLE WALL FOR DUCTS UP TO 48 INCHES WIDE AND DOUBLE WALL FOR LARGER DIMENSIONS.

4.6. REMOTE DAMPER OPERATORS

4.6.1. DESCRIPTION: CABLE SYSTEM DESIGNED FOR REMOTE MANUAL DAMPER ADJUSTMENT, SS CABLE, RECESSED WALL BOX W/COVER PLATE, OR CONCEALED CABLE TUCKED INTO AIR DEVICE.

4.7. DUCT-MOUNTED ACCESS DOORS

4.7.1. DUCT-MOUNTED ACCESS DOORS: FABRICATE ACCESS PANELS IN ACCORDANCE WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE"; FIGURE 7-2 (7-2M), "DUCT ACCESS DOORS AND PANELS," AND FIGURE 7-3, "ACCESS DOORS - ROUND DUCT." MINIMUM SIZE 18X18 OR 324 SQ. IN.

4.8. FLEXIBLE CONNECTORS

4.8.1. FIRE-PERFORMANCE CHARACTERISTICS: ADHESIVES, SEALANTS, FABRIC MATERIALS, AND ACCESSORY MATERIALS SHALL HAVE FLAME-SPREAD INDEX NOT EXCEEDING 25 AND SMOKE-DEVELOPED INDEX NOT EXCEEDING 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84. MATERIALS: FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS, COATINGS AND ADHESIVES: COMPLY WITH UL 181, CLASS 1.

4.9. MATERIALS

4.9.1. GALVANIZED SHEET STEEL: COMPLY WITH ASTM A653/A653M.

4.9.1.1. GALVANIZED COATING DESIGNATION: G90.

4.9.1.2. EXPOSED-SURFACE FINISH: MILL PHOSPHATIZED.

4.9.2. STAINLESS STEEL SHEETS: COMPLY WITH ASTM A480/A480M, TYPE 304, AND HAVING A NO. 2 FINISH.

4.9.3. ALUMINUM SHEETS: COMPLY WITH ASTM B209, ALLOY 3003, TEMPER H14; WITH MILL FINISH FOR CONCEALED DUCTS AND STANDARD, ONE-SIDE BRIGHT FINISH FOR EXPOSED DUCTS.

4.9.4. EXTRUDED ALUMINUM: COMPLY WITH ASTM B221, ALLOY 6063, TEMPER T6.

4.9.5. REINFORCEMENT SHAPES AND PLATES: GALVANIZED-STEEL REINFORCEMENT WHERE INSTALLED ON GALVANIZED SHEET METAL DUCTS; COMPATIBLE MATERIALS FOR ALUMINUM AND STAINLESS STEEL DUCTS.

4.9.6. TIE RODS: GALVANIZED STEEL, 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS; 3/8-INCH MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36 INCHES.

5. EXECUTION

5.1. INSTALLATION

5.1.1. INSTALL DUCT ACCESSORIES IN ACCORDANCE WITH APPLICABLE DETAILS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" FOR METAL DUCTS.

5.1.2. INSTALL DUCT ACCESSORIES OF MATERIALS SUITED TO DUCT MATERIALS; USE GALVANIZED-STEEL ACCESSORIES IN GALVANIZED-STEEL AND FIBROUS-GLASS DUCTS, STAINLESS STEEL ACCESSORIES IN STAINLESS STEEL DUCTS, AND ALUMINUM ACCESSORIES IN ALUMINUM DUCTS.

5.1.3. SET DAMPERS TO FULLY OPEN POSITION BEFORE TESTING, ADJUSTING, AND BALANCING.

5.1.4. INSTALL TEST HOLES AT FAN INLETS AND OUTLETS AND ELSEWHERE AS INDICATED AND AS NEEDED FOR TESTING AND BALANCING.

5.1.5. INSTALL FIRE AND SMOKE DAMPERS IN ACCORDANCE WITH UL LISTING AND MANUFACTURER'S INSTRUCTIONS.

5.1.6. INSTALL DUCT ACCESS DOORS ON SIDES OF DUCTS TO ALLOW FOR INSPECTING, ADJUSTING, AND MAINTAINING ACCESSORIES AND EQUIPMENT AT THE FOLLOWING LOCATIONS:

5.1.6.1. ON BOTH SIDES OF DUCT COILS.

5.1.6.2. UPSTREAM FROM DUCT FILTERS.

5.1.6.3. AT OUTDOOR-AIR INTAKES AND MIXED-AIR PLENUMS.

5.1.6.4. AT DRAIN PANS AND SEALS.

5.1.6.5. ADJACENT TO AND CLOSE ENOUGH TO FIRE OR SMOKE DAMPERS, TO RESET OR REINSTALL FUSIBLE LINKS. ACCESS DOORS FOR ACCESS TO FIRE OR SMOKE DAMPERS HAVING FUSIBLE LINKS SHALL BE PRESSURE RELIEF ACCESS DOORS AND SHALL BE OUTWARD OPERATION FOR ACCESS DOORS INSTALLED UPSTREAM FROM DAMPERS AND INWARD OPERATION FOR ACCESS DOORS INSTALLED DOWNSTREAM FROM DAMPERS.

5.1.6.6. FOR GREASE DUCTS, INSTALL AT LOCATIONS AND SPACING AS REQUIRED BY NFPA 96.

5.1.6.7. CONTROL DEVICES REQUIRING INSPECTION.

5.1.6.8. ELSEWHERE AS INDICATED.

5.1.7. INSTALL ACCESS DOORS WITH SWING AGAINST DUCT STATIC PRESSURE.

5.1.8. LABEL ACCESS DOORS INDICATE THE PURPOSE OF ACCESS DOOR.

5.1.9. INSTALL FLEXIBLE CONNECTORS TO CONNECT DUCTS TO EQUIPMENT.

5.1.10. FOR FANS DEVELOPING STATIC PRESSURES OF 5 INCHES WG AND MORE, COVER FLEXIBLE CONNECTORS WITH LOADED VINYL SHEET HELD IN PLACE WITH METAL STRAPS.

5.1.11. INSTALL DUCT TEST HOLES WHERE REQUIRED FOR TESTING AND BALANCING PURPOSES.

END OF SECTION 23 33 00

23 33 46 - FLEXIBLE DUCTS

1. GENERAL

1.1. SUMMARY

1.1.1. SECTION INCLUDES:

1.1.1.1. NON-INSULATED FLEXIBLE DUCTS.

1.1.1.2. INSULATED FLEXIBLE DUCTS.

1.2. SUBMITTALS

1.2.1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

2. PRODUCTS - SEE DUCT SCHEDULE

2.1. ASSEMBLY DESCRIPTION

2.1.1. COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESSES, AND DUCT CONSTRUCTION METHODS UNLESS OTHERWISE INDICATED. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.

3. EXECUTION

3.1. INSTALLATION

3.1.1. INSTALL FLEXIBLE DUCTS ACCORDING TO APPLICABLE DETAILS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" FOR METAL DUCTS AND IN NAIMA AH116, "FIBROUS GLASS DUCT CONSTRUCTION STANDARDS," FOR FIBROUS-GLASS DUCTS.

3.1.2. INSTALL IN INDOOR APPLICATIONS ONLY. FLEXIBLE DUCTWORK SHOULD NOT BE EXPOSED TO UV LIGHTING.

3.1.3. CONNECT TERMINAL UNITS TO SUPPLY DUCTS WITH MAXIMUM 12-INCH LENGTHS OF FLEXIBLE DUCT. DO NOT USE FLEXIBLE DUCTS TO CHANGE DIRECTIONS.

3.1.4. CONNECT DIFFUSERS OR LIGHT TROFFER BOOTS TO DUCTS DIRECTLY OR WITH MAXIMUM 60-INCH LENGTHS OF FLEXIBLE DUCT.

3.1.5. CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH CLAMPS OR ADHESIVE PLUS SHEET METAL SCREWS.

3.1.6. INSTALLATION:

3.1.6.1. INSTALL DUCTS FULLY EXTENDED.

3.1.6.2. DO NOT BEND DUCTS ACROSS SHARP CORNERS.

3.1.6.3. BENDS OF FLEXIBLE DUCTING SHALL NOT EXCEED A MINIMUM OF ONE DUCT DIAMETER.

3.1.6.4. AVOID CONTACT WITH METAL FIXTURES, WATER LINES, PIPES, OR CONDUITS.

3.1.6.5. INSTALL FLEXIBLE DUCTS IN A DIRECT LINE, WITHOUT SAGS, TWISTS, OR TURNS.

3.1.7. SUPPORTING FLEXIBLE DUCTS:

3.1.7.1. SUSPEND FLEXIBLE DUCTS WITH BANDS 1-1/2 INCHES WIDE OR WIDER AND SPACED A MAXIMUM OF 48 INCHES APART. MAXIMUM CENTERLINE SAG BETWEEN SUPPORTS SHALL NOT EXCEED 1/2 INCH PER 12 INCHES.

3.1.7.2. INSTALL EXTRA SUPPORTS AT BENDS PLACED APPROXIMATELY ONE DUCT DIAMETER FROM CENTER LINE OF THE BEND.

3.1.7.3. DUCTS MAY REST ON CEILING JOISTS OR TRUSS SUPPORTS. SPACING BETWEEN SUPPORTS SHALL NOT EXCEED THE MAXIMUM SPACING PER MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.

3.1.7.4. VERTICALLY INSTALLED DUCTS SHALL BE STABILIZED BY SUPPORT STRAPS AT A MAXIMUM OF 72 INCHES O.C.

END OF SECTION 23 33 46

23 37 13.13 - AIR DIFFUSERS

1. GENERAL

1.1. SUMMARY

1.1.1. SECTION INCLUDES:

1.1.2. AIR DIFFUSERS.

1.2. ACTION SUBMITTALS

1.2.1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

1.2.2. DATA SHEET: INDICATE MATERIALS OF CONSTRUCTION, FINISH, AND MOUNTING DETAILS; AND PERFORMANCE DATA INCLUDING THROW AND DROP, STATIC-PRESSURE DROP, AND NOISE RATINGS.

1.2.3. DIFFUSER SCHEDULE: INDICATE DRAWING DESIGNATION, ROOM LOCATION, QUANTITY, MODEL NUMBER, SIZE, AND ACCESSORIES FURNISHED.

2. PRODUCTS

2.1. AIR DIFFUSERS - SEE AIR DEVICE SCHEDULE

3. EXECUTION

3.1. INSTALLATION

3.1.1. INSTALL DIFFUSERS LEVEL AND PLUMB.

3.1.2. CEILING-MOUNTED OUTLETS AND INLETS: DRAWINGS INDICATE GENERAL ARRANGEMENT OF DUCTS, FITTINGS, AND ACCESSORIES. AIR OUTLET AND INLET LOCATIONS HAVE BEEN INDICATED TO ACHIEVE DESIGN REQUIREMENTS FOR AIR VOLUME, NOISE CRITERIA, AIRFLOW PATTERN, THROW, AND PRESSURE DROP. MAKE FINAL LOCATIONS WHERE INDICATED, AS MUCH AS PRACTICAL. FOR UNITS INSTALLED IN LAY-IN CEILING PANELS, LOCATE UNITS IN THE CENTER OF PANEL. WHERE ARCHITECTURAL FEATURES OR OTHER ITEMS CONFLICT WITH INSTALLATION, NOTIFY ARCHITECT AND ENGINEER FOR A DETERMINATION OF FINAL LOCATION.

3.1.3. INSTALL DIFFUSERS WITH AIRTIGHT CONNECTIONS TO DUCTS AND TO ALLOW SERVICE AND MAINTENANCE OF DAMPERS, AIR EXTRACTORS, AND FIRE DAMPERS.

3.2. ADJUSTING

3.2.1. AFTER INSTALLATION, ADJUST DIFFUSERS TO AIR PATTERNS INDICATED, OR AS DIRECTED, BEFORE STARTING AIR BALANCING.

END OF SECTION 23 3 713.13

23 37 13.23 - REGISTERS AND GRILLES

1. GENERAL

1.1. SUMMARY

1.1.1. SECTION INCLUDES:

1.1.1.1. REGISTERS AND GRILLES.

1.2. ACTION SUBMITTALS

1.2.1. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

1.2.1.1. DATA SHEET: INDICATE MATERIALS OF CONSTRUCTION, FINISH, AND MOUNTING DETAILS; AND PERFORMANCE DATA INCLUDING THROW AND DROP, STATIC-PRESSURE DROP, AND NOISE RATINGS.

1.2.1.2. REGISTER AND GRILLE SCHEDULE: INDICATE DRAWING DESIGNATION, ROOM LOCATION, QUANTITY, MODEL NUMBER, SIZE, AND ACCESSORIES FURNISHED.

2. PRODUCTS

2.1. REGISTERS AND GRILLES - SEE AIR DEVICE SCHEDULE

3. EXECUTION

3.1. INSTALLATION

3.1.1. INSTALL REGISTERS AND GRILLES LEVEL AND PLUMB.

3.1.2. OUTLETS AND INLETS LOCATIONS: DRAWINGS INDICATE GENERAL ARRANGEMENT OF DUCTS, FITTINGS, AND ACCESSORIES. AIR OUTLET AND INLET LOCATIONS HAVE BEEN INDICATED TO ACHIEVE DESIGN REQUIREMENTS FOR AIR VOLUME, NOISE CRITERIA, AIRFLOW PATTERN, THROW, AND PRESSURE DROP. MAKE FINAL LOCATIONS WHERE INDICATED, AS MUCH AS PRACTICAL. FOR UNITS INSTALLED IN LAY-IN CEILING PANELS, LOCATE UNITS IN THE CENTER OF PANEL. WHERE ARCHITECTURAL FEATURES OR OTHER ITEMS CONFLICT WITH INSTALLATION, NOTIFY ARCHITECT AND ENGINEER FOR A DETERMINATION OF FINAL LOCATION.

3.1.3. INSTALL REGISTERS AND GRILLES WITH AIRTIGHT CONNECTIONS TO DUCTS AND TO ALLOW SERVICE AND MAINTENANCE OF DAMPERS, AIR EXTRACTORS, AND FIRE DAMPERS.

3.2. ADJUSTING

3.2.1. AFTER INSTALLATION, ADJUST REGISTERS AND GRILLES TO AIR PATTERNS INDICATED, OR AS DIRECTED, BEFORE STARTING AIR BALANCING.

END OF SECTION 23 37 13.23

23 74 16.11 - PACKAGED, SMALL-CAPACITY, ROOFTOP AIR-CONDITIONING UNITS

1. GENERAL

1.1. SUMMARY

1.1.1. SECTION INCLUDES PACKAGED, SMALL-CAPACITY (25 TONS AND UNDER), DX ROOFTOP AIR-CONDITIONING UNITS (RTUS):

1.2. ACTION SUBMITTALS

1.2.1. PRODUCT DATA: FOR EACH RTU.

1.2.1.1. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES.

1.2.1.2. INCLUDE RATED CAPACITIES, DIMENSIONS, REQUIRED CLEARANCES, CHARACTERISTICS, AND FURNISHED SPECIALTIES AND ACCESSORIES.

1.2.1.3. INCLUDE UNIT DIMENSIONS AND WEIGHT.

1.2.1.4. INCLUDE CABINET MATERIAL, METAL THICKNESS, FINISHES, INSULATION, AND ACCESSORIES.

1.2.1.5. FANS:

1.2.1.5.1. INCLUDE CERTIFIED FAN-PERFORMANCE CURVES WITH SYSTEM OPERATING CONDITIONS INDICATED.

1.2.1.5.2. INCLUDE CERTIFIED FAN-SOUND POWER RATINGS.

1.2.1.5.3. INCLUDE FAN CONSTRUCTION AND ACCESSORIES.

1.2.1.5.4. INCLUDE MOTOR RATINGS, ELECTRICAL CHARACTERISTICS, AND MOTOR ACCESSORIES.

1.2.1.6. INCLUDE CERTIFIED COIL-PERFORMANCE RATINGS WITH SYSTEM OPERATING CONDITIONS INDICATED.

1.2.1.7. INCLUDE FILTERS WITH PERFORMANCE CHARACTERISTICS.

1.2.1.8. INCLUDE GAS FURNACES WITH PERFORMANCE CHARACTERISTICS.

1.2.1.9. INCLUDE DAMPERS, INCLUDING HOUSINGS, LINKAGES, AND OPERATORS.

1.2.2. SHOP DRAWINGS: INCLUDE RTU'S IN DUCT SHOP DRAWING SUBMITTAL.

1.3. INFORMATIONAL SUBMITTALS

1.3.1. MANUFACTURER'S WARRANTY, SOURCE QUALITY-CONTROL REPORTS, SYSTEM STARTUP REPORTS, AND FIELD QUALITY-CONTROL REPORTS.

1.4. CLOSEOUT SUBMITTALS

1.4.1. OPERATION AND MAINTENANCE DATA: FOR RTUS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

1.5. WARRANTY

1.5.1. WARRANTY: PROVIDE MANUFACTURER'S STANDARD WARRANTY, UNLESS STATED OTHERWISE IN SCHEDULE.

2. PRODUCTS

2.1. PERFORMANCE REQUIREMENTS

2.1.1. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY AN NRTL, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

2.1.2. UL COMPLIANCE: COMPLY WITH UL 1995.

2.2. CAPACITIES AND CHARACTERISTICS

2.2.1. UNIT CONFIGURATION, CAPACITIES, AND CHARACTERISTICS ARE SCHEDULED ON THE PLANS. INCLUDING REQUIREMENTS FOR CASINGS, FANS, DRIVES, AND MOTORS, ROTARY HEAT EXCHANGERS, COILS, REFRIGERANT CIRCUIT COMPONENTS, AIR FILTRATION, GAS FURNACES, DAMPERS, ELECTRICAL POWER CONNECTIONS, CONTROLS, ROOF CURBS, AND ACCESSORIES.

2.3. SOURCE QUALITY CONTROL

2.3.1. AHRI COMPLIANCE:

2.3.1.1. COMPLY WITH AHRI 210/240 FOR TESTING AND RATING ENERGY EFFICIENCIES FOR RTUS.

2.3.1.2. COMPLY WITH AHRI 340/360 FOR TESTING AND RATING ENERGY EFFICIENCIES FOR RTUS. (UNITS LARGER THAN 65MBH)

2.3.1.3. COMPLY WITH AHRI 270 FOR TESTING AND RATING SOUND PERFORMANCE FOR RTUS.

2.3.1.4. COMPLY WITH AHRI 1060 FOR TESTING AND RATING PERFORMANCE FOR AIR-TO-AIR EXCHANGER.

2.3.2. AMCA COMPLIANCE:

2.3.2.1. COMPLY WITH AMCA 11 AND BEAR THE AMCA-CERTIFIED RATINGS SEAL FOR AIR AND SOUND PERFORMANCE ACCORDING TO AMCA 211 AND AMCA 311.

2.3.2.2. DAMPER LEAKAGE TESTED ACCORDING TO AMCA 500-D.

2.3.2.3. OPERATING LIMITS: CLASSIFY ACCORDING TO AMCA 99.

3. EXECUTION

3.1. EXAMINATION

3.1.1. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF RTUS.

3.1.2. EXAMINE ROUGHING-IN FOR RTUS TO VERIFY ACTUAL LOCATIONS OF PIPING AND DUCT CONNECTIONS BEFORE EQUIPMENT INSTALLATION.

3.1.3. EXAMINE ROOFS FOR SUITABLE CONDITIONS WHERE RTUS WILL BE INSTALLED.

3.1.4. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2. INSTALLATION

3.2.1. ROOF CURB: INSTALL ON ROOF STRUCTURE, LEVEL AND SECURE, ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND THESE SPECIFICATIONS. INSTALL RTUS ON CURBS AND COORDINATE ROOF PENETRATIONS AND FLASHING WITH ROOF CONSTRUCTION, ARCHITECT, AND GENERAL CONTRACTOR (G.C.). SECURE RTUS TO UPPER CURB RAIL, AND SECURE CURB BASE TO ROOF FRAMING AS DESIGNED BY THE STRUCTURAL ENGINEER. COORDINATE SIZES AND LOCATIONS OF ROOF CURBS WITH ACTUAL EQUIPMENT PROVIDED. COORDINATE ROOF CURB INSTALLATION WITH ROOFING CONTRACTOR.

3.2.2. DO NOT OPERATE FAN SYSTEM UNTIL FILTERS (TEMPORARY OR PERMANENT) ARE IN PLACE. REPLACE TEMPORARY FILTERS USED DURING CONSTRUCTION AND TESTING WITH NEW, CLEAN FILTERS.

3.3. PIPING CONNECTIONS

3.3.1. PIPING INSTALLATION REQUIREMENTS ARE SPECIFIED IN OTHER SECTIONS. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALTIES.

3.3.2. WHERE INSTALLING PIPING ADJACENT TO RTU, ALLOW SPACE FOR SERVICE AND MAINTENANCE.

3.3.3. CONNECT PIPING TO UNIT MOUNTED ON VIBRATION ISOLATORS WITH FLEXIBLE CONNECTORS.

3.3.4. CONNECT CONDENSATE DRAIN PANS USING ASTM B88, TYPE M COPPER TUBING.

3.4. DUCT CONNECTIONS

3.4.1. COMPLY WITH DUCT INSTALLATION REQUIREMENTS SPECIFIED IN OTHER HVAC SECTIONS. DRAWINGS INDICATE GENERAL ARRANGEMENT OF DUCTS. THE FOLLOWING ARE SPECIFIC CONNECTION REQUIREMENTS:

3.4.1.1. INSTALL DUCTS TO TERMINATION AT TOP OF ROOF CURB.

3.4.1.2. REMOVE ROOF DECKING ONLY AS REQUIRED FOR PASSAGE OF DUCTS. DO NOT CUT OUT DECKING UNDER ENTIRE ROOF CURB.

3.4.1.3. INSTALL RETURN-AIR DUCT CONTINUOUSLY THROUGH ROOF STRUCTURE.

3.5. ELECTRICAL CONNECTIONS

3.5.1. CONNECT ELECTRICAL WIRING ACCORDING TO SECTION 260519 "LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES."

3.5.2. GROUND EQUIPMENT ACCORDING TO SECTION 260526 "GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS."

3.5.3. INSTALL ELECTRICAL DEVICES FURNISHED BY MANUFACTURER, BUT NOT FACTORY MOUNTED, ACCORDING TO NFPA 70 AND NECA 1.

3.5.4. INSTALL NAMEPLATE FOR EACH ELECTRICAL CONNECTION, INDICATING ELECTRICAL EQUIPMENT DESIGNATION AND CIRCUIT NUMBER FEEDING CONNECTION.

3.5.4.1. NAMEPLATE SHALL BE LAMINATED ACRYLIC OR MELAMINE PLASTIC SIGNS AS LAYERS OF BLACK WITH ENGRAVED WHITE LETTERS AT LEAST 1/2 INCH HIGH.

3.5.4.2. LOCATE NAMEPLATE WHERE EASILY VISIBLE.

3.6. CONTROL CONNECTIONS

3.6.1. INSTALL CONTROL AND ELECTRICAL POWER WIRING TO FIELD-MOUNTED CONTROL DEVICES.

3.7. FIELD QUALITY CONTROL

3.7.1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TEST AND INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS.

3.7.2. TESTS AND INSPECTIONS:

3.7.2.1. AFTER INSTALLING RTUS AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST UNITS FOR COMPLIANCE WITH REQUIREMENTS.

3.7.2.2. INSPECT FOR AND REMOVE SHIPPING BOLTS, BLOCKS, AND TIE-DOWN STRAPS.

3.7.2.3. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION.

3.7.2.4. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

3.7.3. RTU WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

3.7.4. PREPARE TEST AND INSPECTION REPORTS.

3.8. STARTUP SERVICE

3.8.1. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE.

3.8.1.1. COMPLETE INSTALLATION AND STARTUP CHECKS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.8.1.2. INSPECT FOR VISIBLE DAMAGE TO UNIT CASING.

3.8.1.3. INSPECT FOR VISIBLE DAMAGE TO FURNACE COMBUSTION CHAMBER.

3.8.1.4. INSPECT FOR VISIBLE DAMAGE TO COMPRESSOR, COILS, AND FANS.

3.8.1.5. INSPECT INTERNAL INSULATION.

3.8.1.6. VERIFY THAT LABELS ARE CLEARLY VISIBLE.

3.8.1.7. VERIFY THAT CLEARANCES HAVE BEEN PROVIDED FOR SERVICING.

3.8.1.8. VERIFY THAT CONTROLS ARE CONNECTED AND OPERABLE.

3.8.1.9. VERIFY THAT FILTERS ARE INSTALLED.

3.8.1.10. CLEAN CONDENSER COIL AND INSPECT FOR CONSTRUCTION DEBRIS.

3.8.1.11. VERIFY LUBRICATION ON FAN AND MOTOR BEARINGS.

3.8.1.12. INSPECT FAN-WHEEL ROTATION FOR MOVEMENT IN CORRECT DIRECTION WITHOUT VIBRATION AND BINDING.

3.8.1.13. ADJUST FAN BELTS TO PROPER ALIGNMENT AND TENSION.

3.8.1.14. START UNIT ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

3.8.1.14.1. START REFRIGERATION SYSTEM.

3.8.1.14.2. DO NOT OPERATE BELOW RECOMMENDED LOW-AMBIENT TEMPERATURE.

3.8.1.14.3. COMPLETE STARTUP SHEETS AND ATTACH COPY WITH CONTRACTOR'S STARTUP REPORT.

3.8.1.15. INSPECT AND RECORD PERFORMANCE OF INTERLOCKS AND PROTECTIVE DEVICES; VERIFY SEQUENCES.

3.8.1.16. OPERATE UNIT FOR AN INITIAL PERIOD AS RECOMMENDED OR REQUIRED BY MANUFACTURER.

3.8.1.17. CALIBRATE THERMOSTATS.

3.8.1.18. ADJUST AND INSPECT HIGH-TEMPERATURE LIMITS.

3.8.1.19. INSPECT OUTDOOR-AIR DAMPERS FOR PROPER STROKE AND INTERLOCK WITH RETURN-AIR DAMPERS.

3.8.1.20. START REFRIGERATION SYSTEM AND MEASURE AND RECORD THE FOLLOWING WHEN AMBIENT IS A MINIMUM OF 15 DEG F ABOVE RETURN-AIR TEMPERATURE:

3.8.1.20.1. COIL LEAVING-AIR, DRY- AND WET-BULB TEMPERATURES.

3.8.1.20.2. COIL ENTERING-AIR, DRY- AND WET-BULB TEMPERATURES.

3.8.1.20.3. OUTDOOR-AIR, DRY-BULB TEMPERATURE.

3.8.1.20.4. OUTDOOR-AIR-COIL, DISCHARGE-AIR, DRY-BULB TEMPERATURE.

3.8.1.21. INSPECT CONTROLS FOR CORRECT SEQUENCING OF HEATING, MIXING DAMPERS, REFRIGERATION, AND NORMAL AND EMERGENCY SHUTDOWN.

3.8.1.22. MEASURE AND RECORD THE FOLLOWING MINIMUM AND MAXIMUM AIRFLOWS. PLOT FAN VOLUMES ON FAN CURVE.

3.8.1.22.1. SUPPLY-AIR VOLUME.

3.8.1.22.2. RETURN-AIR VOLUME.

3.8.1.22.3. RELIEF-AIR VOLUME.

3.8.1.22.4. OUTDOOR-AIR INTAKE VOLUME.

3.8.1.23. SIMULATE MAXIMUM COOLING DEMAND AND INSPECT THE FOLLOWING:

3.8.1.23.1. COMPRESSOR REFRIGERANT SUCTION AND HOT-GAS PRESSURES.

3.8.1.23.2. SHORT CIRCUITING OF AIR THROUGH CONDENSER COIL OR FROM CONDENSER FANS TO OUTDOOR-AIR INTAKE.

3.8.1.24. VERIFY OPERATION OF REMOTE PANEL INCLUDING PILOT-LIGHT OPERATION AND FAILURE MODES. INSPECT THE FOLLOWING:

3.8.1.24.1. HIGH-TEMPERATURE LIMIT ON GAS-FIRED HEAT EXCHANGER.

3.8.1.24.2. LOW-TEMPERATURE SAFETY OPERATION.

3.8.1.24.3. FILTER HIGH-PRESSURE DIFFERENTIAL ALARM.

3.8.1.24.4. ECONOMIZER TO MINIMUM OUTDOOR-AIR CHANGEOVER.

3.8.1.24.5. RELIEF-AIR FAN OPERATION.

3.8.1.24.6. SMOKE AND FIRESTAT ALARMS.

3.8.1.25. AFTER STARTUP AND PERFORMANCE TESTING AND PRIOR TO SUBSTANTIAL COMPLETION, REPLACE EXISTING FILTERS WITH NEW FILTERS.

3.9. ADJUSTING

3.9.1. ADJUST DAMPER LINKAGES FOR PROPER DAMPER OPERATION.

3.9.2. COMPLY WITH REQUIREMENTS IN SECTION 230593 "TESTING, ADJUSTING, AND BALANCING FOR HVAC" FOR AIR-HANDLING SYSTEM TESTING, ADJUSTING, AND BALANCING.

3.10. CLEANING

3.10.1. AFTER COMPLETING SYSTEM INSTALLATION AND TESTING, ADJUSTING, AND BALANCING RTUS AND AIR-DISTRIBUTION SYSTEMS, CLEAN RTUS INTERNALLY TO REMOVE FOREIGN MATERIAL AND CONSTRUCTION DIRT AND DUST. CLEAN FAN WHEELS, CABINETS, DAMPERS, COILS, AND FILTER HOUSINGS, AND INSTALL NEW, CLEAN FILTERS

3.11. DEMONSTRATION

3.11.1. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN RTUS.

END OF SECTION 23 74 16.11

1 **MECHANICAL SPECIFICATIONS**
SCALE: N.T.S.

WARBY PARKER, INC.
233 EAST SPRING STREET
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ENGINEER

EEA CONSULTING ENGINEERS
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EEA Project No.	20256574
State of Registration	Florida
Firm Registration No.	26645

PROJECT NUMBER 250486	DATE: 02.25.26
DRAWN BY: SL	CHECK BY: JTS
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF:	JTS

REVISION LOG:	
ISSUED FOR CLIENT	02.25.26
ISSUED FOR LL PERMIT + BID	03.06.23

CARRIAGE GATE SHOPPING CENTER
3425 THOMASVILLE RD
SPACE 7
TALLAHASSEE, FL 32309

DRAWING NO.
M-105
MECHANICAL SPECIFICATIONS

JEREMY T. SMITH
EEA CONSULTING ENGINEERS

BID DOCUMENT ONLY
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Registrant's Name:
Jeremy T. Smith
Serial No.
041482

DATE: 02/25/26
PROJECT NO: 250486
LOCATION: CARRIAGE GATE, TALLAHASSEE FL
PLOT SCALE: 1:1

Mechanical Compliance Certificate

Project Information

Energy Code:	90.1 (2019) Standard
Project Title:	Warby Parker - Carriage Gate
Location:	Tallahassee, Florida
Climate Zone:	2a
Project Type:	Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
3425 Thomasville Rd, Space 7 Tallahassee , Florida 32309	WARBY PARKER NEW YORK , New York 10013 (646) 517-5223	EEA Austin , Texas 78730-3204 512 744 4400 www.eeace.com

Mechanical Systems List

Quantity	Component	Description
HVAC Systems		
1	RTU-1	Cooling: 1 each - Single Package DX Unit (RTU-1), Capacity = 44 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 0.00 , Required Efficiency = 0.00 Proposed Part Load Efficiency = 16.00 SEER2, Required Part Load Efficiency = 13.40 SEER2 Fan System: RTU-1 2 -- Compliance (Brake HP and fan efficiency method) : Passes Fans: FAN-1 Supply, Constant Volume, 1500 CFM, 1.0 motor nameplate hp, 0.8 design brake hp (1.0 max. BHP), 1.00 fan energy index , fan exception: 3rd party air/energy performance certified SYSTEM VERIFICATION REQUIRED.
1	AHU-1/CU-1	Split System Heat Pump Heating Mode: Capacity = 24 kBtu/h, Proposed Efficiency = 9.00 HSPF2, Required Efficiency = 7.50 HSPF2 Cooling Mode: Capacity = 21 kBtu/h, Proposed Efficiency = 17.20 SEER2, Required Efficiency = 14.30 SEER2 Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00 Fan System: AHU-1/CU-1 -- Compliance (Brake HP and fan efficiency method) : Passes Fans: FAN-2 Supply, Constant Volume, 750 CFM, 1.0 motor nameplate hp, 0.5 design brake hp (1.0 max. BHP), 1.10 fan energy index SYSTEM VERIFICATION REQUIRED.

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Selene Licon - Mechanical Designer		03-05-2026
Name - Title	**Signature**	**Date**

VENTILATION CALCULATION RTU-1

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **221** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
Sales	1	907.0	15.0	1479.7	7.50	0.12	0.0	0.0	221.3
Totals (incl. Space Multipliers)				**1479.7**					**221.3**

LOAD CALCULATION RTU-1

Air System Information

Air System Name	**SALES**		Number of zones	**1**	
Equipment Class	**PKG ROOF**		Floor Area	**907.0**	ft²
Air System Type	**SZCAV**		Location	**Tallahassee, Florida**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**3.6**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**42.7**	MBH	OA DB / WB	**96.2 / 76.4**	°F
Sensible coil load	**33.1**	MBH	Entering DB / WB	**75.3 / 63.4**	°F
Coil CFM at Aug 1500	**1480**	CFM	Leaving DB / WB	**54.4 / 53.4**	°F
Max block CFM	**1480**	CFM	Coil ADP	**52.1**	°F
Sum of peak zone CFM	**1480**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.777**		Resulting RH	**54**	%
CFM/Ton	**416.1**		Design supply temp.	**55.0**	°F
ft²/Ton	**255.1**		Zone T-stat Check	**0 of 1**	OK
BTU/(hr·ft²)	**47.0**		Max zone temperature deviation	**0.1**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.6**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**1480**	CFM	BTU/(hr·ft²)	**17.2**	
Max coil CFM	**1480**	CFM	Ent. DB / Lvg DB	**61.6 / 71.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1480**	CFM	Fan motor BHP	**0.32**	BHP
Standard CFM	**1470**	CFM	Fan motor kW	**0.26**	kW
Actual max CFM/ft²	**1.63**	CFM/ft²	Fan static	**0.80**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**221**	CFM	CFM/person	**14.76**	CFM/person
CFM/ft²	**0.24**	CFM/ft²			

VENTILATION CALCULATION AHU-1

1. Summary

Ventilation Sizing Method .... **Sum of Space OA Airflows**
Design Ventilation Airflow Rate .... **102** CFM

2. Space Ventilation Analysis

Zone Name / Space Name	Mult.	Floor Area (ft²)	Maximum Occupants	Maximum Supply Air (CFM)	Required Outdoor Air (CFM/person)	Required Outdoor Air (CFM/ft²)	Required Outdoor Air (CFM)	Required Outdoor Air (% of supply)	Uncorrected Outdoor Air (CFM)
Zone 1									
BOH	1	185.0	2.0	129.7	5.00	0.12	0.0	0.0	32.2
Closet	1	72.0	0.0	24.1	5.00	0.12	0.0	0.0	8.6
Contact IR / Passage	1	191.0	2.0	177.3	5.00	0.06	0.0	0.0	21.5
Exam Room	1	104.0	2.0	103.1	5.00	0.06	0.0	0.0	16.2
Mannager Office	1	35.0	1.0	86.4	5.00	0.12	0.0	0.0	9.2
Pre Exam Room	1	70.0	2.0	91.7	5.00	0.06	0.0	0.0	14.2
Toilet Room	1	55.0	0.0	53.2	0.00	0.00	0.0	0.0	0.0
Totals (incl. Space Multipliers)				**665.5**					**101.9**

LOAD CALCULATION AHU-1

Air System Information

Air System Name	**BOH**		Number of zones	**1**	
Equipment Class	**PKG ROOF**		Floor Area	**712.0**	ft²
Air System Type	**SZCAV**		Location	**Tallahassee, Florida**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Cooling Coil Sizing Data

Total coil load	**1.7**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**20.8**	MBH	OA DB / WB	**96.2 / 76.4**	°F
Sensible coil load	**16.1**	MBH	Entering DB / WB	**76.9 / 64.2**	°F
Coil CFM at Jul 1500	**666**	CFM	Leaving DB / WB	**54.4 / 53.3**	°F
Max block CFM	**666**	CFM	Coil ADP	**51.9**	°F
Sum of peak zone CFM	**666**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.772**		Resulting RH	**51**	%
CFM/Ton	**383.6**		Design supply temp.	**55.0**	°F
ft²/Ton	**410.3**		Zone T-stat Check	**0 of 1**	OK
BTU/(hr·ft²)	**29.2**		Max zone temperature deviation	**2.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**8.2**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**666**	CFM	BTU/(hr·ft²)	**11.5**	
Max coil CFM	**666**	CFM	Ent. DB / Lvg DB	**61.6 / 73.0**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**666**	CFM	Fan motor BHP	**0.15**	BHP
Standard CFM	**661**	CFM	Fan motor kW	**0.12**	kW
Actual max CFM/ft²	**0.93**	CFM/ft²	Fan static	**0.80**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**102**	CFM	CFM/person	**11.33**	CFM/person
CFM/ft²	**0.14**	CFM/ft²			

LOAD SUMMARY SALES AREA

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 96.2 °F / 76.4 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 26.9 °F / 24.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	88 ft²	2153	-	88 ft²	-	-
Wall Transmission	181 ft²	692	-	181 ft²	1122	-
Roof Transmission	907 ft²	1049	-	907 ft²	1472	-
Window Transmission	88 ft²	1016	-	88 ft²	1808	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	68 ft²	2165	-	68 ft²	2166	-
Floor Transmission	907 ft²	0	-	907 ft²	532	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1007 W	2824	-	0	0	-
Task Lighting	2101 W	7169	-	0	0	-
Electric Equipment	0 W	1	-	0	0	-
People	15	3750	3000	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	10% / 0%	2082	0	0%	0	0
>> Total Zone Loads	**-**	**22901**	**3000**	**-**	**7101**	**0**
Zone Conditioning	-	26435	3000	-	6757	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1480 CFM	0	-	1480 CFM	0	-
Ventilation Load	221 CFM	5833	6519	221 CFM	9683	0
Supply Fan Load	1480 CFM	878	-	1480 CFM	-878	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**33146**	**9519**	**-**	**15563**	**0**
Central Cooling Coil	-	33146	9521	-	0	0
Central Heating Coil	-	0	-	-	15563	-
>> Total Conditioning	**-**	**33146**	**9521**	**-**	**15563**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

LOAD SUMMARY BOH AREA

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 96.2 °F / 76.4 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 26.9 °F / 24.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	394 ft²	1695	-	394 ft²	2443	-
Roof Transmission	712 ft²	866	-	712 ft²	1156	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	21 ft²	296	-	21 ft²	526	-
Floor Transmission	712 ft²	0	-	712 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	0 W	0	-	0	0	-
Task Lighting	712 W	2429	-	0	0	-
Electric Equipment	2 W	6	-	0	0	-
People	9	2250	1800	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	2000	0	-	0	0
Safety Factor	10% / 0%	954	0	0%	0	0
>> Total Zone Loads	**-**	**10496**	**1800**	**-**	**4125**	**0**
Zone Conditioning	-	13186	1800	-	4103	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	666 CFM	0	-	666 CFM	0	-
Ventilation Load	102 CFM	2488	2953	102 CFM	4480	0
Supply Fan Load	666 CFM	395	-	666 CFM	-395	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**16069**	**4753**	**-**	**8188**	**0**
Central Cooling Coil	-	16069	4753	-	0	0
Central Heating Coil	-	0	-	-	8188	-
>> Total Conditioning	**-**	**16069**	**4753**	**-**	**8188**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

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DRAWING NO.
M-501
MECHANICAL CALCULATIONS

JEREMY T. SMITH
EEA CONSULTING ENGINEERS

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Registrant's Name: Jeremy T. Smith
Serial No. 041482

DATE: 02/25/26
PROJECT NO: 250486
LOCATION: CARRIAGE GATE, TALLAHASSEE FL
PLOT SCALE: 1:1