A. GENERAL CONDITIONS

1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS (IF PROVIDED AS PART OF THE CONTRACT) ARE A PART OF THIS CONTRACT.

2. THE TERM "CONTRACTOR" SHALL MEAN THE "MECHANICAL CONTRACTOR HIRED TO COMPLETE THE WORK OUTLINED IN THESE PLANS AND SPECIFICATIONS" UNLESS OTHERWISE SPECIFIED.

3. THE CONTRACTOR FOR THIS WORK IS REQUIRED TO REVIEW ALL DRAWINGS FOR ALL OTHER TRADES.

4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ITS SUBCONTRACTORS WITH A FULL SET OF BID DOCUMENTS INCLUDING SPECIFICATIONS AND MUST COORDINATE ITS WORK AND INSPECTIONS AND THE WORK AND INSPECTION OF THEIR SUBCONTRACTORS WITH ALL OTHER TRADES ON SITE TO CONFORM WITH THE GENERAL CONTRACTOR'S TIME SCHEDULE.

5. BY SUBMITTING A QUOTATION OR PROPOSAL THE MECHANICAL CONTRACTOR EXPRESSLY STATES AND WARRANTS THAT: ALL DRAWINGS AND SPECIFICATIONS HAVE BEEN THOROUGHLY REVIEWED, CONTRACTOR HAS BECOME FAMILIARIZED WITH JOB SITE CONDITIONS AND IS TOTALLY QUALIFIED TO PERFORM ALL OF THE WORK REQUIRED.

6. BEFORE SUBMITTING A FINAL PROPOSAL THE CONTRACTOR SHALL EXAMINE THE SITE OF THE PROPOSED WORK TO DETERMINE THE EXISTING CONDITIONS THAT MAY AFFECT THE PROPOSAL. IF DISCREPANCIES ARE NOTED BETWEEN THE DOCUMENTS AND THE EXISTING CONDITIONS THE ARCHITECT SHALL BE NOTIFIED AND THE CONTRACTOR SHALL RECEIVE CLARIFICATION BEFORE SUBMITTING A BID. THE SUBMISSION OF A PROPOSAL SHALL INDICATE THAT ALL CHARGES AND COSTS MADE NECESSARY BY EXISTING CONDITIONS ARE INCLUDED AND THAT THE COMPLETE SYSTEM AS DESCRIBED HEREIN WILL BE FURNISHED AT THE PROPOSED COST.

7. WHEN USED, THE TERM "PROVIDED BY CONTRACTOR" SHALL BE INTERPRETED AS MEANING "FURNISHED AND INSTALLED BY CONTRACTOR" WITH THE EXCEPTION WHERE ITEMS ARE "PROVIDED BY TENANT" SHALL BE INTERPRETED AS MEANING "FURNISHED BY TENANT (INSTALLED BY CONTRACTOR)", EXCEPT WHERE NOTED OTHERWISE.

B. GENERAL REQUIREMENTS

1. THE MECHANICAL SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK/SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT/AGENCY TO DISCUSS CODE ISSUES/IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SUCH SERVICES/WORK WILL BE PERFORMED, THIS SPECIFIC USE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE, SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS/SPECIFICATIONS.

2. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE COMPLETE AND FULLY FUNCTIONAL MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS (IF SUPPLIED) AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH LANDLORD AS REQUIRED. FIELD VERIFY THE EXACT TYPE, SIZE, LOCATION, REQUIREMENTS, ETC. OF EXISTING EQUIPMENT, PIPE AND DUCTS SERVING THE TENANT SPACE PRIOR TO SUBMISSION OF BID.

3. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE PROVIDED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS NECESSARY TO COMPLETE THE WORK OR WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE PROVIDED AS PART OF THE CONTRACT.

4. WHERE THE DRAWINGS AND / OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS STILL RESPONSIBLE FOR PROVIDING THE SYSTEM AS DESIGNED AND DESCRIBED ON THE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.

5. THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH DETAILED REQUIREMENTS OF LEASE EXTRACTS FROM THE LANDLORD AND TENANT.

6. COORDINATE LOCATIONS OF ALL AIR OUTLETS WITH ALL WALLS, LIGHTS, SPRINKLER HEADS, CEILING TILES AND DECORATIVE CEILING FIXTURES PRIOR TO INSTALLATION.

7. ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATION, SERVICE, MAINTENANCE AND REPAIR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT ACCESS TO ALL EQUIPMENT FOR SERVICE.

8. THE CONTRACTOR SHALL DO ALL CUTTING, CORE DRILLING, CHASING, OR CHANNELING AND PATCHING REQUIRED FOR ANY WORK UNDER THIS CONTRACT. CUTTING SHALL HAVE PRIOR APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER AND THE LANDLORD OR LANDLORD'S REPRESENTATIVE. PATCHING SHALL MATCH FINISH OF SURROUNDING AREA.

9. CONTRACTOR SHALL INSTALL ALL MECHANICAL EQUIPMENT AND APPLIANCES PURSUANT TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. FINAL APPROVAL THAT THE MANUFACTURER'S INSTALLATION INSTRUCTIONS ARE ON THE JOB SITE FOR ALL MECHANICAL EQUIPMENT AND APPLIANCES RESTS WITH THE GOVERNING CODE OFFICIAL(S).

C. CODES

1. ALL WORK SHALL BE PERFORMED IN A NEAT AND PROFESSIONAL MANNER USING GOOD CONSTRUCTION PRACTICES. ALL WORK SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE LANDLORD'S CRITERIA; STATE, COUNTY AND LOCAL CODES AND ORDINANCES; THE LATEST EDITIONS OF ASHRAE STANDARDS, THE LIFE SAFETY CODE, THE APPLICABLE BUILDING CODE, UNDERWRITERS LABORATORIES, THE NATIONAL ELECTRICAL CODE, NFPA 70, 90A AND 96 AND ALL OTHER APPLICABLE CODES ENFORCED BY AUTHORITIES HAVING JURISDICTION. THE CHANGES REQUIRED BY ANY APPLICABLE CODES SHALL BE INCLUDED IN THE BID. AFTER THE CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED BY THE TENANT TO THE CONTRACTOR.

D. LICENSES, PERMITS, INSPECTIONS AND FEES

1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS AND FEES REQUIRED OR RELATED TO THIS WORK.

2. FURNISH TO THE TENANT'S CONSTRUCTION MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

E. DRAWINGS

1. DRAWINGS (PLANS AND SPECIFICATIONS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. BECAUSE OF THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL DUCT AND PIPE OFFSETS, FITTINGS AND ACCESSORIES THAT MAY BE REQUIRED. THE MECHANICAL CONTRACTOR MUST OBTAIN APPROVED CONSTRUCTION DRAWINGS FROM THE GENERAL CONTRACTOR BEFORE BEGINNING ANY WORK.

2. THE LAYOUT SHOWN ON THE DRAWINGS IS BASED ON A PARTICULAR MAKE OF EQUIPMENT. IF ANOTHER MAKE OF EQUIPMENT IS USED WHICH REQUIRES MODIFICATION OR CHANGE OF ANY DESCRIPTION FROM THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE AS PART OF THIS WORK, FOR MAKING ALL SUCH MODIFICATIONS AND CHANGES, INCLUDING THOSE INVOLVING OTHER TRADES WITH THE COST THEREOF INCLUDED IN THE BID. IN SUCH CASE, CONTRACTOR SHALL SUBMIT DRAWINGS AND SPECIFICATIONS PRIOR TO STARTING WORK SHOWING ALL SUCH MODIFICATIONS AND CHANGES. THE PROPOSAL SHALL BE SUBJECT TO THE APPROVAL OF THE TENANT'S CONSTRUCTION MANAGER.

F. EXISTING LEASE SPACE CONDITIONS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING MECHANICAL WORK IN THE SPACE NOT SHOWN TO BE REUSED IN THE NEW TENANT SPACE.

2. THE CONTRACTOR SHALL INCLUDE AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, DUCTWORK, ETC. AND ASSOCIATED ROOF CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED UNLESS NOTED FOR REUSE OR RECONFIGURATION ON PLANS. ROOF PATCHING SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE BY A ROOFING CONTRACTOR APPROVED BY THE LANDLORD. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF (ABOVE THIS SPACE) NOT APPLICABLE TO THE NEW WORK OR PART OF THE LANDLORD'S OR ANOTHER TENANT'S ACTIVE SYSTEM MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH THE EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT REUSED IN THIS PROJECT. IF REQUIRED BY THE LANDLORD OR CODES, ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.

3. ACTIVE LANDLORD OR OTHER TENANT SERVICES ENCOUNTERED IN WORK SHALL BE PROTECTED AND SUPPORTED. IF EXISTING SERVICES NOT ANTICIPATED REQUIRE RELOCATION, CONTACT THE TENANT'S CONSTRUCTION MANAGER IMMEDIATELY. ALL COSTS FOR REPAIR OF DAMAGES TO ACTIVE LANDLORD OR OTHER TENANT SERVICES DURING CONSTRUCTION SHALL BE PAID FOR BY THE CONTRACTOR CAUSING THE DAMAGE.

4. TIE-INS AND MODIFICATIONS TO EXISTING LANDLORD SERVICES MUST BE DONE WITH MINIMUM INTERRUPTION OF LANDLORD OPERATION AND DURING HOURS SPECIFIED BY THE LANDLORD. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXACT WORKING HOURS OF THIS WORK WITH THE LANDLORD PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE IN THEIR BID, ALL PREMIUM TIME REQUIRED TO PERFORM MODIFICATIONS DURING OTHER THAN NORMAL WORKING HOURS. ALL SUCH WORK MUST BE COORDINATED WITH THE LANDLORD.

5. EQUIPMENT AND MATERIALS IN TRANSIT SHALL UTILIZE FREIGHT ELEVATOR OR STAIRS. SAID EQUIPMENT OR MATERIALS SHALL BE DISASSEMBLED AS REQUIRED TO MEET THE RESTRICTIONS IMPOSED BY THE BUILDING OR ITS COMPONENT CONSTRAINTS AND THEN REASSEMBLED IN THE NEW WORK AREA.

6. ALL WORK SHALL BE DONE WITH A MINIMUM OF NOISE AND DISTURBANCE TO BUSINESS ROUTINE. ALL WORK SCHEDULES SHALL BE COORDINATED WITH AND APPROVED BY, THE TENANTS CONSTRUCTION MANAGER.

7. SINCE THESE ARE SECURE FLOORS, ALL DELIVERIES, WORKERS, WORK OPERATORS, ETC., REQUIRED BY THE CONTRACTOR FOR WORK PERFORMED IN ANY AREA OR SITE BUILDING SHALL BE IN STRICT CONFORMANCE TO THE RULES AND REGULATIONS OF THE OWNER.

8. CONTRACTOR SHALL PROTECT THEIR WORK AND EQUIPMENT FROM DAMAGE, VANDALS, ETC. ANY ITEM THAT IS DAMAGED, VANDALIZED OR STOLEN PRIOR TO ACCEPTANCE OF BUILDING BY OWNER AND ARCHITECT SHALL BE REPLACED BY RESPECTIVE CONTRACTOR AT NO CHARGE TO TENANT.

9. IT IS SPECIFICALLY THE INTENTION OF THIS SPECIFICATION TO HOLD THE CONTRACTOR RESPONSIBLE FOR ALL DAMAGE DONE TO ANY EXISTING FACILITIES, EQUIPMENT, PAINTING, OR ARCHITECTURAL AND STRUCTURAL FEATURES OF THE BUILDING, BY EITHER THEIR OWN WORKMEN OR BY ANY OF THEIR SUBCONTRACTORS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE DONE BY THEIR OWN WORKMEN OR SUBCONTRACTORS AND THE OWNER AT THEIR DISCRETION, MAY WITHHOLD PAYMENTS EQUAL TO THE REASONABLE COST OF THE REPAIRS.

10. THIS CONTRACTOR OR THEIR WORKMEN SHALL NOT BE PERMITTED TO USE ANY PART OF THE EXISTING BUILDING AS A SHOP WITHOUT THE APPROVAL OF THE OWNER AND ARCHITECT.

11. WHERE THE WORK MAKES TEMPORARY SHUTDOWN OF SERVICES UNAVOIDABLE, THEY SHALL BE MADE AT NIGHT OR AT SUCH TIMES AS WILL CAUSE THE LEAST INTERFERENCE WITH THE ESTABLISHED OPERATING ROUTINE.

12. THIS CONTRACTOR SHALL ARRANGE THE WORK SO AS TO ASSURE THAT SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTION TO THE EXISTING WORK. THIS CONTRACTOR SHALL GIVE AMPLE WRITTEN NOTICE IN ADVANCE TO THE OWNER OF ANY REQUIRED SHUT DOWN.

13. ALL MOTORS, FANS, CONTROLS, FIXTURES, HVAC UNIT, DUCTWORK AND OTHER EQUIPMENT FOR USE IN THIS CONTRACT SHALL BE PROTECTED BY TARPAULIN OR BY BOXING AS SOON AS DELIVERED TO THE SITE AND SHALL BE KEPT CLEAN AND DRY. THE MOTORS, UNITS, FIXTURES, FANS, DUCTWORK AND MOVING PARTS SHALL BE KEPT COVERED SO AS TO ELIMINATE DIRT, DUST AND OTHER MATERIALS ENTERING THE PARTS DURING ERECTION AND CONSTRUCTION WORK ON THE BUILDING. SHOULD IT BE FOUND THAT ANY PARTS ARE DAMAGED DUE TO CARELESSNESS ON THE PART OF THE CONTRACTOR IN NOT PROVIDING PROPER PROTECTION, SUCH PART OR PARTS SHALL BE REPLACED BY THE CONTRACTOR AT THEIR OWN COST AND EXPENSE. ALL OPENINGS IN DUCTS, PIPING, CONDUITS, ETC., SHALL BE PROPERLY PROTECTED WITH TEMPORARY CAPS OR PLUGS AT ALL TIMES.

G. DISCREPANCIES IN DOCUMENTS

1. DRAWINGS (PLANS, SPECIFICATIONS AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWING, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE THE TENANT'S CONSTRUCTION MANAGER, IN WRITING, OF VARIATIONS TO THE CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE TENANT'S CONSTRUCTION MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

H. TRADE NAMES AND MANUFACTURERS

1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM STANDARD FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUIVALENT OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO REVIEW IN WRITING BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO ACCEPTANCE. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

I. SHOP DRAWINGS

1. SUBMIT THREE COPIES OF MATERIAL LISTS AND SHOP DRAWINGS FOR ALL EQUIPMENT AND DUCT FABRICATION DRAWINGS TO THE TENANT'S CONSTRUCTION MANAGER FOR REVIEW PRIOR TO ORDERING EQUIPMENT. SUBMISSIONS MUST BE EARLY ENOUGH TO ALLOW THE TENANT'S CONSTRUCTION MANAGER EIGHT WORKING DAYS FOR REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BE IN ACCORDANCE WITH THE GENERAL CONDITIONS USING THE MANUFACTURER'S LISTED ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE ALL DATA THAT PERTAINS TO THE REQUIREMENTS SET FORTH ON THE DRAWINGS AND IN THE SPECIFICATIONS. THE SUBMITTAL SHALL INCLUDE BUT NOT BE LIMITED TO CUTS OR CATALOGS INCLUDING DESCRIPTIVE LITERATURE AND CHARACTERISTICS OF EQUIPMENT SHALL SHOW MAJOR DIMENSIONS, ROUGHING-IN DATA, CAPACITY, CURVES, PRESSURE DROPS, CODE COMPLIANCE, MOTOR AND DRIVE DATA AND ELECTRICAL DATA. OBSERVE SPECIAL INSTRUCTIONS WHEN REQUIRED. SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL AND SUBCONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THEY ARE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS OR INDICATE WHERE EXCEPTIONS TAKE PLACE. LACK OF SUCH CONTRACTOR'S REVIEW WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY TENANT'S CONSTRUCTION MANAGER. ALL SHOP DRAWINGS MUST APPEAR IN THE OPERATION AND MAINTENANCE MANUALS LEFT ON SITE AT JOB COMPLETION.

2. TENANT'S CONSTRUCTION MANAGER'S OR ARCHITECT'S REVIEW OF SHOP DRAWINGS OR SCHEDULES SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS OR OTHER DEFICIENCIES OR DEVIATIONS IN THE SHOP DRAWINGS FROM THE CONSTRUCTION DOCUMENTS.

3. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND / OR THEIR SUBCONTRACTORS TO FURNISH SHOP DRAWINGS AND SUBMITTALS ON ANY AND ALL EQUIPMENT, DUCT, DAMPERS, CONTROLS ETC. TO THE ARCHITECT FOR THEIR REVIEW PRIOR TO CONSTRUCTION.

J. RECORD DRAWINGS

1. THE CONTRACTOR SHALL MAINTAIN ONE COPY OF DRAWINGS AND SPECIFICATIONS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS LOCATIONS OF CONCEALED PIPING VALVES AND DUCTS, REVISIONS, ADDENDUMS AND CHANGE ORDERS, SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS AND CONTRACTOR'S COORDINATION WITH OTHER TRADES AND EXACT ROUTING OF ALL SANITARY AND DOMESTIC WATER PIPING UNDER FLOOR.

2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THE CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. THE DRAWINGS ARE TO BE TURNED OVER TO THE TENANT.

K. GUARANTEE, WARRANTY

1. THE MECHANICAL CONTRACTOR SHALL INCLUDE IN THE PROPOSAL A ONE YEAR GUARANTEE, WARRANTY ON ALL EQUIPMENT AND MATERIAL INSTALLED OR REFURBISHED, ALL MATERIALS AND WORK UNDER THE CONTRACT AND SHALL MAKE GOOD, REPAIR, OR REPLACE AT THEIR OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF WRITTEN ACCEPTANCE OF THE INSTALLATION BY THE TENANT'S CONSTRUCTION MANAGER. IN CASE OF REPLACEMENT OR REPAIR OF EQUIPMENT DUE TO FAILURE WITHIN THE GUARANTEE PERIOD, THE GUARANTEE ON THAT PORTION OF WORK SHALL BE EXTENDED FOR A PERIOD OF 12 MONTHS FROM THE DATE OF SUCH REPLACEMENT OR REPAIR. THIS GUARANTEE, WARRANTY IS TO INCLUDE ALL LABOR, MATERIAL, PARTS, ETC. NECESSARY TO MAINTAIN THE SYSTEM IN SATISFACTORY OPERATION FOR A PERIOD OF ONE YEAR STARTING FROM THE DATE OF ACCEPTANCE OF THE SYSTEM BY THE TENANT. IT SHALL ALSO INCLUDE ONE SUMMER TO WINTER CHANGEOVER AND ONE WINTER TO SUMMER CHANGEOVER, A NEW SET OF FILTERS AT THE TIME OF STARTUP AND TWELVE (12) MONTHLY FILTER CHANGES DURING THE FIRST YEAR. THE NORMAL PREVENTATIVE MAINTENANCE WORK SHALL BE PERFORMED AT THE TIME OF THE FILTER CHANGES. USE ONLY #40 PLEATED TYPE AIR FILTERS.

L. OPERATIONS MANUALS

1. ONE COPY OF EACH OPERATION AND MAINTENANCE MANUAL FOR ALL EQUIPMENT FURNISHED ON THE JOB SHALL BE PROVIDED TO THE TENANT BOUND TOGETHER IN A 3 INCH, THREE RING BINDER. THE BINDER SHALL INCLUDE BUT NOT BE LIMITED TO INSTALLATION, MAINTENANCE AND OPERATING INSTRUCTIONS, PAMPHLETS OR BROCHURES, REVIEWED SHOP DRAWINGS AND WARRANTIES OBTAINED FROM EACH MANUFACTURER OF PRINCIPAL ITEMS OF EQUIPMENT.

M. SLEEVES

1. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL, OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2 INCHES ABOVE THE FLOOR.

2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH APPROVED SEALANTS RATED FOR THE APPLICATION SO AS TO MAINTAIN THE FIRE RATING OF THE ASSEMBLY. CONFORM TO THE U.L. ASSEMBLY RATING OF THE FLOOR OR WALL.

3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE 22 GAUGE GALVANIZED STEEL MINIMUM.

4. DUCT SLEEVES SHALL BE MINIMUM 14 GAUGE STEEL.

N. HANGERS

1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC. NECESSARY FOR THE INSTALLATION OF WORK.

2. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING OR DUCTWORK. DUCTWORK SHALL NOT BE SUPPORTED FROM ROOF DECKING AND/OR BRIDGING, BUT SHALL BE SUSPENDED FROM THE TOP CHORD OF BAR JOISTS, STEEL OR OTHER STRUCTURE. DUCTWORK SHALL CLEAR ALL SPRINKLERS AND OTHER OBSTACLES AND SHALL BE HUNG AS HIGH AS POSSIBLE IN WORK AND STORAGE AREAS. WHERE INTERFERENCE'S OCCUR, IN ORDER TO SUPPORT DUCTWORK OR PIPING, THE CONTRACTOR MUST INSTALL TRAPEZE TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, ACCESS DOORS AND OTHER EQUIPMENT SERVICE REQUIREMENTS AND/OR OTHER TRADES. HANGER TYPES AND INSTALLATION METHODS ARE SUBJECT TO LANDLORD CRITERIA.

3. HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6 INCH LONG SPLIT CIRCLE GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE INSULATION.

4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED FROM ONE ANOTHER.

P. ACCESS DOORS

1. FURNISH STEEL ACCESS DOORS AND FRAMES, MINIMUM 16 INCHES BY 20 INCHES OR AS REQUIRED FOR ADEQUATE ACCESS TO THE GENERAL CONTRACTOR FOR ALL LOCATIONS WHERE NECESSARY TO PROVIDE ACCESS TO CONCEALED VALVES AND OTHER EQUIPMENT REQUIRING SERVICE OR INSPECTION. LOCATION, TYPE, SIZE AND NUMBER WILL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE TENANT CONSTRUCTION MANAGER TO SUIT EQUIPMENT REQUIREMENTS. GENERAL CONTRACTOR WILL INSTALL ACCESS DOORS AND FRAMES.

2. ACCESS DOORS LOCATED IN FIRE-RATED WALLS, FLOORS, CEILING-FLOOR, OR CEILING-ROOF ASSEMBLIES SHALL BE FIRE RATED, U.L. LISTED AND LABELED.

3. ACCESS DOORS SHALL BE FLUSH TYPE, MANUFACTURED FROM 14 GAUGE STEEL, COMPLETE WITH FLUSH FLANGE TYPE FRAMES MANUFACTURED FROM 16 GAUGE STEEL, PROVIDED WITH ANCHORS. ACCESS DOORS SHALL BE SUITABLE FOR INSTALLATION IN WALL OR CEILING MATERIALS SHOWN IN ROOM FINISH SCHEDULES. PROVIDE ACCESS DOORS FOR ALL CONCEALED VALVES, VENTS, DAMPERS, FIRE DAMPERS, EXPANSION JOINTS, PULL BOXES, SHOCK ABSORBERS, DRAINS, MOTORS, FANS, PUMPS AND ANY OTHER ITEM REQUIRING SERVICE. DOORS IN PLASTER OR CONCRETE SURFACES SHALL HAVE A RECESSED DOOR WITH CONCRETE OR PLASTER FACING. DOORS IN CARPETED OR TILED AREAS SHALL BE RECESSED WITH TILE FACING. NO ACCESS DOORS ARE REQUIRED IN 2' X 2' AND 2' X 4' LAY-IN ACOUSTIC TILE CEILING. PROVIDE COLORED PINS TO DENOTE ACCESS TILES. FURNISH FACTORY MADE METAL ACCESS DOORS, COMPLETELY FLUSH, "ALLAN HEAD" SCREWDRIVER OPERATED, WITH FRAMES AND CAM-TYPE CATCH WITH STAINLESS STEEL STUD. DOORS SHALL BE NOT LESS THAN 12" X 12" FOR HAND ACCESS. DOORS IN WALLS AND CEILING SHALL BE PRIME COATED CARBON STEEL. FURNISH FIRE RATED DOORS FOR FIRE RATED CONSTRUCTION. RATING OF DOOR MUST BE SAME RATING AS CONSTRUCTION.

Q. ELECTRIC MOTORS

1. FURNISH, INSTALL AND ALIGN ALL MOTORS REQUIRED FOR THIS EQUIPMENT, UNLESS THEY ARE FACTORY INSTALLED ON THE UNIT. ALL STARTERS AND ASSOCIATED WIRING AND SAFETY SWITCHES FOR SUCH MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. STARTERS SHALL MEET ALL REQUIREMENTS AS DEFINED IN THE ELECTRICAL SPECIFICATIONS.

2. DESIGN, CONSTRUCTION AND PERFORMANCE CHARACTERISTICS OF MOTORS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF LATEST NEMA, ANSI, ISEE STANDARDS FOR ELECTRICAL EQUIPMENT. ALL MOTORS SHALL BE SUITABLE FOR OPERATION ON VOLTAGE VARIATION OF PLUS OR MINUS 10 PERCENT, 40 DEGREES C AMBIENT TEMPERATURE AND HAVE A SERVICE FACTOR OF NOT LESS THAN 1.15.

R. LOW VOLTAGE (24 VOLT) WIRING

1. THE CONTRACTOR IS TO INSTALL ALL LOW VOLTAGE WIRING REQUIRED FOR THEIR EQUIPMENT. THIS WORK INCLUDES ALL TRANSFORMERS AND DEVICES TO MAKE THIS A COMPLETE FUNCTIONAL SYSTEM.

2. ALL WORK IS TO CONFORM TO THE ELECTRICAL SPECIFICATIONS AND THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

3. ANY CONDUIT REQUIRED BY CODE OR THE LANDLORD WILL BE INSTALLED BY THE ELECTRICAL SUBCONTRACTOR.

4. SMOKE DETECTORS AND REMOTE TEST STATION

I. IONIZING TYPE ARE TO BE USED ON THE RETURN SIDE OF THE AHU AND PHOTO-TYPE ARE TO BE USED ON THE SUPPLY SIDE. ON ALL OTHER TYPES OF HVAC UNITS WHERE SMOKE DUCT DETECTORS ARE REQUIRED, USE FIELD INSTALLED IONIZING TYPE IN RETURN DUCTWORK AND PHOTO-TYPE ON THE SUPPLY LOCATED BEFORE THE FIRST TAKEOFF. ONCE ACTIVATED, THE SMOKE DETECTOR WILL SHUT DOWN HVAC UNIT.

II. SMOKE DETECTORS SHALL HAVE THEIR OWN REMOTE KEY TEST STATION SYSTEM WITH AUDIBLE AND VISUAL ALARM, SIMPLEX MODEL 4098-9842 OR APPROVED EQUIVALENT. ALARM TO HAVE CANDELA SETTING OF 75 AND A HIGH VOLUME HORN TONE SETTING. ALARM SYSTEM MAY BE DELETED WHERE NOT REQUIRED BY LANDLORD OR BY LOCAL CODE.

A. HEATING, VENTILATION AND AIR CONDITIONING

1. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS TO SEQUENCE, COORDINATE AND INTEGRATE THE VARIOUS ELEMENTS OF THE HVAC SYSTEM, MATERIALS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCE'S AND CONFLICTS.

B. HVAC EQUIPMENT (REFER TO PLANS FOR SCHEDULE OF EQUIPMENT)

1. PRIMARY HVAC UNITS ARE TO BE AS SCHEDULED. EQUIVALENTS MAY BE SUBSTITUTED WITH WRITTEN APPROVAL ONLY. ALL COMPRESSORS ARE TO INCLUDE A 5 YEAR EXTENDED WARRANTY.

2. ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES, APPURTENANCES AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEMS SHOWN ON THE DRAWINGS AND SPECIFIED.

3. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL AIR CONDITIONING EQUIPMENT MUST HAVE A CONDENSATE DRAIN AND BE TRAPPED IN ACCORDANCE WITH MANUFACTURER'S DATA. SEE DRAWINGS FOR ADDITIONAL DETAILS.

4. SECONDARY DRAIN PANS ARE REQUIRED TO BE INSTALLED BENEATH ALL INDOOR AIR CONDITIONING EQUIPMENT WITH THE EXCEPTION OF AIR TERMINAL BOXES. SECONDARY PANS ARE TO PROTECT ENTIRE UNIT. PROVIDE CONDENSATE PUMPS AS REQUIRED. CONDENSATE SHALL BE DIRECTED TO MOP SINK, LAVATORY TRAP OR OTHER APPROVED DRAIN.

5. ALL MECHANICAL EQUIPMENT AND APPLIANCES WHICH CONTAIN REFRIGERANT MUST COMPLY WITH AN APPLICABLE STANDARD (E.G. UL 207, 412, 471).

C. TOILET EXHAUST FANS

1. WHERE SHOWN ON DRAWINGS PROVIDE A TOILET EXHAUST FAN COMPLETE WITH GRAVITY BACKDRAFT DAMPER. ALL DUCTWORK, ROOF OPENINGS AND CAPS NECESSARY TO PROVIDE A COMPLETE EXHAUST SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR. REFER TO PLANS FOR APPLICABILITY.

D. BASEBOARD, CABINET AND UNIT HEATERS

1. WHERE SHOWN ON THE DRAWINGS, PROVIDE ELECTRIC HEATERS COMPLETE WITH ELECTRIC HEATING COIL, CONTROLS AND INTEGRAL OR REMOTE THERMOSTAT AS SHOWN.

E. INLINE PUMPS

1. WHERE SHOWN ON DRAWINGS, PROVIDE AN INLINE CLOSE COUPLED PUMP(S), BRONZE FITTED. PUMPS SHALL BE FURNISHED WITH BRONZE CASE WEARING RINGS, BRONZE SHAFT SLEEVE AND MECHANICAL SHAFT SEALS. PUMPS TO BE SO CONSTRUCTED THAT THEY MAY BE MOUNTED IN A HORIZONTAL OR VERTICAL PIPE LINE. MOTOR TO BE 1750 RPM UNLESS NOTED OTHERWISE.

F. VIBRATION ISOLATION DEVICES

1. VIBRATION ISOLATION DEVICES SHALL BE PROVIDED IN ALL SUPPORTS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, WATER SOURCE HEAT PUMPS, AIR HANDLERS, FAN POWERED VAV BOXES, ETC.) AND STRUCTURE.

2. VIBRATING EQUIPMENT HUNG FROM STRUCTURE SHALL BE ISOLATED WITH RUBBER AND SPRING DEVICES. VIBRATING EQUIPMENT SUPPORTED FROM FLOOR OR DECK SHALL BE ISOLATED WITH HOUSED SPRING MOUNT DEVICES.

3. EXAMINE DEAD LOAD AND OPERATING LOAD CONDITIONS WHEN SELECTING DEVICES. ADJUST FOR PROPER ALIGNMENT AND LOADING. AVOID "GROUNDING" THE ISOLATOR.

4. CHECK HANGER ROD SIZE FOR ALLOWABLE LOADS AT THE ISOLATING DEVICE AND THE UPPER AND LOWER ATTACHMENTS TO STRUCTURES, DUCTS, EQUIPMENT, ETC.

5. CONSULT MANUFACTURER FOR APPLICATION DATA.

G. CURBS AND STEEL FRAMING FOR SUPPORT

1. THIS CONTRACTOR WILL PROVIDE ALL NECESSARY CURBS AND STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT. CURBS SHALL BE A MINIMUM OF 14 INCHES HIGH AND OF THE SAME MANUFACTURER AS THE EQUIPMENT SUPPORTED. INSULATE UNDER THE COMPRESSOR SECTION TO PREVENT CONDENSATION. ALL CURBS MUST BE INSTALLED SO THAT THE TOP OF CURBS ARE "DEAD" LEVEL. ALL PENETRATIONS OF EXISTING STRUCTURE SHALL BE DONE IN ACCORDANCE WITH THE LANDLORD'S GUIDELINES AT THIS CONTRACTOR'S EXPENSE. ALL CONNECTIONS TO ROOFTOP EQUIPMENT SHALL BE INSIDE THE CURB (CONDENSATE DRAIN, POWER WIRING, CONTROL WIRING, ETC.).

H. METAL DUCTWORK - NO FIBERGLASS DUCT ALLOWED

1. NO DUCTWORK SHALL BE FABRICATED PRIOR TO APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER. DEVIATIONS FROM DESIGN MUST BE APPROVED BY TENANT'S CONSTRUCTION MANAGER PRIOR TO FABRICATION OR INSTALLATION. ALL DUCT MAINS ARE TO BE RECTANGULAR. ALL DUCT BRANCHES TO DIFFUSERS ARE TO BE ROUND SPIRAL DUCT.

2. ALL DUCTWORK SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH SMACNA LOW VELOCITY AND "HVAC DUCT CONSTRUCTION STANDARDS MANUAL", LATEST EDITION AND ASHRAE USING PRIME SHEETS OF GALVANIZED STEEL. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE ROD APPLICATIONS AND JOINT TYPES AND INTERVALS. ALL SQUARE ELBOWS SHALL BE PROVIDED WITH DOUBLE WALLED VANES ON MAXIMUM 3" CENTERS. PROVIDE SEAL CLASS "C" ON ALL TRAVERSE JOINTS UNLESS SUPERSEDED BY MORE STRINGENT LOCAL CODES. ALL DUCT CONNECTIONS ARE TO BE RIGID AND LEAK FREE ASSEMBLIES.

3. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ANY DUCTWORK INSTALLED IS TO BE COMPLETELY SEALED UP OF ANY OPENINGS, EITHER AT THE BEGINNING OR END OF A DUCT RUN OR AT A BRANCH, COLLAR DIFFUSER OR REGISTER TO AVOID DIRT OR OTHER CONTAMINANTS FROM ENTERING THE SYSTEM.

4. EXCEPT WHERE OTHERWISE INDICATED, CONSTRUCT DUCT SYSTEMS TO 2 INCH WATER GAUGE PRESSURE CLASSIFICATION (VERIFY WHETHER RETURN OR EXHAUST DUCT IS POSITIVE OR NEGATIVE PRESSURE). PRESSURE TEST DUCTS FOR LEAKAGE. REMAKE LEAKING JOINTS AND APPLY SEALANTS AS REQUIRED TO FABRICATE A SYSTEM THAT DOES NOT EXCEED 5 PERCENT LEAKAGE OR LESS AS STATED BY PRESSURE CLASS RATINGS IN SMACNA STANDARDS.

5. AS A MINIMUM, CROSSBREAK ALL FLAT SURFACES OR REINFORCE WITH A BEAD APPROXIMATELY 3/8 INCH WIDE BY 3/16 INCH DEEP ON 12 INCH CENTERS TO PREVENT VIBRATIONS.

6. INSTALL RIGID ROUND AND RECTANGULAR METAL DUCT WITH SUPPORT SYSTEMS INDICATED IN SMACNA STANDARDS. NO WOOD SHALL BE USED TO SUPPORT OR BRACE DUCTS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES OR BY LANDLORD.

7. WHERE DUCTS PASS THROUGH ROOFS, FLOORS AND FIRE RATED PARTITIONS, PROVIDE AS MINIMUM 1-1/2 INCH BY 1-1/2 INCH BY 1/8 INCH STEEL ANGLE FRAMES AT EACH SIDE OF OPENING. THE ANNULAR SPACE BETWEEN DUCT AND ANGLE FRAMES SHALL BE CAULKED WITH SILICONE SEALANT OR FIREPROOFED AS REQUIRED BY THE ASSEMBLY FIRE RATING. CONTRACTOR TO PROVIDE FIRE OR COMBINATION FIRE / SMOKE DAMPERS AT EACH PENETRATION WHERE REQUIRED BY CODE.

8. ALL TRAVERSE JOINTS AND SEAMS IN SUPPLY AIR DUCT SHALL BE SEALED AIR TIGHT WITH DAP CMC DUCT SEALER. JOINTS ALSO SHALL BE RIVETED OR CONNECTED WITH SHEET METAL SCREWS.

9. SOFT ELASTOMER BUTYL GASKETS WITH ADHESIVE BACKING SHALL BE USED TO SEAL FLANGED JOINTS.

10. DUCT TRANSITIONS SHALL NOT EXCEED 30 DEGREES SLOPE EXCEPT AS SPECIFICALLY NOTED OTHERWISE.

11. PROVIDE ACCESS TO ALL MOTORIZED DAMPERS, FIRE DAMPERS, FIRE / SMOKE DAMPERS, CONTROLS AND OTHER ITEMS IN DUCTWORK THAT REQUIRE SERVICE OR INSPECTION. IF THE ACCESS PANEL LOCATION IS EXPOSED TO THE SALES AREA, IT MUST BE APPROVED BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO INSTALLATION. LAY-IN SUPPLY AND RETURN AIR DIFFUSERS, GRILLES AND REGISTERS WITH PLASTER FRAMES MAY BE USED AS ACCESS LOCATIONS.

12. ALL BRANCHES AND TAKEOFFS SHALL BE EQUIPPED WITH MANUAL VOLUME CONTROLLING DEVICES HAVING AN INDICATING AND LOCKING DEVICE.

13. ALL TAPES AND MASTICS USED TO SEAL DUCTS MUST BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A AND BE MARKED "181A-P" FOR PRESSURE SENSITIVE TAPE, "181A-M" FOR MASTIC, OR "181A-H" FOR HEAT-SENSITIVE TAPE. TAPES AND MASTICS USED TO SEAL FLEXIBLE AIR DUCTS AND CONNECTORS MUST COMPLY WITH UL 181B AND BE MARKED "181B-FX" FOR PRESSURE SENSITIVE TAPE OR "181B-M" FOR MASTIC. MECHANICAL FASTENERS USED WITH FLEXIBLE NONMETALLIC AIR DUCTS MUST COMPLY WITH UL 181B AND BE MARKED "181B-C".

I. FLEXIBLE CONNECTIONS

1. FLEXIBLE COLLARS SHALL BE PROVIDED IN ALL CONNECTIONS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, WATER SOURCE HEAT PUMPS, AIR HANDLERS, FAN POWERED VAV BOXES, ETC.) AND DUCTS OR CASINGS. ALSO PROVIDE FLEXIBLE CONNECTIONS WHERE DUCTS CROSS BUILDING EXPANSION JOINTS.

2. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF NEOPRENE-COATED FLAMEPROOF FABRIC. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR MOVEMENT AND PREVENT THE TRANSMISSION OF VIBRATION.

3. FLEXIBLE CONNECTIONS ARE TO BE RATED FOR THE OPERATING PRESSURE OF THE SYSTEM.

4. FINAL CONNECTIONS TO EXHAUST FAN(S) SHALL BE WITH A HEAVY AIRTIGHT ACID RESISTANT FIRE RETARDANT FIBERGLASSED NEOPRENE CONNECTOR, A MINIMUM OF SIX (6) INCHES IN LENGTH. THE CONNECTOR SHALL BE FASTENED TO EQUIPMENT AND DUCT WITH TWO FLEXIBLE REMOVABLE BRASS STRAPS OR ALTERNATE APPROVED METHOD.

J. THERMOSTATS

1. MOUNT THERMOSTATS 4'-0" (ADA COMPLYING), THERMOSTAT SENSORS 5'-0" ABOVE FINISHED FLOORS AND SET DATE, TIME, TEMPERATURE, ETC. TURN OVER OPERATING INSTRUCTIONS TO TENANT REPRESENTATIVE.

2. THERMOSTATS SHALL BE PROVIDED WITH KEY OPERATED SECURITY COVERS AND DESCRIPTIVE NAMEPLATES.

K. FIRE DAMPERS, SMOKE DAMPERS

1. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL FIRE DAMPERS AS REQUIRED BY LANDLORD AND / OR TENANT CRITERIA AND / OR CODES HAVING JURISDICTION. ALL FIRE DAMPERS SHALL COMPLY WITH THE REQUIREMENTS OF THE BOARD OF FIRE UNDERWRITERS, THE LOCAL FIRE MARSHAL AND SHALL BE LABELED AND APPROVED BY UNDERWRITERS LABORATORIES.

2. FIRE DAMPERS SHALL HAVE THE BLADES OUT OF THE AIR STREAM AND A 165 DEGREE F FUSIBLE LINK.

3. PROVIDE ALL NECESSARY FRAMING AND SLEEVES FOR DAMPER MOUNTING PER UL AND CODE REQUIREMENTS.

4. PROVIDE DUCT ACCESS DOORS IN AN ACCESSIBLE LOCATION FOR ALL FIRE DAMPERS. DOOR IS TO BE 20 GAUGE GALVANIZED DOOR WITH QUICK-OPENING LATCH AND PIANO HINGE.

5. WHERE REQUIRED BY LOCAL CODES, LANDLORD AND IF INDICATED ON DRAWINGS, PROVIDE UL555S SMOKE DAMPER WITH FIRE/HEAT/SMOKE SENSOR, REVERSIBLE MOTOR AND INTERLOCK WITH FIRE ALARM SYSTEM.

L. FLEXIBLE AIR DUCT

1. FLEXIBLE DUCT FOR CONNECTIONS SHALL BE A FACTORY FABRICATED ASSEMBLY CONSISTING OF AN INNER SLEEVE, INSULATION AND AN OUTER MOISTURE BARRIER. THE INNER SLEEVE SHALL BE CONSTRUCTED OF A CONTINUOUS VINYL COATED SPRING STEEL WIRE HELIX FUSED TO A CONTINUOUS LAYER OF FIBERGLASS IMPREGNATED AND COATED VINYL. A 1 1/4" THICK LAYER OF INSULATING BLANKET OF FIBERGLASS WOOL SHALL ENCASE THE INNER SLEEVE AND BE SHEATHED WITH AN OUTER MOISTURE BARRIER OF A BIDIRECTIONAL REINFORCED METALIZED VAPOR BARRIER. THE FLEXIBLE DUCT SHALL BE RATED FOR A MAXIMUM WORKING VELOCITY OF 6000 FPM AND SHALL BE LISTED BY THE UNDERWRITERS LABORATORIES UNDER THEIR UL-181 STANDARDS AS A CLASS I DUCT AND SHALL COMPLY WITH NFPA STANDARD - 90A. THE FLEXIBLE DUCT SHALL BE THERMAFLEX M-KC OR APPROVED EQUIVALENT. FLEXIBLE DUCT SHALL ROUTE FROM SHEET METAL DUCTWORK TO CEILING DIFFUSERS ONLY. THERE SHALL BE NO EXPOSED FLEXIBLE DUCT.

2. FLEXIBLE AIR DUCT MAY ONLY BE USED IN VERTICAL APPLICATIONS WITH PRIOR APPROVAL FROM THE TENANT'S CONSTRUCTION MANAGER.

3. FLEXIBLE DUCT SHALL NOT EXTEND OVER 5 FEET IN LENGTH AT ANY ONE LOCATION.

M. SUPPLY AND RETURN AIR TAKEOFF FITTINGS

1. RECTANGULAR DUCT

A. PROVIDE 45 DEGREE RECTANGULAR TAKEOFFS FROM MAIN DUCTWORK TO RECTANGULAR BRANCHES.

2. SPIRAL DUCT

A. PROVIDE SADDLE OR DIRECT CONNECTION OF A BRANCH DUCT INTO A LARGER DUCT. THE DIAMETER OF THE BRANCH SHALL NOT EXCEED TWO THIRDS OF THE DIAMETER OF THE MAIN. PROTRUSIONS INTO THE MAIN ARE NOT ALLOWED.

N. DAMPERS

1. PROVIDE MANUAL LOCKING QUADRANT VOLUME CONTROL DAMPERS WITH HANDLE OPERATORS IN EACH BRANCH DUCT AND AS SHOWN ON PLANS TO FACILITATE AIR BALANCING.

2. WHERE ACCESS TO BALANCING DAMPER IS RESTRICTED OR IN AREAS WITH SHEET ROCK CEILINGS, YOUNG REGULATORS SHALL BE USED.

3. ALL RECTANGULAR DAMPERS IN OUTSIDE AIR AND RELIEF AIR DUCTS ARE TO BE OPPOSED BLADE TYPE. ALL RECTANGULAR DAMPERS IN RETURN AIR DUCTS TO BE PARALLEL BLADE TYPE. ALL OUTSIDE AIR DUCT DAMPERS MUST ALSO BE OF THE LOW LEAKAGE TYPE.

4. ALL MOTORIZED DAMPERS NOT FURNISHED WITH EQUIPMENT ARE TO BE HONEYWELL DAMPERS.

O. DIFFUSERS, GRILLES AND REGISTERS

1. PROVIDE DIFFUSERS, GRILLES AND REGISTERS AS SCHEDULED. DEVICES TO BE COMPLETE WITH FRAMES AND ALL ACCESSORIES. ALL DIFFUSERS, GRILLES AND REGISTERS IN SHEET ROCK CEILINGS TO BE PROVIDED WITH PLASTER FRAMES. FINISH TO BE COORDINATED WITH INTERIOR FINISHES.

2. INSTALL ALL AIR DEVICES AS LOCATED ON THE ARCHITECTURAL REFLECTED CEILING PLAN OR THE MECHANICAL PLAN.

P. DUCTWORK INSULATION

1. ALL NEW SUPPLY AND RETURN AIR DUCTWORK WITHIN 10' OF HVAC UNIT SHALL BE ACOUSTICALLY LINED. DUCT SIZES SHOWN ON THE DRAWING ARE INTERNAL FREE AREA SIZES. INTERNAL LINER SHALL BE 2" THICK FOR CLIMATE ZONES 1-4 AND 3" FOR CLIMATE ZONES 5-8. DUCT LINER EQUIVALENT TO JOHNS MANVILLE "PERMACOTE LINACOUSTIC" ("R VALUE" = 8 FOR 2" AND 12 FOR 3") AND SHALL BE APPLIED TO THE DUCTWORK WITH FIRE RESISTIVE ADHESIVES AND CADMIUM OR COPPER PLATED MECHANICAL FASTENERS.

2. ALL OUTSIDE AIR AND UNEXPOSED DUCTWORK WITHIN BUILDING, EXCEPT WHERE ACOUSTICALLY LINED, SHALL HAVE 3 INCH IN CLIMATE ZONES 1-4 AND 4" IN CLIMATE ZONES 5-8, FIBERGLASS DUCT WRAP INSULATION WITH FSK FACING EQUIVALENT TO JOHNS MANVILLE "MICROLITE EQ TYPE 75" (INSTALLED "R VALUE" = 8.3 FOR 3" AND 12 FOR FOR 4").

3. LEADING EDGES OF DUCT INSULATION SHALL BE OVERLAPPED BY ADJOINING INSULATION FOR 6" MINIMUM AND THEN SEALED WITH FOIL VAPOR BARRIER ADHESIVE AND DUCT MASTIC SO THAT NO FIBERGLASS INSULATION IS VISIBLE.

4. ALL INSULATION ON EXISTING PIPING OR DUCTS THAT IS WETTED, DAMAGED, DISTURBED OR REMOVED SHALL BE REPLACED.

5. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES. INSULATION MUST COMPLY WITH NFPA 90A.

6. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 AND MUST NOT FLAME, GLOW SMOLDER OR SMOKE WHEN TESTED IN ACCORDANCE WITH ASTM C 411 OR AS REQUIRED BY LOCAL CODES.

7. EXTERIOR SUPPLY AND RETURN DUCT INSULATION

A. SERVICE: RECTANGULAR, SUPPLY-AIR AND RETURN-AIR DUCTS.
   1. MATERIAL: INSULATION BOARD, 6 PSF MINIMUM AND PLAIN FACING.
   2. THICKNESS: 2 INCHES.
   3. NUMBER OF LAYERS: TWO. TOTAL THICKNESS = 4"
   4. VAPOR RETARDER REQUIRED: YES.

A. INORGANIC GLASS FIBERS PREFORMED AND BONDED BY THERMOSETTING RESIN. MUST COMPLY WITH ASTM C 612, TYPE IA AND IB,
   1. KNAUF INSULATION OR APPROVED EQUIVALENT.

B. INSULATION INSTALLED OUTDOORS: FLAME SPREAD RATING OF 25 OR LESS AND SMOKE DEVELOPED RATING OF 50 OR LESS.

8. APPLY INSULATION AS FOLLOWS:

A. APPLY TWO-LAYER INSULATION WITH JOINTS TIGHTLY BUTTED AND STAGGERED AT LEAST 3 INCHES. SECURE LAYERS WITH ADHESIVE, MECHANICAL FASTENERS OR BANDING. FASTENERS SHALL BE LOCATED A MAXIMUM OF 3" FROM EACH EDGE AND NO GREATER THAN 12" APART.

B. ON EXPOSED APPLICATIONS, FINISH INSULATION WITH A SKIM COAT OF MINERAL-FIBER, HYDRAULIC-SETTING CEMENT TO SURFACE OF INSTALLED INSULATION. WHEN DRY, APPLY FLOOD COAT OF LAGGING ADHESIVE AND PRESS ON ONE LAYER OF GLASS CLOTH OR TAPE. OVERLAP EDGES AT LEAST 1 INCH (25 MM). APPLY FINISH COAT OF LAGGING ADHESIVE OVER GLASS CLOTH OR TAPE. THIN THE FINISH COAT TO ACHIEVE SMOOTH FINISH. OUTDOOR JACKET: POLYGUARD PRODUCTS, INC. 'ALUMAGUARD 60' OR MFM BUILDING PRODUCTS CORP. 'FLEXCLAD 400'.

Q. SYSTEM CLEANOUT

1. UPON COMPLETION OF INSTALLATION, CLEAN ENTIRE SYSTEM BEFORE INSTALLING AIR OUTLETS. CONTRACTOR TO PROVIDE A CERTIFICATION THAT CLEANING WAS ACCOMPLISHED PRIOR TO PROJECT CLOSEOUT.

2. FILTERS MUST BE IN UNITS AT ANY TIME FANS ARE OPERATED.

R. SYSTEM TESTING, ADJUSTING AND BALANCING

1. TESTING, ADJUSTING AND BALANCING OF ALL WORK SHALL BE COMPLETED BY AN INDEPENDENT CONTRACTOR WHO IS CURRENTLY LICENSED BY THE ASSOCIATED AIR BALANCING COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). NO OTHER BALANCE REPORTS WILL BE REVIEWED OR ACCEPTED. ALL BALANCING WORK MUST BE COMPLETE AND DONE IN ACCORDANCE WITH THE MOST RECENT STANDARDS OF THEIR SOCIETY. PAYMENT OF ALL COSTS FOR TESTING SHALL BE MADE BY THE HVAC CONTRACTOR.

2. THE CONTRACTOR SHALL INSTALL NEW FILTERS IN ALL UNITS PRIOR TO THE AIR BALANCING. THE COMPLETE AIR BALANCE SHALL TAKE PLACE WITH OUTSIDE AIR DAMPERS IN MINIMUM POSITION.

3. BALANCE AIR AND WATER QUANTITIES TO WITHIN PLUS OR MINUS 5 PERCENT OF THAT INDICATED ON THE DRAWINGS. ANY REQUIRED CHANGES IN SHEAVES, BELTS, PULLEYS OR THE ADDITION OF DAMPERS REQUIRED TO ACHIEVE SPECIFIED FLOW RATES SHALL BE PROVIDED BY THE HVAC CONTRACTOR WITH NO ADDITIONAL COST TO THE TENANT.

4. THE BALANCE REPORT SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:

A) AABC OR NEBB CERTIFICATION NUMBER AND SIGNATURE OF BALANCING CONTRACTOR.
B) INSTRUMENTATION LIST WITH LAST CALIBRATION DATES.
C) MAKE AND MODEL NUMBERS OF ALL HVAC EQUIPMENT TESTED.
D) AIR CFM AND STATIC PRESSURE READINGS (DISCHARGE AND SUCTION) AS MEASURED BY PITOT TUBE DUCT TRAVERSE AT THE UNITS.
E) MOTOR NAMEPLATE DATA WITH ACTUAL FIELD VOLTAGE AND AMPERAGE READINGS FOR EACH LEG.
F) MOTOR AND FAN RPM, SHEAVE SIZES AND BELT SIZES AND LENGTHS.
G) OUTSIDE, RETURN, MIXED AND SUPPLY AIR TEMPERATURES AT FULL COOLING.
H) WATER BALANCE DATA INCLUDING GPM WITH INLET AND OUTLET TEMPERATURE AND PRESSURE READINGS.
I) MAKE AND MODEL NUMBERS OF ALL AIR DISTRIBUTION EQUIPMENT.
J) FINAL BALANCED AIR VOLUMES AT ALL OUTLETS (INCLUDING RETURNS WHERE DUCTED).
K) INDEXED PLAN WITH DIFFUSER AND RETURN LOCATIONS.

5. ALL CONTROL SEQUENCES SHALL BE TESTED AND OPERATING STATUS RECORDED IN THE REPORT.

6. THREE COPIES OF THE BALANCE REPORT SHALL BE SUBMITTED THROUGH THE GENERAL CONTRACTOR TO THE TENANT'S CONSTRUCTION MANAGER FOR REVIEW AND COMMENT.

7. THE BALANCING CONTRACTOR SHALL PERFORM ALL APPLICABLE TESTING AND BALANCING FUNCTIONS REQUIRED FOR THE SYSTEM DESIGNED IN THESE DRAWINGS. THE BALANCING CONTRACTOR SHALL RECHECK ANY ITEMS THAT THE TENANT DEEMS NECESSARY AT NO ADDITIONAL COST TO THE TENANT.

8. FINAL BALANCE REPORT SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL.

S. FINAL HVAC INSPECTIONS

1. ASIDE FROM NORMAL INTERIM INSPECTIONS OF WORK IN PLACE, THE TENANT SHALL HAVE THE RIGHT TO HAVE AN INDEPENDENT HVAC CONTRACTOR INSPECT THE FINISHED HVAC INSTALLATION UPON COMPLETION FOR COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODES. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE TO BRING ALL ITEMS REPORTED BY THE INDEPENDENT HVAC CONTRACTOR UP TO PLANS AND SPECIFICATIONS REQUIREMENTS AT NO ADDITIONAL COST TO THE TENANT.

T. INDOOR AIR QUALITY

1. NO ANALYSIS HAS BEEN MADE WITH REGARD TO SOURCES OR POTENTIAL SOURCES OF INDOOR OR OUTDOOR AIR CONTAMINANTS OR LEVELS OF CONTAMINATION.

2. IT IS THE RESPONSIBILITY OF THE GENERAL AND MECHANICAL CONTRACTOR TO INFORM THE TENANT'S REPRESENTATIVE, LANDLORD AND TENANT'S ARCHITECT IF ANY SOURCE OR POTENTIAL SOURCE OF INDOOR AIR CONTAMINATION IS IDENTIFIED.

3. PRIOR TO ENCLOSING SPACES SUCH AS PLUMBING CHASES, AIR SHAFTS AND RETURN AIR PLENUMS CLEAN ALL AREAS THOROUGHLY. THE CONTRACTOR SHALL GUARANTEE THAT THE PLENUM CHAMBER USED FOR RECIRCULATING OF AIR WILL BE OF TIGHT CONSTRUCTION AND THAT ALL SOURCES OF CONTAMINATION FROM TRAPS, SOIL STACKS, DOWNSPOUTS, VENTS, EXHAUST DISCHARGES AND OTHER SOURCES WILL BE ENCLOSED SO THAT NO CONTAMINATED AIR WILL BE RECIRCULATED.

4. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES SHUT OFF THE HVAC SYSTEM, BLOCK OFF ALL AIR GRILLS, DIFFUSERS AND OTHER OPENINGS OUTSIDE THE IMMEDIATE CONSTRUCTION AREA. OPENINGS TO ADJACENT TENANT SPACES SHALL BE COVERED WITH FILTER MEDIA TO PREVENT DUST AND OTHER AIRBORNE CONTAMINANTS FROM PASSING TO ADJOINING SPACES.

5. CONTRACTOR TO INSTALL TEMPORARY EXHAUST SYSTEM TO VENTILATE CONSTRUCTION SITE AND KEEP SITE UNDER SLIGHT NEGATIVE PRESSURE DURING ALL HOURS OF CONSTRUCTION, EVEN IF AFTER NORMAL BUSINESS HOURS.

6. CONTRACTOR TO INSTALL TEMPORARY BARRIERS TO PROTECT ADJACENT SPACES FROM DUST, PARTICULATES, VAPORS AND NOISE. WHERE TEMPORARY BARRIERS ARE INSTALLED ALWAYS MAINTAIN FIRE EXITS AND EXITWAYS. 4-15-19

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
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DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR

LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHA, PA 19102

PROJECT NO.: 210293
DRAWN BY: LC
SCALE: AS NOTED
CHECKED BY: KF
DATE: 11/04/2021
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME:
MECHANICAL GENERAL NOTES

DRAWING NO.: M100

FIRM REGISTRATION NO.: AX010102

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SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

1. DUCT MATERIALS
   a. DUCTS SERVING TYPE I HOODS SHALL BE CONSTRUCTED OF THE FOLLOWING MATERIALS:
      i. STEEL HAVING A MINIMUM THICKNESS OF 0.0575 INCH (1.463 MM) (NO. 16 GAGE).
      ii. STAINLESS STEEL NOT LESS THAN 0.0450 INCH (1.14 MM) (NO. 18 GAGE) IN THICKNESS.
   b. DUCT INSULATION INSTALLED WITHIN 18 INCHES (457 MM) OF A TYPE I HOOD SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED FOR THE APPLICATION.

I. JOINTS, SEAMS AND PENETRATIONS OF GREASE DUCTS
   a. JOINTS, SEAMS AND PENETRATIONS OF GREASE DUCTS SHALL BE MADE WITH A CONTINUOUS LIQUID-TIGHT WELD OR BRAZE MADE ON THE EXTERNAL SURFACE OF THE DUCT SYSTEM.
   b. EXCEPTIONS:
      i. PENETRATIONS SHALL NOT BE REQUIRED TO BE WELDED OR BRAZED WHERE SEALED BY DEVICES THAT ARE LISTED FOR THE APPLICATION.
      ii. INTERNAL WELDING OR BRAZING SHALL NOT BE PROHIBITED PROVIDED THAT THE JOINT IS FORMED OR GROUND SMOOTH AND IS PROVIDED WITH READY ACCESS FOR INSPECTION.
      iii. FACTORY-BUILT COMMERCIAL KITCHEN GREASE DUCTS LISTED AND LABELED IN ACCORDANCE WITH UL 1978 AND INSTALLED IN ACCORDANCE WITH SECTION 304.1.
   c. DUCT JOINT TYPES
      i. DUCT JOINTS SHALL BE BUTT JOINTS, WELDED FLANGE JOINTS WITH A MAXIMUM FLANGE DEPTH OF / INCH (12.7 MM) OR OVERLAPPING DUCT JOINTS OF EITHER THE TELESCOPING OR BELL TYPE. OVERLAPPING JOINTS SHALL BE INSTALLED TO PREVENT LEDGES AND OBSTRUCTIONS FROM COLLECTING GREASE OR INTERFERING WITH GRAVITY DRAINAGE TO THE INTENDED COLLECTION POINT. THE DIFFERENCE BETWEEN THE INSIDE CROSS-SECTIONAL DIMENSIONS OF OVERLAPPING SECTIONS OF DUCT SHALL NOT EXCEED / INCH (6.4 MM). THE LENGTH OF OVERLAP FOR OVERLAPPING DUCT JOINTS SHALL NOT EXCEED 2 INCHES (51 MM).
   d. DUCT-TO-HOOD JOINTS.
      i. DUCT-TO-HOOD JOINTS SHALL BE MADE WITH CONTINUOUS INTERNAL OR EXTERNAL LIQUID-TIGHT WELDED OR BRAZED JOINTS. SUCH JOINTS SHALL BE SMOOTH, ACCESSIBLE FOR INSPECTION, AND WITHOUT GREASE TRAPS.
      ii. EXCEPTIONS: THIS SECTION SHALL NOT APPLY TO:
         1. A VERTICAL DUCT-TO-HOOD COLLAR CONNECTION MADE IN THE TOP PLANE OF THE HOOD IN ACCORDANCE WITH ALL OF THE FOLLOWING:
      a. THE HOOD DUCT OPENING SHALL HAVE A 1-INCHDEEP (25 MM), FULL PERIMETER, WELDED FLANGE TURNED DOWN INTO THE HOOD INTERIOR AT AN ANGLE OF 90 DEGREES (1.57 RAD) FROM THE PLANE OF THE OPENING.
      b. THE DUCT SHALL HAVE A 1-INCH-DEEP (25 MM) FLANGE MADE BY A 1-INCH BY 1-INCH (25 MM BY 25 MM) ANGLE IRON WELDED TO THE FULL PERIMETER OF THE DUCT NOT LESS THAN 1-INCH (25 MM) ABOVE THE BOTTOM END OF THE DUCT.
      c. A GASKET RATED FOR USE AT NOT LESS THAN 1,500°F (816°C) IS INSTALLED BETWEEN THE DUCT FLANGE AND THE TOP OF THE HOOD.
      d. THE DUCT-TO-HOOD JOINT SHALL BE SECURED BY STUD BOLTS NOT LESS THAN ¼-INCH (6.4 MM) IN DIAMETER WELDED TO THE HOOD WITH A SPACING NOT GREATER THAN 4 INCHES (102 MM) ON CENTER FOR THE FULL PERIMETER OF THE OPENING. THE BOLTS AND NUTS SHALL BE SECURED WITH LOCK-WASHERS.
      e. DUCT-TO-EXHAUST FAN CONNECTIONS.
      i. DUCT-TO-EXHAUST FAN CONNECTIONS SHALL BE FLANGED AND GASKETED AT THE BASE OF THE FAN FOR VERTICAL DISCHARGE FANS; SHALL BE FLANGED, GASKETED AND BOLTED TO THE INLET OF THE FAN FOR SIDE-INLET UTILITY FANS; AND SHALL BE FLANGED, GASKETED AND BOLTED TO THE INLET AND OUTLET OF THE FAN FOR IN-LINE FANS. GASKET AND SEALING MATERIALS SHALL BE RATED FOR CONTINUOUS DUTY AT A TEMPERATURE OF NOT LESS THAN 1,500°F (816°C).
   f. VIBRATION ISOLATION.
      i. A VIBRATION ISOLATION CONNECTOR FOR CONNECTING A DUCT TO A FAN SHALL CONSIST OF NONCOMBUSTIBLE PACKING IN A METAL SLEEVE JOINT OF APPROVED DESIGN OR SHALL BE A COATED-FABRIC FLEXIBLE DUCT CONNECTOR LISTED AND LABELED FOR THE APPLICATION. VIBRATION ISOLATION CONNECTORS SHALL BE INSTALLED ONLY AT THE CONNECTION OF A DUCT TO A FAN INLET OR OUTLET.
   g. GREASE DUCT TEST.
      i. PRIOR TO THE USE OR CONCEALMENT OF ANY PORTION OF A GREASE DUCT SYSTEM, A LEAKAGE TEST SHALL BE PERFORMED. DUCTS SHALL BE CONSIDERED TO BE CONCEALED WHERE INSTALLED IN SHAFTS OR COVERED BY COATINGS OR WRAPS THAT PREVENT THE DUCTWORK FROM BEING VISUALLY INSPECTED ON ALL SIDES. THE PERMIT HOLDER SHALL BE RESPONSIBLE TO PROVIDE THE NECESSARY EQUIPMENT AND PERFORM THE GREASE DUCT LEAKAGE TEST. A LIGHT TEST SHALL BE PERFORMED TO DETERMINE THAT ALL WELDED AND BRAZED JOINTS ARE LIQUID TIGHT. A LIGHT TEST SHALL BE PERFORMED BY PASSING A LAMP HAVING A POWER RATING OF NOT LESS THAN 100 WATTS THROUGH THE ENTIRE SECTION OF DUCTWORK TO BE TESTED. THE LAMP SHALL BE OPEN SO AS TO EMIT LIGHT EQUALLY IN ALL DIRECTIONS PERPENDICULAR TO THE DUCT WALLS. A TEST SHALL BE PERFORMED FOR THE ENTIRE DUCT SYSTEM, INCLUDING THE HOOD-TO-DUCT CONNECTION. THE DUCT WORK SHALL BE PERMITTED TO BE TESTED IN SECTIONS, PROVIDED THAT EVERY JOINT IS TESTED. FOR LISTED FACTORY-BUILT GREASE DUCTS, THIS TEST SHALL BE LIMITED TO DUCT JOINTS ASSEMBLED IN THE FIELD AND SHALL EXCLUDE FACTORY WELDS.

III. GREASE DUCT SUPPORTS
   a. GREASE DUCT BRACING AND SUPPORTS SHALL BE OF NONCOMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE STRUCTURE AND DESIGNED TO CARRY GRAVITY AND SEISMIC LOADS WITHIN THE STRESS LIMITATIONS OF THE INTERNATIONAL BUILDING CODE. BOLTS, SCREWS, RIVETS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALLS.

IV. AIR VELOCITY
   a. GREASE DUCT SYSTEMS SERVING A TYPE I HOOD SHALL BE DESIGNED AND INSTALLED TO PROVIDE AN AIR VELOCITY WITHIN THE DUCT SYSTEM OF NOT LESS THAN 500 FEET PER MINUTE (2.5 M/S).
   b. EXCEPTION:
      i. THE VELOCITY LIMITATIONS SHALL NOT APPLY WITHIN DUCT TRANSITIONS UTILIZED TO CONNECT DUCTS TO DIFFERENTLY SIZED OR SHAPED OPENINGS IN HOODS AND FANS, PROVIDED THAT SUCH TRANSITIONS DO NOT EXCEED 3 FEET (914 MM) IN LENGTH AND ARE DESIGNED TO PREVENT THE TRAPPING OF GREASE.

V. SEPARATION OF GREASE DUCT SYSTEM
   a. A SEPARATE GREASE DUCT SYSTEM SHALL BE PROVIDED FOR EACH TYPE I HOOD. A SEPARATE GREASE DUCT SYSTEM IS NOT REQUIRED WHERE ALL OF THE FOLLOWING CONDITIONS ARE MET:
      i. ALL INTERCONNECTED HOODS ARE LOCATED WITHIN THE SAME STORY.
      ii. ALL INTERCONNECTED HOODS ARE LOCATED WITHIN THE SAME ROOM OR IN ADJOINING ROOMS.
      iii. INTERCONNECTING DUCTS DO NOT PENETRATE ASSEMBLIES REQUIRED TO BE FIRE-RESISTANCE RATED.
      iv. THE GREASE DUCT SYSTEM DOES NOT SERVE SOLID-FUEL-FIRED APPLIANCES.

VI. GREASE DUCT CLEARANCES
   a. WHERE ENCLOSURES ARE NOT REQUIRED, GREASE DUCT SYSTEMS AND EXHAUST EQUIPMENT SERVING A TYPE I HOOD SHALL HAVE A CLEARANCE TO COMBUSTIBLE CONSTRUCTION OF NOT LESS THAN 18 INCHES (457 MM), AND SHALL HAVE A CLEARANCE TO NONCOMBUSTIBLE CONSTRUCTION AND GYPSUM WALLBOARD ATTACHED TO NONCOMBUSTIBLE STRUCTURES OF NOT LESS THAN 3 INCHES (76 MM).
   b. EXCEPTIONS:
      i. FACTORY-BUILT COMMERCIAL KITCHEN GREASE DUCTS LISTED AND LABELED IN ACCORDANCE WITH UL 1978.
      ii. LISTED AND LABELED EXHAUST EQUIPMENT INSTALLED IN ACCORDANCE WITH SECTION 304.1.
      iii. WHERE COMMERCIAL KITCHEN GREASE DUCTS ARE CONTINUOUSLY COVERED ON ALL SIDES WITH A LISTED AND LABELED FIELD-APPLIED GREASE DUCT ENCLOSURE MATERIAL, SYSTEM, PRODUCT OR METHOD OF CONSTRUCTION SPECIFICALLY EVALUATED FOR SUCH PURPOSE IN ACCORDANCE WITH ASTM E2336, THE REQUIRED CLEARANCE SHALL BE IN ACCORDANCE WITH THE LISTING OF SUCH MATERIAL, SYSTEM, PRODUCT OR METHOD.

VII. PREVENTION OF GREASE ACCUMULATION IN GREASE DUCTS
   a. DUCT SYSTEMS SERVING A TYPE I HOOD SHALL BE CONSTRUCTED AND INSTALLED SO THAT GREASE CANNOT COLLECT IN ANY PORTION THEREOF, AND THE SYSTEM SHALL SLOPE NOT LESS THAN ONE-FOURTH UNIT VERTICAL IN 12 UNITS HORIZONTAL (2-PERCENT SLOPE) TOWARD THE HOOD OR TOWARD A GREASE RESERVOIR DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION 506.3.7.1. WHERE HORIZONTAL DUCTS EXCEED 75 FEET (22 860 MM) IN LENGTH, THE SLOPE SHALL BE NOT LESS THAN ONE UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.3-PERCENT SLOPE).
   b. GREASE DUCT RESERVOIRS.
   i. GREASE DUCT RESERVOIRS SHALL:
      1. BE CONSTRUCTED AS REQUIRED FOR THE GREASE DUCT THEY SERVE.
      2. BE LOCATED ON THE BOTTOM OF THE HORIZONTAL DUCT OR THE BOTTOM MOST SECTION OF THE DUCT RISER.
      3. EXTEND ACROSS THE FULL WIDTH OF THE DUCT AND HAVE A LENGTH OF NOT LESS THAN 12 INCHES (305 MM).
      4. HAVE A DEPTH OF NOT LESS THAN 1 INCH (25 MM).
      5. HAVE A BOTTOM THAT SLOPES TO A DRAIN.
      6. BE PROVIDED WITH A CLEANOUT OPENING CONSTRUCTED IN ACCORDANCE WITH SECTION 506.3.8 AND INSTALLED TO PROVIDE DIRECT ACCESS TO THE RESERVOIR. THE CLEANOUT OPENING SHALL BE LOCATED ON A SIDE OR ON TOP OF THE DUCT SO AS TO PERMIT CLEANING OF THE RESERVOIR.
      7. BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WHERE MANUFACTURED DEVICES ARE UTILIZED.

VIII. GREASE DUCT CLEANOUTS AND OPENINGS
   a. GREASE DUCT CLEANOUTS AND OPENINGS SHALL COMPLY WITH ALL OF THE FOLLOWING:
   i. GREASE DUCTS SHALL NOT HAVE OPENINGS EXCEPT WHERE REQUIRED FOR THE OPERATION AND MAINTENANCE OF THE SYSTEM.
   ii. SECTIONS OF GREASE DUCTS THAT ARE INACCESSIBLE FROM THE HOOD OR DISCHARGE OPENINGS SHALL BE PROVIDED WITH CLEANOUT OPENINGS SPACED NOT MORE THAN 20 FEET (6096 MM) APART AND NOT MORE THAN 10 FEET (3048 MM) FROM CHANGES IN DIRECTION GREATER THAN 45 DEGREES (0.79 RAD).
   iii. CLEANOUTS AND OPENINGS SHALL BE EQUIPPED WITH TIGHT-FITTING DOORS CONSTRUCTED OF STEEL HAVING A THICKNESS NOT LESS THAN THAT REQUIRED FOR THE DUCT.
   iv. CLEANOUT DOORS SHALL BE INSTALLED LIQUID TIGHT.
   v. DOOR ASSEMBLIES INCLUDING ANY FRAMES AND GASKETS SHALL BE APPROVED FOR THE APPLICATION AND SHALL NOT HAVE FASTENERS THAT PENETRATE THE DUCT.
   vi. GASKET AND SEALING MATERIALS SHALL BE RATED FOR NOT LESS THAN 1,500°F (816°C).
   vii. LISTED DOOR ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
   b. PERSONNEL ENTRY.
   i. WHERE DUCTWORK IS LARGE ENOUGH TO ALLOW ENTRY OF PERSONNEL, NOT LESS THAN ONE APPROVED OR LISTED OPENING HAVING DIMENSIONS NOT LESS THAN 22 INCHES BY 20 INCHES (559 MM BY 508 MM) SHALL BE PROVIDED IN THE HORIZONTAL SECTIONS, AND IN THE TOP OF VERTICAL RISERS. WHERE SUCH ENTRY IS PROVIDED, THE DUCT AND ITS SUPPORTS SHALL BE CAPABLE OF SUPPORTING THE ADDITIONAL LOAD, AND THE CLEANOUTS SPECIFIED IN SECTION 506.3.8 ARE NOT REQUIRED.
   c. CLEANOUTS SERVING IN-LINE FANS.
   i. A CLEANOUT SHALL BE PROVIDED FOR BOTH THE INLET SIDE AND OUTLET SIDE OF AN INLINE FAN EXCEPT WHERE A DUCT DOES NOT CONNECT TO THE FAN. SUCH CLEANOUTS SHALL BE LOCATED WITHIN 3 FEET (914 MM) OF THE FAN DUCT CONNECTIONS.

IX. GREASE DUCT HORIZONTAL CLEANOUTS
   a. CLEANOUTS SERVING HORIZONTAL SECTIONS OF GREASE DUCTS SHALL:
   i. BE SPACED NOT MORE THAN 20 FEET (6096 MM) APART.
   ii. BE LOCATED NOT MORE THAN 10 FEET (3048 MM) FROM CHANGES IN DIRECTION THAT ARE GREATER THAN 45 DEGREES (0.79 RAD).
   iii. BE LOCATED ON THE BOTTOM ONLY WHERE OTHER LOCATIONS ARE NOT AVAILABLE AND SHALL BE PROVIDED WITH INTERNAL DAMMING OF THE OPENING SUCH THAT GREASE WILL FLOW PAST THE OPENING WITHOUT POOLING. BOTTOM CLEANOUTS AND OPENINGS SHALL BE APPROVED FOR THE APPLICATION AND INSTALLED LIQUID TIGHT.
   iv. NOT BE CLOSER THAN 1 INCH (25 MM) FROM THE EDGES OF THE DUCT.
   v. HAVE OPENING DIMENSIONS OF NOT LESS THAN 12 INCHES BY 12 INCHES (305 MM BY 305 MM), WHERE SUCH DIMENSIONS PRECLUDE INSTALLATION, THE OPENING SHALL BE NOT LESS THAN 12 INCHES (305 MM) ON ONE SIDE AND SHALL BE LARGE ENOUGH TO PROVIDE ACCESS FOR CLEANING AND MAINTENANCE.
   vi. SHALL BE LOCATED AT GREASE RESERVOIRS.

X. GREASE DUCT ENCLOSURES
   x. A COMMERCIAL KITCHEN GREASE DUCT SERVING A TYPE I HOOD THAT PENETRATES A CEILING, WALL, FLOOR OR ANY CONCEALED SPACE SHALL BE ENCLOSED FROM THE POINT OF PENETRATION TO THE OUTLET TERMINAL. IN-LINE EXHAUST FANS NOT LOCATED OUTDOORS SHALL BE ENCLOSED AS REQUIRED FOR GREASE DUCTS. A DUCT SHALL PENETRATE EXTERIOR WALLS ONLY AT LOCATIONS WHERE UNPROTECTED OPENINGS ARE PERMITTED BY THE INTERNATIONAL BUILDING CODE. THE DUCT ENCLOSURE SHALL SERVE A SINGLE GREASE DUCT AND SHALL NOT CONTAIN OTHER DUCTS, PIPING OR WIRING SYSTEMS. DUCT ENCLOSURES SHALL HAVE A FIRE-RESISTANCE RATING OF NOT LESS THAN THAT OF THE ASSEMBLY PENETRATED AND NOT LESS THAN 1 HOUR. FIRE DAMPERS AND SMOKE DAMPERS SHALL NOT BE INSTALLED IN GREASE DUCTS.
   y. EXCEPTION:
   i. A DUCT ENCLOSURE SHALL NOT BE REQUIRED FOR A GREASE DUCT THAT PENETRATES ONLY A NON-FIRE-RESISTANCE/RATED ROOF/CEILING ASSEMBLY.
   z. SHAFT ENCLOSURE.
   i. GREASE DUCTS SHALL BE PERMITTED TO BE ENCLOSED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE REQUIREMENTS FOR SHAFT CONSTRUCTION. SUCH GREASE DUCT SYSTEMS AND EXHAUST EQUIPMENT SHALL HAVE A CLEARANCE TO COMBUSTIBLE CONSTRUCTION OF NOT LESS THAN 18 INCHES (457 MM), AND SHALL HAVE A CLEARANCE TO NONCOMBUSTIBLE CONSTRUCTION AND GYPSUM WALLBOARD ATTACHED TO NONCOMBUSTIBLE STRUCTURES OF NOT LESS THAN 6 INCHES (152 MM). DUCT ENCLOSURES SHALL BE SEALED AROUND THE DUCT AT THE POINT OF PENETRATION AND VENTED TO THE OUTSIDE OF THE BUILDING THROUGH THE USE OF WEATHER-PROTECTED OPENINGS.
   d. FIELD-APPLIED GREASE DUCT ENCLOSURE.
   i. GREASE DUCTS SHALL BE ENCLOSED BY A LISTED AND LABELED FIELD-APPLIED GREASE DUCT ENCLOSURE MATERIAL, SYSTEMS, PRODUCT, OR METHOD OF CONSTRUCTION SPECIFICALLY EVALUATED FOR SUCH PURPOSE IN ACCORDANCE WITH ASTM E2336. THE SURFACE OF THE DUCT SHALL BE CONTINUOUSLY COVERED ON ALL SIDES FROM THE POINT AT WHICH THE DUCT ORIGINATES TO THE OUTLET TERMINAL. DUCT PENETRATIONS SHALL BE PROTECTED WITH A THROUGH-PENETRATION FIRESTOP SYSTEM TESTED AND LISTED IN ACCORDANCE WITH ASTM E814 OR UL 1479 AND HAVING A "F" AND "T" RATING EQUAL TO THE FIRE RESISTANCE RATING OF THE ASSEMBLY BEING PENETRATED. THE GREASE DUCT ENCLOSURE AND FIRESTOP SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE LISTING AND THE MANUFACTURER'S INSTRUCTIONS. PARTIAL APPLICATION OF A FIELD-APPLIED GREASE DUCT ENCLOSURE SHALL NOT BE INSTALLED FOR THE SOLE PURPOSE OF REDUCING CLEARANCES TO COMBUSTIBLES AT ISOLATED SECTIONS OF GREASE DUCT. EXPOSED DUCT WRAP SYSTEMS SHALL BE PROTECTED WHERE SUBJECT TO PHYSICAL DAMAGE.
   e. FACTORY-BUILT GREASE DUCT ENCLOSURE ASSEMBLIES.
   i. FACTORY-BUILT GREASE DUCTS INCORPORATING INTEGRAL ENCLOSURE MATERIALS SHALL BE LISTED AND LABELED FOR USE AS GREASE DUCT ENCLOSURE ASSEMBLIES SPECIFICALLY EVALUATED FOR SUCH PURPOSE IN ACCORDANCE WITH UL 2221. DUCT PENETRATIONS SHALL BE PROTECTED WITH A THROUGH-PENETRATION FIRESTOP SYSTEM TESTED AND LISTED IN ACCORDANCE WITH ASTM E814 OR UL 1479 AND HAVING AN "F" AND "T" RATING EQUAL TO THE FIRE-RESISTANCE RATING OF THE ASSEMBLY BEING PENETRATED. THE GREASE DUCT ENCLOSURE ASSEMBLY AND FIRESTOP SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE LISTING AND THE MANUFACTURER'S INSTRUCTIONS.

XI. GREASE DUCT FIRE-RESISTIVE ACCESS OPENING
   a. WHERE CLEANOUT OPENINGS ARE LOCATED IN DUCTS WITHIN A FIRE-RESISTANCE-RATED ENCLOSURE, ACCESS OPENINGS SHALL BE PROVIDED IN THE ENCLOSURE AT EACH CLEANOUT POINT. ACCESS OPENINGS SHALL BE PROVIDED WITH TIGHT-FITTING SLIDING OR HINGED DOORS THAT ARE EQUAL IN FIRE-RESISTIVE PROTECTION TO THAT OF THE SHAFT OR ENCLOSURE. AN APPROVED SIGN SHALL BE PLACED ON ACCESS OPENING PANELS WITH WORDING AS FOLLOWS: "ACCESS PANEL. DO NOT OBSTRUCT."

GREASE DUCT NOTES

N.T.S. | M100 | 2

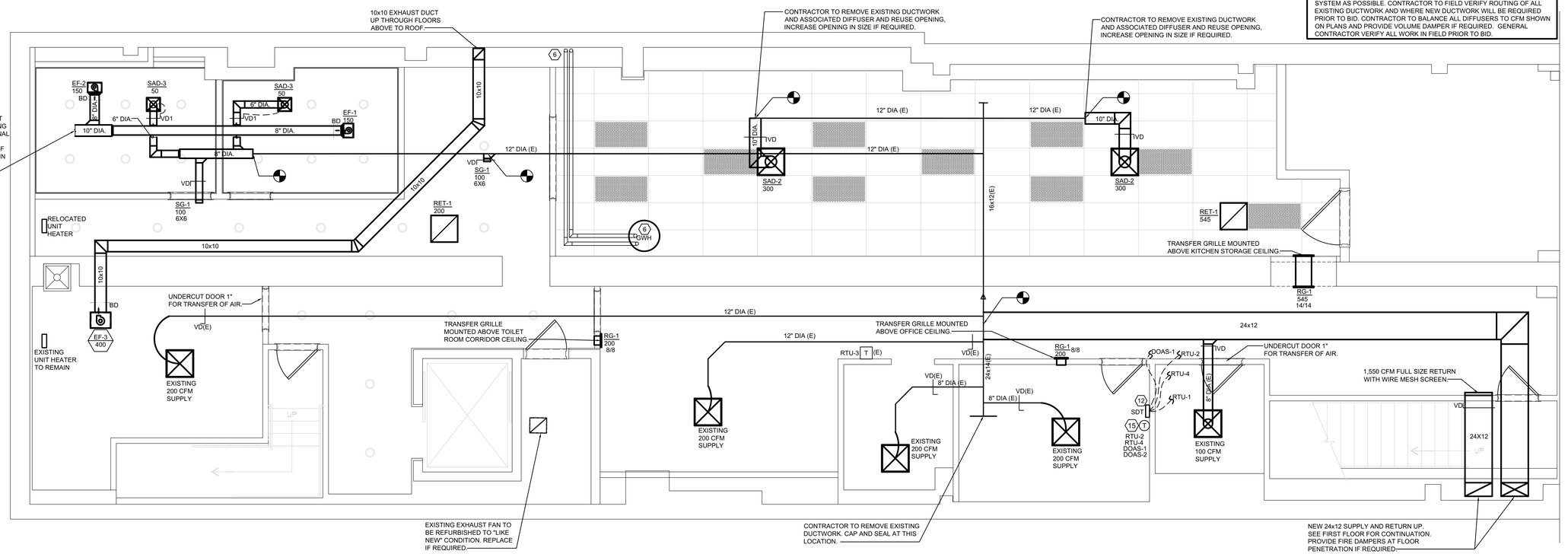
MECHANICAL LEGEND

N.T.S. | M100 | 3

- CEILING SUPPLY AIR DIFFUSER (SAD)
- CEILING SUPPLY AIR DIFFUSER WITH BLANK-OFF SECTION
- CEILING RETURN AIR GRILLE (RET)
- EXHAUST FAN
- LINEAR SUPPLY/RETURN DIFFUSER (LENGTH PER PLANS)
- DUCT MOUNTED DIFFUSER
- WALL TRANSFER GRILLE (TG)
- THERMOSTAT
- TEMPERATURE SENSOR
- CARBON DIOXIDE SENSOR
- CARBON MONOXIDE SENSOR
- NEW DUCTWORK
- EXISTING DUCT TO REMAIN
- HUMIDISTAT CONTROL PANEL
- VD — VOLUME DAMPER
- VD1 — VOLUME DAMPER W/ REMOTE OPERATOR
- SAD 100 — TYPE OF AIR DEVICE AIR QUANTITY (CFM)
- Z x Y — X, INCHES, SIDE OF DUCT SHOWING
- M — MOTORIZED DAMPER
- FD — FIRE DAMPER
- SD — SMOKE DAMPER
- FSD — FIRE / SMOKE DAMPER
- SMOKE DETECTOR SUPPLY - PHOTOELECTRIC
- SMOKE DETECTOR RETURN - IONIZATION
- FIELD CONNECTION
- DOOR UNDER CUT
- SUPPLY AIR FLOW
- RETURN AIR FLOW
- NEW FLEX DUCT
- HUMIDISTAT DUCTED SENSOR

NOTE:
SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

IT IS THE INTENT OF THIS DESIGN TO REUSE AS MUCH OF THE EXISTING SYSTEM AS POSSIBLE. CONTRACTOR TO FIELD VERIFY ROUTING OF ALL EXISTING DUCTWORK AND WHERE NEW DUCTWORK WILL BE REQUIRED PRIOR TO BID. CONTRACTOR TO BALANCE ALL DIFFUSERS TO CFM SHOWN ON PLANS AND PROVIDE VOLUME DAMPER IF REQUIRED. GENERAL CONTRACTOR VERIFY ALL WORK IN FIELD PRIOR TO BID.



INFORMATION ABOUT EXISTING CONDITIONS WAS TAKEN FROM LANDLORD'S DRAWINGS ISSUED BY THE CORTLAND MORGAN, ARCHITECT ON 08/06/13 (GENERAL REVISION) INFORMATION TO BE VERIFIED IN FILED PRIOR TO BID.

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.

MECHANICAL HVAC BASEMENT PLAN

1/4" = 1'-0" | M200 | 1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA/UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
Richard Chen
PA UCC CERT # 0067155
Applied Electronically By L&I User

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COMMONWEALTH OF PENNSYLVANIA
KENNETH A. FULLER
REGISTERED PROFESSIONAL ENGINEER
Professional Engineer
KENNETH A. FULLER, P.E.
PA. LICENSE NUMBER: PE075601
EXPIRES 9-30-21
COA NUMBER 003203

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.

DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT:
KURA SUSHI REVOLVING SUSHI BAR
LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.:	DRAWN BY:
210293	LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC
DRAWING NAME: MECHANICAL PLAN
DRAWING NO.: M200
FIRM REGISTRATION NO.: AX010102
SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

DATE: 11/04/2021
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT NO.: 210293
PROJECT: 210293
PLOT SCALE: 1:1

1	CONTRACTOR TO REMOVE EXISTING DUCTWORK AND ASSOCIATED DIFFUSER AND REUSE OPENING, INCREASE OPENING IN SIZE IF REQUIRED.
2	CONTRACTOR TO REMOVE EXISTING DUCTWORK AND DIFFUSER. CAP AND SEAL AT THIS LOCATION.
3	CONTRACTOR TO COORDINATE LOCATION OF EXHAUST HOOD WITH LOCATION OF EQUIPMENT BELOW EXHAUST HOOD. REFER TO EQUIPMENT PLAN FOR LOCATION OF ALL KITCHEN EQUIPMENT. COORDINATE FINAL ARRANGEMENT WITH CAPTIVE AIRE PRIOR TO INSTALLATION. SEE M600 THROUGH M604 DRAWINGS FOR DETAILS AND SPECIFICATION OF EXHAUST HOODS.
4	CONTRACTOR TO MAINTAIN REQUIRED CLEARANCE AT CONTROL SIDE OF ANSUL SYSTEM BOX PER MANUFACTURER'S RECOMMENDATIONS. SEE M600 DRAWING SERIES FOR EXHAUST HOOD DETAILS
5	CONTRACTOR TO PROVIDE MANUAL PULL STATION FOR KITCHEN HOOD FIRE SUPPRESSION SYSTEM ACTIVATION AND GAS SUPPLY SHUT-OFF TO BE PROVIDED BY THE FIRE-SUPPRESSION SUBCONTRACTOR. GENERAL CONTRACTOR SHALL PROVIDE RECESSED JUNCTION BOX AND CONDUIT FOR PULL STATION LINKAGE. FIRE SUPPRESSION SUBCONTRACTOR SHALL VERIFY APPROVED LOCATION WITH THE LOCAL AUTHORITY AND COORDINATE THE COMPLETE INSTALLATION WITH ALL OTHER TRADES
6	ROUTE 4"PVC FLUE VENT AND 4"PVC COMBUSTION AIR INTAKE OUT THRU ROOF AND TERMINATE PER MANUFACTURER'S INSTRUCTION.
7	CONTRACTOR TO PROVIDE AND INSTALL NEW ROOFTOP UNIT AS SCHEDULE AND SHOWN. COORDINATE EXACT LOCATION IN FIELD. COORDINATE ALL ROOF WORK WITH LANDLORD ROOFING CONTRACTOR. CONTRACTOR TO NOTIFY ARCHITECT/ENGINEER OF ANY ISSUES PRIOR TO BID.
8	REMOTE ZONE TEMPERATURE SENSOR SHALL BE INSTALLED IN CEILING AND WIRED BACK TO THERMOSTAT. CONTRACTOR TO MATCH FINISH WITH CEILING. FIELD VERIFY WITH OWNER'S REPRESENTATIVE FOR THE EXACT LOCATION PRIOR TO INSTALLATION.
9	PROVIDE AND INSTALL NEW DEDICATED OUTSIDE AIR SYSTEM (DOAS) UNIT ON MANUFACTURER PROVIDED ROOF CURB. COORDINATE ANY ROOF MODIFICATION WITH LANDLORD ROOFING CONTRACTOR. PROVIDE FLEXIBLE DUCT CONNECTIONS FROM PLENUM TO BOTTOM OF CURB. REPLACE AIR FILTER(S) AFTER COMPLETION OF CONSTRUCTION, AND PRIOR TO OCCUPANCY.

10	PROVIDE AND INSTALL NEW KITCHEN EXHAUST FANS KEF-1 AND KEF-2 ON ROOF. THE TENANT'S CONTRACTOR SHALL BE RESPONSIBLE TO WIRE AND PROVIDE CONTROLS TO INTERLOCK FAN WITH HOODS 1 AND 2 TO KEF-2 AND HOODS 3-4 TO KEF-1 PER CAPTIVEAIRE DRAWINGS. TGC TO COORDINATE WITH LANDLORD AND PROVIDE ANY MISSING COMPONENTS FOR A COMPLIANT SYSTEM THAT MEETS SPECIFICATIONS.
12	CONTRACTOR TO PROVIDE IONIZATION TYPE DUCT SMOKE DETECTOR IN RETURN DUCTWORK FOR RTU's. CONTRACTOR TO PROVIDE PHOTOELECTRIC TYPE DUCT SMOKE DETECTOR IN SUPPLY FOR DOAS-1 RTU. WIRE BACK TO SMOKE DETECTOR TEST STATION (SDT) IN MANAGER OFFICE.
13	TRANSITION EXHAUST DUCT UP FROM HOODS TO MAIN EXHAUST DUCT THAT LEADS UP TO EXHAUST FAN ON ROOF. FIELD VERIFY ANY REQUIRED TRANSITIONS OR OFFSETS OF EXHAUST DUCT FROM COMBUSTIBLE MATERIALS TO MAINTAIN THE MINIMUM CLEARANCES REQUIRED PER APPLICABLE CODE(S) AND FIRE WRAP PER MANUFACTURER'S INSTRUCTIONS AND LOCAL CODE. PROVIDE PITCH IN DUCT FOR STEAM CONDENSATE DRAINAGE AS REQUIRED PER LOCAL CODE. BALANCE AS REQUIRED.
14	ALL MATERIALS INSTALLED WITHIN 18" OF TYPE 1 HOOD SHALL BE NON-COMBUSTIBLE.
15	PROGRAMMABLE THERMOSTATS TO BE VERTICALLY STACKED AND COORDINATE THE LABELING OF EACH ZONE OR AREA WITH THE OWNER PRIOR TO CONSTRUCTION. CONTRACTOR SHALL MOUNT THERMOSTAT AT 48" A.F.F. VERIFY FINAL PLACEMENT WITH ARCHITECTURAL FLOOR PLAN AND OWNER'S REPRESENTATIVE. IF REQUIRED, PROVIDE A LOCK-BOX FOR EACH THERMOSTAT.
16	ROUTE MAKE-UP AIR DUCTWORK TO PERFORATED SUPPLY GRILLES VIA A PLENUM BOX CONNECTION. PREFER TO M600 SERIES SHEETS FOR ADDITIONAL INFORMATION.
17	TRANSITION GREASE EXHAUST DUCT UP FROM HOOD COLLAR TO KITCHEN EXHAUST FAN ON ROOF. EXHAUST DUCT SHALL MAINTAIN THE DESIGN AIR VELOCITY THROUGHOUT. FIELD VERIFY ANY REQUIRED TRANSITIONS OR OFFSETS OF EXHAUST DUCT FROM COMBUSTIBLE MATERIALS TO MAINTAIN THE MINIMUM CLEARANCES REQUIRED PER APPLICABLE CODE(S) AND FIRE WRAP PER MANUFACTURER'S INSTRUCTIONS AND LOCAL CODE. PROVIDE CLEANOUTS AS REQUIRED AND PITCH PER LOCAL CODE. BALANCE AS REQUIRED.
18	EXISTING AIR CURTAIN TO REMAIN. REFURBISH TO 'LIKE NEW' CONDITION.

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.

MECHANICAL KEY NOTES

N.T.S. | M100 | 2

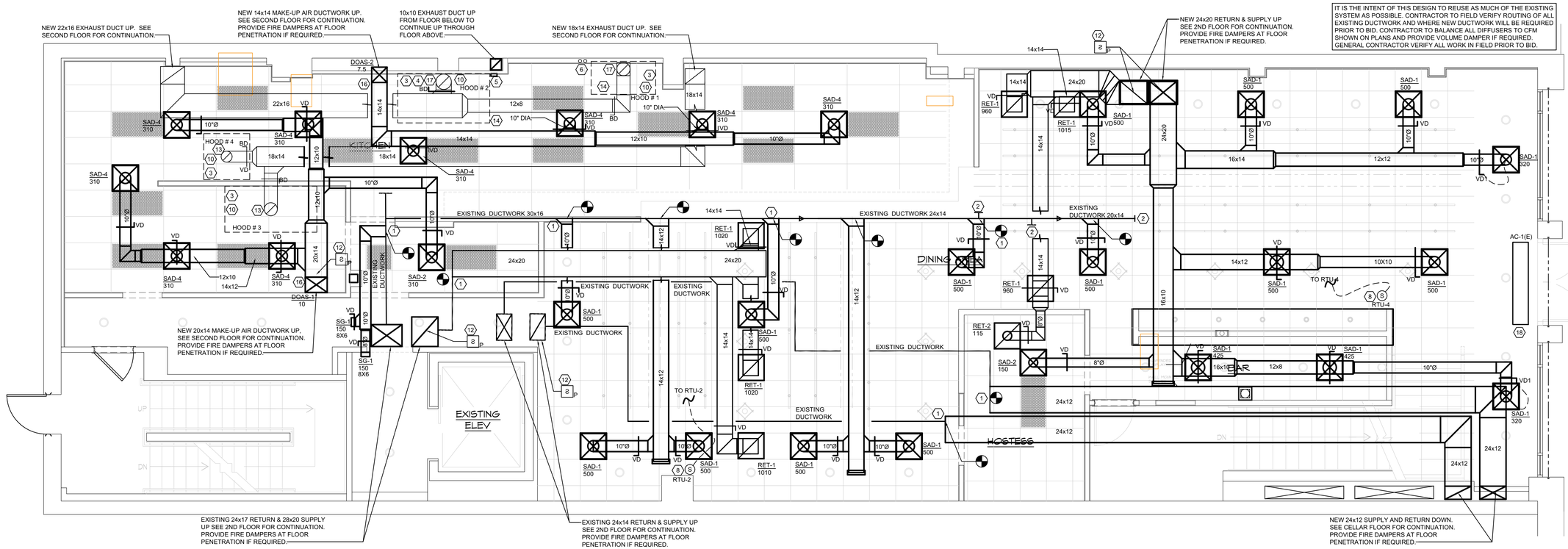
CEILING SUPPLY AIR DIFFUSER (SAD)
CEILING SUPPLY AIR DIFFUSER WITH BLANK-OFF SECTION
CEILING RETURN AIR GRILLE (RET)
EXHAUST FAN
LINEAR SUPPLY/RETURN DIFFUSER (LENGTH PER PLANS)
DUCT MOUNTED DIFFUSER
WALL TRANSFER GRILLE (TG)
THERMOSTAT
TEMPERATURE SENSOR
CARBON DIOXIDE SENSOR
CARBON MONOXIDE SENSOR
NEW DUCTWORK
EXISTING DUCT TO REMAIN
HUMIDISTAT CONTROL PANEL

VOLUME DAMPER
VOLUME DAMPER W/ REMOTE OPERATOR
TYPE OF AIR DEVICE / AIR QUANTITY (CFM)
X, INCHES, SIDE OF DUCT SHOWING
MOTORIZED DAMPER
FIRE DAMPER
SMOKE DAMPER
FIRE / SMOKE DAMPER
SMOKE DETECTOR SUPPLY - PHOTOELECTRIC
SMOKE DETECTOR RETURN - IONIZATION
FIELD CONNECTION
DOOR UNDER CUT
SUPPLY AIR FLOW
RETURN AIR FLOW
NEW FLEX DUCT
HUMIDISTAT DUCTED SENSOR

NOTE:
SYMBOL LIST SHOWN IS FOR GENERAL REFERENCE ONLY. THE PRESENCE OF A SYMBOL DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS USED.

MECHANICAL LEGEND

N.T.S. | M100 | 3



MECHANICAL HVAC FIRST FLOOR PLAN

1/4" = 1'-0" | M201 | 1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
Richard Chen
PA UCC CERT #7008765
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PA. LICENSE NUMBER: PE075601
EXPIRES 9-30-21
COA NUMBER 003203

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DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT:
KURA SUSHI REVOLVING SUSHI BAR

LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.: 210293	DRAWN BY: LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME:
MECHANICAL PLAN

DRAWING NO.: M201

FIRM REGISTRATION NO.: AX010102

SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

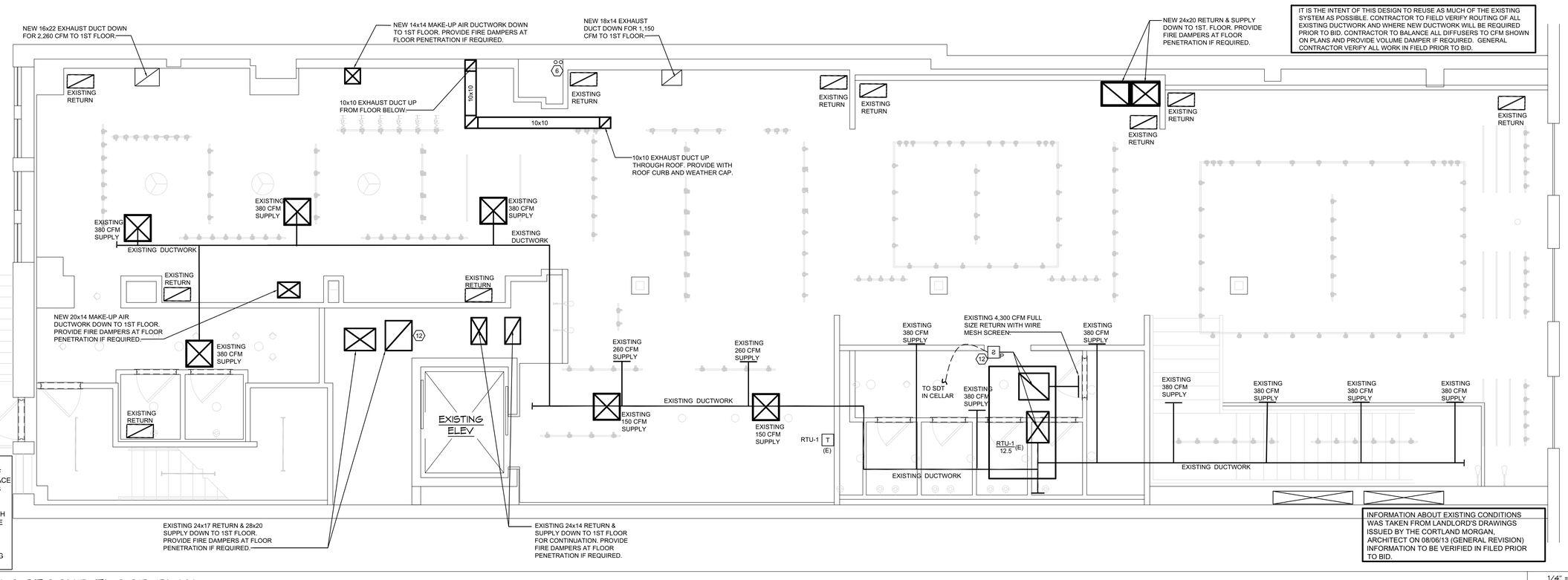
DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

1	CONTRACTOR TO REMOVE EXISTING DUCTWORK AND ASSOCIATED DIFFUSER AND REUSE OPENING, INCREASE OPENING IN SIZE IF REQUIRED.
2	CONTRACTOR TO REMOVE EXISTING DUCTWORK AND DIFFUSER. CAP AND SEAL AT THIS LOCATION.
3	CONTRACTOR TO COORDINATE LOCATION OF EXHAUST HOOD WITH LOCATION OF EQUIPMENT BELOW EXHAUST HOOD. REFER TO EQUIPMENT PLAN FOR LOCATION OF ALL KITCHEN EQUIPMENT. COORDINATE FINAL ARRANGEMENT WITH CAPTIVE AIRE PRIOR TO INSTALLATION. SEE M400 THROUGH MM403 DRAWINGS FOR DETAILS AND SPECIFICATION OF EXHAUST HOODS.
4	CONTRACTOR TO MAINTAIN REQUIRED CLEARANCE AT CONTROL SIDE OF ANSUL SYSTEM BOX PER MANUFACTURER'S RECOMMENDATIONS. SEE M600 AND M401 DRAWINGS FOR EXHAUST HOOD DETAILS
5	CONTRACTOR TO PROVIDE MANUAL PULL STATION FOR KITCHEN HOOD FIRE SUPPRESSION SYSTEM ACTIVATION AND GAS SUPPLY SHUT-OFF TO BE PROVIDED BY THE FIRE-SUPPRESSION SUBCONTRACTOR. GENERAL CONTRACTOR SHALL PROVIDE RECESSED JUNCTION BOX AND CONDUIT FOR PULL STATION LINKAGE. FIRE SUPPRESSION SUBCONTRACTOR SHALL VERIFY APPROVED LOCATION WITH THE LOCAL AUTHORITY AND COORDINATE THE COMPLETE INSTALLATION WITH ALL OTHER TRADES
6	ROUTE 4"PVC FLUE VENT AND 4"PVC COMBUSTION AIR INTAKE OUT THRU ROOF AND TERMINATE PER MANUFACTURER'S INSTRUCTION.
7	CONTRACTOR TO PROVIDE AND INSTALL NEW ROOF UNIT AS SCHEDULE AND SHOWN. COORDINATE EXACT LOCATION IN FIELD. COORDINATE ALL ROOF WORK WITH LANDLORD ROOFING CONTRACTOR. CONTRACTOR TO NOTIFY ARCHITECT/ENGINEER OF ANY ISSUES PRIOR TO BID.
8	REMOTE ZONE TEMPERATURE SENSOR SHALL BE INSTALLED IN CEILING AND WIRED BACK TO THERMOSTAT. CONTRACTOR TO MATCH FINISH WITH CEILING. FIELD VERIFY WITH OWNER'S REPRESENTATIVE FOR THE EXACT LOCATION PRIOR TO INSTALLATION.
9	PROVIDE AND INSTALL NEW DEDICATED OUTSIDE AIR SYSTEM (DOAS) UNIT ON MANUFACTURER PROVIDED ROOF CURB. COORDINATE ANY ROOF MODIFICATION WITH LANDLORD ROOFING CONTRACTOR. PROVIDE FLEXIBLE DUCT CONNECTIONS FROM PLENUM TO BOTTOM OF CURB. REPLACE AIR FILTER(S) AFTER COMPLETION OF CONSTRUCTION, AND PRIOR TO OCCUPANCY.

10	PROVIDE AND INSTALL NEW KITCHEN EXHAUST FANS KEF-1 AND KEF-2 ON ROOF. THE TENANT'S CONTRACTOR SHALL BE RESPONSIBLE TO WIRE AND PROVIDE CONTROLS TO INTERLOCK FAN WITH HOODS 1 AND 2 TO KEF-2 AND HOODS 3-4 TO KEF-1 PER CAPTIVEAIRE DRAWINGS. TGC TO COORDINATE WITH LANDLORD AND PROVIDE ANY MISSING COMPONENTS FOR A COMPLIANT SYSTEM THAT MEETS SPECIFICATIONS.
12	CONTRACTOR TO PROVIDE IONIZATION TYPE DUCT SMOKE DETECTOR IN RETURN DUCTWORK FOR RTU's. CONTRACTOR TO PROVIDE PHOTOELECTRIC TYPE DUCT SMOKE DETECTOR IN SUPPLY FOR DOAS-1 RTU. WIRE BACK TO SMOKE DETECTOR TEST STATION (SDT) IN MANAGER OFFICE.
13	TRANSITION EXHAUST DUCT UP FROM HOODS TO MAIN EXHAUST DUCT THAT LEADS UP TO EXHAUST FAN ON ROOF. FIELD VERIFY ANY REQUIRED TRANSITIONS OR OFFSETS OF EXHAUST DUCT FROM COMBUSTIBLE MATERIALS TO MAINTAIN THE MINIMUM CLEARANCES REQUIRED PER APPLICABLE CODE(S) AND FIRE WRAP PER MANUFACTURER'S INSTRUCTIONS AND LOCAL CODE. PROVIDE PITCH IN DUCT FOR STEAM CONDENSATE DRAINAGE AS REQUIRED PER LOCAL CODE. BALANCE AS REQUIRED.
14	ALL MATERIALS INSTALLED WITHIN 18" OF TYPE 1 HOOD SHALL BE NON-COMBUSTIBLE.
15	PROGRAMMABLE THERMOSTATS TO BE VERTICALLY STACKED AND COORDINATE THE LABELING OF EACH ZONE OR AREA WITH THE OWNER PRIOR TO CONSTRUCTION. CONTRACTOR SHALL MOUNT THERMOSTAT AT 48" A.F.F. VERIFY FINAL PLACEMENT WITH ARCHITECTURAL FLOOR PLAN AND OWNER'S REPRESENTATIVE. IF REQUIRED, PROVIDE A LOCK-BOX FOR EACH THERMOSTAT.
16	ROUTE MAKE-UP AIR DUCTWORK TO PERFORATED SUPPLY GRILLES VIA A PLENUM BOX CONNECTION. PREFER TO M600 SERIES SHEETS FOR ADDITIONAL INFORMATION.
17	TRANSITION GREASE EXHAUST DUCT UP FROM HOOD COLLAR TO KITCHEN EXHAUST FAN ON ROOF, EXHAUST DUCT SHALL MAINTAIN THE DESIGN AIR VELOCITY THROUGHOUT. FIELD VERIFY ANY REQUIRED TRANSITIONS OR OFFSETS OF EXHAUST DUCT FROM COMBUSTIBLE MATERIALS TO MAINTAIN THE MINIMUM CLEARANCES REQUIRED PER APPLICABLE CODE(S) AND FIRE WRAP PER MANUFACTURER'S INSTRUCTIONS AND LOCAL CODE. PROVIDE CLEANOUTS AS REQUIRED AND PITCH PER LOCAL CODE. BALANCE AS REQUIRED.
18	EXISTING AIR CURTAIN TO REMAIN.

MECHANICAL KEY NOTES

N.T.S. | M202 | 2



MECHANICAL HVAC SECOND FLOOR PLAN

1/4" = 1'-0" | M202 | 1

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PLUCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
Richard Chen
PA UCC CERT #1068765
Applied Electronically by L&I User

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Custom Designs & Engineering
KENNETH A. FULLER, P.E.
PA. LICENSE NUMBER: PE075601
EXPIRES 9-30-21
COA NUMBER 003203

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DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT:
KURA SUSHI REVOLVING SUSHI BAR
LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.: 210293	DRAWN BY: LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC
DRAWING NAME:
MECHANICAL SECOND FLOOR PLAN
DRAWING NO.: M202
FIRM REGISTRATION NO.: AX010102
SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

1	CONTRACTOR TO REMOVE EXISTING DUCTWORK AND ASSOCIATED DIFFUSER AND REUSE OPENING, INCREASE OPENING IN SIZE IF REQUIRED.
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8	REMOTE ZONE TEMPERATURE SENSOR SHALL BE INSTALLED IN CEILING AND WIRED BACK TO THERMOSTAT. CONTRACTOR TO MATCH FINISH WITH CEILING. FIELD VERIFY WITH OWNER'S REPRESENTATIVE FOR THE EXACT LOCATION PRIOR TO INSTALLATION.
9	PROVIDE AND INSTALL NEW DEDICATED OUTSIDE AIR SYSTEM (DOAS) UNIT ON MANUFACTURER PROVIDED ROOF CURB. COORDINATE ANY ROOF MODIFICATION WITH LANDLORD ROOFING CONTRACTOR. PROVIDE FLEXIBLE DUCT CONNECTIONS FROM PLENUM TO BOTTOM OF CURB. REPLACE AIR FILTER(S) AFTER COMPLETION OF CONSTRUCTION, AND PRIOR TO OCCUPANCY.
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16	ROUTE MAKE-UP AIR DUCTWORK TO PERFORATED SUPPLY GRILLES VIA A PLENUM BOX CONNECTION. PREFER TO M600 SERIES SHEETS FOR ADDITIONAL INFORMATION.
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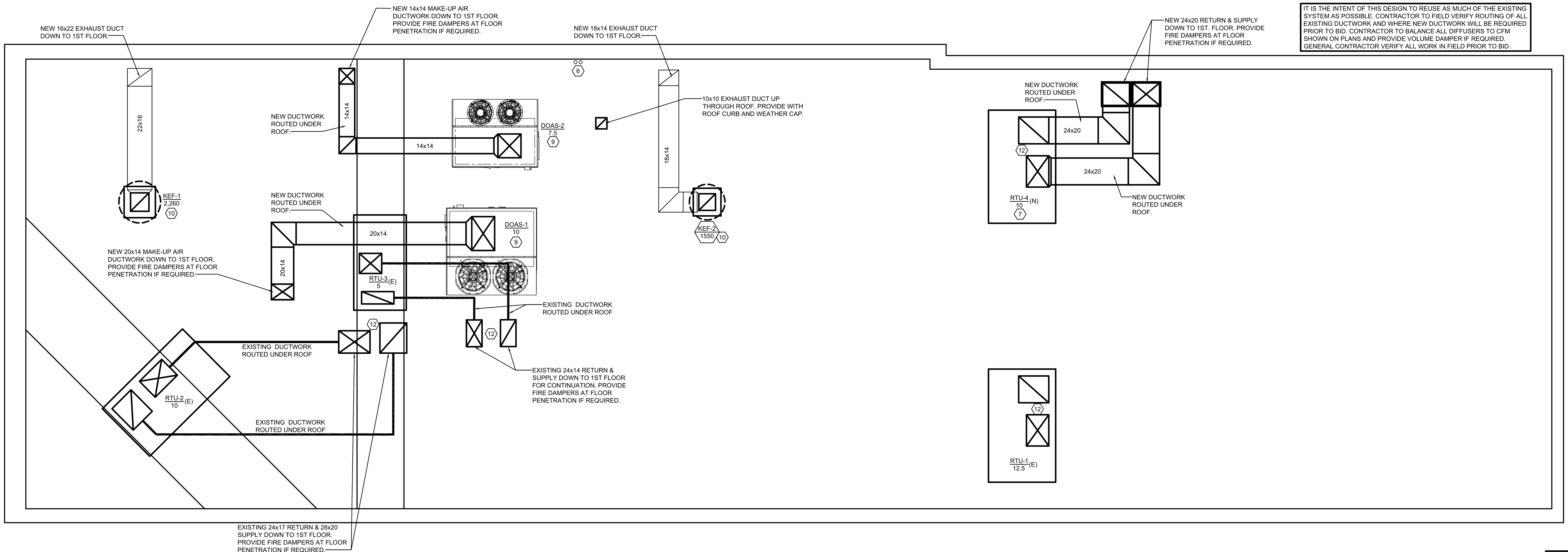
18	EXISTING AIR CURTAIN TO REMAIN.

MECHANICAL KEY NOTES

N.T.S.
M202
2

IT IS THE INTENT OF THIS DESIGN TO REUSE AS MUCH OF THE EXISTING SYSTEM AS POSSIBLE. CONTRACTOR TO FIELD VERIFY ROUTING OF ALL EXISTING DUCTWORK AND WHERE NEW DUCTWORK WILL BE REQUIRED PRIOR TO BID. CONTRACTOR TO BALANCE ALL DIFFUSERS TO CFM SHOWN ON PLANS AND PROVIDE VOLUME DAMPER IF REQUIRED. GENERAL CONTRACTOR VERIFY ALL WORK IN FIELD PRIOR TO BID.



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.

INFORMATION ABOUT EXISTING CONDITIONS WAS TAKEN FROM LANDLORD'S DRAWINGS ISSUED BY THE CORTLAND MORGAN, ARCHITECT ON 08/06/13 (GENERAL REVISION) INFORMATION TO BE VERIFIED IN FILED PRIOR TO BID.

MECHANICAL HVAC BASEMENT PLAN

1/4" = 1'-0"
M200
1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
PA UCC CERT # 006195
Applied Electronically by L&I User

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Custom Designing & Engineering PC

COMMONWEALTH OF PENNSYLVANIA
KENNETH A. FULLER, P.E.
PA. LICENSE NUMBER: PE079801
EXPIRES 9-30-21
COA NUMBER 003203

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DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
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DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR

LOCATION: KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.: 210293	DRAWN BY: LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME: MECHANICAL ROOF PLAN

DRAWING NO.: M203

FIRM REGISTRATION NO.: AX010102

SEAL

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

1. ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH ALL NATIONAL, STATE, & LOCAL CODES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL HVAC WORK IS PROVIDED AND INSTALLED IN STRICT ACCORDANCE WITH SEISMIC REQUIREMENTS.
2. THE CONTRACTOR SHALL PREPARE AND FILE ALL REQUIRED PLANS AND PERMITS WITH THE LOCAL BUILDING DEPARTMENT AND SHALL PAY ALL FILING FEES AS REQUIRED. THE CONTRACTOR SHALL OBTAIN ALL AUTHORITIES AND SHALL PAY ALL WORK PERMITS, INSPECTIONS, AND WRITE-OFFS AS REQUIRED TO EXECUTE THIS WORK IN A MANNER IN CONFORMANCE WITH THE CODES AND AUTHORITIES HAVING JURISDICTION.
3. CONTRACTOR SHALL COMPLY WITH ALL LANDLORD AND CLIENT DESIGN CRITERIA REQUIREMENTS.
4. GENERAL CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH LANDLORD'S ON-SITE OPERATIONS MANAGER.
5. CONTRACTOR TO COORDINATE UNIT SIZES AND ACCESS THROUGH EXISTING BUILDING ENTRYWAYS, ELEVATORS, STAIRWELLS, °WINDOWS, ETC. PRIOR TO ORDER. TEMPORARY REMOVALS FOR UNIT MANEUVERABILITY SHALL BE INCLUDED WITHOUT ANY ADDITIONAL COST TO THE TENANT.
6. DO NOT SCALE FROM THESE DRAWINGS.
7. THE CONTRACTOR SHALL PERFORM ALL TESTS AND ARRANGE FOR ALL INSPECTIONS FOR WORK UNDER THEIR CONTRACT AS REQUIRED BY LAW AND SHALL SUPPLY ALL CERTIFICATES OF INSURANCE AS REQUIRED BY THE LAW AND THE OWNER.
8. ALL REMOVALS PERFORMED UNDER THIS CONTRACT SHALL INCLUDE REMOVAL OF ALL DEBRIS AND DISPOSAL AT AN APPROPRIATE SITE. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR DEMOLITION WORK. ANY UNUSED EXISTING MECHANICAL EQUIPMENT AND ASSOCIATED DUCTWORK, DIFFUSERS, CONTROLS, WIRING, ETC. SHALL BE REMOVED IN THEIR ENTIRETY AND SHALL NOT BE ABANDONED IN PLACE UNLESS OTHERWISE NOTED BY THE CONSTRUCTION DOCUMENTS.
9. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, ARCHITECTURAL, PLUMBING, SPRINKLER, AND STRUCTURAL SYSTEMS. RUN DUCTWORK AS TIGHT TO STRUCTURE AS POSSIBLE AND COORDINATE ROUTING IN FIELD. ENSURE ANY CRITICAL ACCESS POINTS ON ALL MECHANICAL EQUIPMENT IS MAINTAINED AFTER CONSTRUCTION IS COMPLETED.
10. THE FINISH AND COLOR OF THE AIR DEVICES, AND ALL OTHER EXPOSED HVAC EQUIPMENT SHALL BE COORDINATED WITH THE ARCHITECT.
11. CONTRACTOR SHALL COORDINATE ALL ROOFING WORK WITH LANDLORD'S APPROVED ROOFING CONTRACTOR. CONTRACTOR TO INSPECT ALL EXISTING ROOF PENETRATIONS TO REMAIN. IF REQUIRED G.C. SHALL HIRE ROOFING CONTRACTOR TO PATCH & REPAIR ROOF INCLUDING NEW FLASHINGS, BOOTS, PORTALS, (ETC.) AS DEEMED NECESSARY UPON INSPECTION.
12. CONTRACTOR SHALL COORDINATE WITH SPECIFICATIONS AND PROVIDE ACOUSTICAL INSULATION ON THE FIRST 10'-0" OF SUPPLY DUCTWORK (OR AS DESIGNATED BY CODE). USE A MINIMUM R6 FIBERGLASS ACOUSTIC DUCT LINER, AND ALL EXPOSED, RAW LINER EDGES SHALL BE CAPPED WITH SHEET METAL NOSING.
13. VERIFY ALL EQUIPMENT VOLTAGES & AVAILABLE AMPERAGE WITH THE ELECTRICAL CONTRACTOR PRIOR TO BID.
14. PROVIDE DISCONNECT SWITCHES FOR ALL HVAC EQUIPMENT.
15. THE FINAL LOCATION OF AIR DEVICES MUST BE COORDINATED WITH THE REFLECTED CEILING PLAN AND ALL OTHER MECHANICAL, ELECTRICAL, SPRINKLER, AND ARCHITECTURAL.
16. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE ASHRAE, NFPA, AND SMACNA GUIDE RECOMMENDATIONS. SIZES AS SHOWN INDICATE INSIDE CLEAR DIMENSIONS OF THE AIR PASSAGE.
17. ALL INTERIOR & EXTERIOR SUPPLY, OUTSIDE AIR, AND RETURN DUCTWORK SHALL BE INSULATED PER THE MECHANICAL GENERAL SPECIFICATIONS & APPLICABLE CODES. INTERIOR EXPOSED DUCTWORK SHALL BE INTERNALLY INSULATED TO PREVENT CONDENSATION.
18. DUCT SIZES MUST BE VERIFIED FOR CLEARANCES AT THE JOB SITE PRIOR TO FABRICATION. ALL DEVIATIONS FROM ORIGINAL CONTRACT DRAWINGS SHALL BE REVIEWED BY THE ENGINEER DURING THE SHOP DRAWING PROCESS.
19. PROVIDE ELBOWS OR TEES WITH TURNING VANES FOR ALL CHANGES OF DUCT DIRECTION. PROVIDE SPLITTER DAMPERS WITH LOCKING QUADRANTS IN ALL TEES.
20. PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO PROPERLY BALANCE EACH INDIVIDUAL AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF THE BALANCING DAMPER IS NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN. ALL SUPPLY, RETURN, AND EXHAUST MAIN BRANCHES FROM TRUNKS, EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL INCORPORATE BALANCING DAMPERS. CABLE OPERATED MANUAL BALANCING DAMPERS SHALL BE PROVIDED IN AREAS WITH INACCESSIBLE OR HIGH CEILINGS. THE CABLE OPERATED DAMPER SHALL BE OUTSIDE OF THE AIRSTREAM. THE CONTRACTOR SHALL COORDINATE THE TYPE AND LOCATION OF THE REMOTE ACCESS POINT WITH THE ARCHITECT / OWNER.
21. COORDINATE INSTALLATION, DEFLECTION SETTING, ETC. FOR DIFFUSERS, GRILLES, REGISTERS, IN FIELD.
22. MAINTAIN ALL EXHAUST TERMINATIONS A MINIMUM OF 10'-0" FROM ANY FRESH AIR INTAKE OR OPERABLE WINDOW OR AS DIRECTED BY LOCAL CODES.
23. AN INDEPENDENT TESTING AND BALANCING AGENCY CERTIFIED BY THE AABC SHALL BE ENGAGED TO TEST AND BALANCE THE HVAC SYSTEMS. SYSTEMS SHALL BE BALANCED TO PLUS / MINUS 10% OF DESIGN REQUIREMENTS. THE CONTRACTOR SHALL PLACE ALL SYSTEMS AND EQUIPMENT INTO FULL OPERATION FOR TESTING AND BALANCING. ONE COPY OF THE FINAL TEST AND BALANCE REPORT WITH THE AABC NATIONAL PERFORMANCE GUARANTY SHALL BE SENT DIRECTLY TO THE ENGINEER OF RECORD.
24. SUBSTITUTIONS FOR DIFFUSERS / GRILLES SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL / REVIEW PRIOR TO PURCHASE.
25. CONTRACTOR SHALL PROVIDE NEW FILTERS FOR HVAC UNITS BEFORE TURNING ON FOR THE FIRST TIME AFTER CONSTRUCTION IS COMPLETED. HVAC EQUIPMENT SHALL NOT RUN DURING CONSTRUCTION UNLESS FILTERS ARE INSTALLED.
26. MECHANICAL CONTRACTOR IS TO PROVIDE AND INSTALL FIRE DAMPERS IN ANY EXISTING OR NEW DUCTWORK THAT PENETRATES A FIRE RATED PARTITION AS REQUIRED BY CODE TO MAINTAIN THE RATING OF THE PENETRATED ASSEMBLY.
27. VERIFY EXACT SIZES OF ALL EXISTING DESIGN COMPONENTS INDICATED FOR REUSE IN FIELD AND CONTACT ENGINEER / ARCHITECT WITH ANY DISCREPANCIES PRIOR TO BID.
28. PROVIDE FLEXIBLE CONNECTORS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTORS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
29. ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE HVAC CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED HVAC EQUIPMENT, VALVES AND OTHER RELATED EQUIPMENT. THE HVAC CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING PRIOR TO SYSTEM FABRICATION AND INSTALLATION.
30. ALL CEILING-MOUNTED EQUIPMENT MUST BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE WITH COMBINATION SPRING AND NEOPRENE-IN-SHEAR HANGERS AND ROD. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.
31. FLEXIBLE DUCTWORK FROM HARD DUCT TO CEILING DIFFUSERS SHALL BE LIMITED IN LENGTH TO 5 FEET.
32. CONTRACTOR TO COMPLY WITH BUILDING / LANDLORD CRITERIA, DESIGN CRITERIA, STANDARD PRACTICES AND LOCAL CODE / ORDINANCE REQUIREMENTS WHEN COMMENCING WORK. THESE REQUIREMENTS SHALL SUPERSEDE ANY AND ALL INFORMATION ON THE DRAWINGS UNLESS AGREEMENT TO THE CONTRARY DURING THE BID PROCESS WHEREAS THE CLIENT WILL BE EXCLUDED FROM INCURRING ANY ADDITIONAL COSTS. THE GENERAL CONTRACTOR SHALL OVERSEE THE EXECUTION AND COMPLETION OF THESE ITEMS ALSO AT NO ADDITIONAL COST TO THE CLIENT. ANY DISCREPANCIES OR INCONSISTENCIES CONCERNING THESE REQUIREMENTS AFTER THE PROJECT IS AWARDED SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OWNER AND TENANT FOR APPROVAL PRIOR TO COMMENCING WORK. ANY UPGRADES TO THE DESIGN / SCOPE OF WORK TO CONFORM TO THE PRECEDING REQUIREMENTS AT THIS JUNCTURE WILL THEN BE AT THE TENANT'S EXPENSE.
33. SINCE CODES VARY ACROSS REGIONS, IT IS THE GENERAL AND SUBCONTRACTOR'S RESPONSIBILITY TO REVIEW THE CONSTRUCTION DRAWINGS DURING BIDDING AND INCLUDE IN THEIR BID ANY ALTERNATE CODE RELATED RECOMMENDATIONS / DETAILS OR SPECIFICATIONS. IF THERE ARE ANY PROPOSED ALTERATION EQUIPMENT / INSTALLATION CHANGES, THEN THE COSTS FOR THESE CHANGES ARE TO BE EQUAL TO OR GREATER IN VALUE TO THE ITEMS AND QUANTITIES MENTIONED IN THE ORIGINAL CONSTRUCTION DRAWINGS AND THE CHANGES SHALL BE SUBMITTED TO THE ARCHITECT / ENGINEER FOR REVIEW AND APPROVAL. CONTRACTORS WHO DO NOT ADHERE TO THIS REQUIREMENT WILL BE RESPONSIBLE FOR INCURRING THE ADDED COSTS REQUIRED FOR THE DESIGN TO COMPLY WITH LOCAL CODE.
34. THE CONTRACTOR, IN REGARDS TO ANY SAWCUTTING, COREDRILLING OR ANY PENETRATING OF A CONCRETE SLAB, FLOOR AND/OR ROOF, IS REQUIRED TO SURVEY DURING BIDDING TO DETERMINE ANY ISSUES, INCLUDING BUT NOT LIMITED TO, NECESSITY OF X-RAYING OF A CONCRETE SLAB, WHERE SUCH MATERIAL BEING PENETRATED IS NOT PROJECTED AND/OR ROUTED INTO A SPACE(S) THAT CREATES A NON-CODE COMPLIANT CONDITION, THE NEED FOR WEATHERSTRIPPING, WATERPROOFING OR OTHER CONDITION AND TO NOTIFY THE OWNER IF A PROBLEM(S) MAY EXIST AND TO INCLUDE COSTS TO SOLVE THE ISSUE UNCOVERED, IN ADDITION TO, NOTIFYING THE ARCHITECT OF RECORD REGARDING SUCH ISSUE(S).
35. GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL CHANGES TO APPLICATIONS NOT CONSISTENT WITH CONTRACT DOCUMENTS IN ALL CASES, INCLUDING "SELF-CERTIFICATION" BY THE ARCHITECT.

MECHANICAL GENERAL NOTES | N.T.S. | M200 | 1

EXISTING ROOFTOP UNIT SCHEDULE

UNIT: TAG	UNIT: LOCATION	UNIT: TONS	FAN: MIN. OSA	FAN: CFM	FAN: HP	FAN: R.P.M.	FAN: E.S.P. "W.C.	FILTER: TYPE	FILTER: NO.	FILTER: EFF.	ELECTRICAL: VOLTS-PH-Hz	ELECTRICAL: MCA	ELECTRICAL: MOCP	COOLING: MBHT	COOLING: MBHS	COOLING: EDB	COOLING: EWB	COMP: NO.	COND: EAT	COND: HP	POWER EXHAUST: HP	GAS HEAT: INPUT MBH	GAS HEAT: OUTPUT MBH	GAS HEAT: EAT	GAS HEAT: LAT	OPER. WT.	MANUFACTURER MODEL NO.
RTU-1 12.5	ROOF (SERVE 2ND F)	12.5	700	5,000	5	1,325	2.6"	2" DISP.	4	30%	208-3-60	70	80	154.8	116.1	80	67	2	95	(2) 1/2	1/3	180	144	65	92	1,700#	LENNOX LGH150H4BMIY
RTU-2 10	ROOF (SERVE 1ST F)	10	950	4,000	5	1,245	2.6"	2" DISP.	4	30%	208-3-60	49	60	124.4	89.6	80	67	2	95	(2) 1/3	1/3	180	144	65	98	1,618#	LENNOX LGH120H4BMIY
RTU-3 5	ROOF (SERVE CELLAR)	5	450	2,000	1	1,146	1.1"	2" DISP.	4	30%	208-3-60	35	50	63.2	46.8	80	67	(1) 2-STAGE	95	1/3	1/3	150	120	65	134	1,169#	LENNOX LGH060H4EHIY

NOTES:
1. REFURBISH EXISTING UNITS TO 'LIKE NEW' CONDITION.

NEW ROOFTOP UNIT SCHEDULE

UNIT: TAG	UNIT: LOCATION	UNIT: TONS	FAN: MIN. OSA	FAN: CFM	FAN: HP	FAN: R.P.M.	FAN: E.S.P. "W.C.	FILTER: TYPE	FILTER: NO.	FILTER: EFF.	ELECTRICAL: VOLTS-PH-Hz	ELECTRICAL: MCA	ELECTRICAL: MOCP	COOLING: MBHT	COOLING: MBHS	COOLING: EDB	COOLING: EWB	COMP: NO.	COMP: kW	COND: EAT	COND: HP	POWER EXHAUST: HP	GAS HEAT: INPUT MBH	GAS HEAT: OUTPUT MBH	GAS HEAT: EAT	GAS HEAT: LAT	OPER. WT.	MANUFACTURER MODEL NO.
RTU-4 10	ROOF (SERVE 1ST F)	10	950	4,000	5	1,245	2.6"	2" DISP.	4	30%	208-3-60	61	70	124.4	89.6	80	67	2	-	95	(2) 1/3	1/3	180	144	65	98	1,618#	LENNOX LGH120H4BMIY

REMARKS: EER = 12.0
REFRIGERANT = R410A

BASIS OF DESIGN: ROOFTOP UNIT WITH HIGH PERFORMANCE ECONOMIZER WITH POWER EXHAUST, LOW AMBIENT HEAD PRESSURE CONTROLS, SMOKE DETECTOR, PROGRAMMABLE THERMOSTAT, ROOF CURB, THRU-THE-BOTTOM SERVICE CONNECTIONS, 120 VAC GFCI CONVENIENCE OUTLET AND DISCONNECT SWITCH.

NOTES:
1. CONTRACTOR TO UTILIZE LANDLORD'S ROOFING CONTRACTOR FOR ALL ROOF PENETRATIONS. REUSE EXISTING ROOF OPENINGS IF POSSIBLE.
2. CONTRACTOR TO HIRE STRUCTURAL ENGINEER TO VERIFY STRUCTURAL INTEGRITY OF ROOF DECK. ADDITIONAL STRUCTURAL REQUIREMENTS ARE THE RESPONSIBILITY OF THIS CONTRACTOR.
3. RUN 1" CONDENSATE DRAIN LINE TO NEAREST ROOF DRAIN OR SPLASH BLOCK.
4. UNIT SHALL BE MOUNTED ON PREFABRICATED ROOF CURB WITH VIBRATION ELIMINATORS (WHERE REQUIRED). LOCATE PER LANDLORD'S SPECIFICATIONS.

NEW EXHAUST FAN SCHEDULE

TAG	LOCATION	SERVICE	CFM	SP " W.C.	RPM	DRIVE	TYPE	WHEEL DIA.	WATTS	VOLTAGE PH. / HZ.	MANUFACTURER MODEL NO.	REMARKS
EF-1 150	TOILET ROOM	EXHAUST	166	0.25"	1,550	DIRECT	BI	-	108	120/1/60	PENNBARRY Z6H	1, 2, 3
EF-2 150	TOILET ROOM	EXHAUST	166	0.25"	1,550	DIRECT	BI	-	108	120/1/60	PENNBARRY Z6H	1,2,3

NOTES:
1. FAN SHALL BE MOUNTED IN CEILING WITH VIBRATION ISOLATORS.
2. FAN SHALL BE CONTROLLED BY THE TOILET ROOM LIGHT SWITCH.
3. FAN SHALL BE PROVIDED WITH LOW LEAKAGE BACKDRAFT DAMPER.

EXHAUST FAN SCHEDULE

TAG	LOCATION	SERVICE	CFM	SP " W.C.	RPM	DRIVE	TYPE	WHEEL DIA.	WATTS	VOLTAGE PH. / HZ.	MANUFACTURER MODEL NO.	REMARKS
EF-3 400	TOILET ROOM	EXHAUST	403	0.375"	1,050	DIRECT	BI	-	243	120/1/60	PENNBARRY Z10S7	1,2,3

NOTES:
1. FAN SHALL BE MOUNTED IN CEILING WITH VIBRATION ISOLATORS.
2. FAN SHALL BE SET TO RUN CONTINUOUSLY.
3. FAN SHALL BE PROVIDED WITH LOW LEAKAGE BACKDRAFT DAMPER.

NEW DIFFUSER, REGISTER, AND GRILLE SCHEDULE

TAG	MAKE & MODEL	DIFFUSER SIZE	NECK SIZE	CFM RANGE	DESCRIPTION
SAD-1	KRUEGER 5PLQ	24X24	6"Φ 8"Φ 10"Φ 12"Φ 14"Φ	0-125 126-245 246-380 381-550 551-725	ALUMINUM CONSTRUCTION, SURFACE OR LAY-IN MOUNT, ROUND NECK PLAQUE FACE CEILING DIFFUSER WITH REMOVABLE FACE PANEL. PROVIDE OPPOSED BLADE DAMPER AND SECTORIZING BAFFLE FOR AIRFLOW OTHER THAN 4-WAY BLOW.
SAD-2	KRUEGER 56600	24X24	SEE PLAN	SEE PLAN	ALUMINUM CONSTRUCTION, SURFACE OR LAY-IN MOUNT, ROUND NECK CEILING DIFFUSER WITH REMOVABLE FACE PANEL. PROVIDE OPPOSED BLADE DAMPER AND SECTORIZING BAFFLE FOR AIRFLOW OTHER THAN 4-WAY BLOW.
SAD-3	KRUEGER 5PLQ	12X12	6"Φ 8"Φ	0-125 126-245	ALUMINUM CONSTRUCTION, SURFACE OR LAY-IN MOUNT, ROUND NECK PLAQUE FACE CEILING DIFFUSER WITH REMOVABLE FACE PANEL. PROVIDE OPPOSED BLADE DAMPER AND SECTORIZING BAFFLE FOR AIRFLOW OTHER THAN 4-WAY BLOW.
SAD-4	CAPTIVE AIRE DI-PSP	24X24	SEE PLAN	SEE PLAN	STAINLESS STEEL PERFORATION AND TRIM REMOVABLE PERFORATION FOR PLENUM CLEANING DOUBLE PERFORATION FOR EVEN AIR DISTRIBUTION ½" THICK INSULATION ON EXTERIOR TOP AND SIDES. SEE CAPTIVEAIRE DRAWINGS(400 SERIES) FOR MORE INFORMATION.
SG-1	KRUEGER 5880	SEE PLANS	SEE PLANS	SEE PLANS	ALUMINUM CONSTRUCTION,DOUBLE DEFLECTION SUPPLY GRILLE. INDIVIDUALLY ADJUSTABLE 3/4" BLADE SPACING SET AT 22.5 DEGREES. BLADES PARALLEL TO THE LONG DIMENSION. PROVIDE WITH OPPOSED BLADE DAMPER & FRAME 22 FOR SURFACE & DUCT MOUNTING.
RET-1	KRUEGER 56690	24X24	SEE PLAN	SEE PLAN	ALUMINUM CONSTRUCTION, SURFACE OR LAY-IN MOUNT, ROUND NECK CEILING DIFFUSER WITH REMOVABLE FACE PANEL. PROVIDE OPPOSED BLADE DAMPER AND SECTORIZING BAFFLE FOR AIRFLOW OTHER THAN 4-WAY BLOW.
RG-1	KRUEGER S580	SEE PLANS	SEE PLANS	SEE PLANS	ALUMINUM CONSTRUCTION, RETURN AIR GRILLE WITH BLADES ON 3/4" CENTER, PARALLEL TO THE LONG DIMENSIONS AND SET AT 35 DEGREES, PROVIDE SURFACE MOUNT BORDER FOR INSTALLATION IN DRYWALL.

1. CONTACT SAMUEL TEPP ASSOCIATES (732-548-7398) FOR ADDITIONAL INFORMATION ON KRUEGER PRODUCTS.
2. COORDINATE FINAL ACCESSORIES, FINISHES, AND LENGTHS WITH CONSTRUCTION MANAGER & ARCHITECT PRIOR TO PROCUREMENT.
3. SELECTION BASED ON KRUEGER OR APPROVED EQUIVALENT AND CAPTIVEAIRE AS NOTED.
4. CONTRACTOR TO PAINT DIFFUSER TO MATCH FINISH WITH ADJACENT CEILING. REFER TO ARCHITECTURAL SHEETS FOR ADDITIONAL INFORMATION ON CEILING FINISH. USE FACTORY BLACK FINISH IN SEATING AREAS.

NEW THERMOSTAT SCHEDULE

(T)	NEW THERMOSTAT TO BE TRANE MODEL BAYSENS924B OR APPROVED, COMPATIBLE EQUIVALENT. MOUNT AT 4'-0" AFF. THERMOSTAT SHALL BE TOUCH SCREEN PROGRAMMABLE, 7-DAY TYPE.
(S)	NEW HONEYWELL C7041P BUTTON PROBE SENSOR. MOUNT IN CEILING AS INDICATED ON MECHANICAL PLAN. WIRE BACK TO T-STAT IN OFFICE. PROVIDE SUBSTITUTE COMPATIBLE TYPE IF REQUIRED.

NEW SMOKE DETECTOR TEST STATION

SDT	REMOTE TEST STATION WITH AUDIBLE AND VISUAL ALARM FOR DUCT SMOKE DETECTOR MANUFACTURED BY SIMPLEX MODEL 4098-9842.

REFER TO M600 SERIES SHEETS FOR KITCHEN EXHAUST FAN, HOOD, AND MAKE-UP AIR UNIT SCHEDULES AND DIAGRAMS

NEW VOLUME DAMPER CABLE CONTROLS

TYPE	DESCRIPTION
"VD1"	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.

AIR BALANCE SCHEDULE

	DINING (CFM)			KITCHEN (CFM)		
UNIT	S/A	O/A	E/A	S/A	O/A	E/A
RTU-1	5,000					
RTU-2	4,000	950				
RTU-3	2,000					
RTU-4	4,000	950				
DOAS-1				1,860	1,860	
DOAS-2				1,240	1,240	
EF-1			-150			
EF-2			-150			
KEF-1						-2,260
KEF-2						-1,550
TOTALS	15,000	1,900	-300	3,100	3,100	-3,810
		1,600			-710	
NET PRESSURIZATION		890				

MECHANICAL SCHEDULES | N.T.S. | M300 | 2

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
PA UCC CERT #006195
Applied Electronically by L&I User

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EXPIRES 9-30-21
COA NUMBER 003203

DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR

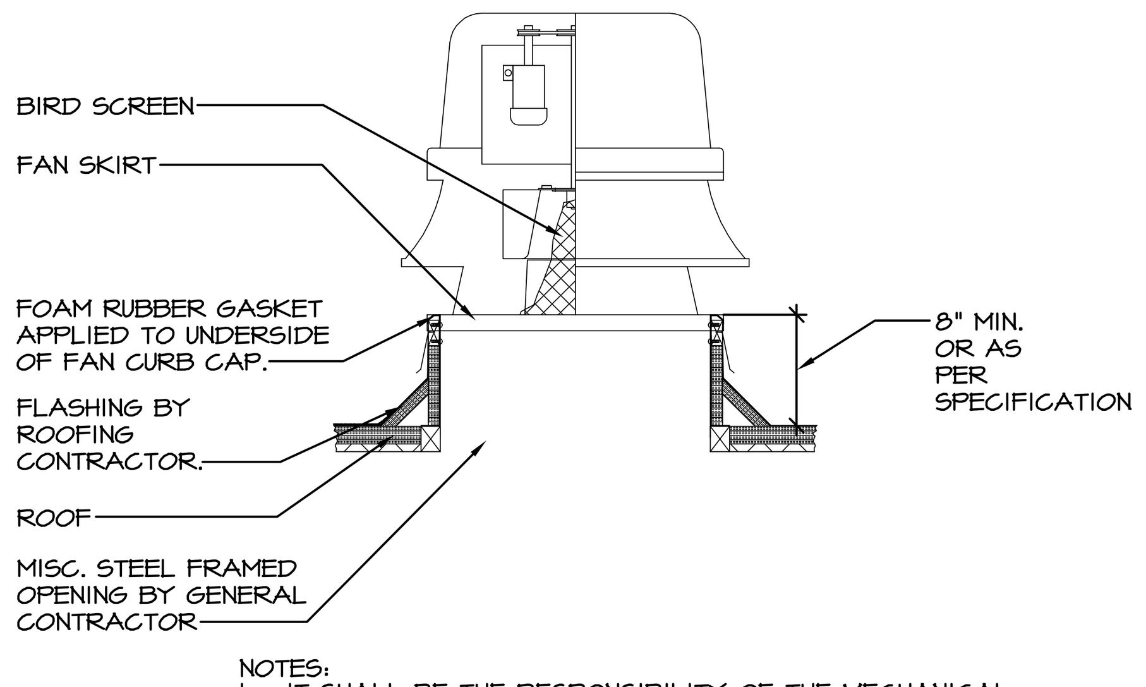
LOCATION: KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.: 210293
DRAWN BY: LC
SCALE: AS NOTED
CHECKED BY: KF
DATE: 11/04/2021
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC
DRAWING NAME: MECHANICAL NOTES & SCHEDULES
DRAWING NO.: M300
FIRM REGISTRATION NO.: AX010102
SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

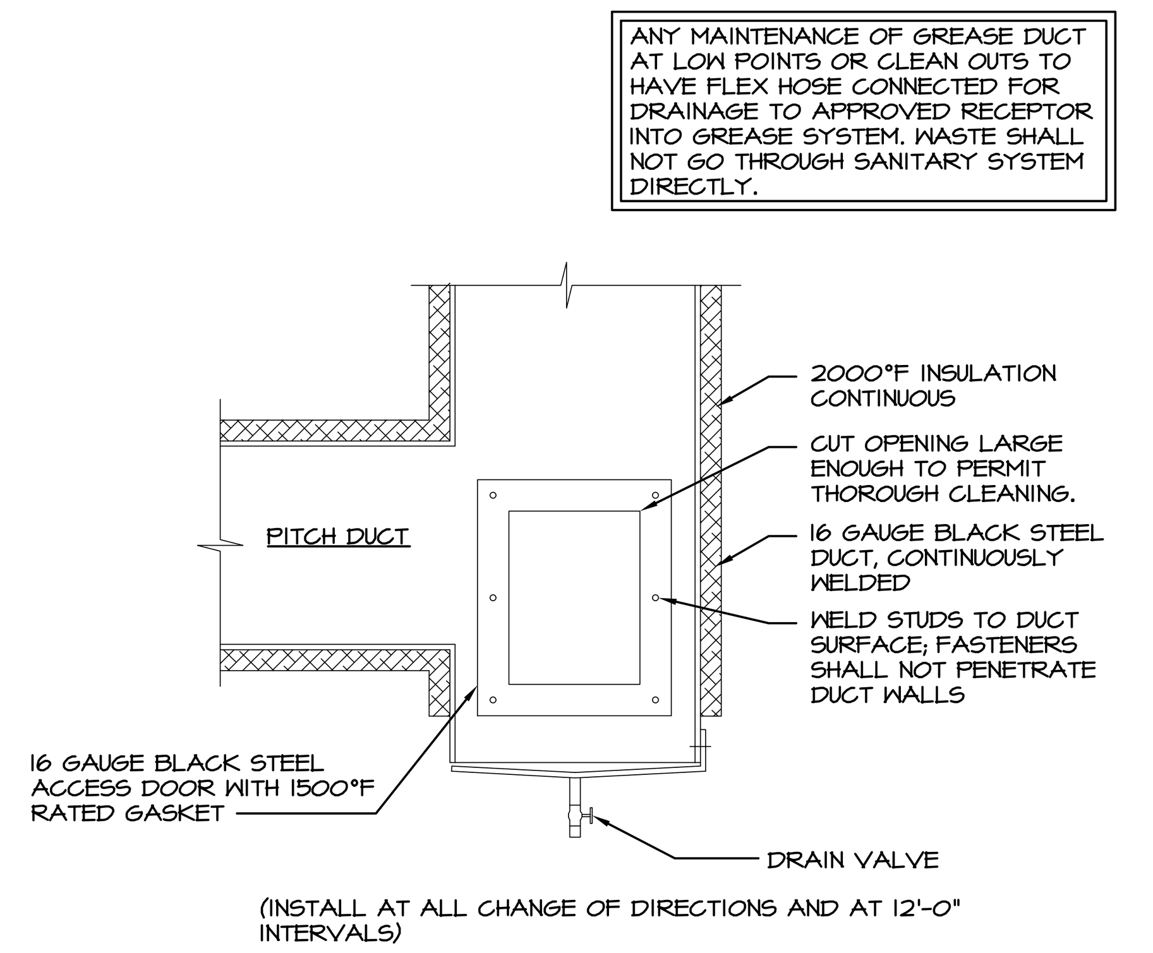
DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1121 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1



NOTES:
1. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE ALL ROOF OPENING SIZES AND PLACEMENTS WITH GENERAL CONTRACTOR.
2. CONTRACTOR TO FURNISH AND INSTALL A BACKDRAFT DAMPER FOR EXHAUST FAN WITHIN ROOF OPENING.

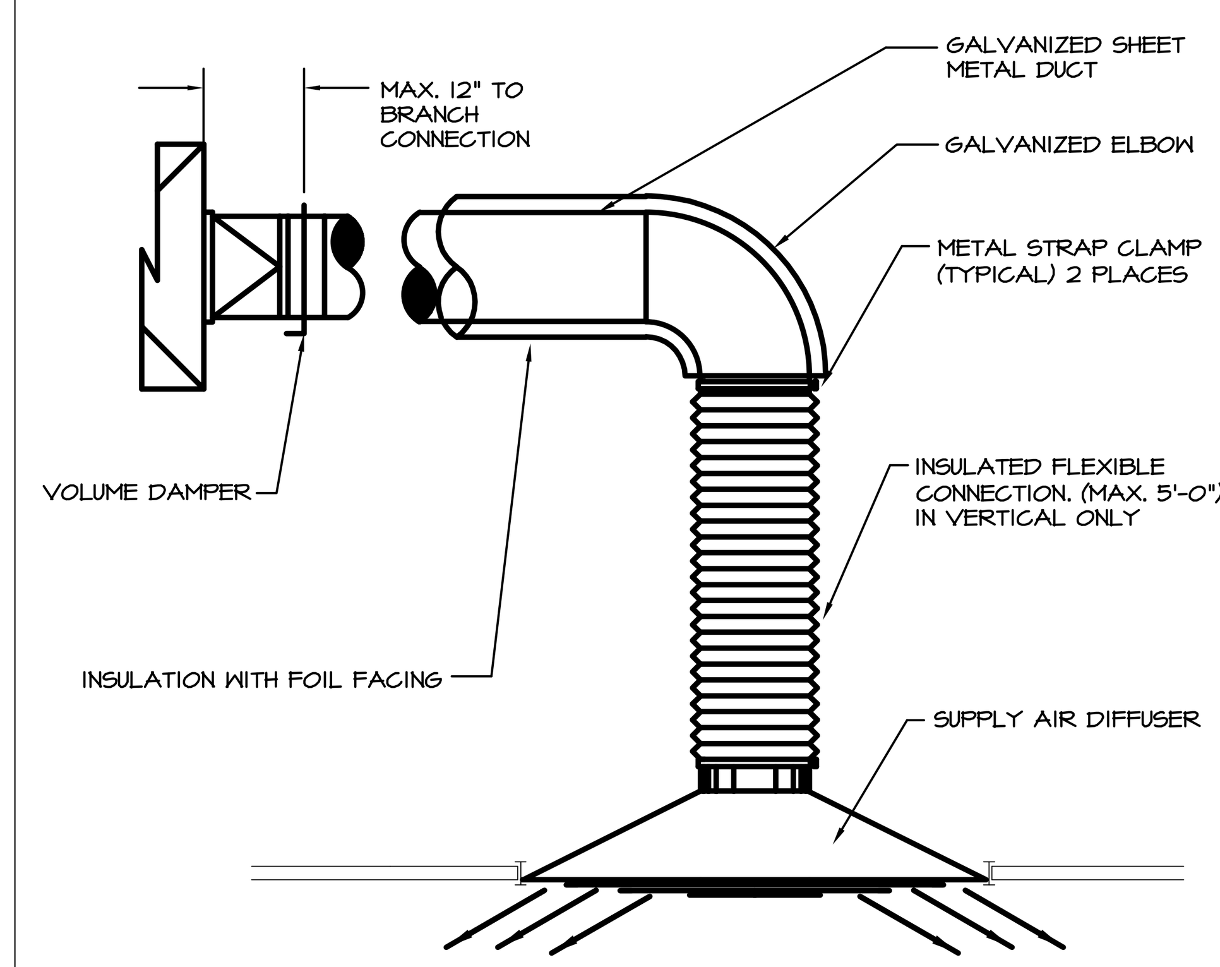
ROOF MOUNTED EXHAUST FAN DETAIL | N.T.S. | M300 | 1

ANY MAINTENANCE OF GREASE DUCT AT LOW POINTS OR CLEAN OUTS TO HAVE FLEX HOSE CONNECTED FOR DRAINAGE TO APPROVED RECEPTOR INTO GREASE SYSTEM. WASTE SHALL NOT GO THROUGH SANITARY SYSTEM DIRECTLY.



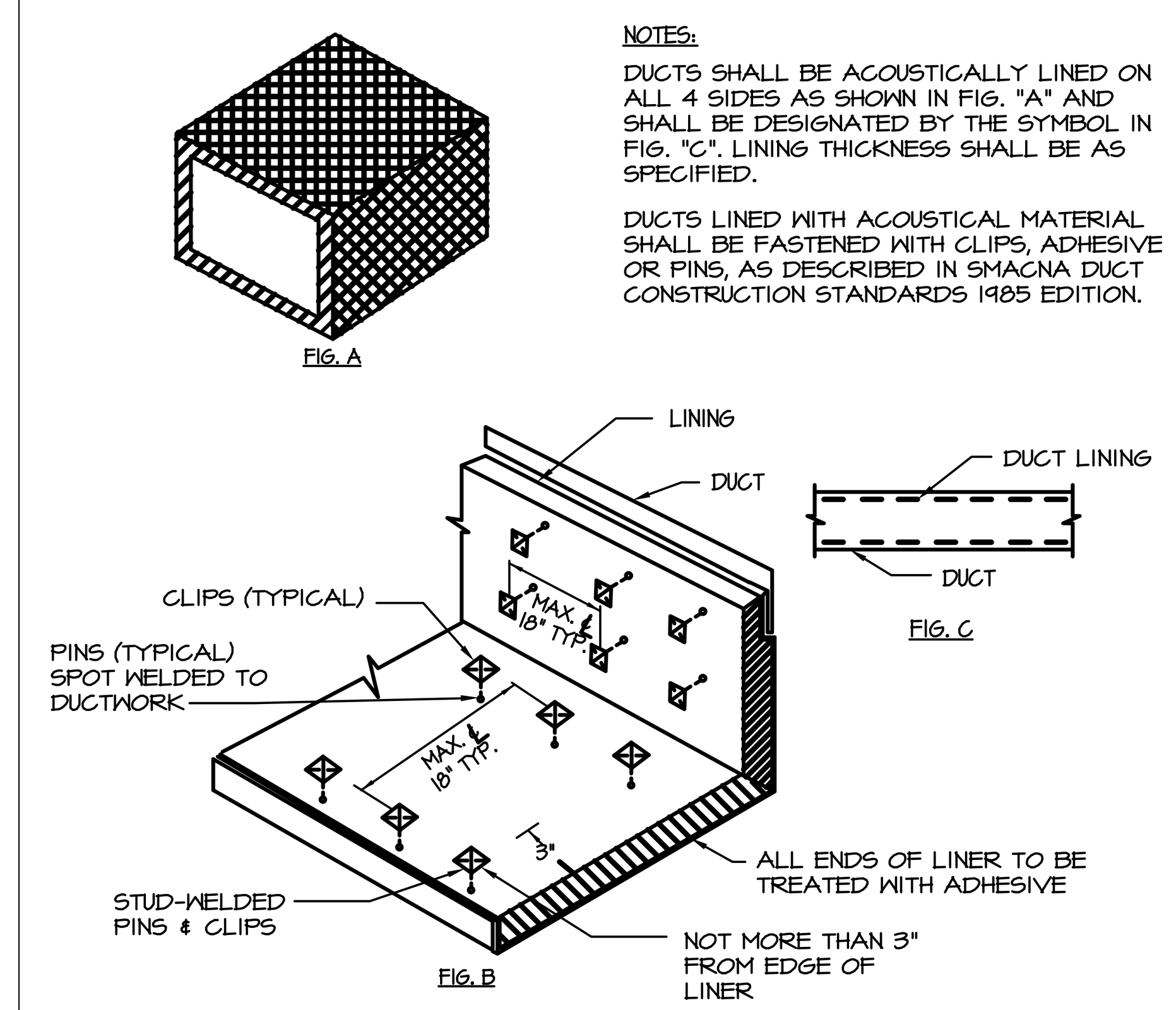
(INSTALL AT ALL CHANGE OF DIRECTIONS AND AT 12'-0" INTERVALS)

GREASE DUCT TRAP DETAIL | N.T.S. | M300 | 2

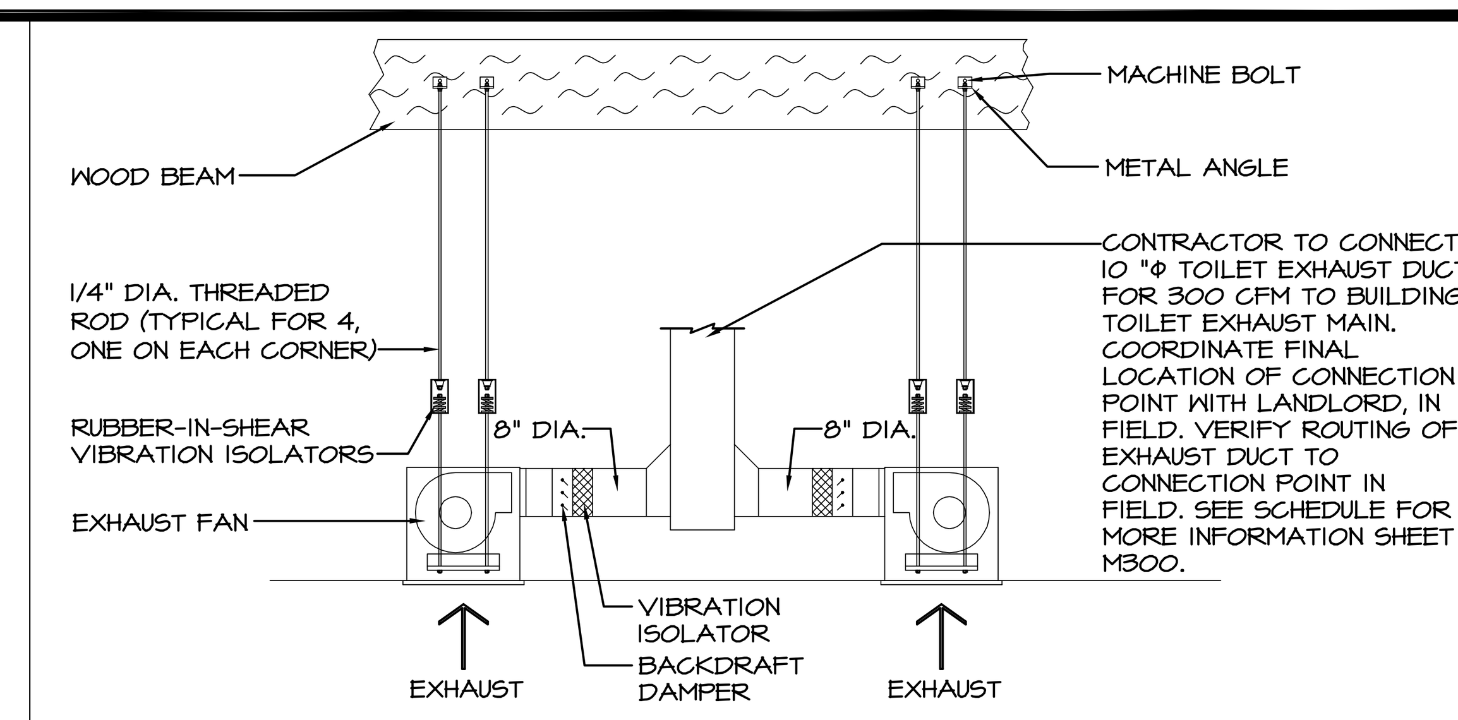


STANDARD DIFFUSER DETAIL | N.T.S. | M300 | 3

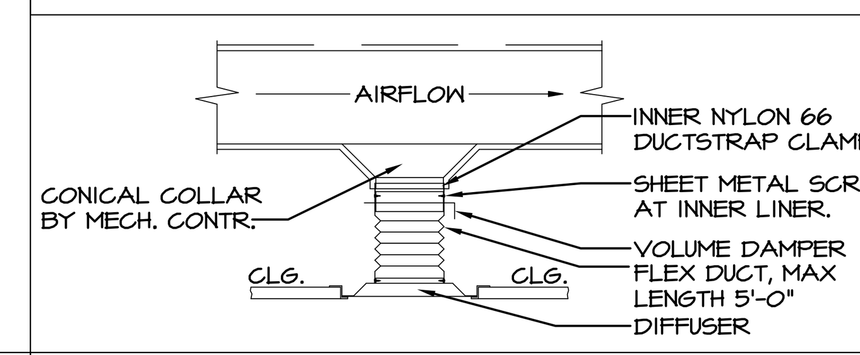
NOTES:
DUCTS SHALL BE ACOUSTICALLY LINED ON ALL 4 SIDES AS SHOWN IN FIG. "A" AND SHALL BE DESIGNATED BY THE SYMBOL IN FIG. "C". LINING THICKNESS SHALL BE AS SPECIFIED.
DUCTS LINED WITH ACOUSTICAL MATERIAL SHALL BE FASTENED WITH CLIPS, ADHESIVE OR PINS, AS DESCRIBED IN SMACNA DUCT CONSTRUCTION STANDARDS 1985 EDITION.



ACOUSTICAL TREATMENT-DUCT LINING | N.T.S. | M300 | 4

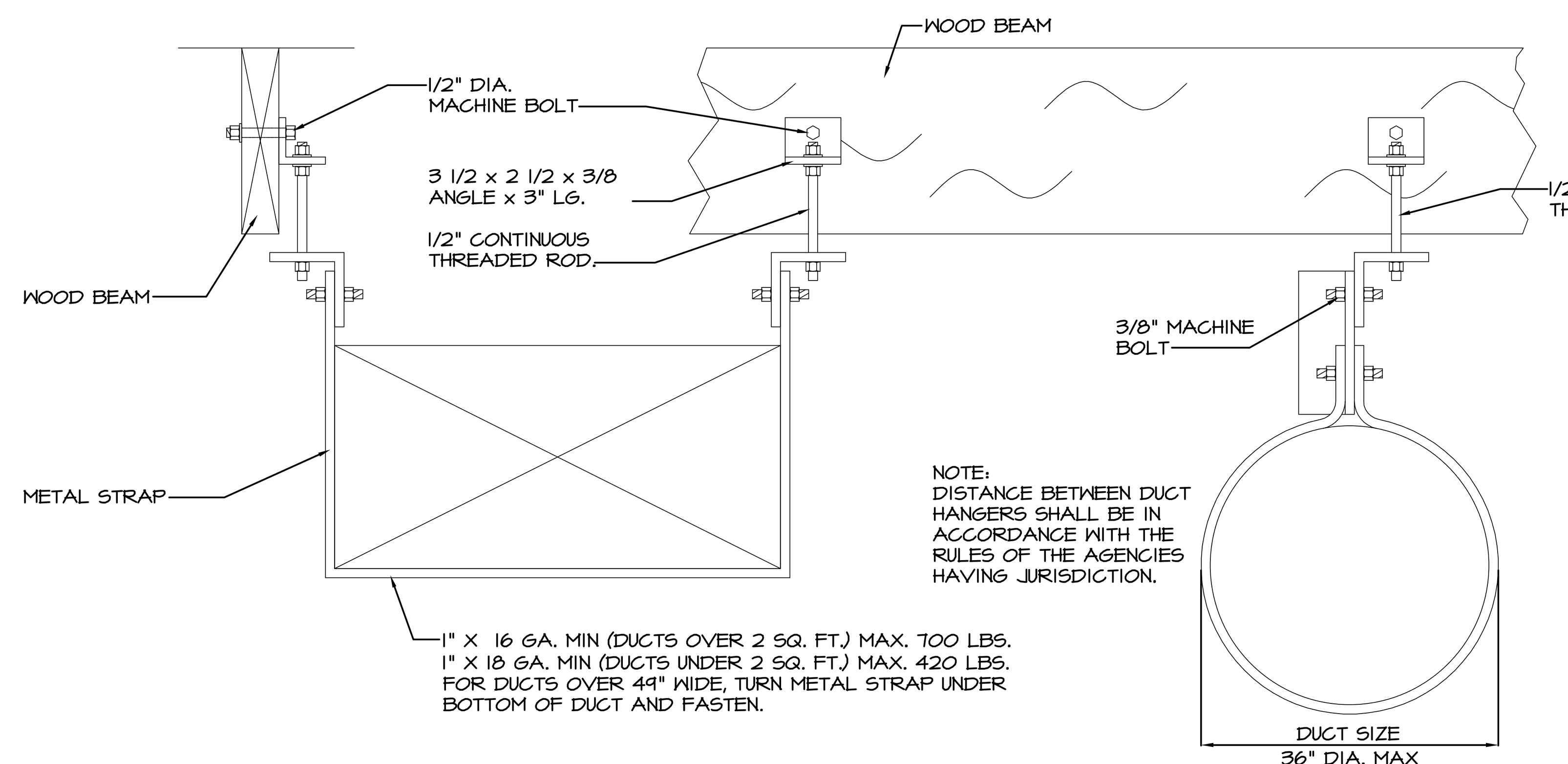


TOILET EXHAUST DETAIL | N.T.S. | M300 | 5



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.

BOTTOM DISCHARGE DETAIL | N.T.S. | M300 | 6



1" X 16 GA. MIN (DUCTS OVER 2 SQ. FT.) MAX. 700 LBS.
1" X 18 GA. MIN (DUCTS UNDER 2 SQ. FT.) MAX. 420 LBS.
FOR DUCTS OVER 49" WIDE, TURN METAL STRAP UNDER BOTTOM OF DUCT AND FASTEN.

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

MAX WEIGHT PER FOOT = 16 LBS.

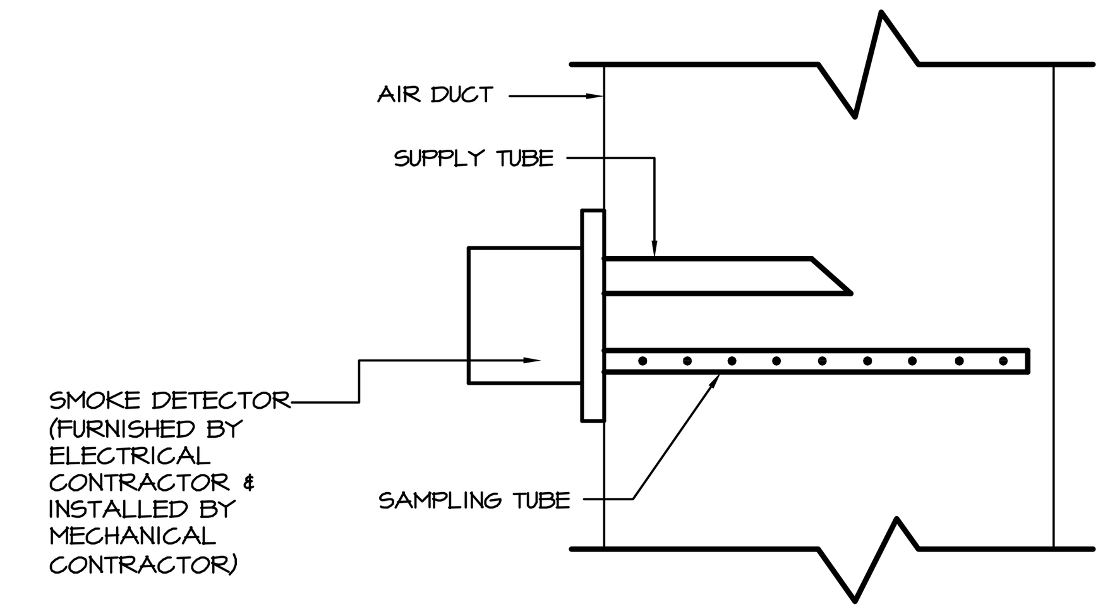
DUCTWORK SUPPORT DETAIL
NOT TO SCALE

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 (0.028 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.)

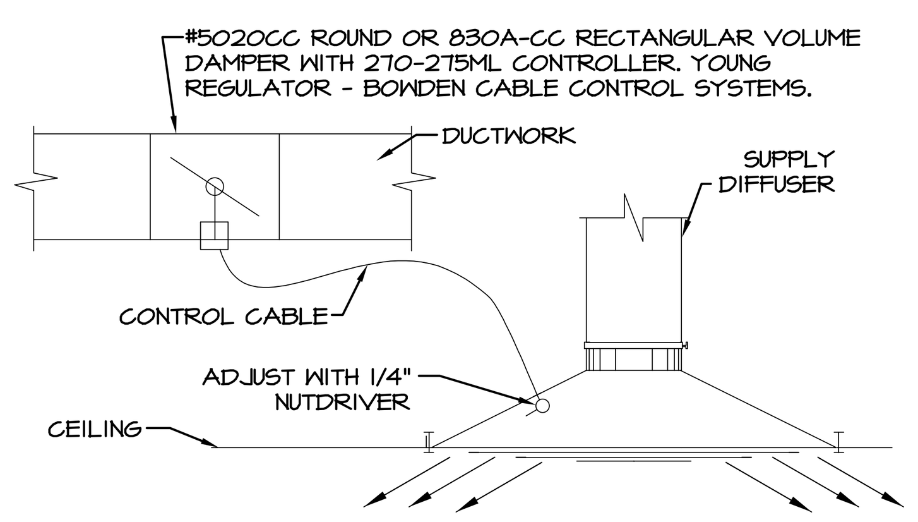
ROUND DUCT SUPPORT DETAIL
NOT TO SCALE

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	26 (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.)

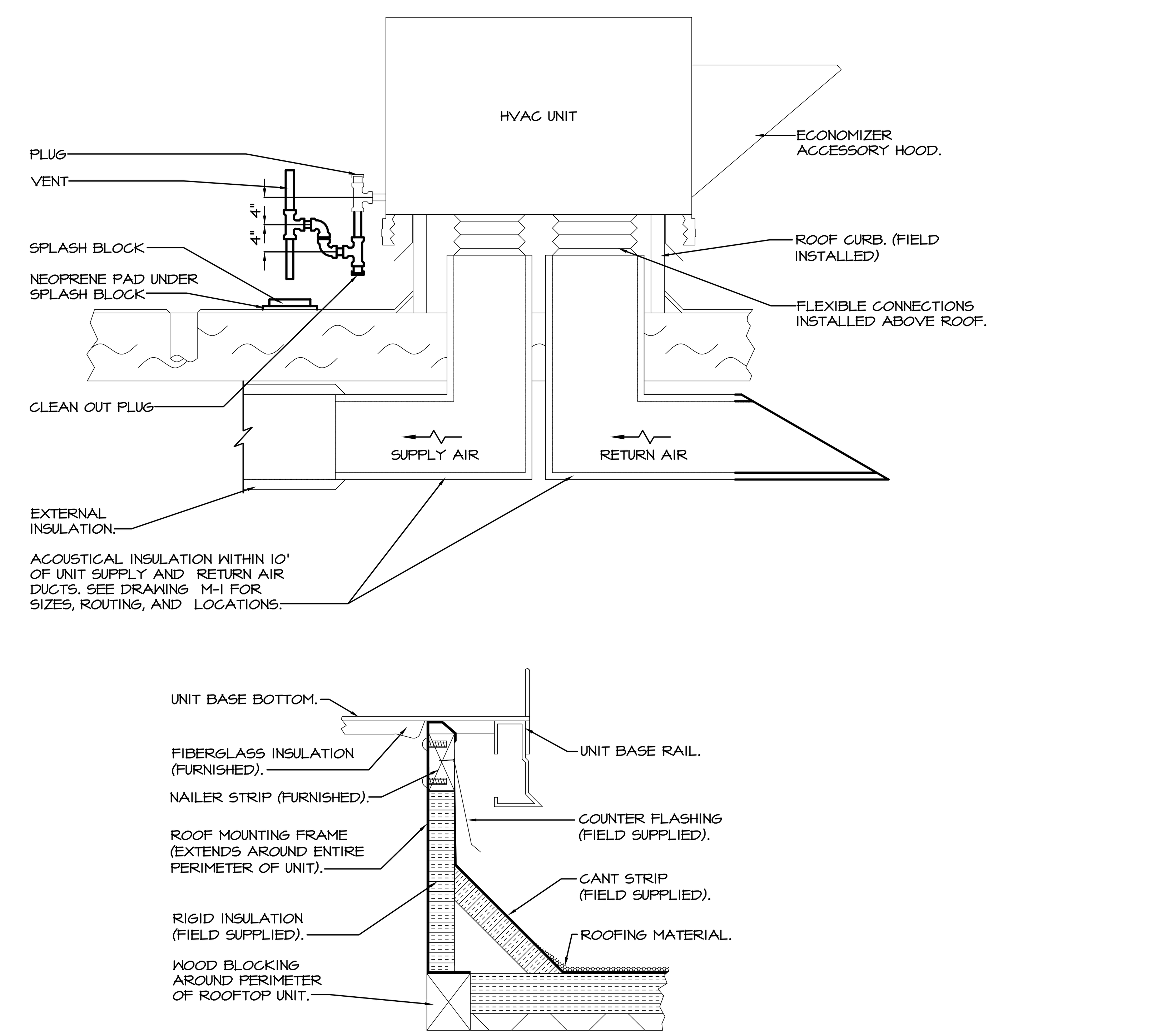
DUCT SUPPORT DETAIL | N.T.S. | M300 | 7



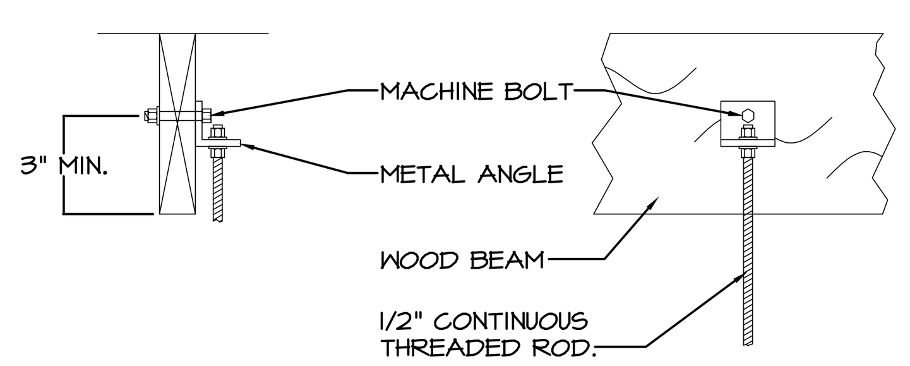
DUCT SMOKE DETECTOR | N.T.S. | M300 | 8



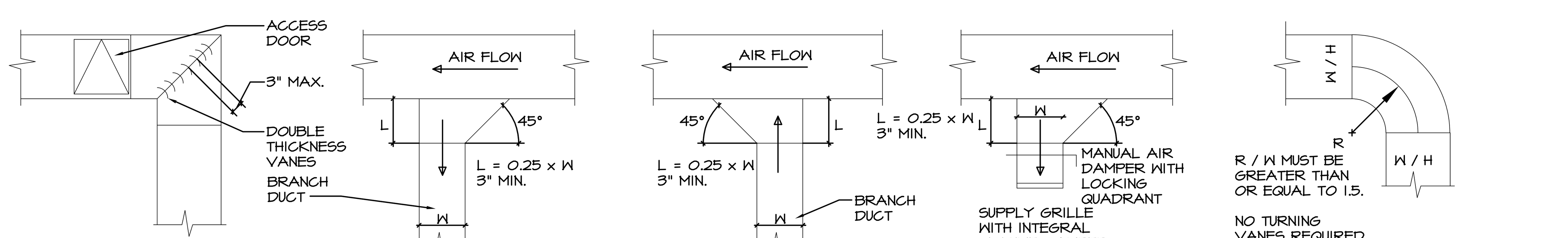
CABLE DAMPER DETAIL | N.T.S. | M300 | 9



NOTE:
WHERE ROOFTOP UNITS ARE REQUIRED TO BE REPLACED OR RELOCATED, COORDINATE ROOF OPENINGS WITH THE LANDLORD. ALL ROOF OPENINGS TO BE BY LANDLORD'S CONTRACTOR AT THIS CONTRACTOR'S EXPENSE. PROVIDE SIGNED AND SEALED DRAWINGS BY A STRUCTURAL ENGINEER AS REQUIRED FOR ANY ADDITIONAL STEEL OR MODIFICATIONS TO EXISTING STEEL. OBTAIN LANDLORD AND BUILDING DEPARTMENT APPROVALS AS REQUIRED.



ATTATCHMENT TO STRUCTURE DETAILS | N.T.S. | M300 | 10



SQUARE ELBOW — SUPPLY TAP — RETURN TAP — SUPPLY TAP WITH SUPPLY GRILLE — ALTERNATE RECTANGULAR ELBOW

DUCTWORK DETAILS | N.T.S. | M300 | 11

ROOFTOP UNIT DETAIL & TYPICAL FLASHING DETAIL | N.T.S. | M300 | 12

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
PA UCC CERT #006795
Applied Electronically by L&I User:

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Custom Designing & Engineering PC
KENNETH A. FULLER, P.E.
PA. LICENSE NUMBER: PE075601
EXPIRES 9-30-21
COA NUMBER 503203

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.

DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR
LOCATION: KURA SUSHI, 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT NO.: 210293
DRAWN BY: LC
SCALE: AS NOTED
CHECKED BY: KC
DATE: 11/04/2021
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC
DRAWING NAME: MECHANICAL DETAILS AND MILLWORK DETAILS
DRAWING NO.: M400
FIRM REGISTRATION NO.: AX010102
SEAL

DATE: 11/04/2021 — PROJECT NO.: 210293 — LOCATION: 1121 CHESTNUT STREET, PHILADELPHIA, PA 19102 — PROJECT: 210293 — PLOT SCALE: 1:1

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	4,018	DESIGN CONDITIONS		DRY BULB	WET BULB
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	93 F	76 F
	3	VOLUME (CU. FT.)	52,234		INSIDE	78 F	50%RH
SENSIBLE GAINS			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
ABOVE CEILING	4	ROOF	5.38				
	5	WALL					
	6	LIGHTS	3.41				
	7						
	8	SUB-TOTAL (4 THRU 7)					
BELOW CEILING	9	ROOF	5.38				
	10	WALL	4.75				
	11	GLASS	58.40				
	12	PEOPLE	250	60	15,068		
	13	INFILTRATION					
	14	LIGHTS	3.41	2,171	7,410		
	15	OUTSIDE AIR	16.15	450	7,269		
	16	EQUIPMENT	138				
	17	SUB-TOTAL (9 THRU 16)			29,746		
LATENT GAINS							
BELOW CEILING	18	PEOPLE	200	60	12,054		
	19	INFILTRATION					
	20	EQUIPMENT					
	21	OUTSIDE AIR	21.86	450	9,836		
	22	SUB-TOTAL (18 THRU 21)			21,890		
ROOM CONDITION							
BELOW CEILING	23	TOTAL LOAD (17 + 22)			51,636		
	24	SENSIBLE HEAT FACTOR (1 - (22 / 17))			0.26		
	25	SUPPLY AIR TEMP. DIFF.					
	26	SUPPLY AIR CFM (17 / (1.08 X 25))			2,000		
	27	CFM PER SQ. FT. (26 / 1)			0.50		
	28	AIR CHANGES PER HOUR ((26 X 60) / 3)			2.3		
	29	ROOM GRAND TOTAL (8 + 17 + 22)			51,636		
	30	AVG. ROOM LOAD BTUH PER SQ. FT. (29 / 1)			13		
	31	TOTAL TENANT AREA (1)				4,018	
	32	TENANT GRAND TOTAL LOAD (29)					51,636
	33	AVG. TENANT LOAD BTUH PER SQ. FT. (32 - 31)					13
	34	AVG. TENANT CFM PER SQ. FT. (26 / 31)					0.50

HEAT LOSS CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	4,018	DESIGN CONDITIONS		DRY BULB	
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	12 F	
	3	VOLUME (CU. FT.)	52,234		INSIDE	70 F	
EXTERIOR LOSSES			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
DAY CYCLE	4	ROOF	5.84				
	5	WALL	7.59				
	6	GLASS	37.38				
	7	INFILTRATION					
	8	OUTSIDE AIR	68.07	450	28,382		
	9	SUB-TOTAL (4 THRU 8)			28,382		
NIGHT CYCLE	10	ROOF	5.84				
	11	WALL	7.59				
	12	GLASS	37.38				
	13	OUTSIDE AIR	68.07				
	14	SUB-TOTAL (10 THRU 13)					
INTERIOR GAINS							
DAY CYCLE	15	LIGHTS 50% CREDIT	3.41	1,086	3,702		
	16	OTHER					
	17	SUB-TOTAL (15 + 16)			3,702		
NET HEAT LOSS							
DAY CYCLE	18	ROOM LOAD (9 - 17)			24,681		
	19	AVG. LOAD PER SQ. FT. (18 / 1)			6		
	20	TOTAL TENANT AREA (1)				4,018	
	21	TENANT GRAND TOTAL LOAD (18)					24,681
	22	AVG. TENANT LOAD BTUH PER SQ. FT. (21 / 20)					6
NIGHT CYCLE	23	AVG. ROOM LOAD BTUH PER SQ. FT. (14 / 1)					
	24	TENANT GRAND TOTAL LOAD (14)					
	25	AVG. TENANT LOAD BTUH PER SQ. FT. (24 / 20)					

2015 INTERNATIONAL MECHANICAL CODE

Description	Area (Ft2) Az	People Outdoor Air Rate CFM/person Table 403.3 Rp	Area Outdoor Airflow Rate CFM/Ft2 Table 403.3 Ra	Default Occupant Density Per Table 403.3 (People/ 1000 ft2) O	Area Outdoor Air Ra*Az	Zone Population O * Az/1000 Pz	Occupant Outdoor Air Rp*Pz	Breathing Zone Outdoor Air Vbz= RpPz + RaAz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Air Req'd Voz = Vbz/Ez	Zone Outdoor Air Provided	Supply Air Design Vpz	Outdoor Air Percent Zp = Voz/Vpz
Existing Peco Room	330	N/R	N/R	N/R					0.80				
Cold Storage	926	N/R	0.12	N/R	111			111	0.80	139	158	700	23%
Existing Ele. Machine Room	155	N/R	N/R	N/R					0.80				
Employee Area	94	N/R	0.12	N/R	11			11	0.80	14	45	200	23%
Storage	273	N/R	0.12	N/R	33			33	0.80	41	45	200	23%
Existing Room	93	N/R	N/R	N/R					0.80				
Office	159	5.00	0.06	5.00	10	1	4	14	0.80	17	45	200	23%
Corridor	1657	N/R	0.06	N/R	99			99	0.80	124	158	700	23%
Toilet Room	331	N/R	N/R	N/R					0.80				
Totals	4,018				264		4	268		335	450	2,000	23%

CELLAR FLOOR COOLING AND HEATING CALCULATIONS

NO SCALE

M301

3

HEAT GAIN CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	4,018	DESIGN CONDITIONS		DRY BULB	WET BULB
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	93 F	76 F
	3	VOLUME (CU. FT.)	52,234		INSIDE	78 F	50%RH
SENSIBLE GAINS			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
ABOVE CEILING	4	ROOF	5.38				
	5	WALL					
	6	LIGHTS	3.41				
	7						
	8	SUB-TOTAL (4 THRU 7)					
BELOW CEILING	9	ROOF	5.38	4,018	21,607		
	10	WALL	4.75	212	1,007		
	11	GLASS	58.40	239	13,956		
	12	PEOPLE	250	60	15,068		
	13	INFILTRATION					
	14	LIGHTS	3.41	3,836	13,092		
	15	OUTSIDE AIR	16.15	700	11,307		
	16	EQUIPMENT	138				
	17	SUB-TOTAL (9 THRU 16)			76,036		
LATENT GAINS							
BELOW CEILING	18	PEOPLE	200	60	12,054		
	19	INFILTRATION					
	20	EQUIPMENT					
	21	OUTSIDE AIR	21.86	700	15,300		
	22	SUB-TOTAL (18 THRU 21)			27,354		
ROOM CONDITION							
BELOW CEILING	23	TOTAL LOAD (17 + 22)			103,391		
	24	SENSIBLE HEAT FACTOR (1 - (22 / 17))			0.64		
	25	SUPPLY AIR TEMP. DIFF.					
	26	SUPPLY AIR CFM (17 / (1.08 X 25))			5,000		
	27	CFM PER SQ. FT. (26 / 1)			1.24		
	28	AIR CHANGES PER HOUR ((26 X 60) / 3)			5.7		
	29	ROOM GRAND TOTAL (8 + 17 + 22)			103,391		
	30	AVG. ROOM LOAD BTUH PER SQ. FT. (29 / 1)			26		
	31	TOTAL TENANT AREA (1)				4,018	
	32	TENANT GRAND TOTAL LOAD (29)					103,391
	33	AVG. TENANT LOAD BTUH PER SQ. FT. (32 - 31)					26
	34	AVG. TENANT CFM PER SQ. FT. (26 / 31)					1.24

HEAT LOSS CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	4,018	DESIGN CONDITIONS		DRY BULB	
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	12 F	
	3	VOLUME (CU. FT.)	52,234		INSIDE	70 F	
EXTERIOR LOSSES			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
DAY CYCLE	4	ROOF	5.84	4,018	23,465		
	5	WALL	7.59	212	1,610		
	6	GLASS	37.38	239	8,933		
	7	INFILTRATION					
	8	OUTSIDE AIR	63.07	700	44,150		
	9	SUB-TOTAL (4 THRU 8)			78,158		
NIGHT CYCLE	10	ROOF	5.84	4,018	23,465		
	11	WALL	7.59	212	1,610		
	12	GLASS	37.38	239	8,933		
	13	OUTSIDE AIR	63.07				
	14	SUB-TOTAL (10 THRU 13)			34,007		
INTERIOR GAINS							
DAY CYCLE	15	LIGHTS 50% CREDIT	3.41	1,918	6,540		
	16	OTHER					
	17	SUB-TOTAL (15 + 16)			6,540		
NET HEAT LOSS							
DAY CYCLE	18	ROOM LOAD (9 - 17)			71,618		
	19	AVG. LOAD PER SQ. FT. (18 / 1)			18		
	20	TOTAL TENANT AREA (1)				4,018	
	21	TENANT GRAND TOTAL LOAD (18)					71,618
	22	AVG. TENANT LOAD BTUH PER SQ. FT. (21 / 20)					18
NIGHT CYCLE	23	AVG. ROOM LOAD BTUH PER SQ. FT. (14 / 1)					8.5
	24	TENANT GRAND TOTAL LOAD (14)					34,007
	25	AVG. TENANT LOAD BTUH PER SQ. FT. (24 / 20)					8.5

2015 INTERNATIONAL MECHANICAL CODE

Description	Area (Ft2) Az	People Outdoor Air Rate CFM/person Table 403.3 Rp	Area Outdoor Airflow Rate CFM/Ft2 Table 403.3 Ra	Default Occupant Density Per Table 403.3 (People/ 1000 ft2) O	Area Outdoor Air Ra*Az	Zone Population O * Az/1000 Pz	Occupant Outdoor Air Rp*Pz	Breathing Zone Outdoor Air Vbz= RpPz + RaAz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Air Req'd Voz = Vbz/Ez	Zone Outdoor Air Provided	Supply Air Design Vpz	Outdoor Air Percent Zp = Voz/Vpz
Storage	3482	N/R	0.12	N/R	418			418	0.80	522	594	4240	14%
Corridor	536	N/R	0.06	N/R	32			32	0.80	40	106	760	14%
Totals	4,018				450			450		563	700	5,000	14%

SECOND FLOOR COOLING AND HEATING CALCULATIONS

NO SCALE

M301

4

HEAT GAIN CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	2,893	DESIGN CONDITIONS		DRY BULB	WET BULB
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	93 F	76 F
	3	VOLUME (CU. FT.)	37,609		INSIDE	78 F	50%RH
SENSIBLE GAINS			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
ABOVE CEILING	4	ROOF	5.38				
	5	WALL					
	6	LIGHTS	3.41				
	7						
	8	SUB-TOTAL (4 THRU 7)					
BELOW CEILING	9	ROOF	5.38				
	10	WALL	4.75	215	1,021		
	11	GLASS	58.40	236	13,781		
	12	PEOPLE	250	43	10,849		
	13	INFILTRATION					
	14	LIGHTS	3.41	2,339	7,983		
	15	OUTSIDE AIR	16.15	1,900	30,690		
	16	EQUIPMENT	138				
	17	SUB-TOTAL (9 THRU 16)			64,324		
LATENT GAINS							
BELOW CEILING	18	PEOPLE	200	43	8,679		
	19	INFILTRATION					
	20	EQUIPMENT					
	21	OUTSIDE AIR	21.86	1,900	41,530		
	22	SUB-TOTAL (18 THRU 21)			50,209		
ROOM CONDITION							
BELOW CEILING	23	TOTAL LOAD (17 + 22)			114,532		
	24	SENSIBLE HEAT FACTOR (1 - (22 / 17))			0.22		
	25	SUPPLY AIR TEMP. DIFF.					
	26	SUPPLY AIR CFM (17 / (1.08 X 25))			8,000		
	27	CFM PER SQ. FT. (26 / 1)			2.77		
	28	AIR CHANGES PER HOUR ((26 X 60) / 3)			12.8		
	29	ROOM GRAND TOTAL (8 + 17 + 22)			114,532		
	30	AVG. ROOM LOAD BTUH PER SQ. FT. (29 / 1)			40		
	31	TOTAL TENANT AREA (1)				2,893	
	32	TENANT GRAND TOTAL LOAD (29)					114,532
	33	AVG. TENANT LOAD BTUH PER SQ. FT. (32 - 31)					40
	34	AVG. TENANT CFM PER SQ. FT. (26 / 31)					2.77

HEAT LOSS CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	2,893	DESIGN CONDITIONS		DRY BULB	
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	12 F	
	3	VOLUME (CU. FT.)	37,609		INSIDE	70 F	
EXTERIOR LOSSES			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
DAY CYCLE	4	ROOF	5.84				
	5	WALL	7.59	215	1,632		
	6	GLASS	37.38	236	8,821		
	7	INFILTRATION					
	8	OUTSIDE AIR	63.07	1,900	119,837		
	9	SUB-TOTAL (4 THRU 8)			130,290		
NIGHT CYCLE	10	ROOF	5.84				
	11	WALL	7.59	215	1,632		
	12	GLASS	37.38	236	8,821		
	13	OUTSIDE AIR	63.07				
	14	SUB-TOTAL (10 THRU 13)			10,453		
INTERIOR GAINS							
DAY CYCLE	15	LIGHTS 50% CREDIT	3.41	1,170	3,988		
	16	OTHER					
	17	SUB-TOTAL (15 + 16)			3,988		
NET HEAT LOSS							
DAY CYCLE	18	ROOM LOAD (9 - 17)			126,302		
	19	AVG. LOAD PER SQ. FT. (18 / 1)			44		
	20	TOTAL TENANT AREA (1)				2,893	
	21	TENANT GRAND TOTAL LOAD (18)					126,302
	22	AVG. TENANT LOAD BTUH PER SQ. FT. (21 / 20)					44
NIGHT CYCLE	23	AVG. ROOM LOAD BTUH PER SQ. FT. (14 / 1)					3.6
	24	TENANT GRAND TOTAL LOAD (14)					10,453
	25	AVG. TENANT LOAD BTUH PER SQ. FT. (24 / 20)					3.6

2015 INTERNATIONAL MECHANICAL CODE

Description	Area (Ft2) Az	People Outdoor Air Rate CFM/person Table 403.3 Rp	Area Outdoor Airflow Rate CFM/Ft2 Table 403.3 Ra	Default Occupant Density Per Table 403.3 (People/ 1000 ft2) O	Area Outdoor Air Ra*Az	Zone Population O * Az/1000 Pz	Occupant Outdoor Air Rp*Pz	Breathing Zone Outdoor Air Vbz= RpPz + RaAz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Air Req'd Voz = Vbz/Ez	Zone Outdoor Air Provided	Supply Air Design Vpz	Outdoor Air Percent Zp = Voz/Vpz
Dining Room	1733	7.50	0.18	70	312	121	910	1222	0.80	1527	1591	6700	24%
Sushi Bar	161	7.50	0.18	100	29	16	121	150	0.80	187	202	850	24%
Hostess	142	N/R	0.12	N/R	17			17	0.80	21	36	150	24%
Corridor	857	N/R	0.06	N/R	51			51	0.80	64	71	300	24%
Totals	2,893				409		1,031	1,440		1,800	1,900	8,000	24%

DINING AREA COOLING AND HEATING CALCULATION(FIRST FLOOR)

NO SCALE

M301

1

HEAT GAIN CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	1,125	DESIGN CONDITIONS		DRY BULB	WET BULB
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	93 F	76 F
	3	VOLUME (CU. FT.)	14,625		INSIDE	78 F	50%RH
SENSIBLE GAINS			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
ABOVE CEILING	4	ROOF	5.40				
	5	WALL					
	6	LIGHTS	3.41				
	7						
	8	SUB-TOTAL (4 THRU 7)					
BELOW CEILING	9	ROOF	5.40				
	10	WALL	4.78	452	2,159		
	11	GLASS	58.40				
	12	PEOPLE	250	17	4,219		
	13	INFILTRATION					
	14	LIGHTS	3.41	903	3,082		
	15	OUTSIDE AIR	16.15				
	16	EQUIPMENT	138				
	17	SUB-TOTAL (9 THRU 16)			9,460		
LATENT GAINS							
BELOW CEILING	18	PEOPLE	200	17	3,375		
	19	INFILTRATION					
	20	EQUIPMENT					
	21	OUTSIDE AIR	21.86				
	22	SUB-TOTAL (18 THRU 21)			3,375		
ROOM CONDITION							
BELOW CEILING	23	TOTAL LOAD (17 + 22)			12,835		
	24	SENSIBLE HEAT FACTOR (1 - (22 / 17))			0.64		
	25	SUPPLY AIR TEMP. DIFF.					
	26	SUPPLY AIR CFM (17 / (1.08 X 25))			3,100		
	27	CFM PER SQ. FT. (26 / 1)			2.76		
	28	AIR CHANGES PER HOUR ((26 X 60) / 3)			12.7		
	29	ROOM GRAND TOTAL (8 + 17 + 22)			12,835		
	30	AVG. ROOM LOAD BTUH PER SQ. FT. (29 / 1)			11		
	31	TOTAL TENANT AREA (1)				1,125	
	32	TENANT GRAND TOTAL LOAD (29)					12,835
	33	AVG. TENANT LOAD BTUH PER SQ. FT. (32 - 31)					11
	34	AVG. TENANT CFM PER SQ. FT. (26 / 31)					2.76

HEAT LOSS CALCULATIONS

	ITEM	ROOM NUMBER:					
		NAME					
	1	AREA (SQ. FT.)	1,125	DESIGN CONDITIONS		DRY BULB	
	2	CEILING HEIGHT (FT.)	13'-0"		OUTSIDE	12 F	
	3	VOLUME (CU. FT.)	14,625		INSIDE	70 F	
EXTERIOR LOSSES			FACTOR	QUANTITY	BTUH	QUANTITY	BTUH
DAY CYCLE	4	ROOF	5.84				
	5	WALL	7.59	452	3,432		
	6	GLASS	37.38				
	7	INFILTRATION					
	8	OUTSIDE AIR	63.07				
	9	SUB-TOTAL (4 THRU 8)			3,432		
NIGHT CYCLE	10	ROOF	5.84				
	11	WALL	7.59	452	3,432		
	12	GLASS	37.38				
	13	OUTSIDE AIR	63.07				
	14	SUB-TOTAL (10 THRU 13)			3,432		
INTERIOR GAINS							
DAY CYCLE	15	LIGHTS 50% CREDIT	3.41	452	1,540		
	16	OTHER					
	17	SUB-TOTAL (15 + 16)			1,540		
NET HEAT LOSS							
DAY CYCLE	18	ROOM LOAD (9 - 17)			1,892		
	19	AVG. LOAD PER SQ. FT. (18 / 1)			2		
	20	TOTAL TENANT AREA (1)				1,125	
	21	TENANT GRAND TOTAL LOAD (18)					1,892
	22	AVG. TENANT LOAD BTUH PER SQ. FT. (21 / 20)					2
NIGHT CYCLE	23	AVG. ROOM LOAD BTUH PER SQ. FT. (14 / 1)					3.1
	24	TENANT GRAND TOTAL LOAD (14)					3,432
	25	AVG. TENANT LOAD BTUH PER SQ. FT. (24 / 20)					3.1

KITCHEN COOLING AND HEATING CALCULATIONS(FIRST FLOOR)

NO SCALE

M301

2

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
PA UCC CERT # 006195
Applied Electronically by L&I User:

TRICARICO ARCHITECTURE AND DESIGN PC
502 VALLEY ROAD, WAYNE, NJ 07470
T: 973-692-0222 F: 973-692-0223
TRICARICO.COM

Custom Designing & Engineering, PC

KENNETH A. FULLER, P.E.
PA. LICENSE NUMBER: PE075601
EXPIRES 9-30-21
COA NUMBER 003203

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.

DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR

LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHA, PA 19102

PROJECT NO.: 210293
DRAWN BY: LC
SCALE: AS NOTED
CHECKED BY: KF
DATE: 11/04/2021
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME:
LOAD CALCULATION

DRAWING NO.:
M500

FIRM REGISTRATION NO.: AX010102

SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1121 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

HOOD INFORMATION – JOB#5058657

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM DIMENSIONS WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP	HOOD CONSTRUCTION	HOOD CONFIG END TO END	HOOD CONFIG ROW
1	Eq. 19	3347 3D-G	CAPTIVEAIRE	4' 11"	450 DEG	1	MEDIUM	175	860			4"	12"	860	1095	-0.564"	430 SS WHERE EXPOSED	ALONE	ALONE
2	Eq. 26,15,14,14,1	4824 ND-G	CAPTIVEAIRE	7' 0"	600 DEG	1	HEAVY	200	1400			4"	14"	1400	1310	-0.624"	430 SS WHERE EXPOSED	ALONE	ALONE
3	Eq. 6	4224 VHB-G	CAPTIVEAIRE	7' 0"	700 DEG	11	N/A	150	1050			4"	12"	1050	1337	-0.129"	430 SS 100%	ALONE	ALONE
4	Eq 23	4224 VHB-G	CAPTIVEAIRE	3' 6"	700 DEG	11	N/A	143	500			4"	10"	500	917	-0.063"	430 SS 100%	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S) TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	LIGHT(S) TYPE	WIRE GUARD	LOCATION	SIZE	UTILITY CABINET(S) FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SYSTEMS QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
1	Eq. 19	CAPTRATE SOLID FILTER	3	16"	16"	85% SEE FILTER SPEC	2	SCREW IN HALOGEN	NO							YES	268 LBS
2	Eq. 26,15,14,14,1	CAPTRATE SOLID FILTER	5	16"	16"	85% SEE FILTER SPEC	2	SCREW IN HALOGEN	NO	LEFT	12"x48"x24"	TANK FS	4.8/4.0	SC-3282BNA	2 LIGHT 2 FAN	YES	723 LBS
3	Eq. 6						2	SCREW IN HALOGEN	NO							NO	251 LBS
4	Eq 23						0									NO	144 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	Eq. 19	FIELD WRAPPER 24.00" HIGH FRONT, LEFT, RIGHT.
		RISER SENSOR INSTALL 6IN PLEN.
		RIGHT VERTICAL END PANEL. 23" TOP WIDTH, 23" BOTTOM WIDTH, 61" HIGH INSULATED 430 SS.
		LEFT VERTICAL END PANEL. 23" TOP WIDTH, 23" BOTTOM WIDTH, 61" HIGH INSULATED 430 SS.
2	Eq. 26,15,14,14,1	FIELD WRAPPER 6.00" HIGH FRONT, LEFT, RIGHT.
		RISER SENSOR INSTALL 6IN PLEN.
		RIGHT VERTICAL END PANEL. 27" TOP WIDTH, 21" BOTTOM WIDTH, 90" HIGH INSULATED 430 SS.
		LEFT VERTICAL END PANEL. 27" TOP WIDTH, 21" BOTTOM WIDTH, 90" HIGH INSULATED 430 SS.
3	Eq. 6	FIELD WRAPPER 6.00" HIGH FRONT, LEFT, RIGHT.
4	Eq 23	FIELD WRAPPER 6.00" HIGH FRONT, LEFT, RIGHT.

VERIFY CEILING HEIGHT

___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

FIRE SYSTEM INFORMATION – JOB#5058657

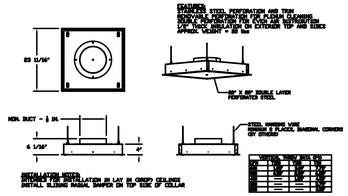
FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION SYSTEM	INSTALLATION LOCATION ON HOOD
1		TANK FS	4.8/4.0	40	FIRE CABINET LEFT	LEFT, HOOD 2

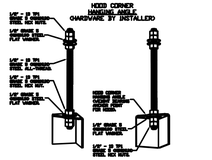
GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

FOR QUESTIONS, CALL THE
North New Jersey Mechanical
REGION 126
PHONE# (201) 308-6647
EMAIL: reg126@captiveaire.com

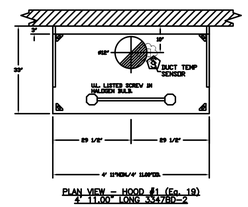
QTY 12-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER (D)-PSP2



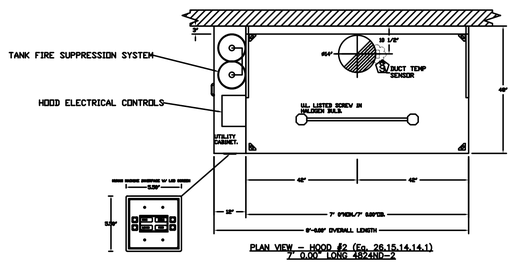


ASSEMBLY INSTRUCTIONS

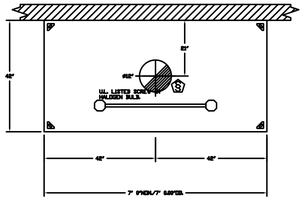
HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 OKINUMURO ALL-THREAD SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 OKINUMURO STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 OKINUMURO HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



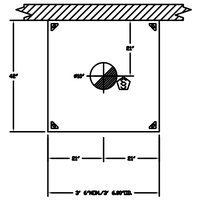
PLAN VIEW – HOOD #1 (Eq. 19)
4' 11.00" LONG 3347BD-2



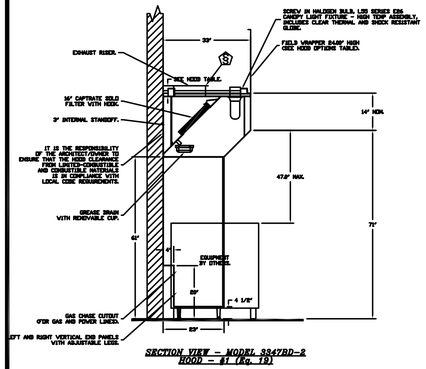
PLAN VIEW – HOOD #2 (Eq. 26,15,14,14,1)
7' 0.00" LONG 4824ND-2



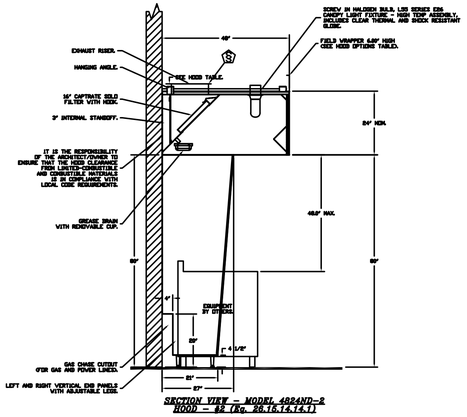
PLAN VIEW – HOOD #3 (Eq. 6)
7' 0.00" LONG 4224VHB-G



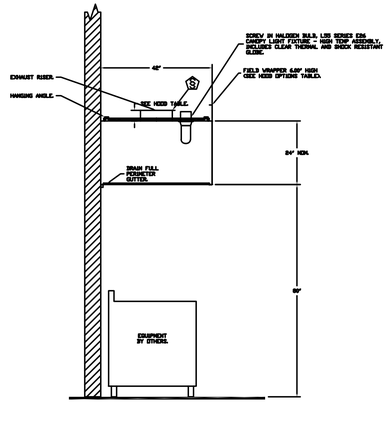
PLAN VIEW – HOOD #4 (Eq. 23)
3' 6.00" LONG 4224VHB-G



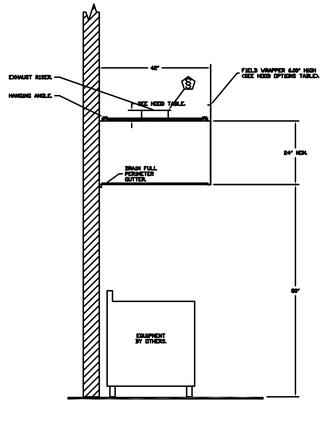
SECTION VIEW – MODEL 3347BD-2
HOOD – #1 (Eq. 19)



SECTION VIEW – MODEL 4824ND-2
HOOD – #2 (Eq. 26,15,14,14,1)



SECTION VIEW – MODEL 4224VHB-G
HOOD – #3 (Eq. 6)



SECTION VIEW – MODEL 4224VHB-G
HOOD – #4 (Eq 23)

CAPTIVEAIRE
www.captiveaire.com
North New Jersey Mechanical
Summit, NJ. PHONE: (201) 308-6647 FAX: (919) 516-8752 EMAIL: reg136@captiveaire.com

REVISIONS

DESCRIPTION	DATE

Kura Sushi – Philadelphia
PHILADELPHIA, PA, 19102

DATE: 9/9/2021
DWG.#: 5058657
DRAWN BY: cld.porter
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 1

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
Richard Chen
PA UCC CERT #305195
Applied Electronically by L&I User:

ARCHITECTURE AND DESIGN PC
1002 VALLEY ROAD, WAYNE, NJ 07470
T:973-692-0222 F:973-692-0223
TRICARICO.COM

Custom Designed Environments
KENNETH A. FULLER, P.E.
PA LICENSE NUMBER: PE079601
EXPIRES 9-30-21
COA NUMBER 003203

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.

DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT:
KURA SUSHI REVOLVING SUSHI BAR

LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.:	DRAWN BY:
210293	LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME:
CAPTIVEAIRE (1)

DRAWING NO.:
M600

FIRM REGISTRATION NO.: AR007052

SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

EXHAUST FAN INFORMATION – JOB#5058657

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF-1	1	DU180HFA	CAPTIVEAIRE	2260	1.200	1101	ODP,PREMIUM	1.500	0.9380	3	208	6.6	522 FPM	175	13.1
2	KEF-2	1	DU85HFA	CAPTIVEAIRE	1550	0.500	1165	ODP	0.750	0.2860	3	208	2.6	491 FPM	92	9.9

DOAS/RTU FAN SCHEDULE – JOB#5058657

FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	RETURN AIR CFM	MAX OUTSIDE AIR CFM	TOTAL CFM	ESP	HP	BHP	PHASE	VOLT	MCA	MOCP	WEIGHT (LBS)
3	DOAS-1	1	CASRTU2-1.200-13-10T-DOAS	CAPTIVEAIRE	13P-2	0	1860	1860	0.500	1.500	1.2400	3	208	54A	60A	1935
4	DOAS-2	1	CASRTU1-1.125-13-7.5T-DOAS	CAPTIVEAIRE	13P-1	0	1240	1240	0.500	1.500	0.5630	3	208	35A	40A	1330

DOAS/RTU COOLING SCHEDULE

FAN UNIT NO	TAG	COMPRESSOR			OUTDOOR FAN				INDOOR COIL		OUTSIDE AIR DB TEMP	OUTSIDE AIR WB TEMP	MIXED AIR DB TEMP	MIXED AIR WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	LEAVING DP TEMP	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	REHEAT LEAVING DB TEMP	REHEAT LEAVING WB TEMP	DESIRED REHEAT CAPACITY	MAX REHEAT CAPACITY	REHEAT LEAVING RELATIVE HUMIDITY	MOISTURE REMOVAL RATE	IEER
		TONNAGE	VOLTAGE	PHASE	MOTOR VOLTAGE	MOTOR #	MOTOR FREQUENCY	MOTOR QTY	ROWS	FACE AREA																	
3	DOAS-1	10	190-240	3	200-240	3	60	2	5	7.3 SQFT	91.0°F	75.0°F	91.0°F	75.0°F	49.8°F	49.7°F	49.7°F	144.0 MBH	80.9 MBH	63.1 MBH	68.0°F	57.3°F	38.3 MBH	96 MBH	52	58.7 LBS/HR	18.6
4	DOAS-2	7.5	190-240	3	200-240	3	60	2	5	6.2 SQFT	91.0°F	75.0°F	91.0°F	75.0°F	49.0°F	48.0°F	47.2°F	102.0 MBH	54.9 MBH	47.1 MBH	68.0°F	56.1°F	26.6 MBH	60 MBH	47	42.7 LBS/HR	18.6

DOAS/RTU HEATING SCHEDULE

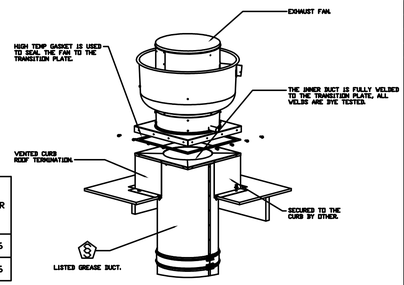
FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
3	DOAS-1	200000	160000	72°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	80
4	DOAS-2	125000	100000	67°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	80

FAN OPTIONS

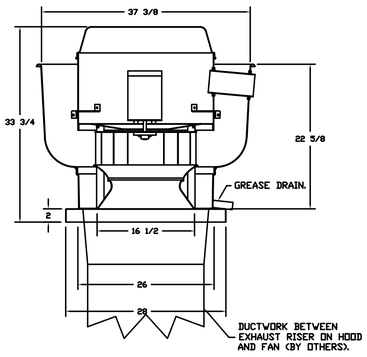
FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX.
		1	EXHAUST FAN HEAT BAFFLE.
		1	2 YEAR PARTS WARRANTY.
2	KEF-2	1	I 19-BDD DAMPER.
		1	2 YEAR PARTS WARRANTY.
3	DOAS-1	1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
		1	TOTAL CFM MONITORING FOR DOAS.
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
		1	RTU SIZE 2 DOWN DISCHARGE.
		1	2" MERV 13 FILTERS FOR SIZE 2 RTU. QTY. 4.
		1	2" MERV 8 FILTERS SIZE 2 RTU. QTY 4.
		1	OVERHEAT STAT.
		1	VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
		1	RTU FIXED 100% DA INTAKE CONTROL.
		1	RTU SIZE 2 NO RETURN.
		1	SIZE 2 RTU CURB DUCT HANGER.
		1	10 TON MODULATING COOLING OPTION, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS).
		1	10 TON MODULATING REHEAT OPTION. SPACE DEWPOINT CONTROL.
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED).
		1	FREEZESTAT.
		1	CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
		1	SIZE 2 RTU CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J BOX.
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS).
4	DOAS-2	1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
		1	TOTAL CFM MONITORING FOR DOAS.
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
		1	2" MERV 13 FILTERS FOR SIZE 1 RTU. QTY. 4.
		1	2" MERV 8 FILTERS SIZE 1 RTU. QTY 4.
		1	OVERHEAT STAT.
		1	VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
		1	RTU SIZE 1 DOWN DISCHARGE.
		1	RTU FIXED 100% DA INTAKE CONTROL.
		1	RTU SIZE 1 NO RETURN.
		1	SIZE 1 RTU CURB DUCT HANGER.
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
		1	7.5 TON MODULATING COOLING OPTION, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS.
		1	7.5 TON MODULATING REHEAT OPTION. SPACE DEWPOINT CONTROL.
		1	VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED).
		1	FREEZESTAT.
		1	CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
		1	SIZE 1 RTU CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J BOX.
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS).

CURB ASSEMBLIES

NO	DN FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	34 LBS	CURB	26.500"W X 26.500"L X 26.000"H VENTED HINGED.
2	# 2	KEF-2	36 LBS	CURB	23.000"W X 23.000"L X 20.000"H ALONG LENGTH, RIGHT HINGED.
3	# 3		79 LBS	CURB	49.500"W X 75.000"L X 20.000"H ALONG WIDTH, RIGHT INSULATED.
4	# 4	DOAS-2	85 LBS	CURB	41.000"W X 71.000"L X 20.000"H ALONG WIDTH, RIGHT INSULATED.



FAN #1 DU180HFA - EXHAUST FAN (KEF-1)



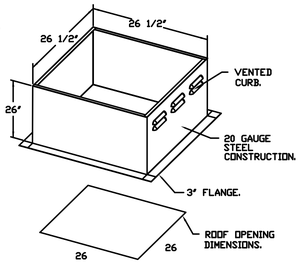
FEATURES:

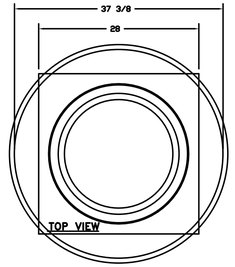
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

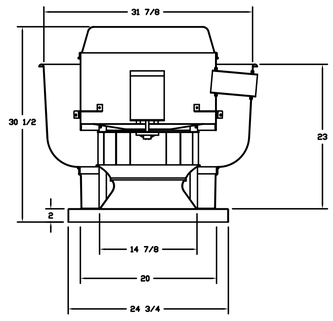
ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS:
GREASE BOX.
EXHAUST FAN HEAT BAFFLE.
2 YEAR PARTS WARRANTY.





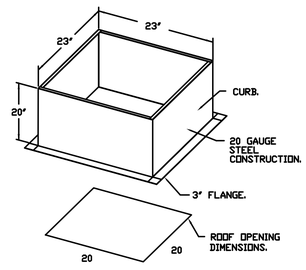
FAN #2 DU85HFA - EXHAUST FAN (KEF-2)



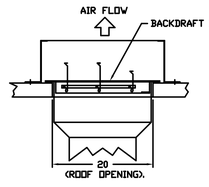
FEATURES:

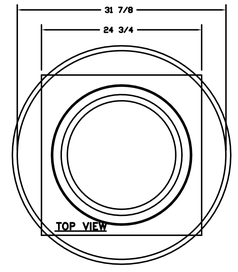
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- NEMA 3R SAFETY DISCONNECT SWITCH.

OPTIONS
I 19-BDD DAMPER.
2 YEAR PARTS WARRANTY.



BACKDRAFT DAMPER INSTALLATION





REVISIONS

DESCRIPTION	DATE

CAPTIVEAIRE
North New Jersey Mechanical
Summit NJ. PHONE: (201) 308-6647 FAX: (919) 516-8702 EMAIL: nnj138@captiveaire.com
www.captiveaire.com

Kura Sushi - Philadelphia
PHILADELPHIA, PA, 19102

DATE: 9/9/2021
DWG.#: 5058657
DRAWN BY: ZDK
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 2

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA/UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
Richard Chen
PA UCC CERT #306195
Applied Electronically by L&I User

TRICARICO ARCHITECTURE AND DESIGN PC
202 VALLEY ROAD, WAYNE, NJ 07470
T:973-692-0222 F:973-692-0223
TRICARICO.COM

Custom Designation Engineering
KENNETH A. FULLER, P.E.
PA LICENSE NUMBER- PE075601
EXPIRES 9-30-21
COA NUMBER 003203

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DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR

LOCATION: KURA SUSHI, 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102

PROJECT NO.:	DRAWN BY:
210293	LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME: CAPTIVEAIRE (2)

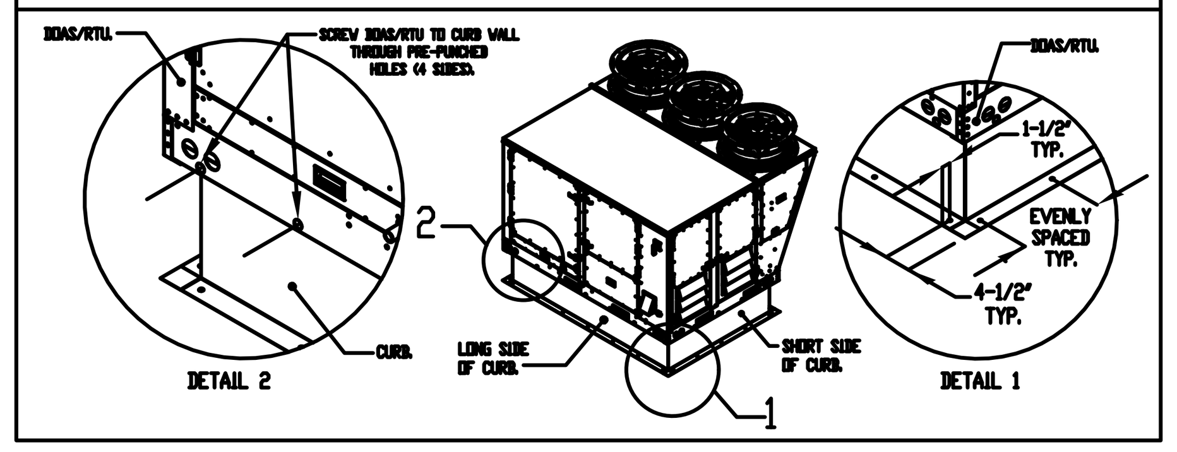
DRAWING NO.: M601

FIRM REGISTRATION NO.: AR001012

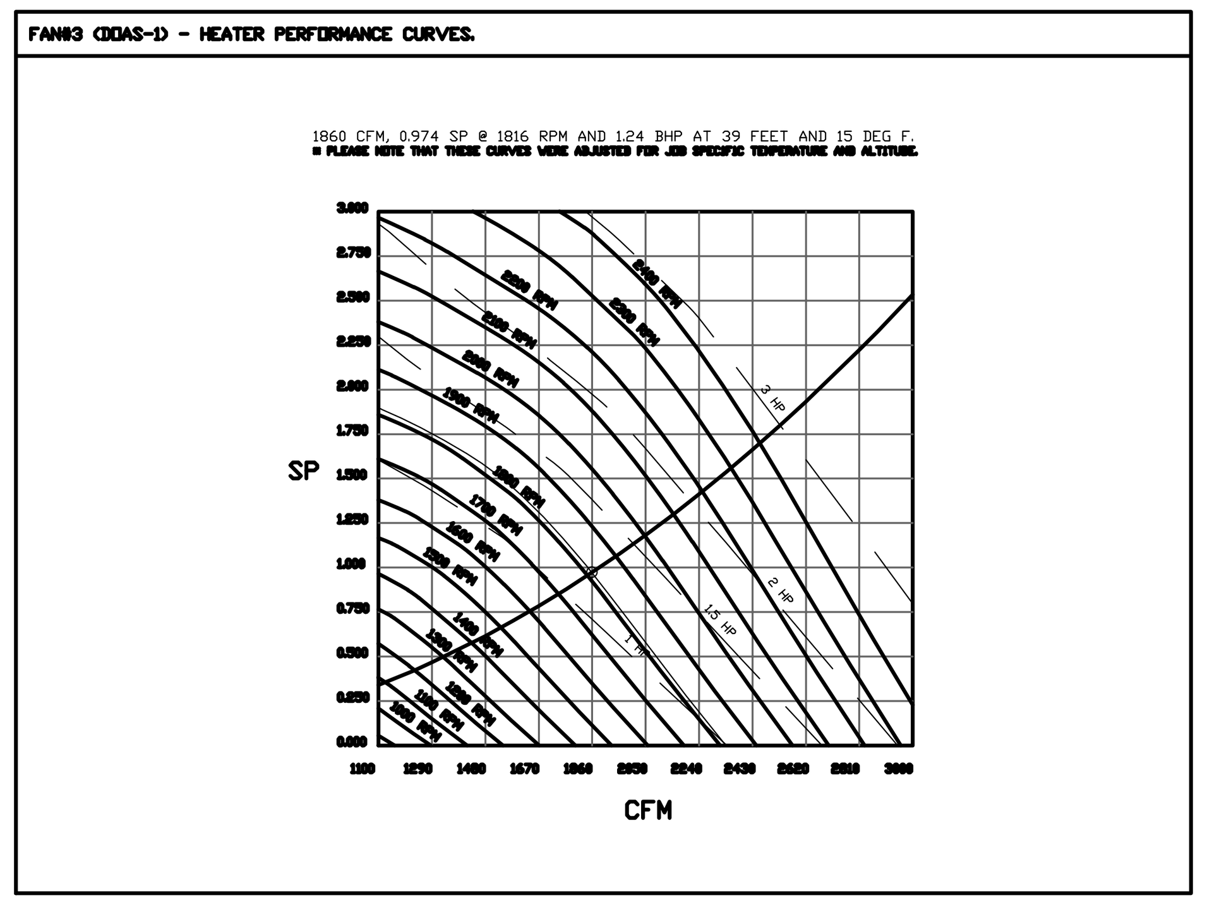
SEAL

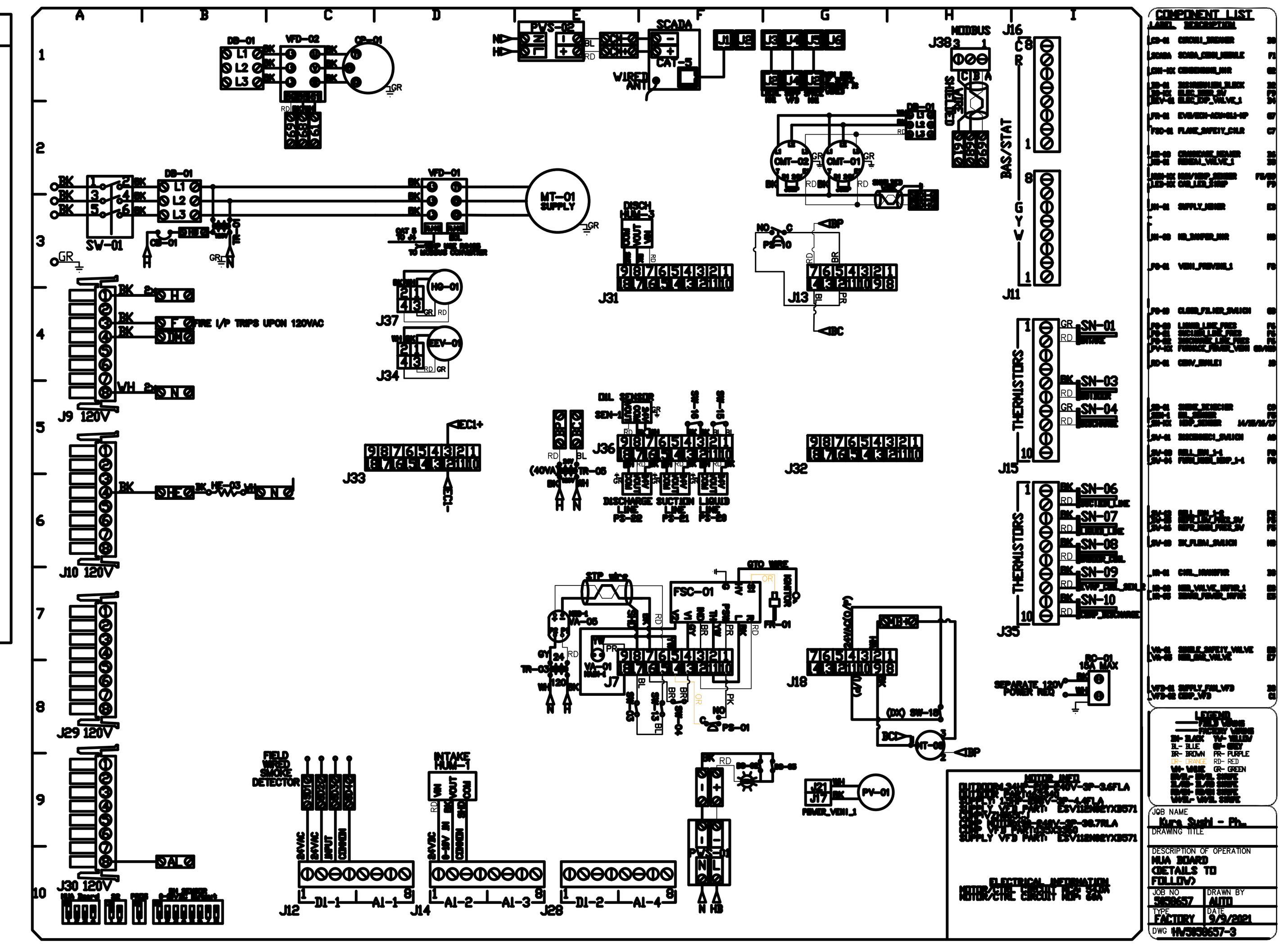
NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS



FAN#3 (DOAS-1) - HEATER PERFORMANCE CURVES.

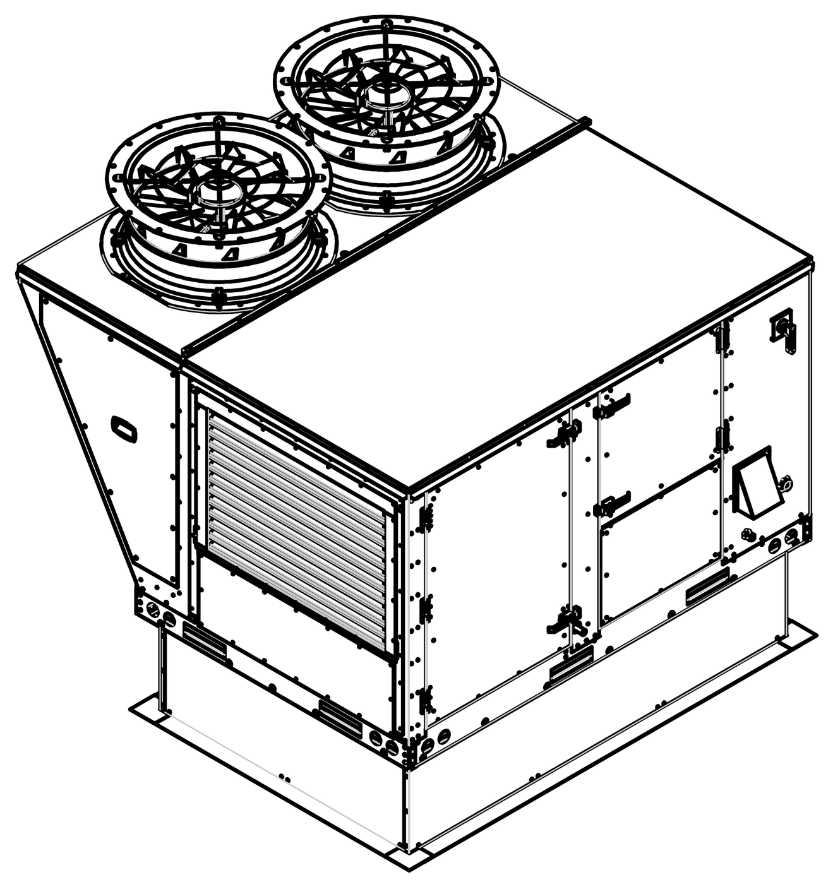


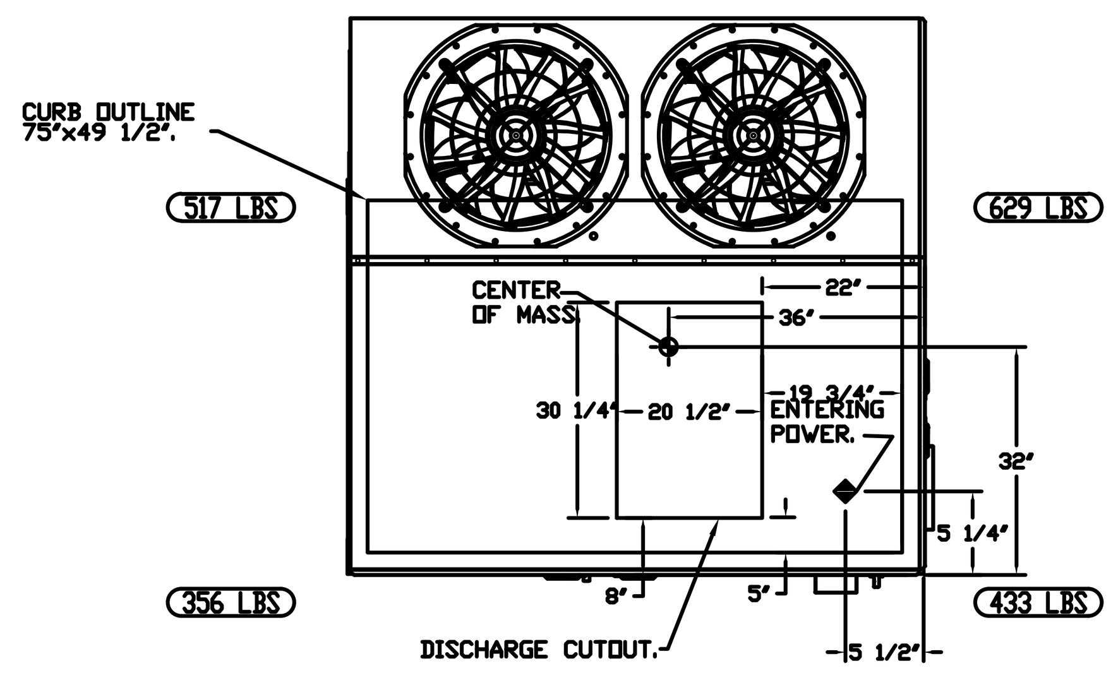


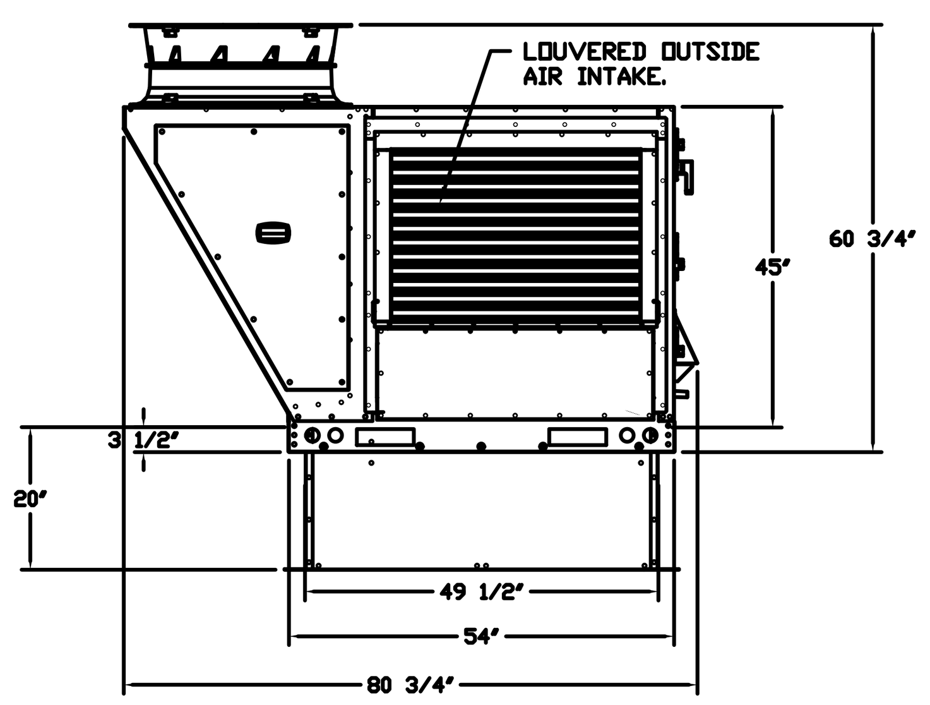
FAN #3 CASRTU2-I.200-13-10T-DDAS - (DOAS-1)

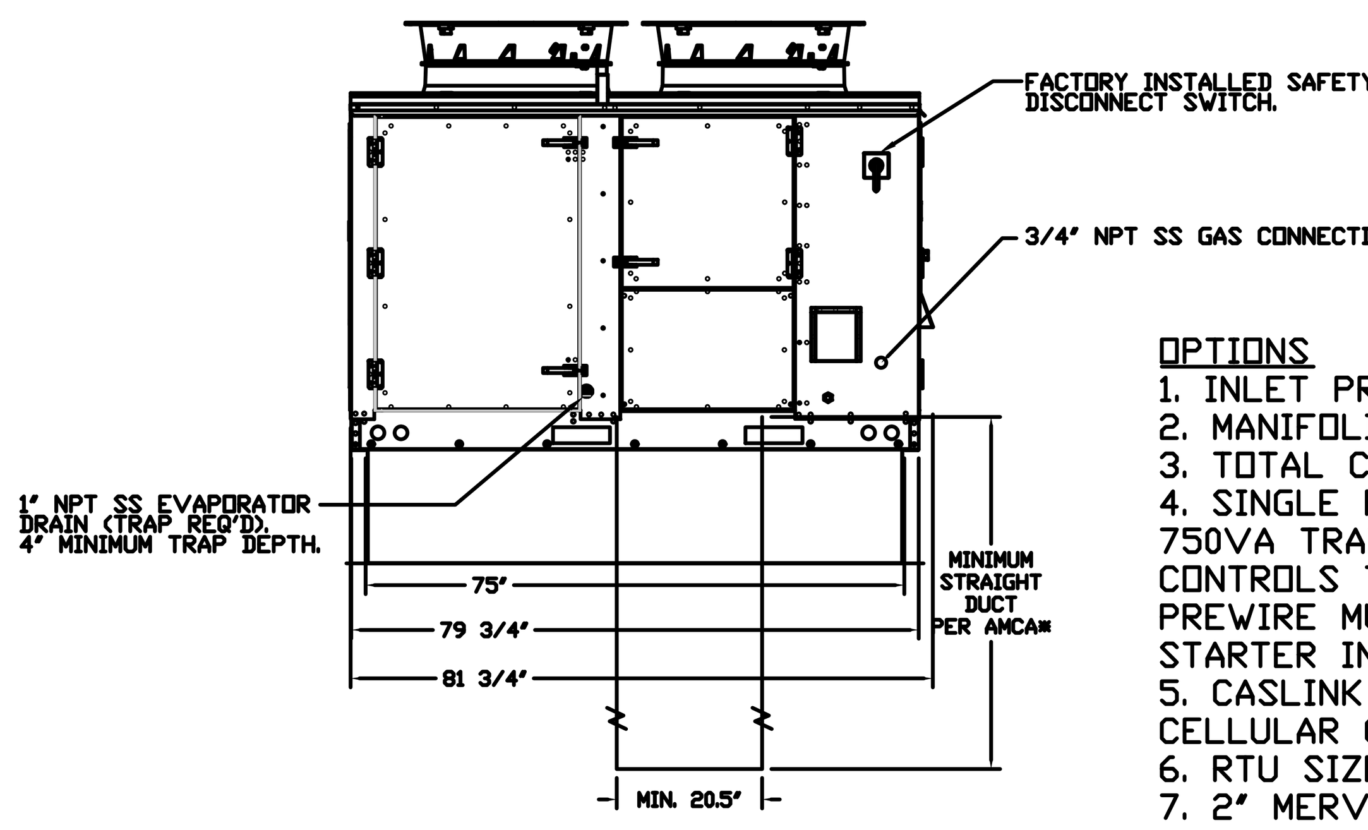
NOTES:

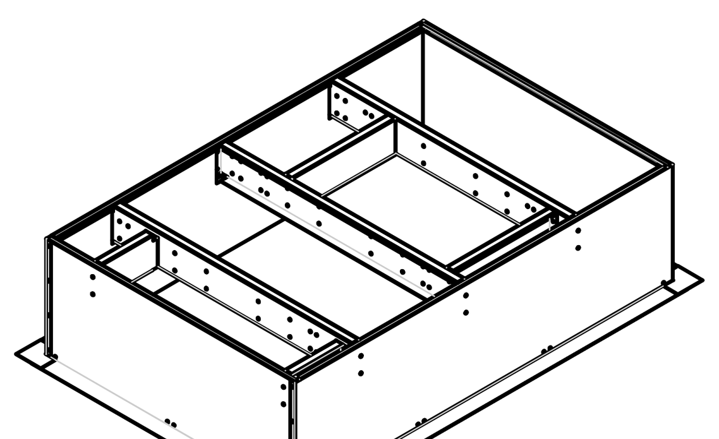
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.

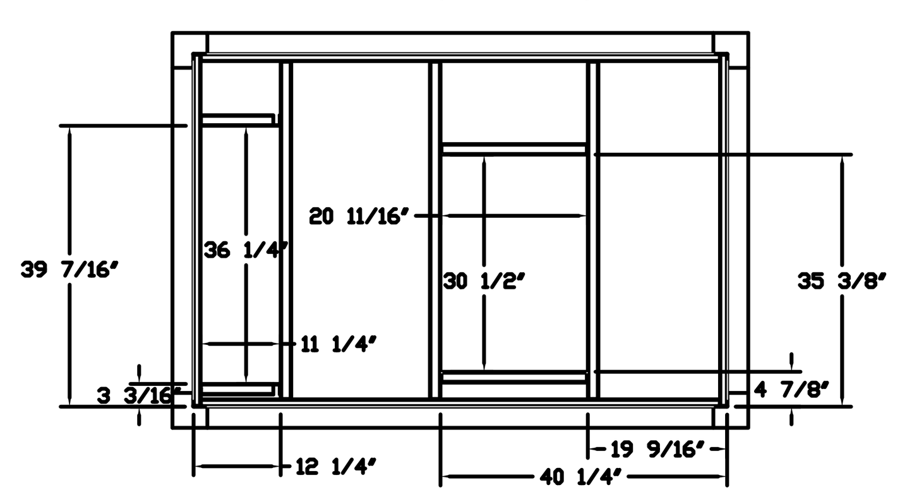










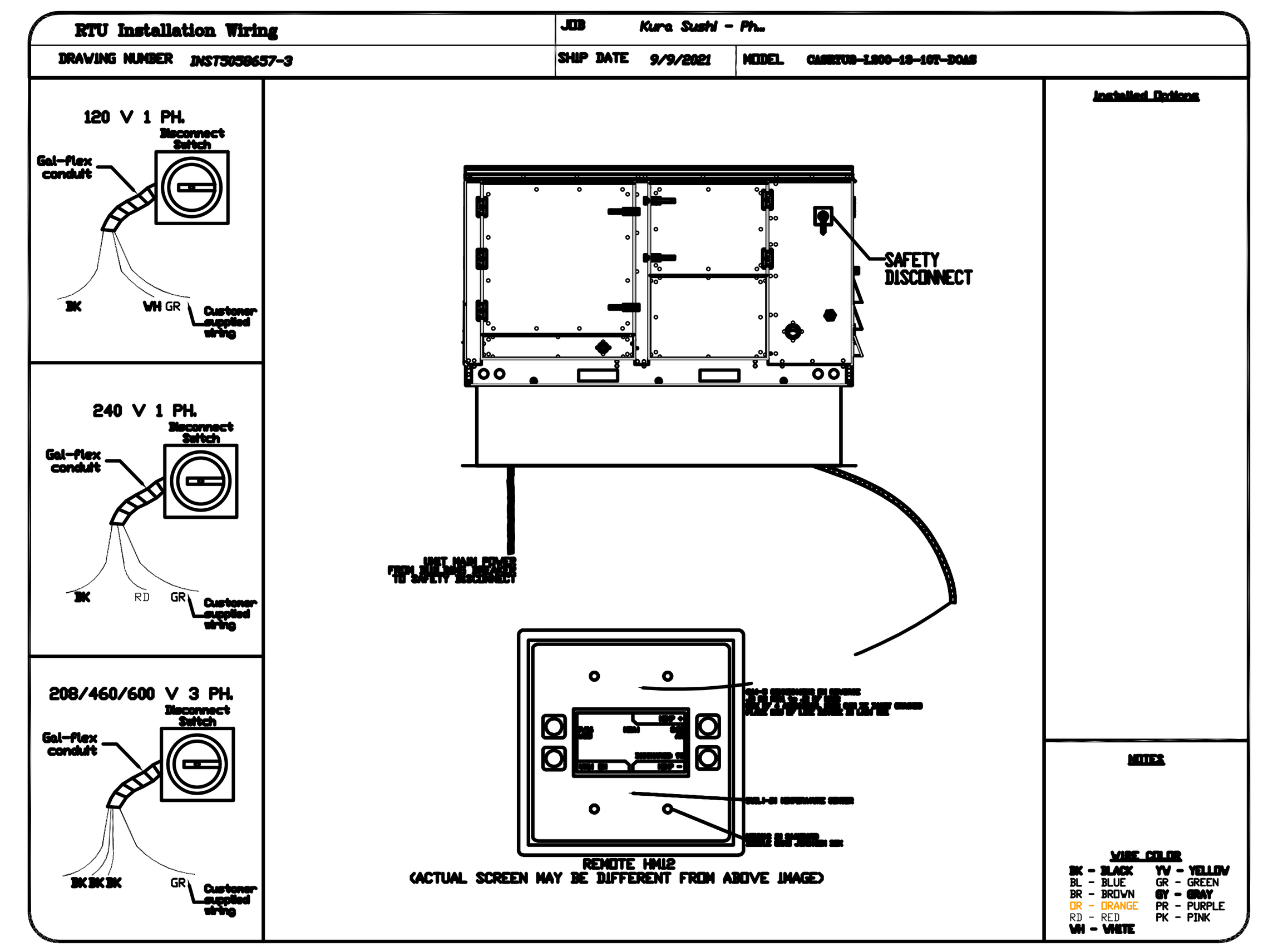


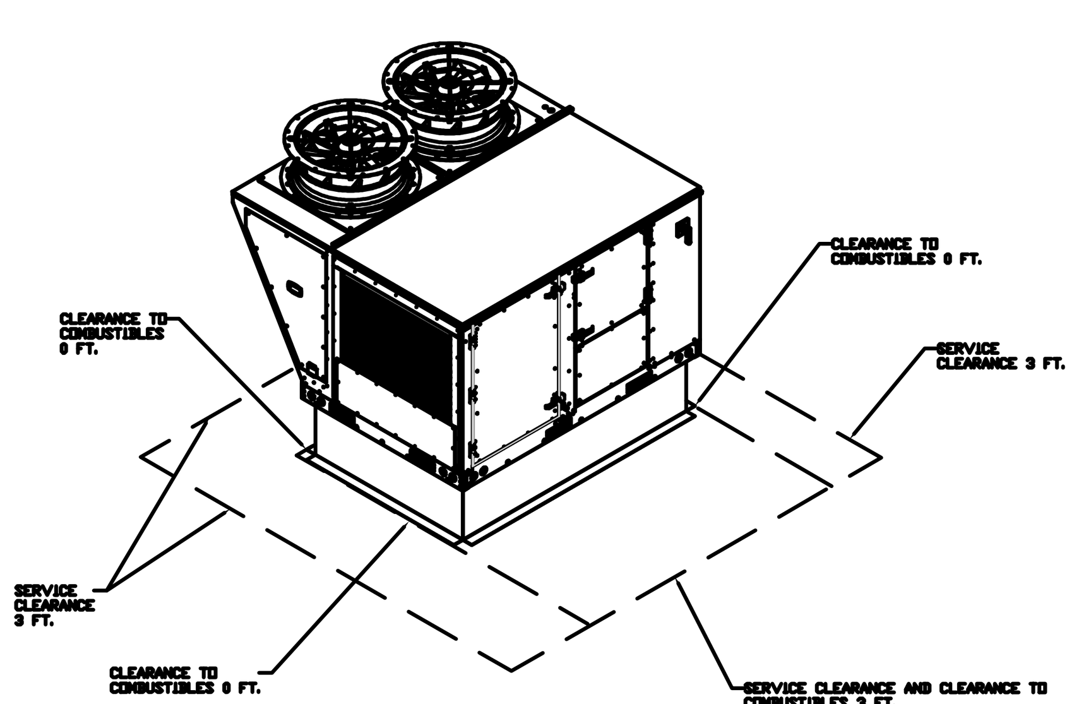
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 20.5" x 30.25".

OPTIONS

1. INLET PRESSURE GAUGE, 0-35".
2. MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
3. TOTAL CFM MONITORING FOR DOAS.
4. SINGLE POINT ELECTRICAL CONNECTION FOR RTU. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
5. CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
6. RTU SIZE 2 DOWN DISCHARGE.
7. 2" MERV 13 FILTERS FOR SIZE 2 RTU. QTY. 4.
8. 2" MERV 8 FILTERS SIZE 2 RTU. QTY 4.
9. OVERHEAT STAT.
10. VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
11. RTU FIXED 100% OA INTAKE CONTROL.
12. RTU SIZE 2 NO RETURN.
13. SIZE 2 RTU CURB DUCT HANGER.
14. 10 TON MODULATING COOLING OPTION, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS).
15. 10 TON MODULATING REHEAT OPTION. SPACE DEWPOINT CONTROL.
16. VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED).
17. FREEZESTAT.
18. CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
19. SIZE 2 RTU CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J BOX.
20. COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
21. 5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS).

RTU Installation Wiring





REVISIONS	
DESCRIPTION	DATE

CAPTIVEAIRE
www.captiveaire.com

North New Jersey Mechanical
, Summit, NJ, PHONE: (201) 308-6647 FAX: (919) 516-8752 EMAIL: reg138@captiveaire.com

Kura Sushi - Philadelphia
PHILADELPHIA, PA, 19102

DATE: 9/9/2021
DWG.#: 5058657
DRAWN BY: ZDK
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO. 3

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
PA UCC CERT # 006195
Applied Electronically by L&I User

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Custom Designing & Engineering LLC

KENNETH A. FULLER, P.E.
PA LICENSE NUMBER: PE079601
EXPIRES 9-30-21
COA NUMBER 003203

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DATE:	ISSUE:
06/07/2021	PRELIM LANDLORD SUBMISSION
11/04/2021	PERMIT SUBMISSION

DATE:	NO.:	REVISIONS / BY:

PROJECT: KURA SUSHI REVOLVING SUSHI BAR

LOCATION: KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.: 210293	DRAWN BY: LC
SCALE: AS NOTED	CHECKED BY: KF
DATE: 11/04/2021	THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

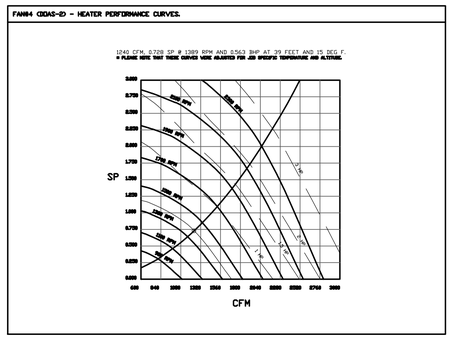
DRAWING NAME: CAPTIVEAIRE (3)

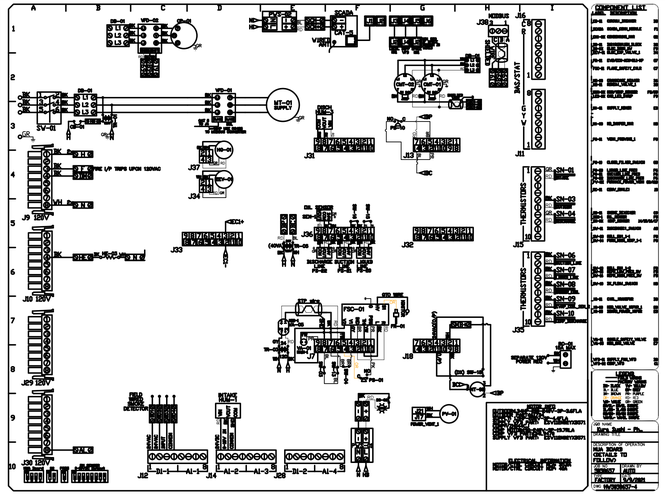
DRAWING NO.: M602

FIRM REGISTRATION NO.: AR010102

SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.





FAN#4 (DOAS-2) - HEATER PERFORMANCE CURVES.

1240 CFM, 0.728 SP @ 1389 RPM AND 0.563 BHP AT 39 FEET AND 15 DEG F.
■ PLEASE NOTE THAT THESE CURVES WERE ADJUSTED FOR JOB SPECIFIC TEMPERATURE AND ALTITUDE.

FAN #4 CASRTU1-I.125-13-7.5T-DOAS - (DOAS-2)

NOTES:

1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.

OPTIONS

1. INLET PRESSURE GAUGE, 0-35".
2. MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE.
3. TOTAL CFM MONITORING FOR DOAS.
4. SINGLE POINT ELECTRICAL CONNECTION FOR RTU. QNTY 1 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" OPTION PREWIRE MUST BE SELECTED. DO NOT PROVIDE SUPPLY STARTER IN PREWIRE.
5. CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED.
6. 2" MERV 13 FILTERS FOR SIZE 1 RTU. QTY. 4.
7. 2" MERV 8 FILTERS SIZE 1 RTU. QTY 4.
8. OVERHEAT STAT.
9. VFD FACTORY MOUNTED AND WIRED IN COMMERCIAL CONTROL VESTIBULE FOR RTU.
10. RTU SIZE 1 DOWN DISCHARGE.
11. RTU FIXED 100% OA INTAKE CONTROL.
12. RTU SIZE 1 NO RETURN.
13. SIZE 1 RTU CURB DUCT HANGER.
14. COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK (SUPPLIED BY OTHERS).
15. 7.5 TON MODULATING COOLING OPTION, 208/230V. R410A REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS.
16. 7.5 TON MODULATING REHEAT OPTION. SPACE DEWPOINT CONTROL.
17. VAV PACKAGE W/ MANUAL/DDC CONTROL (571 VFD INCLUDED).
18. FREEZESTAT.
19. CLOGGED FILTER SWITCH WITH NOTIFICATION ON HMI.
20. SIZE 1 RTU CONVENIENCE OUTLET (GFCI), 15 AMP - REQUIRES SEPARATE 120V CONNECTION. INCLUDES RECEPTACLE, COVER AND J BOX.
21. 5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS).

REVISIONS	
DESCRIPTION	DATE:
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△	
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North New Jersey Mechanical
, Summit, NJ, PHONE: (201) 308-6647 FAX: (919) 516-8752 EMAIL: reg138@captiveaire.com

Kura Sushi - Philadelphia
PHILADELPHIA, PA, 19102

DATE: 9/9/2021
DWG.#: 5058657
DRAWN BY: ZDK
SCALE: 1/2" = 1'-0"
MASTER DRAWING

SHEET NO.
4

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
DEPARTMENT OF LICENSES & INSPECTIONS
Richard Chen
Richard Chen
PA UCC CERT # 006195
Applied Electronically by L&I User:

T+A+D
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Custom Designing & Engineering PC

KENNETH A. FULLER, P.E.
PA. LICENSE NUMBER: PE075601
EXPIRES 9-30-21
COA NUMBER 003203

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DATE:	NO.:	REVISIONS / BY:

PROJECT:
KURA SUSHI
REVOLVING SUSHI BAR

LOCATION:
KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHPA, PA 19102

PROJECT NO.: 210293
DRAWN BY: LC
SCALE: AS NOTED
CHECKED BY: KF
DATE: 11/04/2021
THESE DRAWINGS WERE COMPLETED UNDER THE DIRECT SUPERVISION OF: NJT

NICHOLAS J. TRICARICO ARCHITECT
TRICARICO ARCHITECTURE AND DESIGN PC

DRAWING NAME:
CAPTIVEAIRE (4)

DRAWING NO.:
M603

FIRM REGISTRATION NO.:
AR010102
.\eSeal_PA_Tricarico_220931.tif
SEAL

NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.

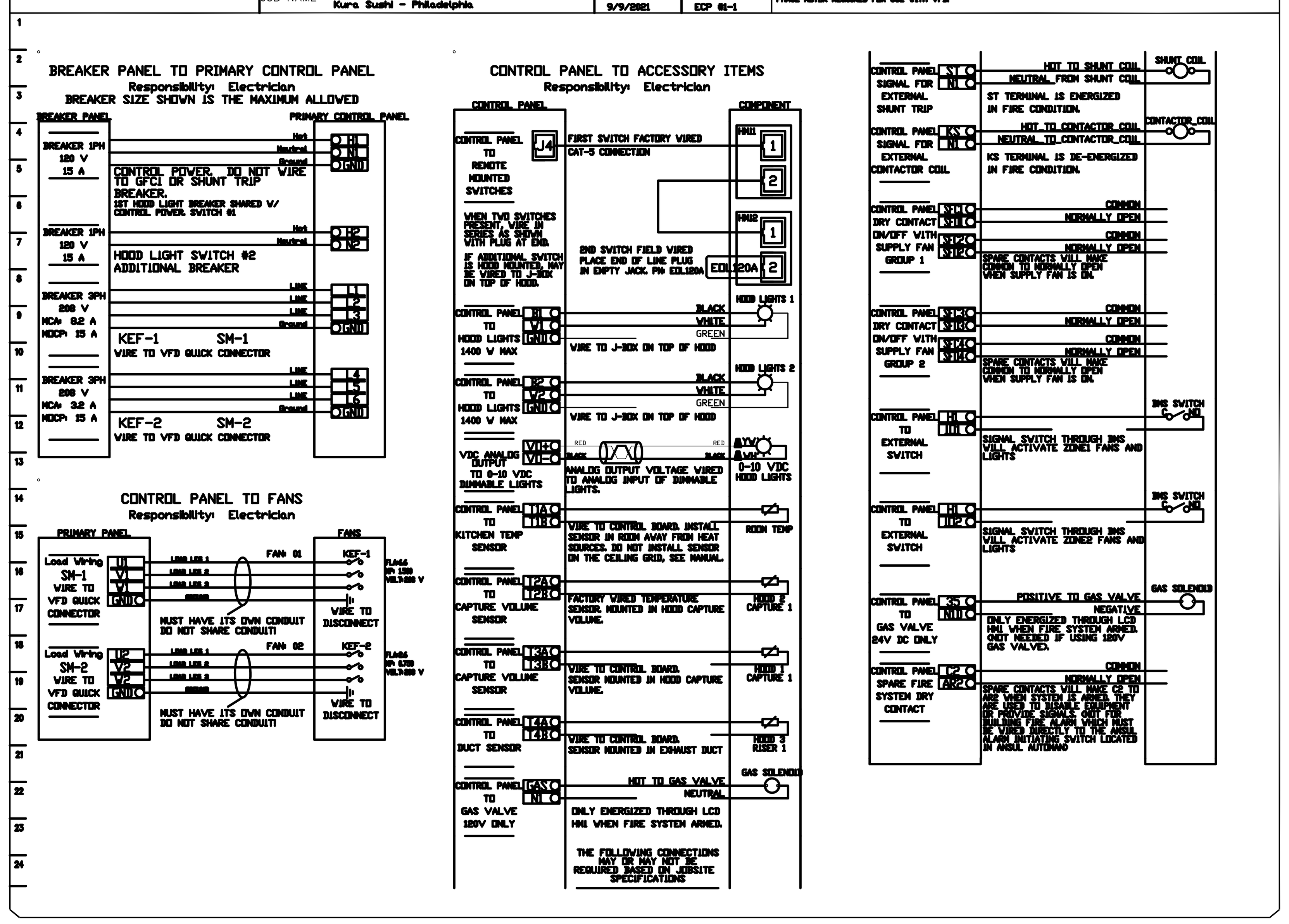
ELECTRICAL PACKAGE – JOB#5058657

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	φ	HP	VOLT	FLA
1		SC-320220MA	UTILITY CABINET LEFT	03 - UTILITY CABINET LEFT	2 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL W/ RELAY ON/OFF WITH SUPPLY	KEF-1	EXHAUST	3	1.500	208	6.6
				HOOD # 2	2 FAN		KEF-2	EXHAUST	3	0.750	208	2.6

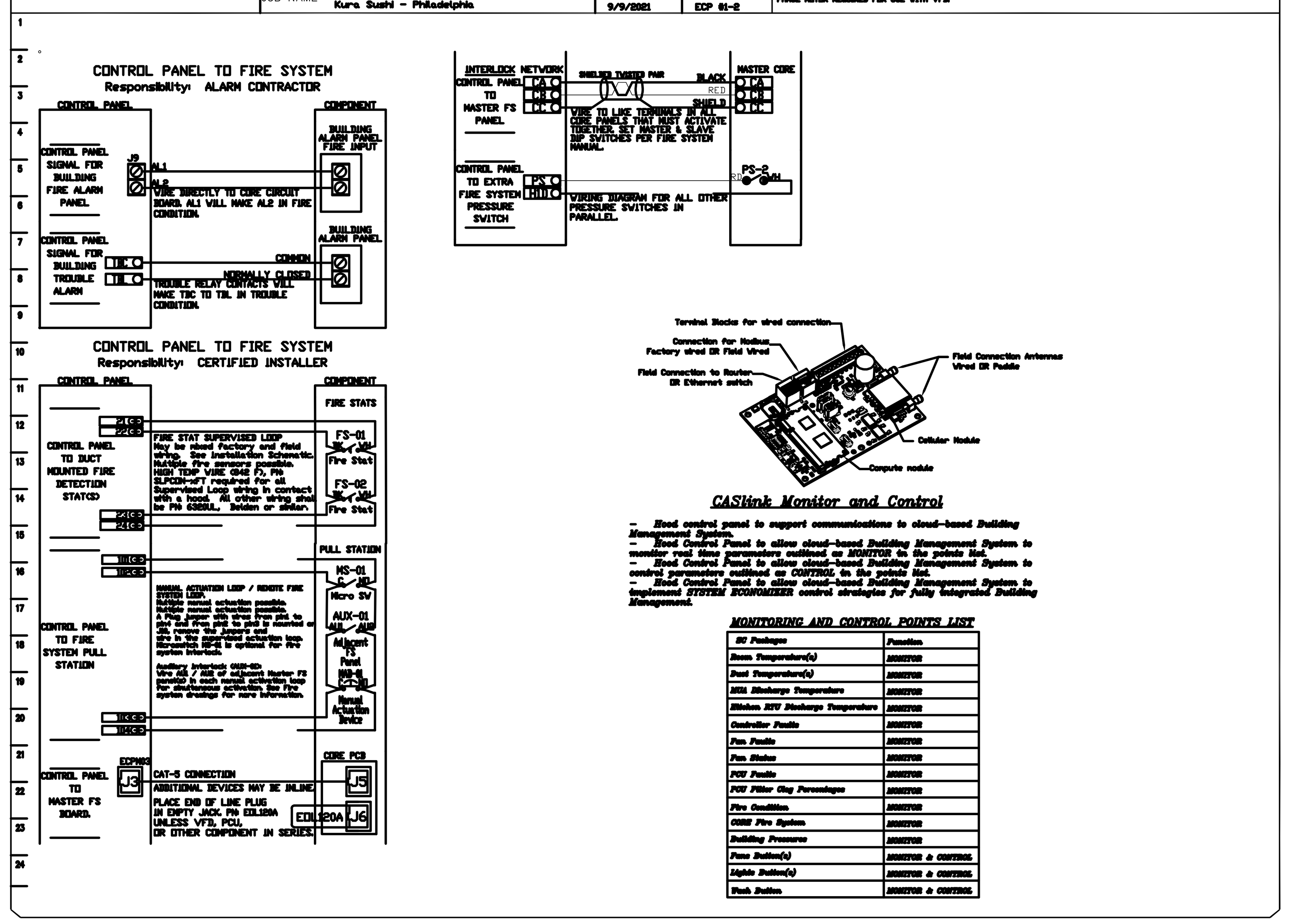
NOTE: 2 Interfaces Provided for Separate Operation of Grease Hoods and Non-Grease Hoods/Fans

JOB NO 5058657 | MODEL NUMBER SC-320220MA | JOB NAME Kura Sushi - Philadelphia | DATE 9/9/2021 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-1

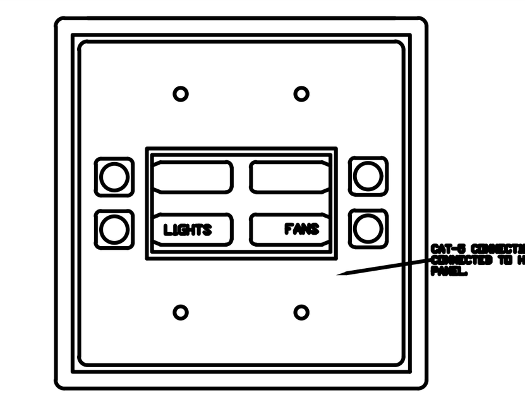
DESCRIPTION OF OPERATION: 3 Phase w/ control for 2 Exhaust Fans. Exhaust on in Fire, Lights out in Fire, Relay On/Off with Supply Fan, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER DUTY 3 PHASE MOTOR REQUIRED FOR USE WITH VFD.



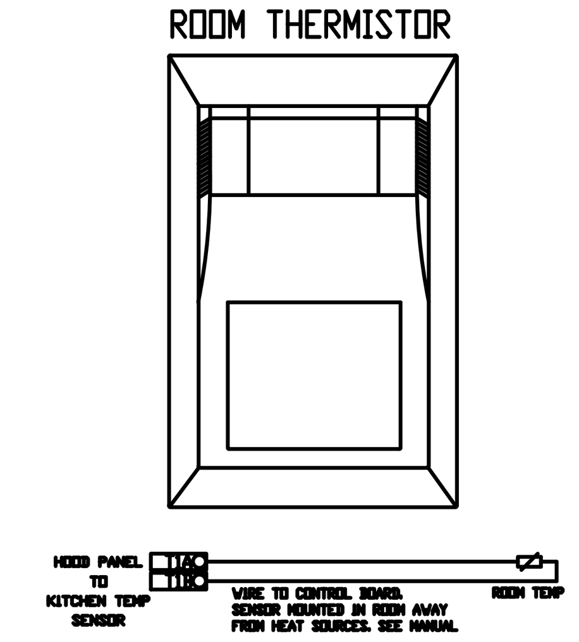
JOB NO 5058657 | MODEL NUMBER SC-320220MA | JOB NAME Kura Sushi - Philadelphia | DATE 9/9/2021 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-2



HOOD CONTROL PACKAGE INTERFACE with LCD Screen
LOCATED ON FACE OF HOOD CONTROLS OR WALL-MOUNTED



ROOM THERMISTOR



JOB NO 5058657 | MODEL NUMBER SC-320220MA | JOB NAME Kura Sushi - Philadelphia | DATE 9/9/2021 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-3

DESCRIPTION OF OPERATION: Fire System #1 TANK FS - 4.0/4.0. Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood pressure panel.

TANK PROTECTION ELECTRICAL DETAIL

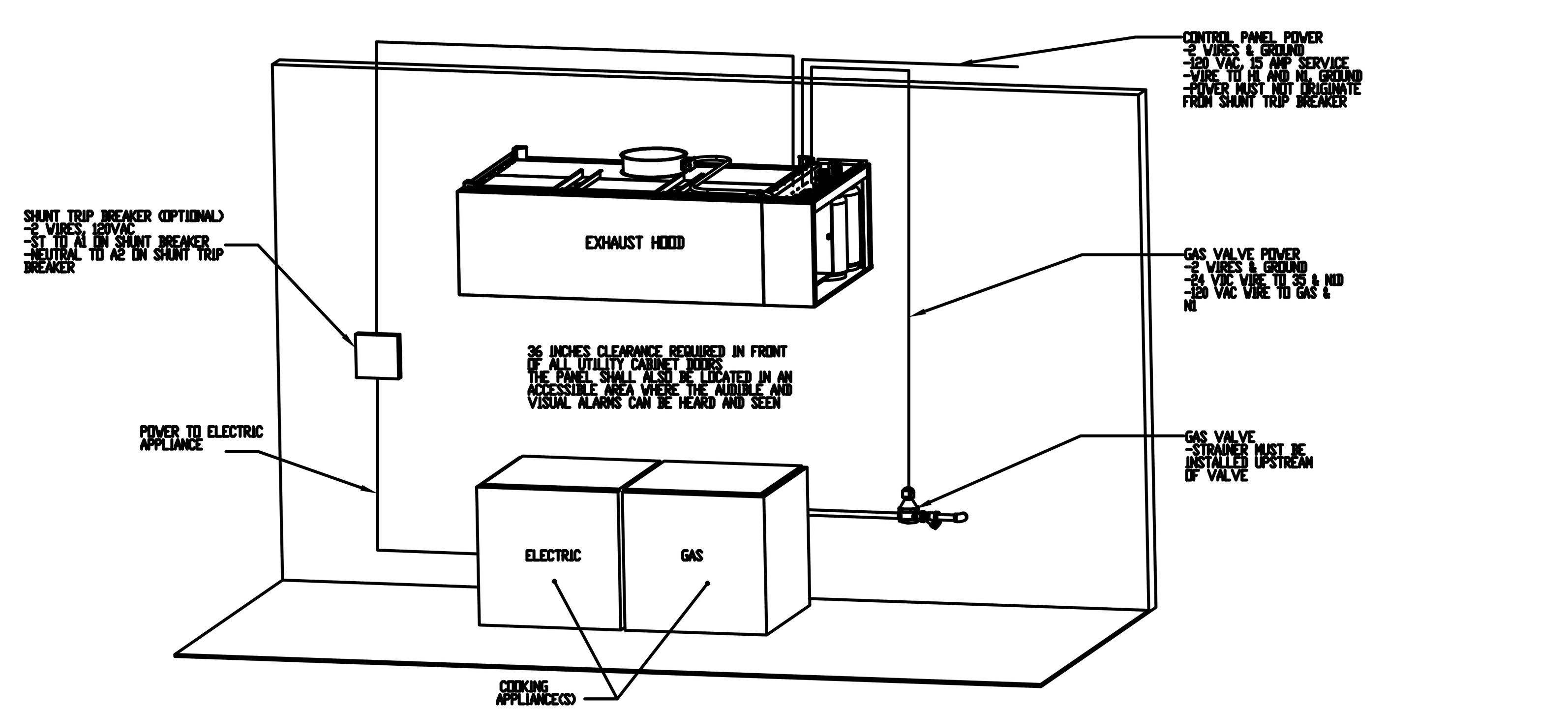
02/10/2021 Rev. 2

FS-1: MASTER

ELECTRICIAN:
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE ALL FANS PER INCLUDED SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE UDS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER COIL (A1 & A2)	120 VAC	< 4 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & N1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS & N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
GAS VALVE	35 & N1D (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VDC OR 120 VAC	< 1.0 AMPS	IF 24 VDC - 2 WIRES & GROUND, N1D TO RED, 35 TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND GAS TO RED, N1 TO RED, AND GREEN TO GROUND



NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

JOB NO 5058657 | MODEL NUMBER SC-320220MA | JOB NAME Kura Sushi - Philadelphia | DATE 9/9/2021 | SCHEMATIC TYPE INSTALL | DWG NO ECP #1-4

DESCRIPTION OF OPERATION: Fire System #1 TANK FS - 4.0/4.0. Tank-based Fire Protection System equipped with Electronic Detection utilizing CORE board as a Listed Release Mechanism. Installed in Hood Utility Cabinet with integral hood pressure panel.

TANK PROTECTION LOW-VOLTAGE DETAIL

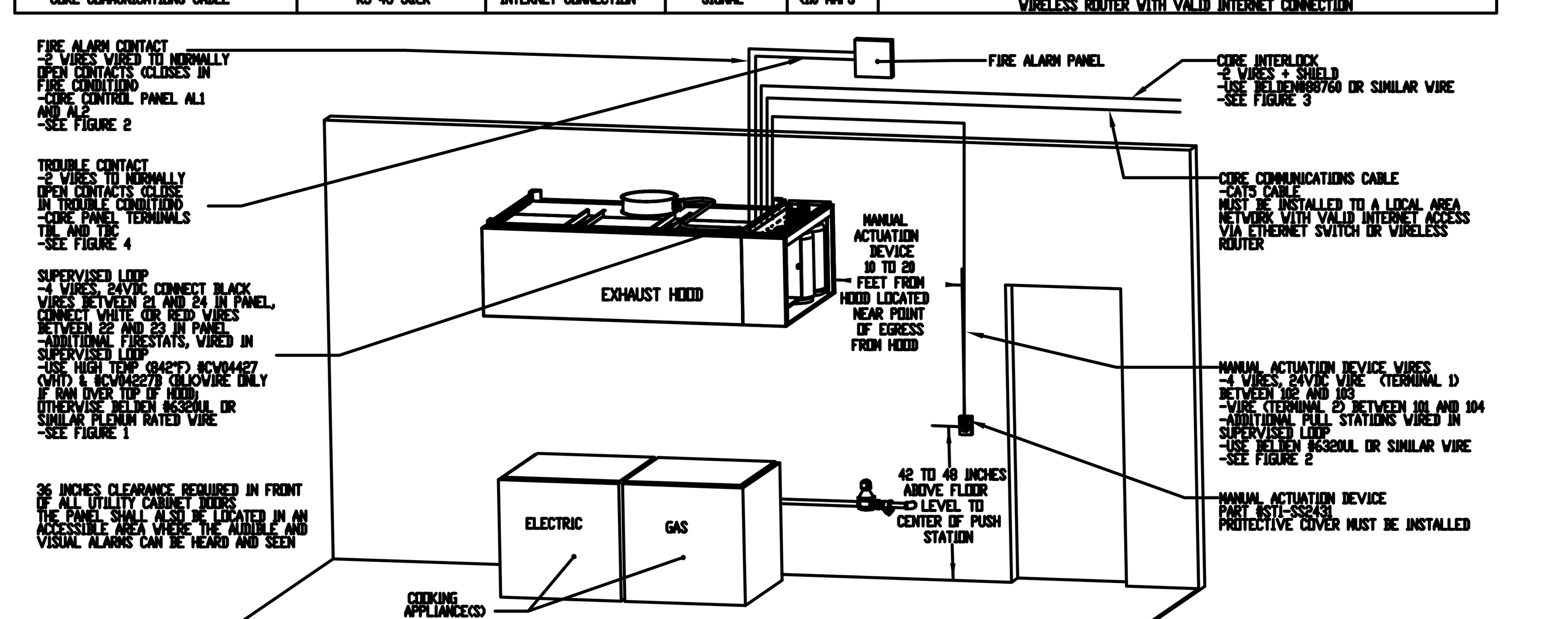
02/10/2021 Rev. 2

FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. VERIFY FINAL FIRE SYSTEM TEST

ALARM CONTRACTOR REQUIREMENT

ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 BETWEEN CORE PANEL TERMINALS 102 AND 103 WIRE MANUAL ACTUATION DEVICE TERMINAL 2 BETWEEN CORE PANEL TERMINALS 101 AND 104 JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER MUST BE INSTALLED IF SURFACE MOUNTED, USE COVER EXTENSION ST1-6531B
REMOTE FIRESTAT SENSOR(S)	21 AND 24 22 AND 23	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR WHITE WIRES BETWEEN HOOD CORE PANEL TERMINALS 22 AND 23 WIRE FIRE SENSOR BLACK WIRE BETWEEN HOOD CORE PANEL TERMINALS 21 AND 24 HIGH TEMP (842°F) #CV04427 (WHT) & #CV04427B (BLK)WIRE OR SIMILAR ONLY IF RAN OVER TOP OF HOOD; OTHERWISE BELDEN #6320UL OR SIMILAR PLENUM RATED WIRE; SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	50V MAX (AC/DC)	UP TO 1 AMP	FIRE ALARM RELAY CONTACTS FOR BUILDING FIRE ALARM LOCATED IN THE CORE ELECTRICAL CONTROL PANEL
CORE INTERLOCK(S)	ILA, ILB, ILC	ILA, ILB, ILC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) ILA, TO CORE SYSTEM (2) ILA. CORE SYSTEM (1) ILB, TO CORE SYSTEM (2) ILB. CORE SYSTEM (1) ILC, TO CORE SYSTEM (2) ILC. USE BELDEN# 88760 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TOK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES
NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

REVISIONS

DESCRIPTION	DATE

CAPTIVEAIRE
www.captiveaire.com

North New Jersey Mechanical
, Summit, NJ, PHONE: (201) 308-6647 FAX: (919) 516-8752 EMAIL: reg138@captiveaire.com

Kura Sushi - Philadelphia
PHILADELPHIA, PA, 19102

DATE: 9/9/2021
DWG.#: 5058657
DRAWN BY: ZDK
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 5

DATE: 11/04/2021
PROJECT NO.: 210293
LOCATION: 1721 CHESTNUT STREET, PHILADELPHIA, PA 19102
PROJECT: 210293
PLOT SCALE: 1:1

PLANS APPROVED
AS NOTED FOR COMPLIANCE WITH PA UCC
01/14/22
CITY OF PHILADELPHIA
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PROJECT: KURA SUSHI REVOLVING SUSHI BAR
LOCATION: KURA SUSHI
1721 CHESTNUT STREET
PHILADELPHIA, PA 19102

PROJECT NO.: 210293
DRAWN BY: LC
SCALE: AS NOTED
CHECKED BY: KF
DATE: 11/04/2021
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NOTE: HARDCOPY SHEETS SMALLER THAN 24x36 ARE NOT TO SCALE.