

MECHANICAL LEGEND			
ABBREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION
(E)	EXISTING (LIGHT LINE)		SMOKE DETECTOR
(N)	NEW (HEAVY LINE)		DUCT SIZE INDICATING SHEET METAL DIMENSIONS. FIRST NUMBER WIDTH AND SECOND IS DEPTH (INCHES).
AFF	ABOVE FINISHED FLOOR		DUCT ELBOW WITH TURNING VANE
AFG	ABOVE FINISHED GRADE		DUCT TEE WITH TURNING VANES
EA	EXHAUST AIR		MANUAL DAMPER WITH LOCKING QUADRANT.
EC	ELECTRICAL CONTRACTOR		FLEXIBLE DUCT
EO	ENGINEER OF RECORD		TAKE-OFF WITH MANUAL VOLUME DAMPER
GC	GENERAL CONTRACTOR		45° DUCT TAKE-OFF
MC	MECHANICAL CONTRACTOR		RECTANGULAR SUPPLY AIR DUCT UP
PC	PLUMBING CONTRACTOR		RECTANGULAR RETURN AIR DUCT UP
SA	SUPPLY AIR		RECTANGULAR EXHAUST AIR DUCT UP
RA	RETURN AIR		ROUND DUCT UP
			DOOR UNDERCUT
			SUPPLY DIFFUSER
			RETURN OR TRANSFER GRILLE
			EXHAUST GRILLE
			THERMOSTAT OR TEMPERATURE SENSOR FOR DEVICE "xxx"
			CONNECTION NEW TO EXISTING
			AIR DEVICE TAG
NOTE: NOT ALL SYMBOLS ON THIS LEGEND ARE NECESSARILY USED ON THIS PROJECT.			

SPECIFICATION GENERAL NOTES

- GENERAL NOTES:
- REVIEW THE CONTRACT CONDITIONS AND GENERAL REQUIREMENTS FOR INFORMATION THAT APPLIES.
 - THE WORD "PROVIDE" IS USED TO MEAN "FURNISH AND INSTALL."
 - PROVIDE ALL ITEMS FOR A COMPLETE AND SUCCESSFUL OPERATION OF ALL SYSTEMS SHOWN ON THESE DRAWINGS.
 - THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF THE WORK. LOCATIONS ARE APPROXIMATE UNLESS DIMENSIONED. MINOR MODIFICATIONS IN LOCATION TO MEET SITE REQUIREMENTS ARE ACCEPTABLE. REFER TO LATEST ARCHITECTURAL DRAWINGS FOR EXACT WALL LOCATIONS AND DIMENSIONS.
 - THE ARCHITECTURAL AND ENGINEERING DRAWINGS ARE COMPLEMENTARY. GENERAL CONTRACTORS, SUBCONTRACTORS, AND VENDORS SHALL ACKNOWLEDGE ALL THE ARCHITECTURAL AS WELL AS ALL THE ENGINEERING DRAWINGS AND INCLUDE ALL WORK NECESSARY TO ACHIEVE A COMPLETE WORKING INSTALLATION FOR ALL DEVICES OR EQUIPMENT WHICH MAY BE SHOWN ON ONE DRAWING BUT NOT SHOWN ON ANOTHER. WHERE ELEMENTS ARE INDICATED OR DESCRIBED IN ANY DRAWING, IT IS THE INTENT THAT ALL RELATED CONSTRUCTION ASSOCIATED WITH SUCH ELEMENTS IS TO BE INCLUDED IN ORDER TO OBTAIN A COMPLETE INSTALLATION. FOR INSTANCE, IF A PIECE OF EQUIPMENT IS IDENTIFIED IN THE ARCHITECTURAL AND/OR MECHANICAL DRAWINGS, BUT THE ELECTRICAL CIRCUIT FOR SUCH EQUIPMENT IS NOT IDENTIFIED IN THE ELECTRICAL DRAWINGS, THE CONTRACTOR IS TO PROVIDE SUCH CIRCUIT IN ORDER TO HAVE FULLY OPERATIONAL EQUIPMENT. FOR ANOTHER EXAMPLE, IF A SINK IS INDICATED, IT IS THE INTENT THAT RELATED PLUMBING WORK INCLUDING DRAINS, VENT, PIPING, VALVES, ETC. ARE TO BE INCLUDED IN ORDER TO RESULT IN A FULLY OPERATIONAL SYSTEM. NO SUBCONTRACTOR SHALL BE ALLOWED TO EXCLUDE PORTIONS OF THE COMPLIMENTARY DRAWING SET. LAY OUT ALL WORK IN ADVANCE. DO NOT DEFACE THE WORK OF OTHER TRADES OR THE EXISTING BUILDING.
 - LOCATION OF PIPES, DUCTS, SWITCHES, PANELS, EQUIPMENT, AND FIXTURES SHALL BE ADJUSTED TO ACCOMMODATE THE WORK OR INTERFERENCES ANTICIPATED AND ENCOUNTERED. DETERMINE THE EXACT ROUTE AND LOCATION OF EACH PIPE AND DUCT PRIOR TO FABRICATION.
 - A. RIGHT-OF-WAY LINES WHICH PITCH SHALL HAVE THE RIGHT-OF-WAY OVER THOSE WHICH DO NOT PITCH. LINES WHOSE ELEVATIONS CANNOT BE CHANGED SHALL HAVE THE RIGHT-OF-WAY OVER LINES WHOSE ELEVATIONS CAN BE CHANGED.
 - B. OFFSETS, TRANSITIONS, AND CHANGES IN DIRECTION: OFFSETS, TRANSITIONS, AND CHANGES IN DIRECTION OF PIPES AND DUCTS SHALL BE MADE AS REQUIRED TO MAINTAIN PROPER HEADROOM AND PITCH OF SLOPING LINES WHETHER OR NOT INDICATED ON THE DRAWINGS.
 - C. FURNISH AND INSTALL ALL TRAPS, AIR VENTS, SANITARY VENTS, AND DEVICES AS REQUIRED TO EFFECT THESE OFFSETS, TRANSITIONS, AND CHANGES IN DIRECTION.
 - H. ALL PENETRATIONS OF FIRE RATED WALLS, FLOORS, AND CEILINGS SHALL HAVE THE SPACE AROUND PENETRATIONS SEALED WITH A FIRE BARRIER SEALANT MEETING THE REQUIREMENTS OF U.L. STANDARD 1479 AND ASTM-E 814. INSTALL SEALANT IN FULL COMPLIANCE WITH MANUFACTURER'S STANDARD INSTALLATION INSTRUCTIONS.
 - I. ALL MATERIALS LOCATED ABOVE CEILING SHALL BE SUITABLE FOR USE WITHIN A RETURN AIR PLENUM AS REQUIRED BY THE ADOPTED EDITION OF THE INTERNATIONAL MECHANICAL CODE.
 - J. WHEN USING A TORCH OR OTHER FLAME-PRODUCING DEVICE ON THIS PROJECT, CONTRACTOR SHALL PROVIDE ONE APPROVED FIRE EXTINGUISHER OR WATER HOSE EQUIPPED WITH A SUITABLE NOZZLE, SUFFICIENT IN LENGTH TO REACH ALL PORTIONS OF THE BUILDING AND CONNECTED TO A WATER SUPPLY ON THE PREMISES WHERE SAID BURNING OPERATION IS PERFORMED. COMBUSTIBLE MATERIAL IN THE CLOSE PROXIMITY OF OPEN FLAME SHALL BE PROTECTED AGAINST IGNITION BY SHIELDING, WETTING, OR OTHER MEANS. IN ALL CASES, A FIRE WATCH SHALL BE MAINTAINED IN THE VICINITY OF THE OPERATION BY THE CONTRACTOR FOR ONE-HALF HOUR AFTER THE TORCH OR FLAME-PRODUCING DEVICE HAS BEEN USED.
 - K. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING THE PROJECT AND TAKE INTO CONSIDERATION CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE APPROVED FOR FAILURE TO VISIT THE SITE PRIOR TO PRICING THE WORK.
 - L. MAINTAIN A CONTRACT SET OF THESE DRAWINGS AT THE SITE, WITH ALL CHANGES OR DEVIATIONS FROM THE ORIGINAL DRAWINGS NEATLY MARKED ON THEM IN RED COLOR. THIS SHALL BE A SEPARATE SET OF DRAWINGS NOT USED FOR CONSTRUCTION PURPOSES, WHICH SHALL BE KEPT UP TO DATE AS THE JOB PROGRESSES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE ENGINEER AT ALL TIMES. UPON COMPLETION OF THE CONTRACT, THIS SET OF "AS-BUILTS" SHALL BE DELIVERED TO THE OWNER WITHIN 15 DAYS OF COMPLETION OF THE PROJECT.
 - M. MATERIAL SHALL BE AS SPECIFIED. SUBSTITUTIONS WILL BE CONSIDERED IF SUBMITTED FOR PRIOR APPROVAL AT LEAST ONE (1) WEEK PRIOR TO THE CONTRACT BID DATE. SUBSTITUTIONS SHOULD BE SUBMITTED SEPARATELY FOR EACH PRODUCT WITH SUPPORTING DATA, DRAWINGS AND SAMPLES AS APPROPRIATE, INCLUDING: 1.) COMPARISON OF THE QUALITIES OF THE PROPOSED SUBSTITUTION WITH THAT SPECIFIED, 2.) CHANGES REQUIRED IN OTHER ELEMENTS OF THE WORK BECAUSE OF THE SUBSTITUTION, 3.) COST DATA COMPARING THE PROPOSED SUBSTITUTION WITH THE PRODUCT SPECIFIED. THE ENGINEER WILL DETERMINE THE ACCEPTABILITY OF THE PROPOSED SUBSTITUTION.
 - N. SUBMIT ELECTRONIC PDF OF MANUFACTURER'S SHOP DRAWINGS FOR EQUIPMENT AND DEVICES. PRIOR TO SUBMITTING THE SHOP DRAWINGS FOR REVIEW, THE CONTRACTOR SHALL REVIEW AND CERTIFY SAME AS TO COMPLIANCE WITH THE PLANS AND SPECIFICATIONS AND FOR DIMENSIONAL SUITABILITY FOR THE APPLICATIONS.
 - O. WHEN ALTERNATE OR SUBSTITUTED EQUIPMENT IS USED, CONTRACTOR IS RESPONSIBLE FOR COORDINATING SPACE REQUIREMENTS, CONFIGURATIONS, CHANGES IN SUPPORTS OR STRUCTURAL MEMBERS, ELECTRICAL REQUIREMENTS, AND COORDINATION OF OTHER TRADES THAT MAY BE AFFECTED BY THEIR USE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE SAME WHEN USING LISTED APPROVED MANUFACTURERS OTHER THAN THE BASIS OF DESIGN.
 - P. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND PERSONNEL REQUIRED FOR TESTING OF INSTALLED EQUIPMENT.
 - Q. THE CONTRACTOR SHALL DEMONSTRATE THE PROPER OPERATION AND CALIBRATION OF ALL SYSTEMS TO THE OWNER, AT A TIME AS AGREED TO BY THE OWNER AND DIRECTED BY THE OWNER.
 - R. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH OPERATION AND MAINTENANCE MANUALS FOR ALL SYSTEMS WITHIN 15 DAYS OF THE COMPLETION OF THE PROJECT.
 - S. THE CONTRACTOR SHALL INCLUDE THE COST FOR COMMISSIONING BY BOWMAN CONSULTING GROUP TO VERIFY THE PERFORMANCE OF THE SYSTEM CONTROLS SHOWN ON THIS DRAWING. THIS INCLUDES PREPARING A COMMISSIONING PLAN, VERIFYING THE OPERATION OF ALL SYSTEMS PER CODE REQUIREMENTS, AND PROVIDING A FINAL COMMISSIONING REPORT. FINAL COMMISSIONING REPORT IS DUE UPON COMPLETION OF THE PROJECT.
- CODES, REGULATIONS, AND STANDARDS:
- ALL WORK SHALL BE IN STRICT ACCORD WITH LOCAL GOVERNING LAWS, ORDINANCES, AND REGULATIONS. ALL WORK MUST BE IN FULL ACCORDANCE WITH ALL CODES, ORDINANCES, AND CODE RULINGS. CONTRACTOR SHALL PROVIDE, WITHOUT EXTRA CHARGE, THE LABOR AND MATERIALS REQUIRED FOR FULL CODE COMPLIANCE.
 - ALL MATERIALS SHALL BE NEW AND SHALL COMPLY WITH THE SPECIFICATIONS ON DRAWINGS.
 - CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LOCAL FEES, PERMITS, AND SERVICES OF INSPECTION AUTHORITIES REQUIRED BY THE WORK OF THE PROJECT. THE CONTRACTOR SHALL ARRANGE FOR ALL INSPECTIONS WHEN THEY BECOME DUE AND SHALL NOT COVER NEW WORK UNTIL APPROVED BY THE INSPECTION AUTHORITY.
 - THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP, MATERIALS, AND EQUIPMENT PROVIDED FOR THE PROJECT AGAINST DEFECTS AND/OR FAULTY WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER.
 - THE CONTRACTOR SHALL REPAIR AND/OR REPLACE DEFECTIVE OR FAULTY WORKMANSHIP, MATERIALS, OR EQUIPMENT, AND SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF OTHER PROPERTY OR WORK DAMAGED AS A RESULT, WITHOUT CHARGE TO THE OWNER AND AS QUICKLY AS POSSIBLE, DURING THE GUARANTEE PERIOD.

BUILDING CODE DATA

GENERAL	CODE	EDITION
GENERAL	BUILDING CODE OF MASSACHUSETTS	2015
HVAC/MECHANICAL	MECHANICAL CODE OF MASSACHUSETTS	2015
PLUMBING	MASSACHUSETTS PLUMBING CODE	CURRENT
ELECTRICAL	MASSACHUSETTS ELECTRICAL CODE	2023
FIRE PROTECTION	MASSACHUSETTS FIRE CODE	2021
FUEL	NFPA STANDARDS	2021
ENERGY	MASSACHUSETTS FUEL GAS CODE	CURRENT
ENERGY	ENERGY CONSERVATION CODE OF MASSACHUSETTS	2021
LOCAL AMENDMENTS	MASSACHUSETTS STATE BUILDING CODE AMENDMENTS	CURRENT

- NOTES:
- ALL WORK PERFORMED SHALL COMPLY WITH THE REQUIREMENTS OF THE LISTED CODES, LOCAL CODE AMENDMENTS, AND REFERENCED STANDARDS AS ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AH J).
 - ALL WORK SUBJECT TO INSPECTION BY THE AHJ AT THE PROJECT SITE FOR COMPLIANCE

PROJECT DESCRIPTION

THIS PROJECT CONSIST OF A TENANT FINISH OF A BRAND NEW CORE AND SHELL BUILDING. THE TENANT FINISH OF THIS 2,442 SQUARE FOOT SPACE WILL BE A RESTAURANT. THE RESTAURANT NEW MECHANICAL WORK INCLUDES NEW ROOFTOP UNITS, NEW KITCHEN HOOD SYSTEM WITH EXHAUST FAN/MAKEUP AIR UNIT, AND NEW RESTROOM EXHAUST FAN.

SPECIFICATION GENERAL NOTES CONTINUED

- DEMOLITION NOTES:
- VERIFY LOCATION OF EXISTING SYSTEMS AND EXISTING FIELD CONDITIONS.
 - REVIEW ALL SHEETS FOR OTHER DEMO AND REMOVAL REQUIREMENTS.
 - COORDINATE ALL DEMOLITION WORK WITH THE ARCHITECTURAL DRAWINGS.
 - ALL CONFLICTS, OMISSIONS, AND CONCERNS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING FOR A WRITTEN RESOLUTION, BEFORE PROCEEDING WITH WORK SO INVOLVED.
 - UNLESS SPECIFICALLY NOTED TO THE CONTRARY, REMOVED MATERIALS SHALL NOT BE REUSED IN THE WORK. SALVAGED MATERIALS THAT ARE TO BE REUSED SHALL BE STORED SAFE AGAINST DAMAGE AND TURNED OVER TO THE APPROPRIATE TRADE FOR REUSE.
 - WHERE INDICATED, SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER. THESE MATERIALS ARE TO BE REMOVED BY THE SUBCONTRACTOR AND TURNED OVER TO THE OWNER WITHOUT DAMAGE. ALL OTHER SALVAGED MATERIALS SHALL BECOME THE PROPERTY OF THE SUBCONTRACTOR, WHO SHALL REMOVE AND LEGALLY DISPOSE OF OR (PREFERABLY) RECYCLE THEM AWAY FROM THE PREMISES.
 - WORK THAT HAS BEEN CUT OR PARTIALLY REMOVED SHALL BE PROTECTED AGAINST DAMAGE UNTIL COVERED BY PERMANENT CONSTRUCTION.
 - INSPECT, CLEAN, AND RECONDITION ALL EQUIPMENT AND ACCESSORIES THAT ARE TO BE REUSED. REMOVE ALL MUD, DEBRIS, RUST AND OTHER EXTRANEIOUS MATERIALS SO THAT THE EXISTING EQUIPMENT AND ALL ACCESSORIES CAN BE REPAINTED AND REPAIRED AS REQUIRED TO PLACE IN FIRST CLASS WORKING CONDITION.
 - WHERE EXISTING EQUIPMENT IS REMOVED, PIPING OR CONDUIT SHALL BE CAPPED UNDER THE FLOOR OR BEHIND THE WALL FACE, UNLESS OTHERWISE NOTED.
 - REPAIR ALL WALL, FLOOR, AND CEILING PENETRATIONS TO MAINTAIN THE EXISTING FIRE RATING AND FINISHES.

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Contents:

MECHANICAL LEGENDS
 AND NOTES

M010

TEMPERATURE CONTROLS

1. THE HVAC SYSTEM CONTROLS ARE TO BE FULLY AUTOMATIC UNLESS OTHERWISE LISTED BELOW.
 - 1.1. CONTROLS SHALL HAVE INTEGRAL FAULT DETECTION AND DIAGNOSTIC CAPABILITIES.
2. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INTERFACE WITH LINE VOLTAGE WIRING, CONNECTIONS, RELAYS, ETC.
3. SETPOINTS:
 - 3.1. OCCUPIED:
 - 3.1.1. HEATING: 70 DEGREES FAHRENHEIT (ADJUSTABLE).
 - 3.1.2. COOLING: 75 DEGREES FAHRENHEIT (ADJUSTABLE).
 - 3.2. UNOCCUPIED:
 - 3.2.1. HEATING: 55 DEGREES FAHRENHEIT (ADJUSTABLE).
 - 3.2.2. COOLING: 85 DEGREES FAHRENHEIT (ADJUSTABLE).
4. THERMOSTATS OR TEMPERATURE SENSORS:
 - 4.1. ALL SETPOINTS ARE TO BE ADJUSTABLE.
 - 4.2. TEMPERATURE CONTROL SETUP AND SETBACK SHALL BE ACCOMPLISHED BY MEANS OF A DEDICATED PROGRAMMABLE THERMOSTAT WITH ADJUSTABLE HEATING AND COOLING SETPOINTS.
 - 4.3. CONTRACTOR SHALL PROGRAM THERMOSTATS FOR OCCUPIED/UNOCCUPIED PERIODS BASED ON A SCHEDULE PROVIDED BY OWNER.
 - 4.4. CONTROLS SHALL HAVE A 5 DEGREE F. DEAD-BAND FOR AUTO-CHANGEOVER SYSTEMS, WITH OVERLAP RESTRICTIONS.
 - 4.5. SYSTEM SHALL HAVE A MINIMUM OF A 7-DAY PROGRAM.
 - 4.6. PROVIDE A 2-HOUR MINIMUM OCCUPIED OVERRIDE.
 - 4.7. PROVIDE MINIMUM A 10-HOUR BATTERY BACKUP.
5. CONTROLS ARE TO BE ELECTRIC/ ELECTRONIC.
6. ROOFTOP UNITS (RTU-1, RTU-2):
 - 6.1. THE TEMPERATURE IN EACH ZONE IS CONTROLLED BY SPACE TEMPERATURE SENSORS CONNECTED TO THE THERMOSTATS LOCATED IN THE OFFICE. ALL ZONES SHALL OPERATE WITH CONTINUOUS FAN OPERATION DURING OCCUPIED TIMES AND INTERMITTENTLY AS NEEDED TO MAINTAIN SET POINTS DURING UNOCCUPIED TIMES. OUTSIDE AIR DAMPER SHALL BE OPEN CONTINUOUSLY WHEN EITHER IN OCCUPIED MODE OR WHEN THE HOOD SYSTEM IS ON AND SHALL BE CLOSED DURING UNOCCUPIED PERIODS.
 - 6.2. THE THERMOSTATS SHALL DETERMINE OCCUPIED/UNOCCUPIED STATUS VIA TIME CLOCK SCHEDULE (OWNER DETERMINED)
7. EXHAUST FAN (EF-2):
 - 7.1. EXHAUST FAN TO RUN DURING ALL OCCUPIED HOURS (OWNER DETERMINED).
8. KITCHEN HOOD SYSTEM (HD-1, EF-1, MAU-1):
 - 8.1. EXHAUST FAN EF-1 AND MAKE UP AIR UNIT MAU-1 SHALL BE INTERLOCKED TO OPERATE TOGETHER. THIS CONTROL CIRCUIT IS ACTIVATED BY A SWITCH AND INCLUDES A FIRE PROTECTION OVERRIDE.
 - 8.2. EF-1 AND MAU-1 SHALL HAVE AUTOMATIC CONTROLS TO ENGAGE WHEN ANY APPLIANCE UNDER HD-1 IS TURNED ON.

HVAC GENERAL NOTES

1. THE NEW MECHANICAL SYSTEMS SHALL BE BY THE MECHANICAL CONTRACTOR. THIS INCLUDES, BUT IS NOT LIMITED TO:
 - 1.1. THE AIR DISTRIBUTION SYSTEMS WITH: AIR HANDLING EQUIPMENT, DUCTWORK, FLEXIBLE DUCT, DIFFUSERS, GRILLES, DAMPERS, CONTROL SYSTEMS, ETC.
2. CONTRACTOR SHALL SECURE THE SERVICES OF AN INDEPENDENT TEST, ADJUST, AND BALANCE CONTRACTOR WHO IS A MEMBER OF THE NEBB OR EQUIVALENT. FOLLOWING ALL TAB WORK, SUBMIT TEST RESULTS IN A BOUND MANUAL, STAMPED AND SIGNED BY A CERTIFIED BALANCING SUPERVISOR OR REGISTERED PE ON STAFF WITH TAB CONTRACTOR. REQUIRED FINAL AIR AND HYDRONIC BALANCE TOLERANCE SHALL BE +10% TO -5% OF QUANTITIES SHOWN ON THESE PLANS.
3. PROJECT DESIGN CONDITIONS ARE:
 - 3.1. LOCATION: MEDWAY, MASSACHUSETTS
 - 3.2. SITE ELEVATION: 210 FEET.
 - 3.3. HVAC DESIGN CONDITIONS PER CHVAC LOAD PROGRAM WHICH MEETS OR EXCEEDS ASHRAE 99% HEATING, 1% COOLING ARE:
 - 3.3.1. LOCATION USED FOR CONDITIONS: LANCASTER, PENNSYLVANIA
 - 3.3.2. HEATING OUTDOOR DB: 8 DEGREES FAHRENHEIT.
 - 3.5.3. COOLING OUTDOOR DB/MCWB: 90/74 DEGREES FAHRENHEIT.
 - 3.5.4. INDOOR DESIGN TEMPERATURES AS STATED IN THE TEMPERATURE CONTROLS INFORMATION.
4. IDENTIFY ALL HVAC AND REFRIGERATION EQUIPMENT AS TO THE AREA SERVED BY THE EQUIPMENT. IDENTIFICATION SHALL BE ENGRAVED PLASTIC TAGS PERMANENTLY AFFIXED TO EACH PIECE OF EQUIPMENT.
5. PROVIDE ALL CURBS, SUPPORTS, AND ANCHORS FOR MECHANICAL WORK. NO CHAIN, TAPE OR WIRE MAY BE USED FOR HANGING OR SUPPORTING.
6. RECEIVE, UNCRATE, ASSEMBLE, AND INSTALL ALL EQUIPMENT FURNISHED BY THIS CONTRACT AND FURNISHED BY THE OWNER IN CONFORMANCE TO MANUFACTURER'S RECOMMENDATIONS.
7. DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS. WHERE DUCT LINER IS USED, OVERALL OUTSIDE DUCT DIMENSIONS SHALL BE ADJUSTED TO ALLOW FOR LINER THICKNESS.
8. ALL SHEET METAL TO BE MADE AND INSTALLED TO SMACNA STANDARDS (AND IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE) WITH 45 DEGREE MAXIMUM REDUCING, 30 DEGREE MAXIMUM EXPANDING TRANSITIONS. ALL EXPOSED RECTANGULAR TO BE PAINT LOCK GALVANIZED. SINGLE BLADE TURNING VANES AND 1.5 CENTERLINE RADIUS FOR ALL ELBOWS AND TEES.
9. ALL SUPPLY AND RETURN RECTANGULAR DUCTS TO HAVE 1" THICK 2 LB/CF DENSITY ACOUSTIC DUCT LINER MINIMUM R-5 CLASS I, UL-181.
10. ALL OUTSIDE AIR DUCTS TO HAVE R-8 1-1/2" THICK AND 1-1/2 LB/CF DENSITY UL 181 CLASS ONE FIBERGLASS DUCT WRAP.
11. DUCT LINER SHALL BE ATTACHED WITH STIC-CLIPS 15°C EACH WAY AND 100% COVERAGE OF FLAME PROOF ADHESIVE. INCREASE DUCT TO ALLOW FOR LINER. SEAL ALL DUCT AIRTIGHT WITH TWO COATS OF DUCT SEALANT. DUCT SEALANT TO BE CLEAR PAINTABLE SILICON CAULK ON ALL EXPOSED DUCTWORK.
12. CAULK ALL DUCT LONGITUDINAL AND TRANSVERSE JOINTS AND SEAMS AIR AND WATER TIGHT WITH PERMANENT COMMERCIAL CAULK PER MANUFACTURER'S RECOMMENDATIONS.
13. CONCEALED ROUND SUPPLY DUCTS SHALL BE LOW-PRESSURE CONSTRUCTION, SEALED AIRTIGHT AND EXTERNALLY INSULATED WITH 1-1/2", 3/4 LB/CF DENSITY BLANKET INSULATION WITH FOIL SCRIM KRAFT FACING. FOIL TAPE ALL JOINTS, MINIMUM R5 FIBERGLASS.
14. EXPOSED ROUND DUCTS SHALL BE PAINT LOCK SPIRAL ONE GAGE HEAVIER THAN SMACNA STANDARD. HARD PIPE TO DIFFUSERS (NO FLEX) AND SEAL WITH CLEAR, PAINTABLE, SILICONE CAULK.
15. ALL FLEXIBLE DUCTWORK SHOWN SHALL BE INSULATED, CLASS I, UL 181, SEMI-RIGID FLEXIBLE DUCT, R4.2 FLEXMASTER 5M OR THERMOPILEX XMK, AND SHALL CONFORM TO LOCAL CODES. NO FLEX DUCT IN EXPOSED AREAS.
16. ALL FLEXIBLE DUCT TAKEOFFS SHALL BE CONICAL BELL MOUTH SPIN-IN FITTINGS WITH MANUAL VOLUME DAMPER WHERE POSSIBLE. MAKE CONNECTION WITH DRAW BANDS AT EACH END OF FLEX.
17. ALL FLEXIBLE DUCT TO BE SAME SIZE AS DIFFUSER CONNECTION.
18. LIMIT FLEXIBLE DUCTWORK TO 5-FT MAXIMUM LENGTH.
19. THIS CONTRACTOR SHALL COORDINATE ALL DUCTWORK PRIOR TO INSTALLATION.
20. WEATHERPROOF ALL MECHANICAL ROOF PENETRATIONS PER CODES AND ALL ROOFING MANUFACTURER RECOMMENDATIONS.
21. PROVIDE SMOKE DETECTORS IN SUPPLY AND RETURN DUCTS FOR MECHANICAL SYSTEMS OVER 2000 CFM (INDIVIDUALLY OR COLLECTIVELY IN A SHARED RETURN AIR PLENUM) AS REQUIRED BY SECTION 606 OF THE INTERNATIONAL MECHANICAL CODE.
22. PROVIDE SLEEVES AND COLLARS FOR ALL DUCTWORK AND PIPES THROUGH WALL, FLOORS, AND CEILINGS. SEAL ALL EXTERNAL PENETRATIONS OF FIRE RATED WALL, FLOORS, AND CEILINGS WITH APPROVED FIRE STOP MATERIAL IN COMPLIANCE WITH ASTM E 814 AND UL 1479.
23. CONFIRM VOLTAGE, PHASE, AND AMPACITY WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT. ALL CONTROL AND INTERLOCK WIRING FOR MECHANICAL EQUIPMENT BY MECHANICAL CONTRACTOR. THREE-PHASE MOTORS TO HAVE MAGNETIC STARTERS WITH PROTECTION ON ALL THREE LEADS. CONTROL AND HEATING/COOLING EQUIPMENT TO AUTOMATICALLY RESTART AFTER POWER FAILURE. ALL WIRING SHALL BE WITHIN CONDUIT AS REQUIRED BY CODE.
24. A MINIMUM CLEARANCE OF 30 INCHES SHALL BE PROVIDED AROUND ALL EQUIPMENT (I.E., FANS, PUMPS, BOILERS, AIR CONDITIONERS, ETC.) FOR SERVICE AND MAINTENANCE AND AS REQUIRED BY MANUFACTURER'S INSTALLATION INSTRUCTIONS.
25. ROOF MOUNTED EQUIPMENT LOCATED WITHIN 10 FEET OF THE EDGE OF THE ROOF SHALL BE PROVIDED WITH SAFETY RAILINGS AS REQUIRED PER CODES OR AS DETAILED ON THE ARCHITECTURAL DRAWINGS.
26. REFRIGERANT PIPING SHALL BE TYPE "ARC" SOFT OR HARD DRAWN COPPER WITH WROUGHT COPPER BRAZED FITTINGS.
 - 26.1. INSULATE ALL EXPOSED NEW PIPING, VALVES AND FITTINGS FOR REFRIGERANT SUCTION LINE SERVICE:
 - 26.1.1. 1/2" THICK ELASTOMERIC PIPE INSULATION INSTALLED IN COMPLIANCE WITH MANUFACTURERS STANDARD INSTALLATION INSTRUCTIONS.
 - 26.1.2. REFRIGERANT SUCTION PIPE INSULATION SHALL BE WRAPPED WITH ALUMINUM JACKETING SECURED TO PIPE AND INSULATION AT MINIMUM 24" ON CENTER.
 27. ALL PIPE INSULATION MATERIALS SHALL CONFORM TO ASTM 84, NFPA 50A AND 255 AND UL 723 NOT TO EXCEED RATING OF 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. ALL INSTALLED INSULATION SHALL MEET OR EXCEED ASHRAE STANDARD 90.1.
 28. ALL DUCT AND PIPE INSULATION EXPOSED OUTSIDE SHALL BE WEATHER PROTECTED AND UV RESISTANT WITH ALUMINUM JACKET.
 29. SEE TEMPERATURE CONTROLS THIS SHEET FOR TEMPERATURE CONTROLS REQUIREMENTS.
 30. ALL RECIRCULATED AIR SHALL PASS THROUGH STANDARD 2" THICK PLEATED MERV 8 THROW AWAY FILTERS. PROVIDE ONE ADDITIONAL SET FOR OWNER AT PROJECT COMPLETION.
 31. INSTALL ALL NEW MECHANICAL EQUIPMENT IN COMPLETE COMPLIANCE WITH MANUFACTURER'S STANDARD INSTALLATION INSTRUCTIONS. ARRANGE ALL EQUIPMENT TO PERMIT EASY REMOVAL OF COILS, MOTORS, FILTERS, AND ALL OTHER PARTS WHICH MIGHT REQUIRE PERIODIC REPLACEMENT OR MAINTENANCE.
 32. GENERAL NOTES APPLY TO MECHANICAL SHEETS.
 33. WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION, INCLUDING APPLICABLE SECTIONS OF NFPA, THE MECHANICAL CODE, AND ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL. PURCHASE PERMITS ASSOCIATED WITH THE WORK. OBTAIN INSPECTIONS REQUIRED BY CODE. SEE ARCHITECTURAL SHEETS FOR THE PREVAILING CODES.
 34. CONTRACTOR AND SUBCONTRACTORS SHALL REVIEW A COMPLETE SET OF THE CONSTRUCTION DOCUMENTS.
 35. COORDINATE WORK WITH THE WORK OF OTHER TRADES. EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND OF THE EXISTING CONDITIONS AT THE PROJECT SITE.

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Project No.

230244

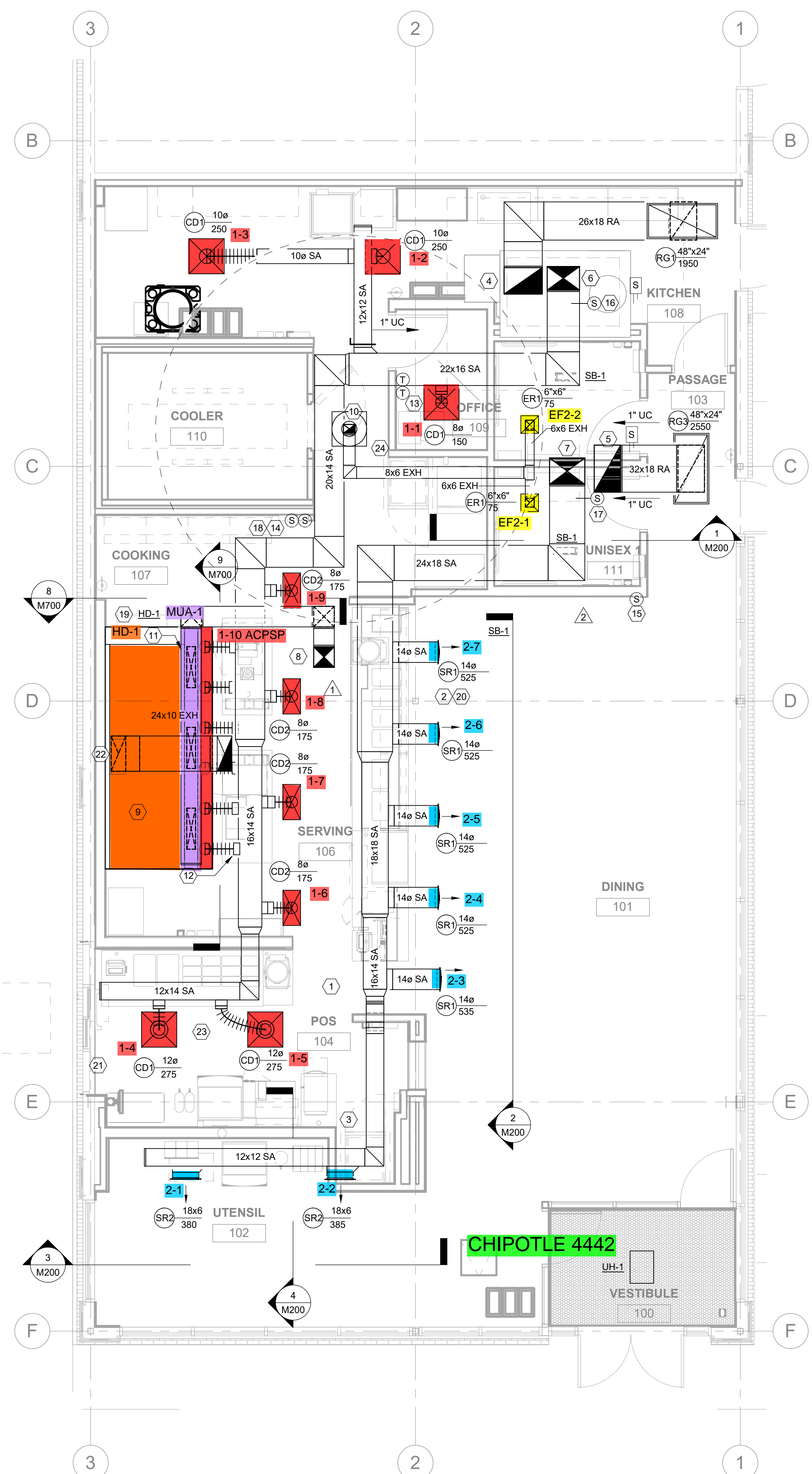
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MECHANICAL CONTROLS
AND NOTES

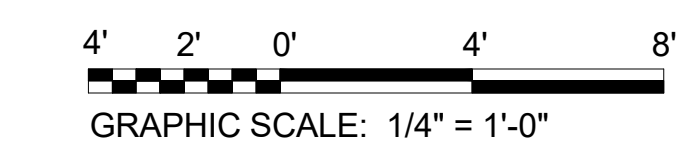
M020

KEY NOTES:

- 1 SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING MOUNTED EQUIPMENT LOCATION. TYPICAL.
- 2 PAINT DUCTWORK VISIBLE THROUGH DINING ROOM SUPPLY REGISTERS BLACK. TYPICAL.
- 3 PENETRATIONS THROUGH SHEAR WALL SHALL BE LIMITED TO 10" DIAMETER (OR A GROUP OF PENETRATIONS ALL CONTAINED WITHIN 10" DIAMETER). IF LARGER PENETRATIONS OR GROUPS OF PENETRATIONS ARE REQUIRED COORDINATE WITH STRUCTURAL ENGINEER FOR APPROPRIATE BRACING. SEE STRUCTURAL DRAWINGS FOR SHEAR WALL LOCATION.
- 4 26"x18" DUCT UP FOR TRANSITION TO RTU-1 RETURN CONNECTION IN ROOF CURB. RTU-1 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-1 OPERATION.
- 5 28"x18" DUCT UP FOR TRANSITION TO RTU-2 RETURN CONNECTION IN ROOF CURB. RTU-2 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-2 OPERATION.
- 6 22"x18" DUCT UP FROM BUILDING SUPPLY THROUGH ROOF. TRANSITION TO RTU-1 SUPPLY CONNECTION IN ROOF CURB.
- 7 24"x18" DUCT UP FROM BUILDING SUPPLY TO RTU-2 SUPPLY CONNECTION. TRANSITION IN ROOF CURB.
- 8 14"x14" DUCT UP THROUGH ROOF. TRANSITION TO MAU-1 SUPPLY CONNECTION IN ROOF CURB.
- 9 24"x10" DUCT UP FROM HOOD THROUGH ROOF TO EF-1 COMPLIANT WITH NFPA 96. PROVIDE RADIUS ELBOWS WITH AN INSIDE RADIUS OF 0.5W AT ELBOWS IN GREASE DUCT.
- 10 8"x6" DUCT UP THROUGH ROOF TO EF-2.
- 11 28"x6" DUCT DOWN TO MAKEUP AIR PSP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL OF 3.
- 12 8" DIA. DUCT DOWN TO AC PSP DUCT CONNECTION. TRANSITION TO SUPPLY PLENUM OPENING SIZE. TYPICAL OF 6. CAP UNUSED DUCT CONNECTIONS.
- 13 INSTALL GRIDPOINT THERMOSTATS FURNISHED BY TEMS FOR RTU-1 AND RTU-2 AT THIS LOCATION AT 48" AFF. COORDINATE WITH ELECTRICAL SWITCHING IN THIS AREA. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 14 INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-1 AT THIS LOCATION 60" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 15 INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-2 AT THIS LOCATION 60" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 16 INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-1 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 17 INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-2 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
- 18 INSTALL REMOTE TEMPERATURE SENSOR FOR HOOD HD-1 AT THIS LOCATION 66" AFF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE (2) #18 G. THERMISTOR CABLE FROM TEMPERATURE SENSOR TO HOOD CONTROL PANEL.
- 19 INSTALL KITCHEN HOOD, HD-1. SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL HOOD ACCORDING TO THE REQUIREMENTS OF ITS LISTING, IN COMPLIANCE WITH NFPA 96, THE BUILDING CODE, AND AUTHORITIES HAVING JURISDICTION. HOOD SHALL HAVE AN INTEGRAL DUCT COLLAR TEMPERATURE SENSOR TO AUTOMATICALLY ENERGIZE THE EXHAUST AND MAKEUP AIR FANS IF COOKING TEMPERATURES ARE DETECTED. EXHAUST DUCT SYSTEM TO BE WELDED OR FACTORY MANUFACTURED WATER AND AIR TIGHT. INSTALL CLEANOUTS PER CODE AND AS SHOWN. INSTALL HOOD PER DETAILS 2, 4, AND 9/M700. CHIPOTLE WILL PROVIDE AN INDEPENDENT TESTING AGENCY FOR TESTING THE INTEGRITY OF THE GREASE DUCT SYSTEM.
- 20 ADJUST SUPPLY REGISTERS SO THAT SUPPLY AIR HITS WALL ON OPPOSITE SIDE OF ROOM AT APPROXIMATELY 7' AFF WITH NO DRAFTS FELT IN THE DINING ROOM. TYPICAL.
- 21 PROVIDE INTEGRAL HEATED AIR CURTAIN IN DRIVE THRU WINDOW ASSEMBLY. SEE ARCH FOR DETAILS.
- 22 PROVIDE GREASE DUCT ACCESS DOORS PER SECTION 506 OF THE INTERNATIONAL MECHANICAL CODE.
- 23 PROVIDE SUPPLY DIFFUSER CONNECTION TO SUPPLY SYSTEM PER DETAIL 1/M700. TYPICAL.
- 24 PROVIDE AUDIOVISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET. WIRE A UNIT BACK TO EACH SMOKE DETECTOR. MOUNT UNIT 60" AFF. TYPICAL.



MECHANICAL FLOOR PLAN
1/4" = 1'-0"



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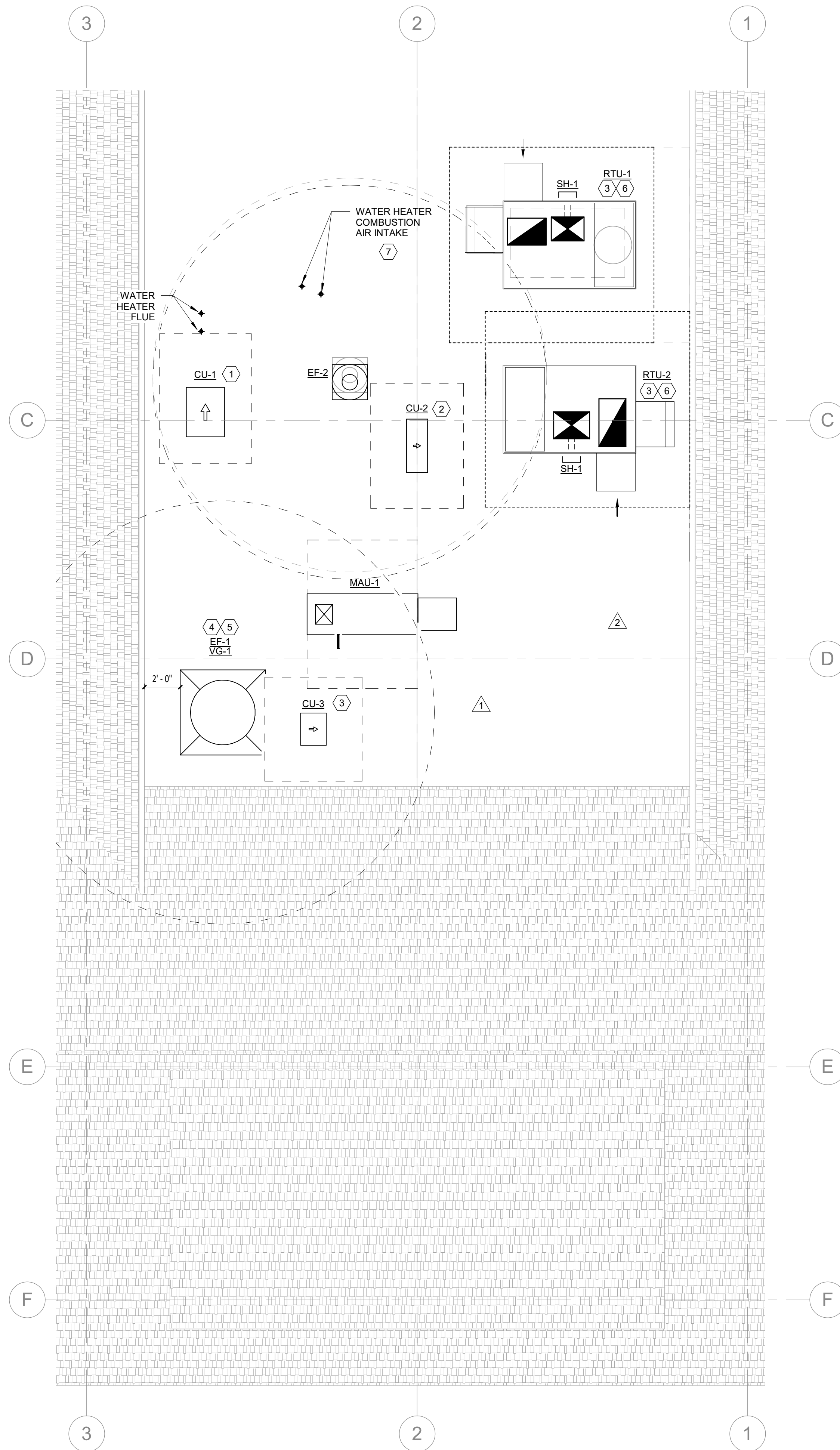
Project No. 230244

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MECHANICAL FLOOR PLANS

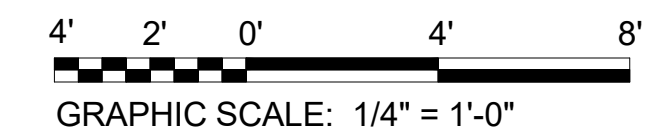
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KEY NOTES:

1. INSTALL REMOTE CONDENSING UNIT FOR WALK-IN COOLER ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROL, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3" OF THE CONDENSING UNIT. CUT 2-1/2" HOLE IN WALK-IN COOLER ROOF FOR REFRIGERANT LINE SET AND SEAL PER THE COOLER MANUFACTURER'S INSTALLATION INSTRUCTIONS AFTER LINE SET IS INSTALLED.
2. INSTALL REMOTE CONDENSER FOR ICE MACHINE ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROL, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3" OF THE REMOTE CONDENSER. IF REFRIGERANT PIPING TO ICE MAKER IS EXPOSED TO PUBLIC VIEW, CONCEAL WITH A STAINLESS STEEL SHROUD AS SHOWN IN THE ARCHITECTURAL DRAWINGS.
3. INSTALL ROOFTOP EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
4. INSTALL EXHAUST FAN EF-1 PER DETAIL 6M700 AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL GREASE WRECKARD SYSTEM FURNISHED BY CHIPOTLE ON EXHAUST FAN EF-1.
5. PROVIDE HINGED ROOF CURB TO ACCESS DUCT FOR CLEANING.
6. INSTALL RISE HALD AIR PURIFIER FURNISHED BY TUV IN RTU PER DETAIL 6M700. SEE ELECTRICAL DRAWINGS FOR POWER CONNECTION INFORMATION. INSTALL UV WARNING STICKERS ON FACE OF ENCLOSURE PER DETAIL AND ON ANY RTU ACCESS DOOR(S) THROUGH WHICH THE RISE HALD WOULD BE VISIBLE IF OPENED.
7. MAINTAIN 10' CLEARANCE BETWEEN WATER HEATER FLUE TERMINATION AND OUTSIDE AIR INTAKES. MAINTAIN 10' CLEARANCE BETWEEN WATER HEATER COMBUSTION AIR INTAKE AND EXHAUST FAN EF-1 DISCHARGE. SEE PLUMBING DRAWINGS FOR MORE INFORMATION ON WATER HEATER FLUE AND COMBUSTION AIR TERMINATIONS.



M110
MECHANICAL ROOF PLAN
1/4" = 1'-0"



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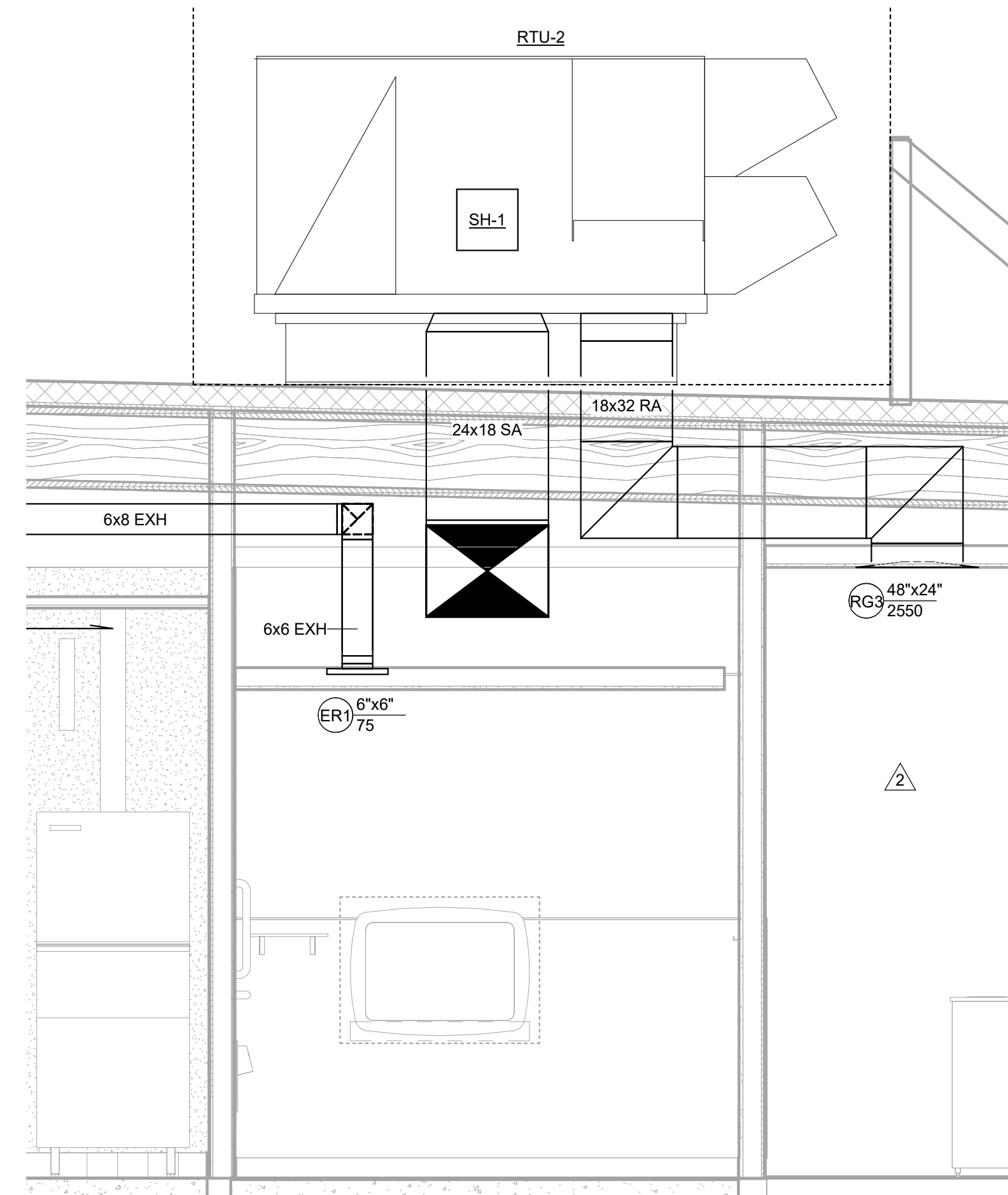
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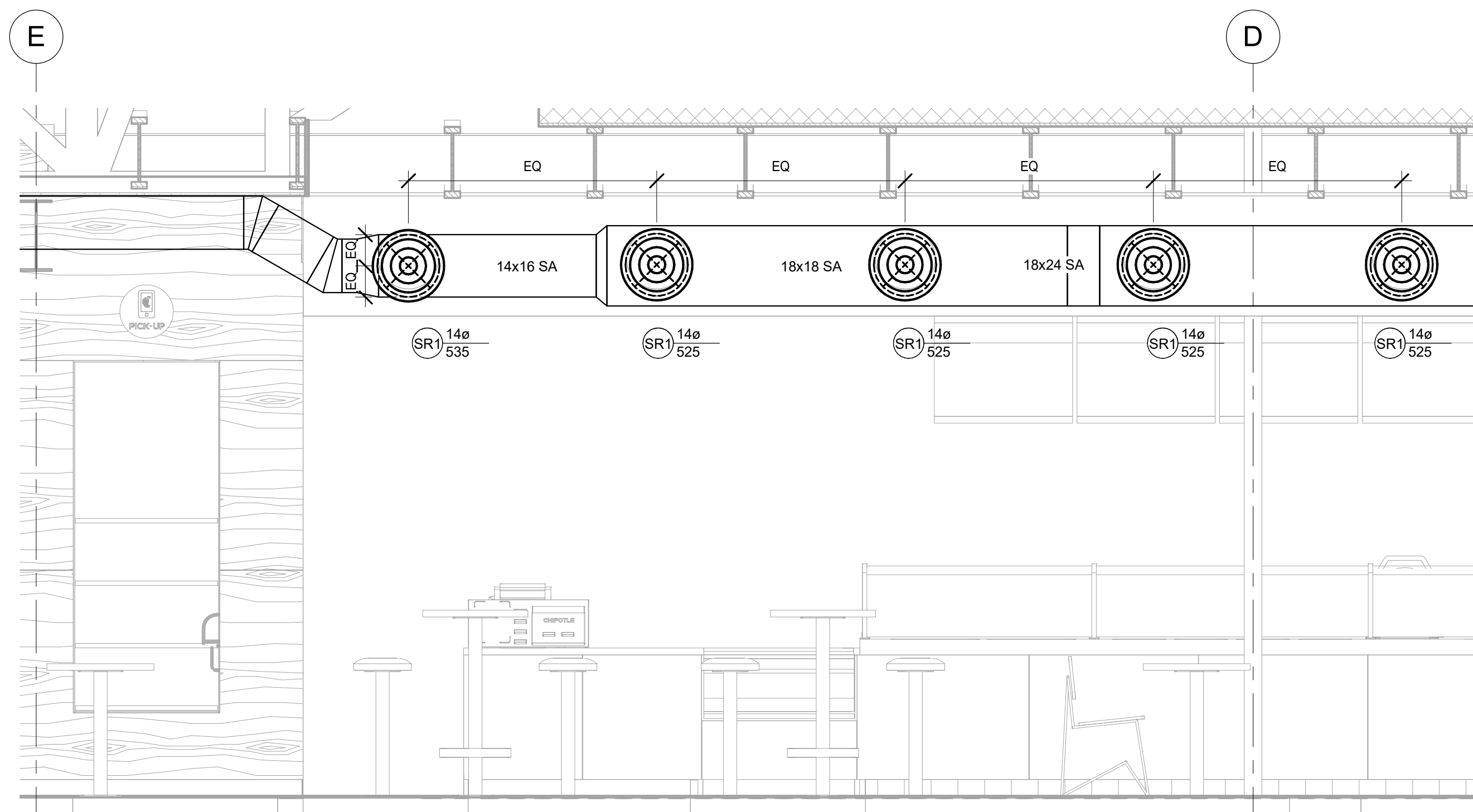
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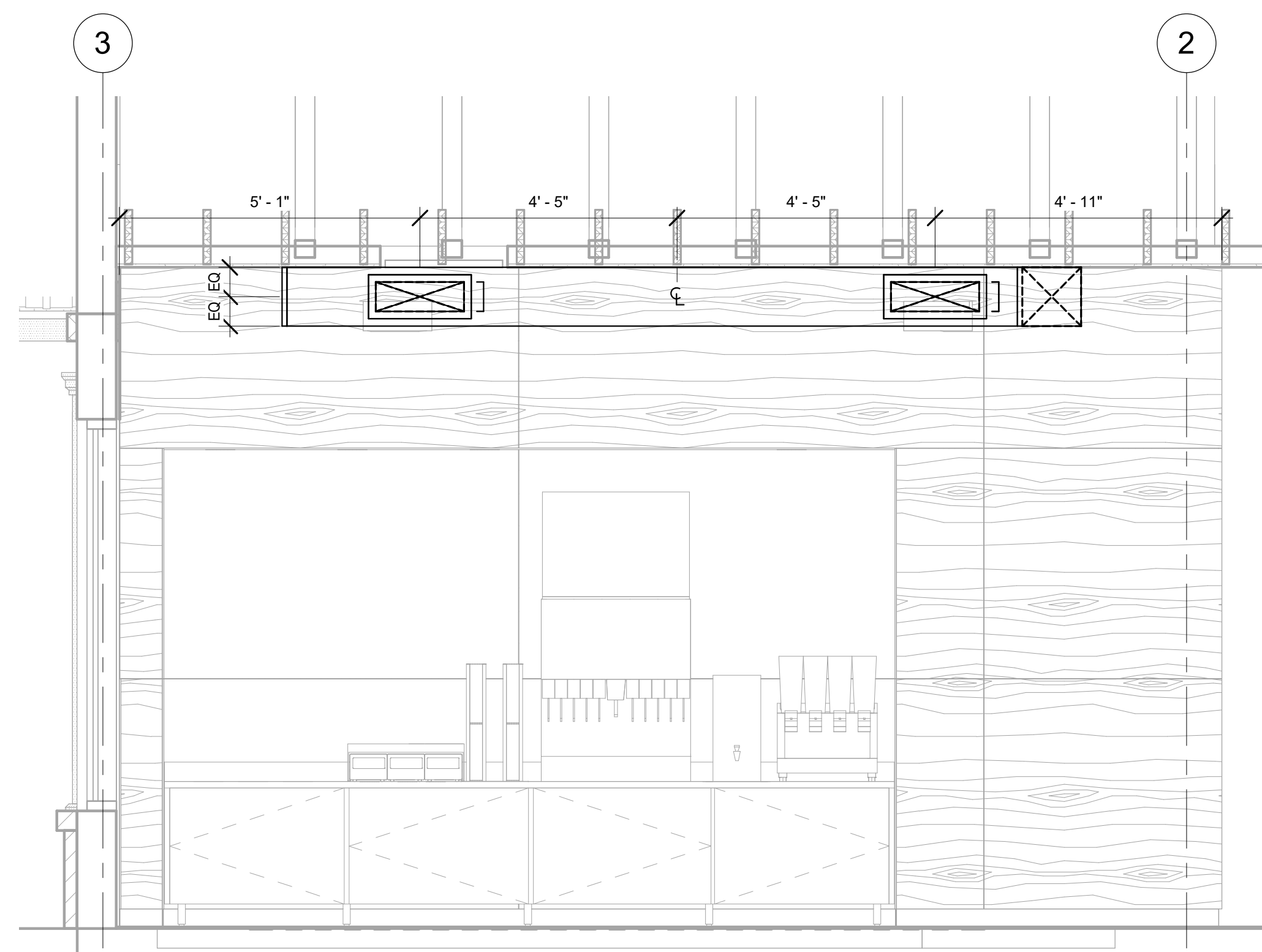
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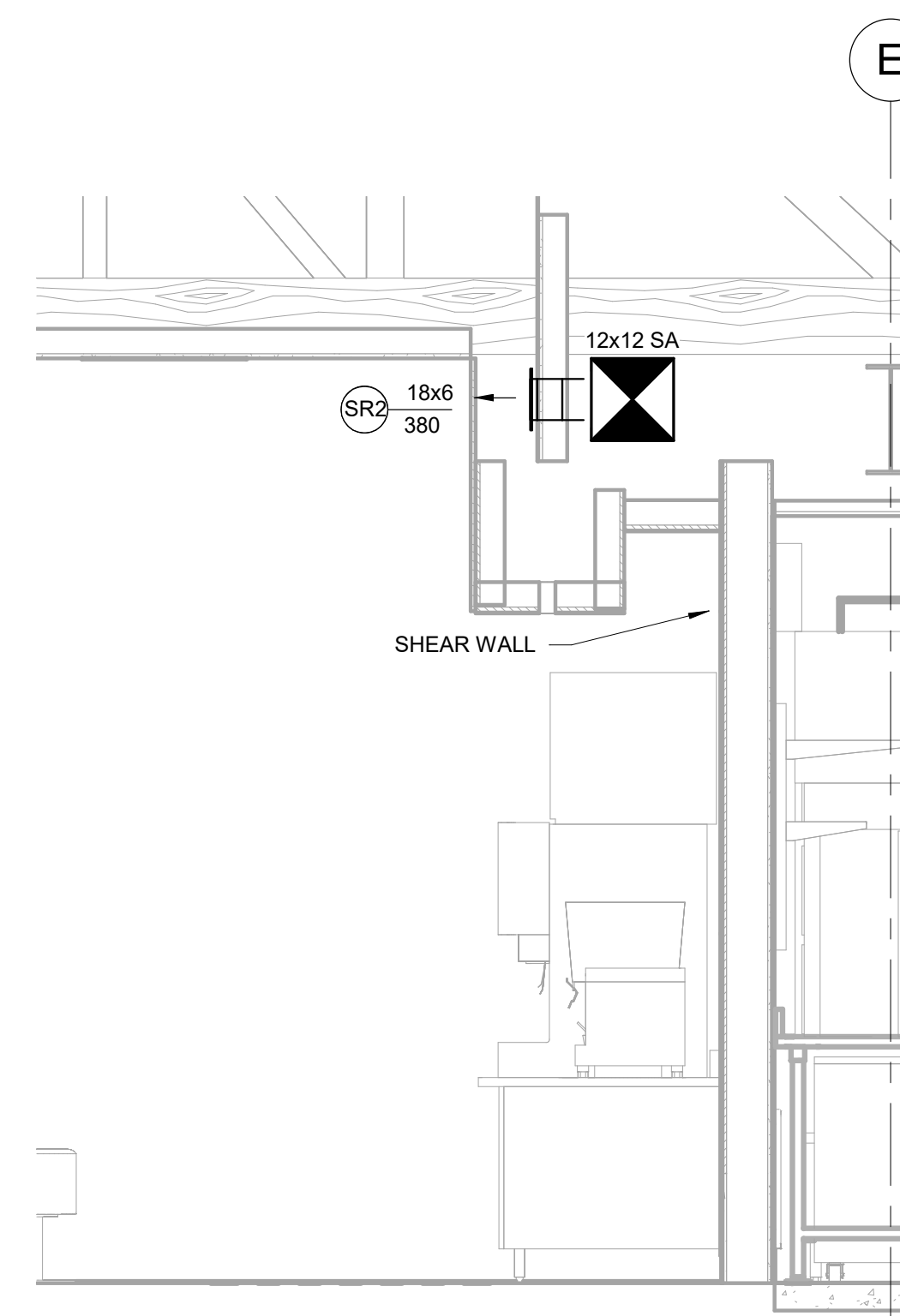
1 HVAC DINING ROOM RETURN SECTION
1/2" = 1'-0"



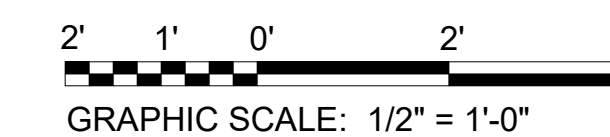
2 HVAC MAIN DINING ROOM SECTION
1/2" = 1'-0"



3 HVAC UTENSIL AREA SECTION NORTH
1/2" = 1'-0"



4 HVAC UTENSIL AREA SECTION WEST
1/2" = 1'-0"



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230244

Contents:

MECHANICAL SECTIONS

TAG	SUPPLY AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	EXHAUST AIRFLOW (CFM)	SUBTOTAL (CFM)
EF-1	0	0	2550	-2550
EF-2	0	0	150	-150
MAU-1	1300	0	0	1300
RTU-1	2600	1,950	0	650
RTU-2	3400	2,550	0	850
NET PRESSURIZATION				100

TAG	DESCRIPTION	MANUFACTURER	MODEL	MATERIAL	FINISH	MOUNTING	FACE SIZE	NECK SIZE	OPPOSED BLADE DAMPER	SERVICE	MAXIMUM NOISE CRITERIA (NC)	NOTES
BS-1	BATHROOM AIR PURIFICATION UNIT	RGF ENVIRONMENTAL GROUP	BRU ASSEMBLY	STAINLESS STEEL	STAINLESS STEEL	SURFACE	N/A	N/A	PURIFICATION	N/A	1	
CD-1	PERFORATED CEILING DIFFUSER	NAILOR	4320A TYPE L	ALUMINUM	WHITE	LAY-IN	24" X 24"	SEE PLANS	YES	SUPPLY	35	2, 3, 5
CD-2	PERFORATED CEILING DIFFUSER	NAILOR	4320A TYPE L	ALUMINUM	WHITE	SURFACE	24" X 12"	SEE PLANS	YES	SUPPLY	35	2, 3, 4, 5
CD-3	PERFORATED CEILING DIFFUSER	NAILOR	4320A TYPE S	ALUMINUM	WHITE	SURFACE	20" X 20"	SEE PLANS	YES	SUPPLY	35	2, 3, 5
ER-1	PERFORATED CEILING EXHAUST	NAILOR	4330R TYPE S	ALUMINUM	WHITE	SURFACE	12" X 12"	SEE PLANS	YES	EXHAUST	35	2, 3
RG-1	PERFORATED CEILING RETURN	NAILOR	4330R TYPE L	ALUMINUM	WHITE	LAY-IN	48" X 24"	SEE PLANS	NO	RETURN	35	2, 3
RG-3	PERFORATED CEILING RETURN	NAILOR	4330R TYPE S	ALUMINUM	WHITE	SURFACE	48" X 24"	SEE PLANS	NO	RETURN	35	2, 3
SR-1	ADJUSTABLE TURBO NOZZLE	AIRCONCEPTS	ANR14	ALUMINUM	WHITE	WALL	NECK + 1-2"	SEE PLANS	YES	SUPPLY	35	2, 3
SR-2	DOUBLE DEFLECTION SUPPLY REGISTER	NAILOR	51DH	ALUMINUM	WHITE	WALL	NECK + 2"	SEE PLANS	YES	SUPPLY	35	2, 3, 5

NOTES:
1 SEE ELECTRICAL PLAN FOR CONNECTION INFORMATION.
2 MAXIMUM STATIC PRESSURE DROP OF 0.15"WC UNLESS OTHERWISE NOTED.
3 SEE PLANS FOR SIZES AND QUANTITIES.
4 REMOVE 4-WAY DEFLECTORS.
5 PROVIDE WITH INTEGRAL OBD.

Room Name	Room Area (Az)	Room Type	Zone Air Distribution Effectiveness (Ez)	Number of People (Pz)	CFM/Person (Rp)	CFM/sqft	Breathing Zone OA (Vbz)	Zone Outdoor Airflow (Voz)	System Ventilation Efficiency (Ev)	Required Outdoor Air Intake (Vot)	Outside Air Provided
RTU-1 - KITCHEN (MULTIPLE ZONE WITH SINGLE RECIRC)											
104 - POS	194	Cafeteria, fast food	0.8	2	7.5	0.18	50	63	0.92	173	650
106 - SERVING	47	Cafeteria, fast food	0.8	2	7.5	0.18	23	30			
107 - COOKING	355	Kitchens (cooking)	0.8	1	5	0.06	7	10			
108 - KITCHEN (FOOD PREP)	314	Cafeteria, fast food	0.8	3	7.5	0.18	79	99			
109 - OFFICE	38	Office spaces	0.8	1	5	0.06	4	6			
Total							160	202			
RTU-2 - DINING (SINGLE ZONE)											
101 - DINING/ORDERING	816	Dining rooms	0.8	66	7.5	0.18	656	820	N/A	826	850
102 - UTENSIL	76	Dining rooms	0.8	0	0	0.06	4	6			
103 - PASSAGE	67	Corridors	0.8	0	0	0.06	4	6			
Total							660	826			

TAG	DESCRIPTION	MANUFACTURER	MODEL	NUMBER OF COMPRESSORS	CIRCUITS	REFRIGERANT TYPE	CHARGE	WEIGHT	ELECTRICAL MOCP	FLA	V/PH	NOTES
CU-1	CONDENSING UNIT - WALK IN COOLER	HARFORD	KPCL99MZOP-3E	1	1	R-404A	10.4 LB	250 LBS	15 A	9 A	208/3/60	1, 2
CU-2	REMOTE CONDENSER - LOW CAPACITY ICE MAKER	HOSHIZAKI	URC-9F	0	1	R-404A	11.46 LB	100 LBS			120/1/60	1, 3
CU-3	REMOTE CONDENSER - SODA MACHINE ICE MAKER	HOSHIZAKI	URC-5F	0	1	R-404A	3.86 LB	100 LBS			120/1/60	1, 3

NOTES:
1 EQUIPMENT SPECIFIED BY OTHERS, SHOWN FOR REFERENCE ONLY.
2 FURNISHED WITH WALK-IN COOLER.
3 FURNISHED WITH ICE MAKER.

TYPE	APPLICATION	ALLOWABLE MATERIAL
DUCT	CONCEALED, GENERAL EXHAUST	RECTANGULAR OR ROUND AS SHOWN
DUCT	CONCEALED, RETURN	RECTANGULAR OR ROUND AS SHOWN, LINED OR INSULATED
DUCT	CONCEALED, SUPPLY	RECTANGULAR OR ROUND AS SHOWN, LINED OR INSULATED
DUCT	CONCEALED, TYPE I HOOD EXHAUST	RECTANGULAR 16 GA. BLACK IRON WITH WRAP OR UL 1978 FACTORY-MANUFACTURED DUCT WITH WRAP (SUBMIT SHOP DRAWINGS FOR FACTORY-MANUFACTURED DUCT PRIOR TO ORDERING FOR APPROVAL)
DUCT	EXPOSED GENERAL EXHAUST	RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC
DUCT	EXPOSED RETURN	RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC
DUCT	EXPOSED SUPPLY	RECTANGULAR LINED OR ROUND AS SHOWN, NO EXPOSED DUCT-SEALING MASTIC

TAG	DESCRIPTION	MANUFACTURER	MODEL	SERVICE	LOCATION	AIRFLOW	E.S.P.	MOUNT	DRIVE	MOTOR POWER	FLA	VOLTAGE	PHASE	NOTES
EF-1	UPBLAST UL762 EXHAUST FAN	CAPTIVEAIRE	DU180HFA	KITCHEN HOOD	ROOF	2,550 CFM	1.45"WC	ROOF CURB	DIRECT	2.0 HP	8.3	208	3	1-4, 8
EF-2	DOWNBLAST RESTROOM EXHAUST FAN	CAPTIVEAIRE	DR12HFA	RESTROOMS	ROOF	150 CFM	0.6"WC	ROOF CURB	DIRECT	0.25 HP	2.9	115	1	5-7

NOTES:
1 WEATHERPROOF DISCONNECT.
2 20" HIGH VENTED ROOF CURB
3 GREASE DRAIN.
4 ENVIRONMENTAL VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM (VG-1).
5 INTEGRAL DISCONNECT.
6 SPEED CONTROL.
7 26" CURB WITH BACKDRAFT DAMPER.
8 E.S.P. INCLUDES E.S.P. OF EXHAUST PLENUM LISTED IN KITCHEN HOOD SCHEDULE.

TAG	DESCRIPTION	MANUFACTURER	MODEL	MAX COOKING TEMP	EXHAUST PLENUM						PERFORATED SUPPLY PLENUMS						# OF LIGHT FIXTURES	WEIGHT	NOTES				
					AIRFLOW	E.S.P.	WIDTH	LENGTH	DUCT COLLARS		WIDTH	LENGTH	MAKEUP AIR PLENUM			HVAC PLENUM							
									#	WIDTH			AIRFLOW	DUCT COLLARS #	WIDTH	LENGTH				AIRFLOW	DUCT COLLARS #	DIAMETER	
HD-1	TYPE I CANOPY HOOD WITH PERFORATED MAU AND HVAC SUPPLY PLENUMS	CAPTIVEAIRE	5424 ND-2-ACPSF-F	600 DEG. F.	2,550 CFM	-0.97" WC	4'-3"	12'-9"	3	10"	24"	1'-7"	13'-9"	1,300 CFM	3	6"	2'-4"	700 CFM	6	8"	8	1,150 LBS	1-11

NOTES:
1 18 GAUGE TYPE 430 STAINLESS STEEL CONSTRUCTION.
2 FURNISHED WITH VAPORPROOF INCANDESCENT LIGHT FIXTURES.
3 16" TALL HE SS FILTERS.
4 INTEGRAL UTILITY CABINET.
5 ANSUL SYSTEM.
6 DUCT COLLAR TEMPERATURE SENSOR.
7 PREWIRE PACKAGE.
8 SPARE FIRE SYSTEM DRY CONTACT.
9 4-POLE 20A CONTACTOR.
10 DVC-1 KITCHEN FAN CONTROL CENTER TO ENGAGE ASSOCIATED MAKE-UP AIR UNIT AND EXHAUST FAN AND CONTROL LIGHTS.
11 UL LISTED FIRE SUPPRESSION AND GREASE COLLECTION SYSTEM.

TAG	DESCRIPTION	MANUFACTURER	MODEL	SERVICE	AIRFLOW	E.S.P.	INPUT	OUTPUT	TEMP RISE	MOTOR POWER	FLA	VOLTAGE	PHASE	WEIGHT	NOTES
MAU-1	DIRECT-FIRED MAKEUP AIR UNIT	CAPTIVEAIRE	A1-D-250-15D	KITCHEN HOOD	1,300 CFM	0.5"WC	98.8 MBH	90.9 MBH	66 DEG. F.	1.0 HP	3.1	208	3	495 LBS	1-7

NOTES:
1 12.5:1 MAXIMUM TURNDOWN.
2 FURNISHED WITH DISCONNECT.
3 20" ROOF CURB.
4 SCREENED INTAKE.
5 WASHABLE ALUMINUM FILTERS.
6 DOWN DISCHARGE SUPPLY AIR.
7 INTERLOCKED WITH KITCHEN HOOD.

TAG	COUNT	DESCRIPTION	MANUFACTURER	MODEL	FURNISHED BY	INSTALLED BY	REMARKS
SB-1	2	BATHROOM AIR PURIFICATION UNIT	RGF ENVIRONMENTAL GROUP	BRU ASSEMBLY	TUV	GC	SEE ELECTRICAL SHEETS FOR CONNECTION INFORMATION
SH-1	2	HVAC AIR PURIFICATION UNIT	RGF ENVIRONMENTAL GROUP	REME-HALO	TUV	GC	SEE DETAIL 6/M700 FOR INSTALLATION INFORMATION.
SI-1	3	ICE MACHINE TREATMENT SYSTEM	RGF ENVIRONMENTAL GROUP	IMS-B-GA	TUV	GC	SEE PLUMBING DRAWINGS FOR INSTALLATION INFORMATION.

TAG	DESCRIPTION	MANUFACTURER	MODEL	NOMINAL CAPACITY	AIRFLOW			COOLING DATA					HEATING DATA			ELECTRICAL DATA			NOTES			
SUPPLY AIR	OUTSIDE AIR	E.S.P.	REFRIGERANT	EAT (°F)	EWBT (°F)	TOTAL CAPACITY (NET)	SENSIBLE CAPACITY (NET)	EER	IEER	FUEL	INPUT	OUTPUT	MOCP	MCA	VOLTAGE	PHASE						
RTU-1	KITCHEN ROOFTOP UNIT	YORK	ZJ078N12R2BSLAA2A2	6.5 TONS	2,600 CFM	650 CFM	0.6" WC	R-410A	80	67	77.8 MBH	55.5 MBH	11.8	15.0	N. GAS	120 MBH	97 MBH	45	35.3	230	3	1-9
RTU-2	DINING ROOM ROOFTOP UNIT	YORK	ZJ102N12P2BSLAA2A2	8.5 TONS	3,400 CFM	850 CFM	0.6" WC	R-410A	80	67	102.8 MBH	71.7 MBH	12.0	14.6	N. GAS	160 MBH	130 MBH	60	45.5	230	3	1-9

NOTES:
1 FURNISHED WITH ENTHALPY ECONOMIZER AND BAROMETRIC RELIEF.
2 SMOKE DETECTOR WITH REMOTE KEYED ANNUNCIATOR/RESET.
3 MOTORIZED OUTSIDE AIR DAMPER.
4 MERV-8 FILTERS.
5 ROOF CURB.
6 HAIL GUARD.
7 TOOL-LESS HINGED ACCESS PANELS.
8 UNIT DISCONNECT.
9 UNIT-MOUNTED CONVENIENCE RECEPTACLE.

TAG	DESCRIPTION	MANUFACTURER	MODEL	LOCATION	FAN DATA				ELECTRICAL DATA			
AIRFLOW	TEMP. RISE	MOUNT	WATTS	AMPS	VOLTAGE	PHASE						
UH-1	CEILING MOUNTED UNIT HEATER	INDEECO	931U4000V	MAIN ENTRY	160 CFM	60 F	CEILING	3000	14.8	208	1	1, 2

NOTES:
1 PROVIDE WITH BUILT-IN TAMPERPROOF THERMOSTAT.
2 INSTALL UNIT RECESSED INTO VESTIBULE CEILING.

TAG	DESCRIPTION	DUCT CONNECTION SIZE	BASIS FOR DESIGN MANUFACTURER	FAN	SERVICE	FURNISHED BY	INSTALLED BY
VG-1	VIROGUARD HOOD EXHAUST FAN ROOFTOP CONTAINMENT SYSTEM	18" X 18"	ENVIRONMENTAL	CAPTIVE-AIRE DU240HFA	KITCHEN HOOD EXHAUST FAN	TDC	GC

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