

## SECTION 23 00 00 - MECHANICAL GENERAL REQUIREMENTS

### PART 1 - GENERAL

1. THE TERM "TENANT," "TENANT'S CONSTRUCTION MANAGER," "OWNER," OR "OWNER'S CONSTRUCTION MANAGER" SHALL REFER TO CAVA.
2. THE TERM "FURNISH" MEANS TO SUPPLY AND DELIVER TO THE PROJECT SITE INCLUDING UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS. THE TERM "INSTALL" DESCRIBES THE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL UNLOADING, UNPACKING, ASSEMBLY, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS. THE TERM "PROVIDE" MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
3. THE GENERAL CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR AS REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM AND AS DESCRIBED IN THESE DRAWINGS.
4. THE GENERAL CONTRACTOR SHALL REVIEW A COMPLETE SET OF THE CONSTRUCTION DOCUMENTS. EACH SUB-CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF DRAWINGS ON SITE DURING THE CONSTRUCTION PROCESS.
5. COORDINATE WORK AS REQUIRED WITH THE LANDLORD. THE GENERAL CONTRACTOR SHALL UTILIZE LANDLORD-REQUIRED CONTRACTORS AT THE GENERAL CONTRACTOR'S EXPENSE.

### PART 2 - PRODUCTS

1. PRODUCTS SHALL BE AS DESCRIBED IN THE DRAWINGS AND AS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM.

### PART 3 - EXECUTION

1. UNLESS DIMENSIONS HAVE BEEN PROVIDED, THE DRAWINGS ARE DIAGRAMMATIC IN NATURE, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND REQUIRED EQUIPMENT. THEY SHALL NOT BE SCALED. COORDINATE WITH THE ARCHITECTURAL DRAWINGS, TENANT VENDORS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CUTSHEETS AS REQUIRED.
2. COMPLETE ALL WORK IN COMPLIANCE WITH THE CODES LISTED ON THE ARCHITECTURAL SHEETS INCLUDING ALL LOCAL AMENDMENTS, ALL RELEVANT NFPA CODES AND STANDARDS AND SMACNA STANDARDS.
  - A. VERIFY ALL CODE REQUIREMENTS AND LOCAL AMENDMENTS WITH THE AUTHORITY HAVING JURISDICTION PRIOR TO BID.
  - B. WHEN THERE IS A DISCREPANCY BETWEEN THE ADOPTED CODES AND THESE DRAWINGS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
3. PROVIDE FIRESTOPPING AND SLEEVES AT ALL COMPONENTS PENETRATING RATED WALLS TO MAINTAIN THE FIRE RATING OF THE EXISTING SHELL SYSTEMS.
4. COORDINATE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AS NECESSARY. PURCHASE PERMITS ASSOCIATED WITH THE WORK AND ARRANGE ALL INSPECTIONS AS REQUIRED.
5. COORDINATE WITH THE WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, THE REQUIREMENTS OF THE OWNER AND OF THE EXISTING CONDITIONS AT THE PROJECT SITE.
6. MAINTAIN A CLEAN CONSTRUCTION SITE DURING CONSTRUCTION. CLEAN SCRAP MATERIAL AND REMOVE FROM SITE DAILY AND MAINTAIN WORKING AREA IN AN ORDERLY FASHION.
7. PROVIDE SUBMITTALS AS NOTED IN THESE SPECIFICATIONS AND AS REQUESTED BY THE TENANT'S CONSTRUCTION MANAGER.
  - A. ALL SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE TENANT'S CONSTRUCTION MANAGER.
  - B. SHOP DRAWINGS SHALL BE SUBMITTED TO ALLOW FOR FIVE BUSINESS DAYS OF REVIEW TIME WITHOUT IMPACT TO THE PROJECT SCHEDULE.
8. PROVIDE REQUESTS FOR INFORMATION TO THE TENANT'S CONSTRUCTION MANAGER.
  - A. REQUESTS FOR INFORMATION SHALL PROVIDE A DETAILED DESCRIPTION OF THE SITE CONDITION OR DISCREPANCY AND THE CONTRACTORS PROPOSED REMEDY.
  - B. REQUESTS FOR INFORMATION SHALL BE SUBMITTED TO ALLOW FOR FIVE BUSINESS DAYS OF REVIEW TIME.
9. UPON COMPLETION OF WORK, THE GENERAL CONTRACTOR SHALL PROVIDE THE TENANT'S CONSTRUCTION MANAGER WITH A BOUND RECORD OF ALL MECHANICAL EQUIPMENT UTILIZED IN THE JOB. THE GENERAL CONTRACTOR SHALL PROVIDE THE SAME INFORMATION IN AN ELECTRONIC FORMAT AS DIRECTED BY THE OWNER. THE BINDER SHALL CONTAIN:
  - A. COVER SHEET INDICATING THE PROJECT NAME, ADDRESS AND TURNOVER DATE.
  - B. COMPANY NAME AND CONTACT INFORMATION OF THE CONTRACTORS UTILIZED FOR THE MECHANICAL SCOPE OF WORK.
  - C. CUTSHEETS, INSTALLATION MANUALS AND MAINTENANCE REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT.
10. UPON COMPLETION OF WORK, THE GENERAL CONTRACTOR SHALL PROVIDE THE TENANT'S CONSTRUCTION MANAGER A FULL SET OF DRAWINGS WITH ANY DEVIATIONS FROM THE DRAWINGS INDICATED IN RED INK.

(END OF SECTION 23 00 00)

## SECTION 23 05 93 - TESTING, ADJUSTING AND BALANCING FOR HVAC

### PART 1 - GENERAL

1. QUALITY ASSURANCE: ALL TESTING AND BALANCING WORK SHALL BE COMPLETED BY AN INDEPENDENT CONTRACTOR AT THE GENERAL CONTRACTOR'S EXPENSE, CERTIFIED BY NEBB OR TABB AS A T&B TECHNICIAN. BALANCE THE SYSTEM IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS.

### PART 2 - PRODUCTS: N/A

### PART 3 - EXECUTION

1. AIR SYSTEMS
  - A. PROVIDE ALL LABOR AND MATERIALS REQUIRED TO BALANCE THE SYSTEM AS NOTED ON THE PLANS.
  - B. FAN SYSTEMS SHALL BE ADJUSTED SUCH THAT THE LOWEST FAN SPEED IS UTILIZED TO DELIVER THE REQUIRED CFM TO THE AIR TERMINALS.
  - C. ADJUST DAMPERS AS REQUIRED TO BALANCE THE SUPPLY, RETURN AND EXHAUST DEVICES TO 10% OF THE DESIGN RATES. ADJUST THE OUTSIDE AIR DAMPER AS REQUIRED TO OBTAIN THE MINIMUM OUTSIDE AIR REQUIREMENTS AS NOTED IN THE SCHEDULES.
  - D. RECORD THE OPERATING VOLTAGE, AMPACITY, SUPPLY/RETURN SYSTEM STATIC PRESSURES, SUPPLY/MIXED AIR TEMPERATURES (BOTH HEATING AND COOLING) AND FINAL FAN RPM.
  - E. VERIFY SYSTEM CONTROLS ARE FUNCTIONING AS INTENDED.
2. WATER SYSTEMS
  - A. PROVIDE ALL LABOR AND MATERIALS REQUIRED TO BALANCE THE SYSTEM AS NOTED ON THE PLANS.
  - B. ADJUST BALANCING VALVES AS REQUIRED TO ACHIEVE A WATER FLOW WITHIN 5% OF THE DESIGN VALUE.
  - C. RECORD THE OPERATING FLOW RATE, WATER SUPPLY/RETURN TEMPERATURE CONDITIONS AND PRESSURE DROP ACROSS THE COIL.
  - D. VERIFY SYSTEM CONTROLS ARE FUNCTIONING AS INTENDED.
3. REPORTING
  - A. THE TEST AND BALANCE AGENT SHALL PREPARE A REPORT INCLUDING THE FINAL VALUES OF THE AIR AND WATER SYSTEM BALANCING, SYSTEM DIAGRAMS, AND SYSTEM NOTES.
  - B. THE GENERAL CONTRACTOR SHALL REVIEW THE FINAL BALANCE REPORT PRIOR TO SENDING TO THE TENANT'S CONSTRUCTION MANAGER.
  - C. PROVIDE T&B REPORT TO THE LANDLORD AND THE AUTHORITY HAVING JURISDICTION AS REQUIRED.

(END OF SECTION 23 05 93)

## SECTION 23 07 13 - DUCT INSULATION

### PART 1 - GENERAL

1. INSULATION SHALL BE PROVIDED ON THE FOLLOWING DUCT SERVICES:
  - A. INDOOR, CONCEALED SUPPLY AND OUTDOOR AIR.
  - B. INDOOR, CONCEALED RETURN.
  - C. INDOOR, CONCEALED OVEN AND WAREWASH EXHAUST FROM AIR TERMINAL TO PENETRATION OF BUILDING EXTERIOR.
  - D. INDOOR, CONCEALED GENERAL EXHAUST FROM AIR TERMINAL TO PENETRATION OF BUILDING EXTERIOR.
  - E. OUTDOOR, SUPPLY AND RETURN.
2. QUALITY ASSURANCE
  - A. INSULATION INSTALLED INDOORS SHALL HAVE A FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS.
  - B. INSULATION INSTALLED OUTDOORS SHALL HAVE A FLAME-SPREAD INDEX OF 75 OR LESS, AND SMOKE-DEVELOPED INDEX OF 150 OR LESS.

### PART 2 - PRODUCTS

1. INTERIOR DUCTWORK SHALL HAVE FLEXIBLE FIBERGLASS DUCT WRAP LAMINATED TO FOIL REINFORCED KRAFT VAPOR BARRIER FACING WITH 2" STAPLING FLANGE AND AN INSTALLED THICKNESS OF 1-1/2" WITH AN R-VALUE OF 6.0.
2. EXTERIOR DUCTWORK SHALL BE INSULATED WITH 2" THICK RIGID INSULATION WITH A MINIMUM R-VALUE OF 12.0, PROTECTED WITH ROOFING MEMBRANE.

### PART 3 - EXECUTION

1. PREPARATION: CLEAN AND DRY SURFACES. REMOVE MATERIALS THAT WILL ADVERSELY AFFECT INSULATION APPLICATION.
2. GENERAL INSTALLATION REQUIREMENTS:
  - A. INSTALL INSULATION ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  - B. INSTALL INSULATION AND ACCESSORIES AND FINISHES WITH SMOOTH, STRAIGHT AND EVEN SURFACES; FREE OF VOIDS THROUGHOUT THE LENGTH OF DUCT AND FITTINGS.
  - C. INSTALL ACCESSORIES COMPATIBLE WITH INSULATION MATERIALS AND SUITABLE FOR THE SERVICE. ACCESSORIES SHALL NOT CORRODE, SOFTEN OR OTHERWISE ATTACK INSULATION OR JACKET IN EITHER WET OR DRY STATE.
  - D. INSTALL INSULATION WITH LONGITUDINAL SEAMS AT TOP OF HORIZONTAL RUNS. LONGITUDINAL SEAMS AND END JOINTS SHALL BE TIGHT. BOND SEAMS AND JOINTS WITH ADHESIVE RECOMMENDED BY INSULATION MANUFACTURER TO MAINTAIN VAPOR BARRIER INTEGRITY.
  - E. APPLY ADHESIVES, MASTICS AND SEALANTS AT MANUFACTURER'S RECOMMENDED COVERAGE RATE.
  - F. CUT INSULATION IN A MANNER TO AVOID COMPRESSING INSULATION MORE THAN 75 PERCENT ITS NOMINAL THICKNESS.
3. PENETRATIONS
  - A. ROOF PENETRATIONS: INSTALL INSULATION CONTINUOUSLY THROUGH ROOF PENETRATIONS. FOR APPLICATIONS REQUIRING ONLY INDOOR INSULATION, TERMINATE INSULATION ABOVE ROOF SURFACE AND SEAL WITH JOINT SEALANT. FOR APPLICATIONS REQUIRING INDOOR AND OUTDOOR INSULATION, INSTALL INSULATION FOR OUTDOOR APPLICATIONS TIGHTLY JOINED TO INDOOR INSULATION ENDS. SEAL JOINT WITH JOINT SEALANT.
  - B. WALL PENETRATIONS: INSTALL INSULATION CONTINUOUSLY THROUGH WALL PENETRATIONS. FOR APPLICATIONS REQUIRING ONLY INDOOR INSULATION, TERMINATE INSULATION OUTSIDE OF WALL SURFACE AND SEAL WITH JOINT SEALANT. FOR APPLICATIONS REQUIRING INDOOR AND OUTDOOR INSULATION, INSTALL INSULATION FOR OUTDOOR APPLICATIONS TIGHTLY JOINED TO INDOOR INSULATION ENDS. SEAL JOINT WITH JOINT SEALANT.
  - C. INTERIOR WALLS: INSTALL INSULATION CONTINUOUSLY THROUGH WALLS AND PARTITIONS THAT ARE NOT FIRE RATED. TERMINATE INSULATION AT FIRE DAMPER SLEEVES FOR FIRE-RATED WALL AND PARTITION PENETRATIONS. EXTERNALLY INSULATE THE DAMPER SLEEVES TO MATCH ADJACENT INSULATION AND OVERLAP DUCT INSULATION AT LEAST 2 INCHES.

(END OF SECTION 23 07 13)

## SECTION 23 31 13 - METAL DUCTS

### PART 1 - GENERAL

1. SECTION INCLUDES
  - A. RECTANGULAR AIR DUCTS AND FITTINGS
  - B. ROUND DUCTS AND FITTINGS
  - C. DOUBLE-WALL DUCTWORK AND FITTINGS
  - D. FLAT-OVAL DUCTS AND FITTINGS
  - E. SHEET METAL MATERIALS
  - F. SEALANTS AND GASKETS
  - G. HANGERS AND SUPPORTS
2. PERFORMANCE REQUIREMENTS
  - A. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESS, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS AND HANGERS/SUPPORTS SHALL COMPLY WITH THE LATEST VERSION OF SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
  - B. DUCT HANGERS AND SUPPORTS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS UNDER CONDITIONS DESCRIBED IN SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
  - C. SURFACES IN CONTACT WITH THE AIRSTREAM SHALL COMPLY WITH REQUIREMENTS IN ANSI/ASHRAE 62.1.
3. SECTION REQUIREMENTS
  - A. SUBMITTALS: NONE REQUIRED.

### PART 2 - PRODUCTS

1. RECTANGULAR DUCTS AND FITTINGS
  - A. COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE BASED ON INDICATED STATIC-PRESSURE CLASS UNLESS NOTED OTHERWISE.
  - B. TRAVERSE JOINTS: SELECT JOINT TYPES AND FABRICATE ACCORDING TO SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FIGURE 2-1 FOR STATIC-PRESSURE CLASS UNLESS OTHERWISE NOTED.
  - C. LONGITUDINAL SEAMS: SELECT SEAM TYPES AND FABRICATE ACCORDING TO SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FIGURE 2-2 FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT SUPPORT INTERVALS AND OTHER PROVISIONS AS REQUIRED.
  - D. ELBOWS, TRANSITIONS, OFFSETS, BRANCH CONNECTIONS, AND OTHER DUCT CONSTRUCTION: SELECT TYPES AND FABRICATE ACCORDING TO SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. CHAPTER 4 FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT SUPPORT INTERVALS AND OTHER PROVISIONS AS REQUIRED.
2. ROUND DUCTS AND FITTINGS
  - A. SPIRAL LOCK SEAM, WITHOUT INSULATION.
  - B. BASIS OF DESIGN: LINDB SAFE SINGLE WALL DUCTS AND FITTINGS. ALTERNATES BY MCGILL AIRFLOW. ALL DUCTWORK SHALL BE PREPPED AND READY TO RECEIVE PAINT.
3. FLAT-OVAL DUCTS AND FITTINGS
  - A. SPIRAL LOCK SEAM, WITHOUT INSULATION.
  - B. BASIS OF DESIGN: LINDB FORS FLAT-OVAL SPIRAL DUCTS AND FITTINGS. ALTERNATES BY MCGILL AIRFLOW. ALL DUCTWORK SHALL BE PREPPED AND READY TO RECEIVE PAINT.
  - C. DOUBLE-WALL DUCTWORK AND FITTINGS
    - A. SPIRAL LOCK SEAM, WITH 1" INSULATION THICKNESS.
    - B. BASIS OF DESIGN: LINDB SAFE DOUBLE WALL DUCTS AND FITTINGS. ALTERNATES BY MCGILL AIRFLOW.
4. MATERIALS: GALVANIZED SHEET STEEL, COMPLY WITH ASTM A 653/A 653M, G90 COATING DESIGNATION.
5. SEALANTS AND GASKETS:
  - A. MAXIMUM FLAME-SPREAD INDEX: 25 (WHEN TESTED ACCORDING TO UL 720).
  - B. MAXIMUM SMOKE-DEVELOPED INDEX: 50 (WHEN TESTED ACCORDING TO UL 723).
  - C. TWO-PART TAPE SEALING SYSTEM: PROVIDE 3" TAPE CONSTRUCTED OF WOVEN COTTON FIBER IMPREGNATED WITH MINERAL GYPSUM AND MODIFIED ACRYLIC/SILICONE TO FORM A HARD, DURABLE AIRTIGHT SEAL. SEALANT SHALL BE A MODIFIED STYRENE ACRYLIC, COMPATIBLE WITH GALVANIZED SHEET STEEL, WATER, MOLD AND MILDEW RESISTANT, VOC CONTENT OF 250g/L OR LESS.
  - D. WATER BASED JOINT AND SEAM SEALANT: BRUSH ON WITH MINIMUM OF 65% SOLIDS CONTENT, MINIMUM SHORE A HARDNESS OF 20. COMPATIBLE WITH GALVANIZED SHEET STEEL, WATER, MOLD AND MILDEW RESISTANT, VOC CONTENT OF 75g/L (LESS WATER).
6. HANGERS AND SUPPORT:
  - A. RECTANGULAR DUCTWORK: HANGER RODS SHALL BE CADMIUM-PLATED STEEL RODS AND NUTS. STRAP AND ROD SIZE SHALL COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. TABLE 5-1. SECURE TO DUCT WITH SHEET METAL SCREWS COMPATIBLE WITH DUCT MATERIALS.
  - B. ROUND DUCTWORK: SUPPORT WITH AIRCRAFT CABLE COMPLYING WITH ASTM A 603, CONNECT ENDS WITH CADMIUM-PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL AND BOLTS DESIGNED FOR DUCT HANGER SERVICE.
  - C. EXTERIOR DUCTWORK SHALL BE PROVIDED WITH DUCT SUPPORTS, SPACED PER THE MANUFACTURER'S RECOMMENDATIONS.

### PART 3 - EXECUTION

1. INSTALLATION
  - A. DRAWING PLANS, SCHEMATICS AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF DUCTWORK ROUTING, COORDINATE INSTALLATION WITH WORK OF ALL OTHER TRADES AND EXISTING CONDITIONS. ACCOMMODATE DUCT HANGER, RODS, INSULATION AND OTHER REQUIREMENTS AS REQUIRED.
  - B. DUCT DIMENSIONS ON PLANS INDICATE DIMENSIONS OF THE INTERNAL FREE AREA.
  - C. INSTALL DUCTS ACCORDING TO SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. IN MAXIMUM PRACTICAL LENGTHS WITH FEWEST POSSIBLE JOINTS.
  - D. UNLESS NOTED OTHERWISE, INSTALL DUCTS PARALLEL AND PERPENDICULAR TO BUILDING LINES.
  - E. INSTALL DUCTS WITH CLEARANCES AS REQUIRED TO ACCOMMODATE THE INSTALLATION OF INSULATION.
  - F. INSTALLATION OF FINISHED DUCTWORK: PROTECT DUCTWORK FROM DAMAGE, REPAIR/REPLACE ALL DAMAGED SECTIONS AND FINISHED WORK. TRIM SEALANTS FLUSH WITH METAL. CREATE A SMOOTH AND UNIFORM EXPOSED BEAD, DO NOT USE TWO-PART TAPING SYSTEM. MAINTAIN CONSISTENCY, SYMMETRY AND UNIFORMITY IN THE INSTALLATION.
  - G. ALL DUCT COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC OR SHEET METAL UNTIL THE FINAL START-UP OF THE HEATING COOLING AND VENTILATION EQUIPMENT.
  - H. DUCT SEALING: CONSTRUCT DUCTS WITH 2 INCH POSITIVE AND NEGATIVE DUCT PRESSURE CLASSIFICATIONS.
  - I. HANGER AND SUPPORT INSTALLATION: COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. CHAPTER 5. HANGERS EXPOSED TO VIEW SHALL BE AIRCRAFT IN ACCORDANCE WITH THE MECHANICAL DETAILS.
  - J. CONNECTIONS: MAKE CONNECTIONS TO EQUIPMENT WITH FLEXIBLE CONNECTORS COMPLYING WITH SECTION 23 33 00 AIR DUCT ACCESSORIES. COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FOR BRANCH, OUTLET AND INLET, AND TERMINAL UNIT CONNECTIONS.
  - K. CLEANING: CLEAN ALL EXISTING DUCTWORK TO REMAIN PRIOR TO TESTING, ADJUSTING AND BALANCING. REMOVE ALL SURFACE CONTAMINANTS AND DEPOSITS ON AIR OUTLETS AND INLETS PRIOR TO FINISH.
  - L. PROVIDE AIR BALANCE IN ACCORDANCE WITH SECTION 23 05 93 TESTING, ADJUSTING, AND BALANCING FOR HVAC.
2. DUCT ELBOWS:
  - A. RECTANGULAR: PROVIDE MITERED ELBOWS WITH HOLLOW-FORMED, DOUBLE-THICKNESS TURNING VANES OR RADIIUSED ELBOWS WITH INSIDE RADIUS NO SMALLER THAN 1/2 OF THE DUCT WIDTH.
  - B. ROUND DUCT ELBOWS: PROVIDE MITERED ELBOWS WITH AN INSIDE RADIUS NO SMALLER THAN 1/2 OF THE DUCT WIDTH.
3. ROUND DUCT ELBOWS: PROVIDE RADIIUSED ELBOWS WITH AN INSIDE RADIUS NO SMALLER THAN 1/2 OF THE DUCT WIDTH.
4. RECTANGULAR MAIN TO RECTANGULAR BRANCH SHALL BE:
  - A. 45-DEGREE ENTRY: RECTANGULAR MAIN TO ROUND BRANCH SHALL BE A SPIRIN FITTING.
  - B. ROUND: COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FIGURE 3-5 AND FIGURE 3-6. PROVIDE 90 DEGREE TAP.

(END OF SECTION 23 31 13)

## SECTION 23 33 00 - AIR DUCT ACCESSORIES

### PART 1 - GENERAL

1. SECTION INCLUDES
  - A. BACKDRAFT AND PRESSURE RELIEF DAMPERS
  - B. MANUAL VOLUME DAMPERS
  - C. CONTROL DAMPERS
  - D. FIRE DAMPERS
  - E. TURNING VANES
  - F. FLEXIBLE CONNECTORS
  - G. DUCT ACCESSORY HARDWARE
2. SECTION REQUIREMENTS
  - A. SUBMITTALS: NONE REQUIRED.

### PART 2 - PRODUCTS

1. COMPLY WITH NFPA 90A AND WITH NFPA 90B.
2. COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE FOR ACCEPTABLE MATERIALS, THICKNESS AND DUCT CONSTRUCTION METHODS UNLESS NOTED OTHERWISE. SHEET METAL MATERIALS SHALL BE FREE FROM PITTING, SEAM MARKS, ROLL MARKS, STAINS, DISCOLORATIONS AND OTHER IMPERFECTIONS.
3. GALVANIZED SHEET STEEL: COMPLY WITH ASTM A 653/A 653M, G90 COATING DESIGNATION.
4. BACKDRAFT AND PRESSURE RELIEF DAMPERS: GRAVITY BALANCED AS SPECIFIED ON THE PLANS.
5. MANUAL VOLUME DAMPERS: STANDARD LEAKAGE RATINGS WITH LINKAGE OUTSIDE OF AIRFRAME. SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.
  - A. FRAME: HAT SHAPED WITH MITERED AND WELDED CORNERS. FLANGELESS FRAMES FOR INSTALLING IN DUCTS.
  - B. BLADES: RECTANGULAR DAMPERS SHALL BE MULTIPLE BLADES WITH OPPOSED-BLADE DESIGN. ROUND DAMPERS SHALL BE SINGLE BLADE.
  - C. BLADE AXLES: GALVANIZED STEEL.
  - D. BEARINGS: MOLDED SYNTHETIC.
  - E. THE BARS AND BRACKETS: GALVANIZED STEEL.
  - F. JACKSHAFT: 1/2" DIAMETER CONSTRUCTED OF GALVANIZED STEEL WITHIN PIPE-BEARING ASSEMBLY WITH SUPPORTS. LENGTH AND NUMBER OF MOUNTINGS AS REQUIRED.
  - G. HARDWARE: ZINC-PLATED, DIE CAST CORE WITH DIAL HANDLE AND A LOCKING NUT.
6. CONTROL DAMPERS
  - A. FRAME: HAT SHAPED WITH MITERED AND WELDED CORNERS. FLANGELESS FRAMES FOR INSTALLING IN DUCTS.
  - B. BLADES: RECTANGULAR DAMPERS SHALL BE MULTIPLE BLADES WITH OPPOSED-BLADE DESIGN. ROUND DAMPERS SHALL BE SINGLE BLADE. BLADE EDGING SHALL BE REPLACEABLE RUBBER SEALS.
  - C. BLADE AXLES: 1/2" DIAMETER. BLADE LINKAGE HARDWARE OF ZINC-PLATED STEEL AND BRASS, ENDS SEALED AGAINST BLADE BEARING.
  - D. BEARINGS: MOLDED SYNTHETIC.
7. FIRE DAMPERS
  - A. TYPE: DYNAMIC, RATED AND LABELED ACCORDING TO UL 555.
  - B. CLOSING RATINGS IN DUCTS UP TO 4" STATIC PRESSURE CLASS AND MAXIMUM 2,000 FPM VELOCITY.
  - C. FIRE RATING: 1-1/2 HOURS, OR AS NOTED IN THE SCHEDULES.
  - D. FRAME: CURTAIN TYPE WITH BLADES INSIDE AIRSTREAM, CONSTRUCTED OF GALVANIZED STEEL.
  - E. MOUNTING SLEEVE: FACTORY FURNISHED.
  - F. MOUNTING ORIENTATION: AS NOTED ON PLANS.
  - G. BLADES: INTERLOCKING, CONSTRUCTED OF GALVANIZED STEEL.
  - H. HEAT-RESPONSIVE DEVICE: 165 DEGREE F RATED FUSIBLE LINK OR AS NOTED IN THE SCHEDULES.
8. TURNING VANES: CURVED BLADES OF GALVANIZED SHEET STEEL, PROVIDED WITH SUPPORT BARS PERPENDICULAR TO BLADE SET SUITABLE FOR DUCT MOUNTING. COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE - SINGLE WALL CONSTRUCTION.
9. FLEXIBLE CONNECTORS: CONSTRUCTED OF FLAME-RETARDANT OR NONCOMBUSTIBLE FABRIC. FABRIC SHALL BE A CLASS FABRIC, DOUBLE COATED WITH NEOPRENE. COMPLY WITH UL 181 CLASS 1, FACTORY-FABRICATED WITH A FABRIC STRIP 3-1/2 INCHES WIDE ATTACHED TO TWO STRIPS OF 2-3/4 INCH THICK GALVANIZED SHEET STEEL.

### PART 3 - EXECUTION

1. INSTALLATION
  - A. INSTALL DUCT ACCESSORIES ACCORDING TO APPLICABLE DETAILS IN SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.
  - B. INSTALL VOLUME DAMPERS AT POINTS NOTED ON PLANS AND AS REQUIRED FOR SYSTEM BALANCING. WHERE DAMPERS ARE INSTALLED IN DUCTS WITH DUCT LINER, INSTALL DAMPERS WITH HAT CHANNELS OF SAME DEPTH AS LINER AND TERMINATE LINER WITH NOSING AT HAT CHANNEL.
  - C. WHERE DAMPERS ARE INSTALLED IN WRAPPED DUCT, PROVIDE INSULATION STAND-OFFS AS REQUIRED.
  - D. SET DAMPERS TO FULLY OPEN POSITION BEFORE TESTING, ADJUSTING AND BALANCING.
  - E. INSTALL TEST HOLES AT FAN INLETS AND OUTLETS AND WHERE REQUIRED FOR TESTING AND BALANCING PURPOSES.
  - F. INSTALL FIRE DAMPERS ACCORDING TO UL LISTING.
  - G. INSTALL FLEXIBLE CONNECTORS TO CONNECT DUCTS TO EQUIPMENT.
2. TESTS AND INSPECTIONS
  - A. OPERATE DAMPERS TO VERIFY FULL RANGE OF MOVEMENT.
  - B. OPERATE FIRE DAMPERS TO VERIFY FULL RANGE OF MOVEMENT AND VERIFY THAT PROPER HEAT-RESPONSE DEVICE IS INSTALLED.
  - C. INSPECT TURNING VANES FOR PROPER AND SECURE INSTALLATION.

(END OF SECTION 23 33 00)

## SECTION 23 33 46 - FLEXIBLE DUCTS

### PART 1 - GENERAL

1. SECTION REQUIREMENTS
  - A. SUBMITTALS: NONE REQUIRED.
2. PRODUCTS
  1. COMPLY WITH NFPA 90A AND NFPA 90B.
  2. COMPLY WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESS AND DUCT CONSTRUCTION METHODS UNLESS NOTED OTHERWISE.
  3. COMPLY WITH ASTM E 86E 90A.
  4. INSULATED, FLEXIBLE DUCT UL 181, CLASS 1, FACTORY FABRICATED AND INSULATED, PROVIDED WITH INTERIOR LINER, FIBROUS-GLASS INSULATION AND VAPOR-BARRIER FILM.
    - A. PRESSURE RATING: 10" W.G. POSITIVE.
    - B. MAXIMUM VELOCITY: 4,000 FPM.
    - C. INSULATION R-VALUE: R6.0
  5. FLEXIBLE DUCT CONNECTORS SHALL BE NYLON STRAPS IN SIZES 3 THROUGH 18 INCHES TO SUIT DUCT SIZE.

### PART 3 - EXECUTION

1. INSTALLATION
  - A. INSTALL FLEXIBLE DUCTS ACCORDING TO APPLICABLE DETAILS IN SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
  - B. INSTALL IN INDOOR APPLICATIONS ONLY. FLEXIBLE DUCTWORK IS ONLY PERMITTED TO CONNECT TO SUPPLY-AIR GRILLES, REGISTERS AND DIFFUSERS. MAXIMUM LENGTH SHALL BE 50 INCHES.
  - C. CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH DRAW BANDS AND TAPE.
  - D. INSTALL DUCTS FULLY EXTENDED.
  - E. DO NOT BEND DUCTS ACROSS SHARP CORNERS.
  - F. BENDS OF FLEXIBLE DUCTING SHALL NOT EXCEED A MINIMUM OF ONE DUCT DIAMETER.
  - G. AVOID CONTACT WITH METAL FIXTURES, WATER LINES, PIPES, ADJACENT DUCTWORK OR CONDUIT.
  - H. INSTALL FLEXIBLE DUCTS IN A DIRECT LINE, WITHOUT SAGS, TWISTS OR TURNS.
  - I. SUSPEND FLEXIBLE DUCTS WITH BANDS 1-1/2 INCHES WIDE AND SPACED A MAXIMUM OF 48 INCHES APART. PROVIDE ADDITIONAL SUPPORT AT BENDS. DUCTS MAY REST ON CEILING JOISTS OR TRUSS SUPPORTS. SPACING BETWEEN THESE ELEMENTS SHALL NOT EXCEED 48 INCHES.

(END OF SECTION 23 33 46)

## SECTION 23 34 01 - CEILING AND INLINE FANS

### PART 1 - GENERAL

1. SECTION REQUIREMENTS
  - A. SUBMITTALS: PROVIDE SHOP DRAWINGS INDICATING THE DIMENSIONS, WEIGHTS, REQUIRED CLEARANCES, COMPONENTS, ELECTRICAL CHARACTERISTICS, CFM, STATIC PRESSURE AND FAN CURVE.
  - B. WARRANTY: SUBMIT A WRITTEN WARRANTY, SIGNED BY THE MANUFACTURER AGREEING TO REPAIR OR REPLACE COMPONENTS OF FANS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN THE MANUFACTURER'S STANDARD WARRANTY PERIOD.
2. PRODUCTS
  1. DESCRIPTION
    - A. HIGH-CAPACITY FAN CAPABLE OF BEING MOUNTED IN THE CEILING OR INLINE ORIENTATION.
    - B. MANUFACTURERS: AS NOTED IN THE MECHANICAL SCHEDULES. NO SUBSTITUTIONS SHALL BE PERMITTED.
  2. CHARACTERISTICS: PROVIDED WITH
    - A. FAN CONSTRUCTED OF GALVANIZED STEEL, FORWARD CURVED AND DIRECT DRIVE.
    - B. HOUSING: CONSTRUCTED OF 20 GAUGE GALVANIZED STEEL WITH 1/2" THICK ACoustic INSULATION, PROVIDED WITH AN AUTOMATIC BACKDRAFT DAMPER ON THE DISCHARGE SIDE OF THE FAN LOCATED WITHIN THE DUCT CONNECTOR. PROVIDED WITH TWO 8-POSITION MOUNTING BRACKETS.
    - C. WHEEL: FORWARD CURVED, DYNAMICALLY BALANCED, POLYMERIC CENTRIFUGAL WHEEL ATTACHED TO THE MOTOR SHAFT WITH SET SCREWS.
    - D. MOTOR: OPEN DRIP MOTOR, PERMANENTLY LUBRICATED, RATED FOR CONTINUOUS DUTY, THERMALLY PROTECTED AND MOUNTED ON VIBRATION ISOLATORS. DISCONNECT SHALL BE INTERNAL AND OF THE PLUG TYPE.
    - E. ACCESSORIES: AS NOTED ON THE MECHANICAL SCHEDULES.
3. EXECUTION
  1. INSTALLATION
    - A. INSTALL CEILING-MOUNTED UNITS LEVEL, PLUMB AND SQUARE WITH CEILINGS AND WALLS.
    - B. SUPPORT CEILING-MOUNTED UNITS SO THEY WILL NOT FALL OR SAG. SUPPORT SUCH THAT THAT THE CEILING WILL NOT BE DEFORMED AFTER MAINTENANCE.
    - C. INSTALL INLINE UNITS PER THE MANUFACTURER'S INSTRUCTIONS.
  2. CONNECTIONS
    - A. COMPLY WITH DUCT INSTALLATION REQUIREMENTS SPECIFIED IN OTHER HVAC SECTIONS. DRAWINGS INDICATE GENERAL ARRANGEMENTS OF DUCTS.
    - B. WHERE INSTALLING ADJACENT TO OTHER BUILDING SYSTEMS, ALLOW SPACE FOR SERVICE AND MAINTENANCE.
    - C. CONNECT DUCTWORK TO FAN WITH FLEXIBLE DUCT CONNECTORS.
    - D. CONNECT ELECTRICAL WIRING IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS.
  3. FIELD QUALITY AND CONTROL
    - A. AFTER INSTALLING FANS, TEST UNITS FOR COMPLIANCE WITH REQUIREMENTS.
    - B. OPERATE PROPER MOTOR ROTATION AND UNIT OPERATIONS.
    - C. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION.

### PART 3 - EXECUTION

1. INSTALLATION
  - A. INSTALL CEILING-MOUNTED UNITS LEVEL, PLUMB AND SQUARE WITH CEILINGS AND WALLS.
  - B. SUPPORT CEILING-MOUNTED UNITS SO THEY WILL NOT FALL OR SAG. SUPPORT SUCH THAT THAT THE CEILING WILL NOT BE DEFORMED AFTER MAINTENANCE.
  - C. INSTALL INLINE UNITS PER THE MANUFACTURER'S INSTRUCTIONS.
2. CONNECTIONS
  - A. COMPLY WITH DUCT INSTALLATION REQUIREMENTS SPECIFIED IN OTHER HVAC SECTIONS. DRAWINGS INDICATE GENERAL ARRANGEMENTS OF DUCTS.
  - B. WHERE INSTALLING ADJACENT TO OTHER BUILDING SYSTEMS, ALLOW SPACE FOR SERVICE AND MAINTENANCE.
  - C. CONNECT DUCTWORK TO FAN WITH FLEXIBLE DUCT CONNECTORS.
  - D. CONNECT ELECTRICAL WIRING IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS.
3. FIELD QUALITY AND CONTROL
  - A. AFTER INSTALLING FANS, TEST UNITS FOR COMPLIANCE WITH REQUIREMENTS.
  - B. OPERATE PROPER MOTOR ROTATION AND UNIT OPERATIONS.
  - C. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION.

(END OF SECTION 23 34 01)

## SECTION 23 34 33 - AIR CURTAINS

### PART 1 - GENERAL

1. SECTION REQUIREMENTS
  - A. SUBMITTALS: PROVIDE SHOP DRAWINGS INDICATING THE HEATING WATTAGE, ELECTRICAL CHARACTERISTICS, AIRFLOW CHARACTERISTICS, DIMENSIONS, WEIGHTS AND ACCESSORIES.
  - B. WARRANTY: PROVIDE MANUFACTURER'S WARRANTY EFFECTIVE FOR FIVE YEARS FOR UNHEATED UNITS, AND TWO YEARS FOR HEATED UNITS. THE GENERAL CONTRACTOR SHALL PROVIDE A 12 MONTH WARRANTY ON ALL WORKMANSHIP.
2. PRODUCTS
  1. MANUFACTURERS: AS NOTED IN THE MECHANICAL SCHEDULES.
  2. CHARACTERISTICS: PROVIDED WITH
    - A. CABINET: ALUMINIZED STEEL, CABINET WITH STAINLESS STEEL RIVETED CONSTRUCTION AND WHITE POWDER COATED FINISH.
    - B. MOUNTING: PROVIDE WALL OR SUSPENDED MOUNTING AS REQUIRED.
    - C. SERVICE ACCESS: REMOVABLE SCREEN AND REMOVABLE BOTTOM ACCESS PANEL.
    - D. MOTORS: DIRECT DRIVE, RESILIENT MOUNTED, RATED FOR CONTINUOUS DUTY WITH INTERNAL THERMAL-OVERLOAD PROTECTION AND PERMANENTLY LUBRICATED SEALED BALL BEARINGS.
    - E. FANS: BALANCED, FORWARD CURVED CROSS FLOW MADE OF ALUMINUM.
    - F. DISCHARGE NOZZLES: PROVIDE UNIFORM VELOCITY ACROSS WIDTH OF AIR CURTAIN.
    - G. INLET: PROVIDED WITH PERFORATED PATTERN SCREEN.
    - H. HEATING ELEMENTS (WHEN NOTED ON PLANS): UL-APPROVED, FACTORY-MOUNTED, FACTORY WIRED, THERMALLY PROTECTED, IN GALVANIZED STEEL FRAME, HELICAL COIL DESIGN WITH THERMAL CUTOFF.
      - I. PROVIDE ALL ACCESSORIES AS NOTED IN THE SCHEDULES.
    - I. CONTROL: A. MANUAL SWITCH: FACTORY INSTALLED 'FAN-OFF-FAN & HEAT' AND 'HIGH-LOW' SWITCHES.
    - B. CONTROL PACKAGE: AIR CURTAIN SHALL TURN ON WHEN DOOR IS OPENED AND SHUT OFF WHEN DOOR IS CLOSED.
    - C. OUTDOOR AIR TEMPERATURE SENSOR (WHEN PROVIDED WITH A HEATING ELEMENT AND INDICATED ON PLANS).
3. EXECUTION
  1. INSTALLATION
    - A. INSTALL AIR CURTAIN WHERE INDICATED ON DRAWINGS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE CLEARANCE TO PERMIT SERVICING AND MAINTENANCE.
    - B. INSTALL LEVEL, PLUMB AND AS CLOSE AS PRACTICAL TO TOP OF OPENING AND FACE OF WALL.
    - C. INSTALL ALL ACCESSORIES.
  2. CONNECTIONS
    - A. CONNECT ELECTRICAL WIRING IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS.
    - B. GROUND EQUIPMENT IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS.
  3. FIELD QUALITY AND CONTROL
    - A. TEST AND OPERATE AIR CURTAIN TO VERIFY PERFORMANCE AS INDICATED.
    - B. ADJUST NOZZLES TO DEFLECT AIR OUTWARD UNLESS NOTED OTHERWISE.

(END OF SECTION 23 34 33)

## SECTION 23 37 13 - GRILLES, REGISTERS & DIFFUSERS

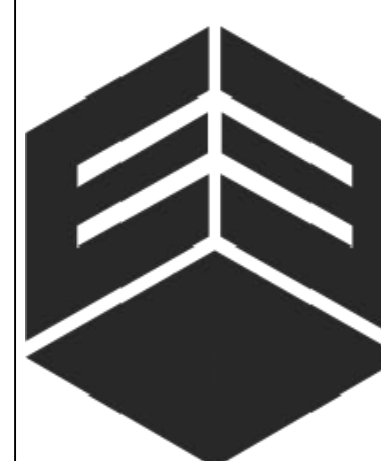
### PART 1 - GENERAL

1. SECTION REQUIREMENTS
  - A. SUBMITTALS: NONE REQUIRED.
2. PRODUCTS
  1. GRILLES: MANUFACTURER, MODEL, MATERIAL, FINISH, MOUNTING AND ACCESSORIES SHALL BE AS NOTED IN THE MECHANICAL SCHEDULES. NO SUBSTITUTIONS SHALL BE PERMITTED.
  2. REGISTERS: MANUFACTURER, MODEL, MATERIAL, FINISH, MOUNTING AND ACCESSORIES SHALL BE AS NOTED IN THE MECHANICAL SCHEDULES. NO SUBSTITUTIONS SHALL BE PERMITTED.
  3. DIFFUSERS: MANUFACTURER, MODEL, MATERIAL, FINISH, MOUNTING AND ACCESSORIES SHALL BE AS NOTED IN THE MECHANICAL SCHEDULES. NO SUBSTITUTIONS SHALL BE PERMITTED, UNLESS OTHERWISE NOTED. ALL CEILING DIFFUSERS SHALL BE FOUR-WAY.

### PART 3 - EXECUTION

1. INSTALLATION
  - A. INSTALL GRILLES, REGISTERS & DIFFUSERS LEVEL AND PLUMB.
  - B. INSTALL GRILLES, REGISTERS & DIFFUSERS AS INDICATED. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION.
  - C. INSTALL GRILLES, REGISTERS & DIFFUSERS WITH AIRTIGHT CONNECTIONS TO DUCTS AND TO ALLOW SERVICE AND MAINTENANCE OF DAMPERS, EXTRACTORS AND OTHER ACCESSORIES.
  - D. ALL AIR DEVICE COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC OR SHEET METAL UNTIL THE FINAL START-UP OF THE HEATING COOLING AND VENTILATION EQUIPMENT.
  - E. WHEN INDICATED ON THE PLANS, PAINT THE GRILLES, REGISTERS & DIFFUSERS PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH AN ENAMEL PAINT, COLOR AS INDICATED.
  - F. AFTER INSTALLATION, ADJUST REGISTERS & DIFFUSERS TO AIR PATTERNS (IF NOTED) OR AS DIRECTED BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO STARTING AIR BALANCING.

(END OF SECTION 23 37 13)



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**CAVA**  
BURBANK EMPIRE CENTER  
1787 VICTORY PLACE  
BURBANK, CA 91502

RESTAURANT NUMBER: XXXXXX

ISSUE	DATE
B&S SUB	

STATE OF CALIFORNIA CALIFORNIA ENERGY COMMISSION

**Process Systems** NRCC-PRC-E

**CERTIFICATE OF COMPLIANCE** (Page 3 of 6)

Project Name: Cava - Burbank Report Page: (Page 3 of 6)

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**H. ENCLOSED PARKING GARAGE EXHAUST**

This section does not apply to this project.

**I. PROCESS BOILER**

This section does not apply to this project.

**J. COMPRESSED AIR SYSTEMS**

This section does not apply to this project.

**K. ELEVATOR LIGHTING AND VENTILATION**

This section does not apply to this project.

**L. ESCALATORS AND MOVING WALKWAYS SPEED CONTROLS**

This section does not apply to this project.

**M. COMPUTER ROOM SYSTEM SUMMARY**

This section does not apply to this project.

**N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION**

This table contains all new and replacement hoods being installed within the scope of the permit application. Table N is used to demonstrate compliance with prescriptive requirements found in 140.9(b).

Kitchen Ventilation 140.9(b)2	
01	<input type="checkbox"/> Existing kitchen hoods not being replaced as part of an addition or alteration (do not need to meet requirements)

Requirements

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**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Joshua Everett

Signature Date: 09/28/2023

Company: Everj Engineering, Inc.

Address: 1509 Buck Trail Lane

City/State/Zip: Worthington / OH / 43085

Phone: 614-345-8054

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
- I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the building provides to the building owner at occupancy.

Responsible Designer Name: Joshua Everett

Signature Date: 09/28/2023

Company: Everj Engineering, Inc.

Address: 1509 Buck Trail Lane

City/State/Zip: Worthington / OH / 43085

Phone: 614-345-8054

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**CERTIFICATE OF COMPLIANCE** (Page 2 of 6)

Project Name: Cava - Burbank Report Page: (Page 2 of 6)

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**C. COMPLIANCE RESULTS**

Results in this table are automatically calculated from data input and calculations in Tables F through R. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Refrigerated Warehouse / Space 120.6(a) (See Table F)	Commercial Refrigeration 120.6(b) (See Table G)	Parking Garage Exhaust 120.6(c) (See Table H)	Process Boilers 120.6(d) (See Table I)	Compressed Air Systems 120.6(e) (See Table J)	Elevators 120.6(f) / 160.7 (See Table K)	Escalators & Moving Walkways 120.6(g) (See Table L)	Computer Rooms 140.9(a) (See Table M)	Commercial Kitchens 140.9(b) (See Table N)	Laboratory/Factory Exhaust 140.9(c) (See Table O)	Controlled Environment Horticulture 120.6(h) (See Table P)	Steam Traps 120.6(i) (See Table Q)	Multifamily Pool/Spa 160.7 (See Table R)	COMPLIES

**D. EXCEPTIONAL CONDITIONS**

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

**E. ADDITIONAL REMARKS**

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

**F. REFRIGERATED WAREHOUSES/SPACES**

This section does not apply to this project.

**G. COMMERCIAL REFRIGERATION**

This section does not apply to this project.

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STATE OF CALIFORNIA CALIFORNIA ENERGY COMMISSION

**Process Systems** NRCC-PRC-E

**CERTIFICATE OF COMPLIANCE** (Page 5 of 6)

Project Name: Cava - Burbank Report Page: (Page 5 of 6)

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**R. Pool & SPAs**

This section does not apply to this project.

**S. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at [https://www.energy.ca.gov/title24/2019standards/2019\\_compliance\\_documents/Nonresidential\\_Documents/NRCI/](https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/)

Form/Title

NRCI-PRC-01-E - Covered Process

**T. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

Selections have been made based on information provided in this document. If any selection have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: <http://www.energy.ca.gov/title24/attcp/providers.html>

Form/Title

Systems/Spaces To Be Field Verified

NRCA-PRC-02-F Kitchen Exhaust HD-1

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STATE OF CALIFORNIA CALIFORNIA ENERGY COMMISSION

**Process Systems** NRCC-PRC-E

**CERTIFICATE OF COMPLIANCE** (Page 4 of 6)

Project Name: Cava - Burbank Report Page: (Page 4 of 6)

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**A. GENERAL INFORMATION**

01	Project Location (city)	Burbank	04	Total Conditioned Floor Area	2018
02	Climate Zone	9	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

• Restaurant

**B. PROJECT SCOPE**

This table includes process systems that are within the scope of the permit application and are demonstrating compliance with mandatory requirements in 120.6 / 160.7 or prescriptive requirements in 140.9.

My project consists of: (check all that apply):

01	02
<input type="checkbox"/> Refrigerated Spaces <3,000 ft² Total (No Title 24, Pt6 requirements)	<input type="checkbox"/> Escalator & Moving Walkway Speed Controls (mandatory 120.6(g))
<input type="checkbox"/> Refrigerated Spaces >=3,000 ft² Total (mandatory 120.6(a))	<input type="checkbox"/> Computer Rooms (mandatory 120.6(j)) and prescriptive 140.9(a)¹
<input type="checkbox"/> Food /Beverage Stores >8,000 ft² cfa (mandatory 120.6(b))	<input checked="" type="checkbox"/> Commercial Kitchen Ventilation/Exhaust (prescriptive 140.9(b))²
<input type="checkbox"/> Enclosed Parking Garage Exhaust >=10,000 cfm (mandatory 120.6(c))	<input type="checkbox"/> Laboratory Exhaust/Factory Exhaust & Fume Hood (prescriptive 140.9(c))³
<input type="checkbox"/> Newly Installed Process Boilers (mandatory 120.6(d))	<input type="checkbox"/> Pool/Spa (mandatory 110.4 / 160.7)
<input type="checkbox"/> Compressed Air Systems Combined HP >= 25 (mandatory 120.6(e))	<input type="checkbox"/> Controlled Environment Horticulture (mandatory 120.6(h))
<input type="checkbox"/> Elevator Lighting & Ventilation Controls (mandatory 120.6(f) / 160.7)	<input type="checkbox"/> New Steam Traps (mandatory 120.6(i))

¹ FOOTNOTES: These building features can comply using the performance method. If using the performance method for these features, compliance should be demonstrated on the NRCC-PRF-E.

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STATE OF CALIFORNIA CALIFORNIA ENERGY COMMISSION

**Process Systems** NRCC-PRC-E

**CERTIFICATE OF COMPLIANCE** (Page 4 of 6)

Project Name: Cava - Burbank Report Page: (Page 4 of 6)

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**N. COMMERCIAL KITCHEN EXHAUST AND VENTILATION**

02	Replacement Air to Hood Compliance Method 140.9(b)1A
03	Not providing replacement air directly to the hood(s)
04	Mechanically cooled or heated makeup air delivered to any space with a kitchen hood is designed per 140.9(b)2A to not exceed the greater of: The hood exhaust flow minus the available transfer air from adjacent spaces
05	Location that is supplying transfer air: Kitchen / Dining />
05	The kitchen/ dining facility has a total Type I and Type II kitchen hood exhaust airflow > 5000 cfm and is designed to have one of the following per 140.9(b)2B: NA: Not a kitchen/ dining facility having a total Type I and Type II kitchen hood exhaust airflow rate > 5,000 cfm

**Kitchen Exhaust: Airflow Rate 140.9(b)1B**

01	Kitchen Name or Item Tag	HD-1	Compliance Method per 140.9(b)1B	NA: Kitchen/ dining facility has a total Type I and Type II kitchen hood exhaust airflow rate <= 5,000 cfm		
02	03	04	05	06	07	08
Name or Item Tag	Hood Type⁴	Hood Style	Hood Length (ft)	Equipment Duty	Design Hood Exhaust Rate CFM	Max Hood Exhaust Rate Allowed CFM
HD-1	Type I				2381	

¹ FOOTNOTES: Type II hoods do not have a max hood exhaust air rate per 140.9(b)1B

**O. LABORATORY AND FACTORY EXHAUST AND FUME HOODS**

This section does not apply to this project.

**P. CONTROLLED ENVIRONMENT HORTICULTURE**

This section does not apply to this project.

**Q. STEAM TRAPS IN INDUSTRIAL FACILITIES**

This section does not apply to this project.

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1787 VICTORY PLACE  
BURBANK, CA 91502

RESTAURANT NUMBER: XXXXXX

ISSUE	DATE
BBS SUBMITTAL	09/29/23
BID SET	12/11/23
CONSTRUCTION SET	02/16/24

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ISSUED FOR CONSTRUCTION

02/16/2024

ENERGY COMPLIANCE CALCULATIONS

SCALE: AS SHOWN DATE: 09/21/2023

M020

STATE OF CALIFORNIA  
**Nonresidential Building Commissioning**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-CXR-E  
Project Name: Cava - Burbank Report Page: (Page 3 of 6)  
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**F. DESIGN REVIEW KICKOFF MEETING**  
This table indicates that the design reviewer meets the qualification requirements per Title 24, Part 1 Section 10-103(a)1 and demonstrates compliance with design review kickoff requirements per 120.8(d)2. This meeting should occur during the Schematic Design phase of the project.

**Design Review Kickoff Meeting Details**

01 Date of Design Review Kickoff Meeting	2023-06-12		
02 Meeting Attendees: (one person may play multiple roles)			
<input checked="" type="checkbox"/> Owner/Facility Manager:	Owner's Design/Construction Team	<input type="checkbox"/> Design Reviewer(s)	
<input checked="" type="checkbox"/> Project Manager:	Owner's Design/Construction Team	<input checked="" type="checkbox"/> Design Architect/ Engineer(s):	David Wick / Joshua Everett
<input type="checkbox"/> Contractor:		<input type="checkbox"/> Certified Acceptance Test Tech(s):	
<input type="checkbox"/> Commissioning Provider:		<input type="checkbox"/> Energy/ T24 Part 6 Consultant:	

**Design Reviewer Qualifications per Title 24 Part 1 Section 10-103(a)1**  
The design reviewer(s) must be licensed professional engineers or licensed architects, or licensed contractors representing services performed by or under the direct supervision of a licensed engineer or architect, as specified in the provisions of Division 3 of the Business and Professions Code.

03 In addition, for buildings with < 10,000 ft <sup>2</sup> , the design reviewer(s) may be the engineer or architect of record. The design reviewer(s) may also be a qualified in-house engineer or architect with no other project involvement or a third party engineer, architect or contractor.	Do the Design Reviewer(s) meet these qualifications?	Yes	No
04 The design reviewer(s) for this project will be:	David Wick / Joshua Everett	<input checked="" type="radio"/>	<input type="radio"/>

**Preliminary Construction Schedule**

	Start Date	Completion Date
05 Schematic Design	2023-06-12	2023-07-24
06 Design Development	2023-07-24	2023-08-30
07 Construction Documents	2023-08-31	2023-09-28
08 Construction	2024-12-31	2024-12-31
09 Building Turnover	2024-12-31	2024-12-31

**Project Goals Related to Energy Efficiency**

10 Operational Costs	Standard owner requirements
11 Desired Building Lifespan	Standard owner requirements
12 Equipment Lifecycle	Standard owner requirements
13 Project Energy Efficiency Goals	Standard owner requirements

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STATE OF CALIFORNIA  
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CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-CXR-E  
Project Name: Cava - Burbank Report Page: (Page 2 of 6)  
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**C. COMPLIANCE RESULTS**  
Table C will indicate if the project data input into the compliance document is compliant with commissioning requirements per 120.8. This table is not editable by the user. If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D, for guidance.

01	02	03	04	05	06	07	08	09
Design Kickoff Review	Owner's Project Requirements	Basis of Design	Design Review	Commissioning Plan	Functional Performance Testing	Documentation and Training	Commissioning Report	
Table F	Table G	Table H	Table I	Table J	Table K	Table L	Table M	
Yes			Yes					COMPLIES
10	David Wick / Joshua Everett							COMPLIES

**D. EXCEPTIONAL CONDITIONS**  
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.  
Either Core and Shell or Tenant fit out has been indicated in Table A. Please note commissioning may be completed for the entire building prior to tenant improvements, or for each individual tenant improvement. The local enforcement agency may have commissioning policies for multi-tenant buildings.  
Table I. Indicates that a Design Review document is attached to the permit application.

**E. ADDITIONAL REMARKS**  
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

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STATE OF CALIFORNIA  
**Nonresidential Building Commissioning**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-CXR-E  
Project Name: Cava - Burbank Report Page: (Page 1 of 6)  
Date Prepared: 2023-09-28T14:38:56-04:00

**A. GENERAL INFORMATION**

01 Project Location (city)	Burbank	04 Building Size (ft <sup>2</sup> )	2018
02 Occupancy Type	Nonresidential	05	< 10,000 ft <sup>2</sup>
03 Project Type	Tenant fit out only	06	Unitary or packaged equipment each serving one zone
		07 Climate Zone	9

**B. PROJECT SCOPE**  
Based on project information provided in Table A, Table B indicates which commissioning related requirements apply per 120.8. Table B is not editable by the user.

**Commissioning Requirements per 120.8**


01	Table F: Design Review Kickoff	120.8(d)1 and 120.8(d)2	The design review kickoff meeting establishes who will play the role of the design reviewer, the project schedule and identify owner's requirements. This meeting should be conducted during schematic design.
02	Table G: Owner's Project Requirements (OPR)	120.8(b)	This requirement does not apply.
03	Table H: Basis of Design (BOD)	120.8(c)	This requirement does not apply.
04	Table I: Design Review	120.8(d) and 120.8(e)	The design reviewer(s) reviews the construction documents for clarity, completeness, and adherence to the owner's goals. Commissioning measures must be included in the construction documents to facilitate the design review and commissioning process. For projects with >= 10,000 ft <sup>2</sup> of nonresidential conditioned floor area, the design review is for adherence with the Owner's Project Requirements (OPR) and Basis of Design (BOD). This should be conducted during design.
05	Table J: Commissioning Plan	120.8(f)	This requirement does not apply.
06	Table K: Functional Performance Testing	120.8(g)	This requirement does not apply.
07	Table L: Documentation and Training	120.8(h)	This requirement does not apply.
08	Table M: Commissioning Report	120.8(i)	This requirement does not apply.

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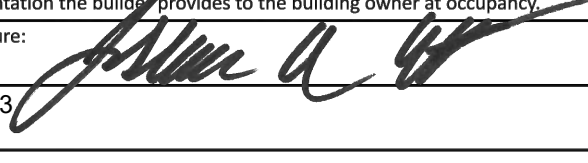
STATE OF CALIFORNIA  
**Nonresidential Building Commissioning**  
CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE** NRCC-CXR-E  
Project Name: Cava - Burbank Report Page: (Page 6 of 6)  
Date Prepared: 2023-09-28T14:38:56-04:00

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**  
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Joshua Everett  
Signature:   
Signature Date: 09/28/2023  
Company: Everj Engineering, Inc.  
Address: 1509 Buck Trail Lane  
City/State/Zip: Worthington / OH / 43085  
Phone: 614-345-8054

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**  
I certify the following under penalty of perjury, under the laws of the State of California:  
1. The information provided on this Certificate of Compliance is true and correct.  
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).  
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.  
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.  
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the building owner at occupancy.

Responsible Designer Name: Joshua Everett  
Signature:   
Date Signed: 09/28/2023  
Company: Everj Engineering, Inc.  
Address: 1509 Buck Trail Lane  
City/State/Zip: Worthington / OH / 43085  
Phone: 614-345-8054

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Project Name: Cava - Burbank Report Page: (Page 5 of 6)  
Date Prepared: 2023-09-28T14:38:56-04:00

**K. FUNCTIONAL PERFORMANCE TESTING**  
This section does not apply to this project.

**L. DOCUMENTATION AND TRAINING**  
This section does not apply to this project.

**M. COMMISSIONING REPORT**  
This section does not apply to this project.

**N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**  
There are no forms required for this project.

**O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**  
There are no forms required for this project.

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**CERTIFICATE OF COMPLIANCE** NRCC-CXR-E  
Project Name: Cava - Burbank Report Page: (Page 4 of 6)  
Date Prepared: 2023-09-28T14:38:56-04:00

**F. DESIGN REVIEW KICKOFF MEETING**

14 Envelope Goals	N/A
15 HVAC System Goals	Standard owner requirements
16 Indoor Lighting System Goals	Standard owner requirements
17 Outdoor Lighting System Goals	N/A
18 Water Heating System Goals	Standard owner requirements
19 Equipment and System Specifications	Standard owner requirements
20 Operations and Maintenance	Standard owner requirements

**G. OWNER'S PROJECT REQUIREMENTS (OPR)**  
This section does not apply to this project.

**H. BASIS OF DESIGN (BOD)**  
This section does not apply to this project.

**I. CONSTRUCTION DOCUMENT DESIGN REVIEW CHECKLIST**  
This table is only completed if a design review document is not attached to permit application to demonstrate compliance with 120.8(b) and 120.8(e). For buildings with >= 10,000 ft<sup>2</sup> conditioned floor area, the design review will ensure the construction documents meet the Owner's Project Requirements (Table G.) and the Basis of Design Documents (Table H.). For buildings with < 10,000 ft<sup>2</sup> conditioned floor area, the design review will ensure the construction documents meet the goals documented in Table F. during the Design Review Kickoff.

01 Attaching Completed Design Review Documentation?	YES	NO
	<input checked="" type="radio"/>	<input type="radio"/>

**J. COMMISSIONING PLAN**  
This section does not apply to this project.

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RESTAURANT NUMBER: XXXXX

ISSUE DATE  
B&S SUBMITTAL 09/29/23  
BID SET 12/11/23  
CONSTRUCTION SET 02/16/24

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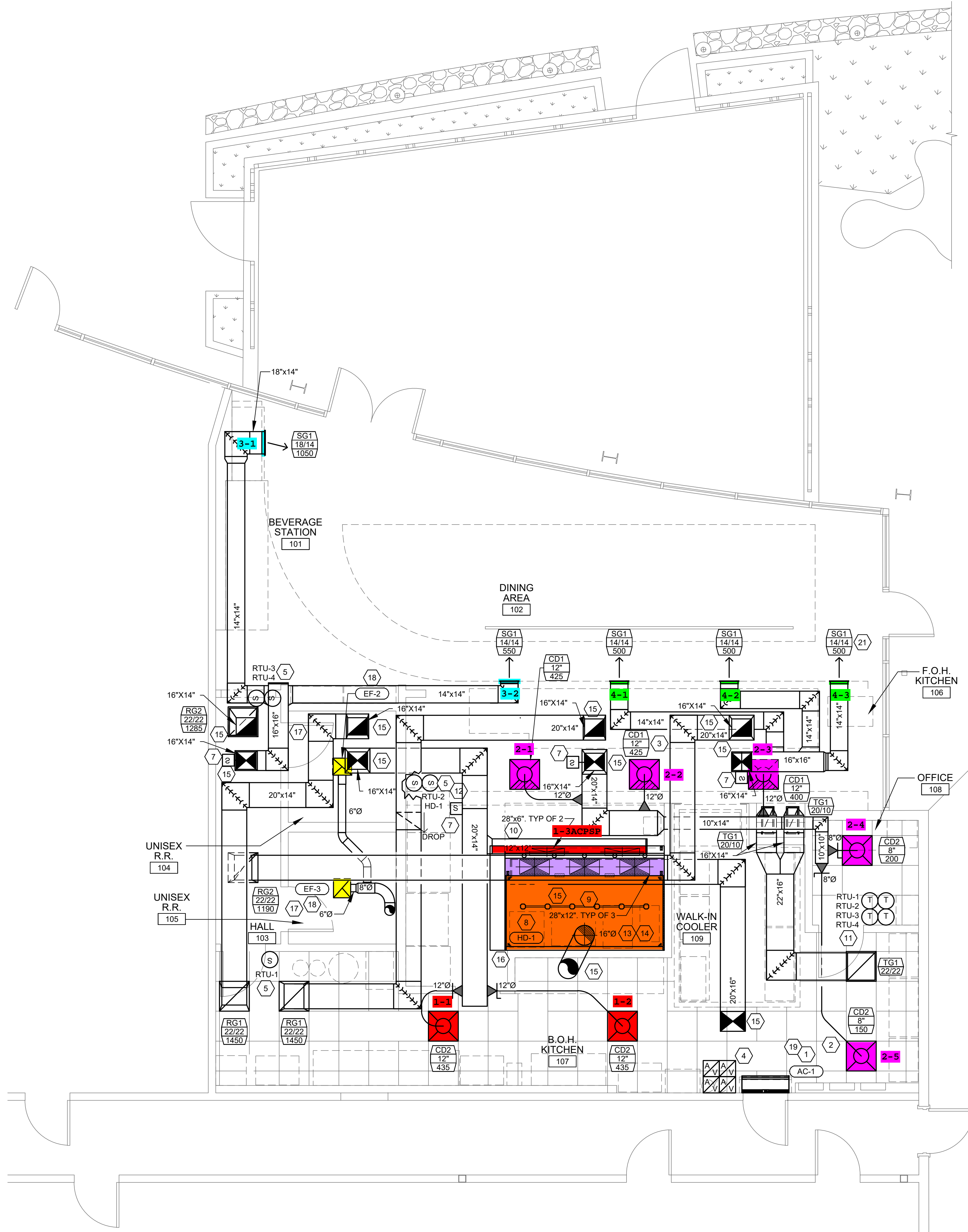
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ENERGY COMPLIANCE CALCULATIONS

SCALE: AS SHOWN DATE: 09/21/2023

M021



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

**SYMBOLS & ABBREVIATIONS**

- MITERED CORNER WITH TURNING VANES
- DUCTWORK INTERNAL FREE DIMENSIONS (WIDTH x HEIGHT)
- RECTANGULAR TO ROUND TRANSITION
- DUCT-MOUNTED SMOKE DETECTOR
- MANUAL VOLUME DAMPER
- MOTOR-OPERATED DAMPER
- FIRE DAMPER
- BRANCH TAKEOFF
- SPIN-IN TAP WITH DAMPER
- SPIN-IN TAP WITHOUT DAMPER
- MITERED CORNER WITHOUT TURNING VANES
- THERMOSTAT
- HUMIDISTAT
- REMOTE SENSOR
- AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET
- PLAN NOTE (SEE PLAN NOTES LISTED ON THE SAME SHEET FOR MEANING)
- CONNECT TO EXISTING
- DIFFUSER IDENTIFICATION  
XXX  
X"  
XXX
- EQUIPMENT TAG. REFER TO THE SCHEDULES FOR MORE INFORMATION

**HVAC ABBREVIATIONS**

(D)	DEMOLISHED
(E)	EXISTING
(R)	RELOCATED
A.F.F.	ABOVE FINISHED FLOOR
AHU	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
A.O.R.	ARCHITECT OF RECORD
BC	BLOWER COIL
B.F.F.	BELOW FINISHED FLOOR
CD	CEILING DIFFUSER
CU	CONDENSING UNIT
EF	EXHAUST FAN
ER	EXHAUST REGISTER
GC	GENERAL CONTRACTOR
OBD	OPPOSED BLADE DAMPER
PL	PLENUM
RG	RETURN GRILLE
RTU	ROOFTOP UNIT
SR	SUPPLY REGISTER
WSHP	WATER SOURCE HEAT PUMP

**CODED NOTES**

1. PROVIDE EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTION AND PER THE STRUCTURAL DETAILS.
2. PROVIDE SUPPLY DIFFUSER CONNECTION PER DETAIL 6M300.
3. REFER TO THE ARCHITECTURAL RCP FOR CEILING MOUNTED EQUIPMENT LOCATION. TYPICAL.
4. PROVIDE AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET. WIRE A UNIT BACK TO EACH SMOKE DETECTOR. MOUNT UNIT 60" AFF. TYPICAL.
5. PROVIDE A REMOTE TEMPERATURE SENSOR FOR THE HVAC EQUIPMENT NOTED AT THIS LOCATION AT 5'-0" AFF. COORDINATE LOCATION WITH EQUIPMENT AND WALL-MOUNTED FIXTURES AS REQUIRED SUCH THAT THE SENSOR IS NOT BLOCKED.
6. NOT USED.
7. THE GENERAL CONTRACTOR SHALL PROVIDE A DUCT-MOUNTED SMOKE DETECTOR IN THE SUPPLY AIR STREAM. UPON DETECTION OF SMOKE THE SUPPLY AIR FAN SHALL DE-ENERGIZE. COORDINATE ALL REQUIREMENTS WITH THE LANDLORD AND ALARM PROVIDER. COORDINATE ACCESS PANELS WITH THE ARCHITECTURAL SHEETS AS REQUIRED.
8. INSTALL TYPE I KITCHEN HOOD FURNISHED BY THE KITCHEN EQUIPMENT SUPPLIER. SUPPORT PER THE MANUFACTURER'S INSTRUCTIONS AND PER THE STRUCTURAL DRAWINGS. INSTALL HOOD IN ACCORDANCE WITH THE REQUIREMENTS OF ITS LISTING AND IN ACCORDANCE WITH THE NFPA AND ALL APPLICABLE BUILDING CODES. HOOD SHALL HAVE AN INTEGRAL DUCT COLLAR TEMPERATURE SENSOR AND SHALL AUTOMATICALLY ENERGIZE THE EXHAUST AND MAKEUP AIR SYSTEMS IF COOKING TEMPERATURES ARE DETECTED. EXHAUST DUCTWORK SHALL BE FACTORY-MANUFACTURED, WATER AND AIR TIGHT OR WELDED STEEL. UPON INSTALLATION OF THE SYSTEM, PROVIDE GREASE DUCT TEST IN ACCORDANCE WITH SECTION 510 OF THE MECHANICAL CODE.
9. PROVIDE DUCT DROP FOR MAKEUP AIR AND CONNECT TO THE HOOD'S INTEGRAL MAKEUP AIR PLENUM.
10. PROVIDE DUCT DROP FOR CONDITIONED AIR AND CONNECT TO THE HOOD'S INTEGRAL AC PLENUM CONNECTION.
11. PROVIDE A HONEYWELL WIFI VISION PRO 8000 TOUCHSCREEN 7-DAY PROGRAMMABLE WITH AUTO-CHANGEOVER AND AUTOMATIC STATE CAPABILITY SERIES THERMOSTATS, COMPATIBLE WITH THE HVAC EQUIPMENT AT THIS LOCATION AT 48" AFF. ADJUST THE SETPOINT OVERLAP, DEADBAND AND OPTIMUM START SETTINGS AS REQUIRED PER THE ENERGY CODE. COORDINATE WITH ELECTRICAL DEVICES AND ARCHITECTURAL ELEMENTS IN THE AREA. EXTEND THE CONTROLS WIRING TO THE MECHANICAL EQUIPMENT AND ASSOCIATED SENSORS AS REQUIRED. COORDINATE LOCATION SO THAT THERMOSTATS ARE NOT BLOCKED. COORDINATE FINAL INSTALLATION LOCATION OF THERMOSTAT WITH OWNER'S REPRESENTATIVE.
12. INSTALL THE REMOTE TEMPERATURE SENSOR FOR THE HOOD. HD-1 AT THIS LOCATION AT 5'-0" AFF. PROVIDE CABLING TO THE HOOD CONTROL PANEL AS NOTED IN THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
13. INSTALL OWNER FURNISHED UL 1978 AND UL-2221 LISTED DOUBLE-WALL GREASE DUCT, EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-3Z ROUND FROM HOOD COLLAR TO EXHAUST FAN ON ROOF. INSTALL EXHAUST DUCT PER MANUFACTURER'S INSTRUCTIONS. PROVIDE CLEANOUTS AT EVERY CHANGE OF DIRECTION IN THE DUCT AND/OR EVERY 10 FEET WITH MINIMUM OF 3 FEET OF CLEARANCE IN FRONT OF CLEAN-OUT. COORDINATE ROUTING OF DUCTWORK WITH OWNER'S CAPTIVEAIRE REPRESENTATIVE.
14. ALL GREASE DUCT BRACING AND SUPPORTS SHALL BE OF NON-COMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE STRUCTURE. BOLTS, SCREWS, RIVETS AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALLS.
15. DUCTWORK TO/FROM ROOF. PROVIDE DUCT TRANSITION IN THE VERTICAL RISE AND PROVIDE TURNING VANE AT THE VERTICAL ELBOW. REFER TO THE HVAC ROOF PLAN FOR CONTINUATION.
16. HOOD CONTROL PANEL WITH INTEGRAL ANSUL CABINET. COORDINATE EXACT MOUNTING LOCATION, ANSUL PIPING AND ALL OTHER REQUIREMENTS WITH THE KITCHEN EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
17. UNDERCUT RESTROOM DOOR 1" FOR TRANSFER AIR.
18. PROVIDE CEILING MOUNTED EXHAUST FAN. TRANSITION FROM FAN DISCHARGE TO DUCT SIZE SHOWN AND EXTEND UP THROUGH ROOF.
19. PROVIDE AIR CURTAIN. MOUNT UNIT ON WALL DIRECTLY ABOVE DOOR PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
20. NOT USED.
21. ADJUST SUPPLY REGISTERS SO THAT SUPPLY AIR HITS WALL ON OPPOSITE SIDE OF ROOM AT APPROXIMATELY 7'-0" AFF WITH NO DRAFTS FELT IN THE DINING ROOM.



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RESTAURANT NUMBER: XXXXX

ISSUE	DATE
B&S SUBMITTAL	02/29/23
BID SET	12/11/23
CONSTRUCTION SET	02/16/24

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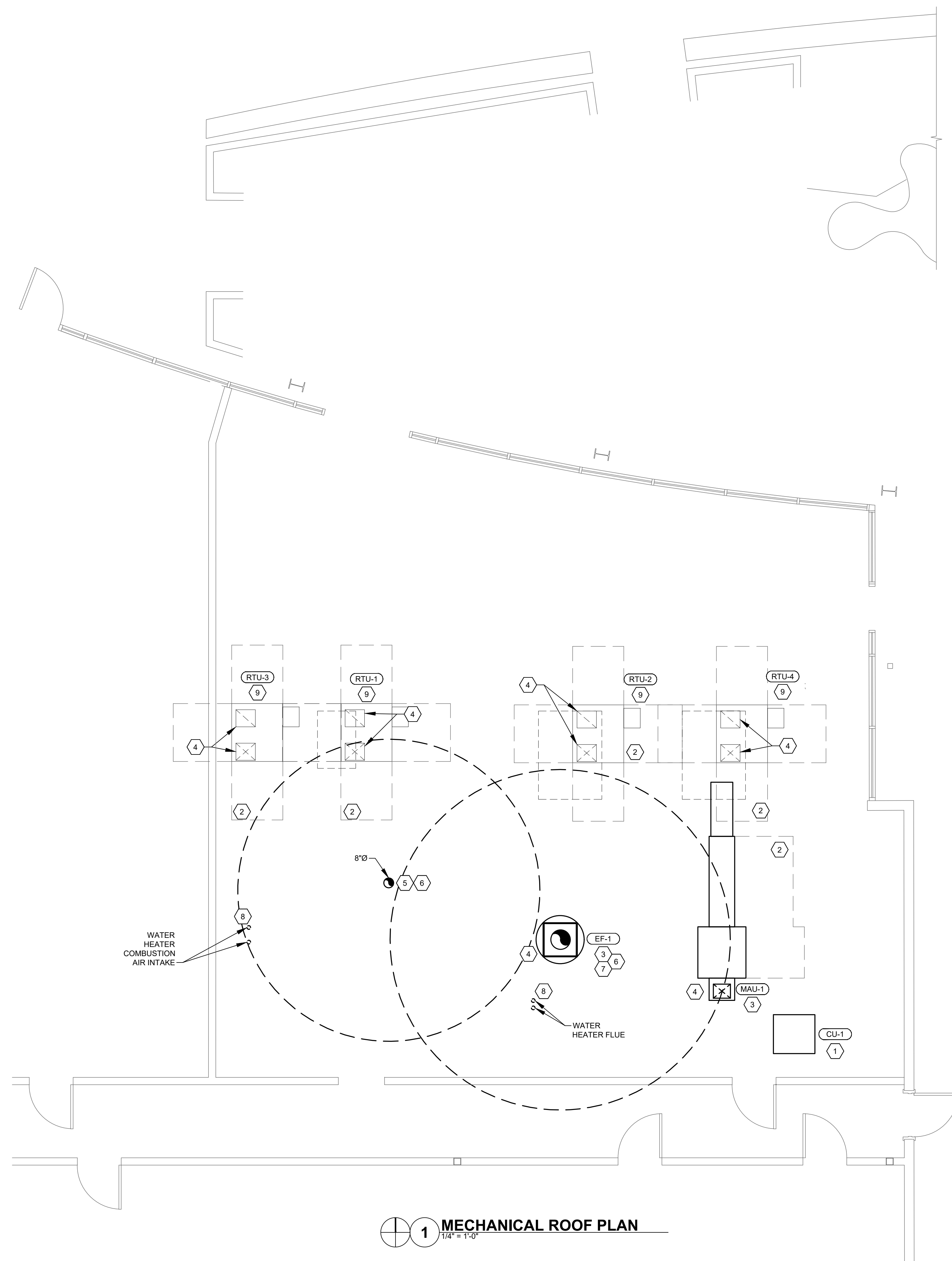
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MECHANICAL PLAN

SCALE: AS SHOWN DATE: 09/21/2023

M100



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

**SYMBOLS & ABBREVIATIONS**

- MITERED CORNER WITH TURNING VANES
- DUCTWORK INTERNAL FREE DIMENSIONS (WIDTH x HEIGHT)
- RECTANGULAR TO ROUND TRANSITION
- DUCT-MOUNTED SMOKE DETECTOR
- MANUAL VOLUME DAMPER
- MOTOR-OPERATED DAMPER
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- THERMOSTAT
- HUMIDISTAT
- REMOTE SENSOR
- AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET
- PLAN NOTE (SEE PLAN NOTES LISTED ON THE SAME SHEET FOR MEANING)
- CONNECT TO EXISTING
- DIFFUSER IDENTIFICATION
- NECK SIZE
- AIRFLOW
- EQUIPMENT TAG. REFER TO THE SCHEDULES FOR MORE INFORMATION

**HVAC ABBREVIATIONS**

(D)	DEMOLISHED
(E)	EXISTING
(R)	RELOCATED
A.F.F.	ABOVE FINISHED FLOOR
A.H.J.	AUTHORITY HAVING JURISDICTION
A.H.U.	AIR HANDLING UNIT
A.O.R.	ARCHITECT OF RECORD
BC	BLOWER COIL
B.F.F.	BELOW FINISHED FLOOR
CD	CEILING DIFFUSER
CU	CONDENSING UNIT
EF	EXHAUST FAN
ER	EXHAUST REGISTER
GC	GENERAL CONTRACTOR
OBD	OPPOSED BLADE DAMPER
PL	PLENUM
RG	RETURN GRILLE
RTU	ROOFTOP UNIT
SR	SUPPLY REGISTER
WSHP	WATER SOURCE HEAT PUMP

**CODED NOTES**

1. COORDINATE MOUNTING LOCATION OF THE WALK-IN COOLER CONDENSING UNIT WITH THE KITCHEN EQUIPMENT SUPPLIER AND INSTALL THE WALK-IN COOLER CONDENSING UNIT, CU-1 ON THE ROOF. ENSURE ALL CLEARANCE REQUIREMENTS FOR THE UNIT ARE MAINTAINED THROUGH CONSTRUCTION. COORDINATE ALL INSTALLATION REQUIREMENTS WITH THE KITCHEN EQUIPMENT SUPPLIER AS NOTED.
2. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE ZONES. NO DUCTWORK, PIPING, CONDUIT OR OTHER SYSTEMS SHALL BE PERMITTED IN THIS AREA. COORDINATE WITH SITE CONDITIONS AND WORK OF OTHER TRADES AS REQUIRED. TYPICAL.
3. INSTALL THE HVAC EQUIPMENT PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ALL STRUCTURAL DETAILS.
4. DUCTWORK TO/FROM SPACE. REFER TO THE HVAC MECHANICAL PLAN FOR CONTINUATION.
5. EXTEND EXHAUST DUCT UP THROUGH ROOF. PROVIDE A ROOF JACK, STORM COLLAR, AND ALL-WEATHER CAP.
6. EXHAUST DISCHARGE SHALL BE NO LESS THAN 10'-0" FROM ALL MECHANICAL INTAKES AND OPERABLE OPENINGS INTO THE BUILDING.
7. INSTALL EXHAUST FAN EF-1 PER DETAIL 4/M300 AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
8. MAINTAIN 10' CLEARANCE BETWEEN WATER HEATER FLUE TERMINATION AND VENTILATION AIR INTAKES. MAINTAIN 10' CLEARANCE BETWEEN WATER HEATER COMBUSTION AIR INTAKE AND EXHAUST FAN EF-1 DISCHARGE. SEE PLUMBING DRAWINGS FOR MORE INFORMATION ON WATER HEATER FLUE AND COMBUSTION AIR TERMINATIONS.
9. EXISTING PACKAGED ROOFTOP UNIT PROVIDED BY THE LANDLORD UNDER A SEPARATE PERMIT TO REMAIN. FIELD-VERIFY MAKE/MODEL UPON START OF WORK.



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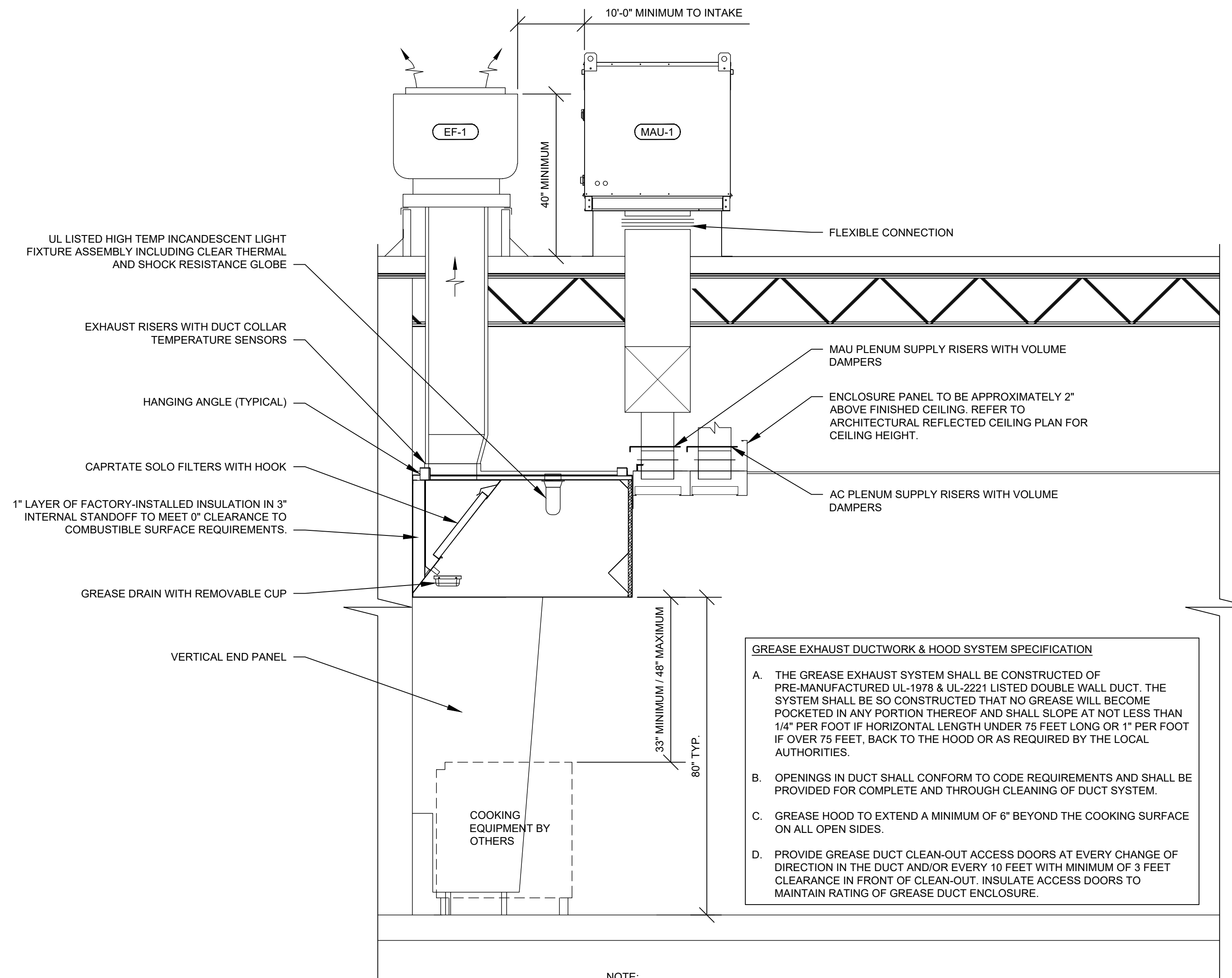
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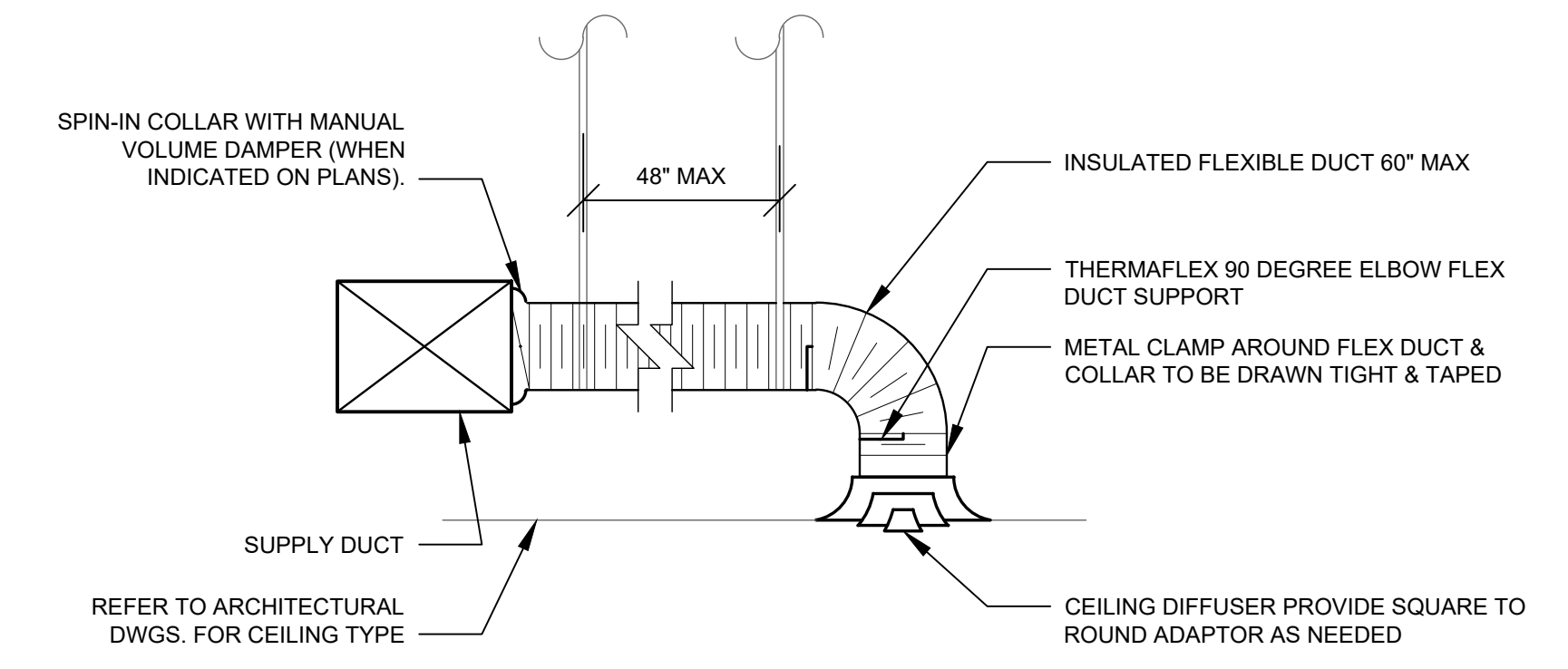
MECHANICAL ROOF PLAN

SCALE: AS SHOWN DATE: 09/21/2023

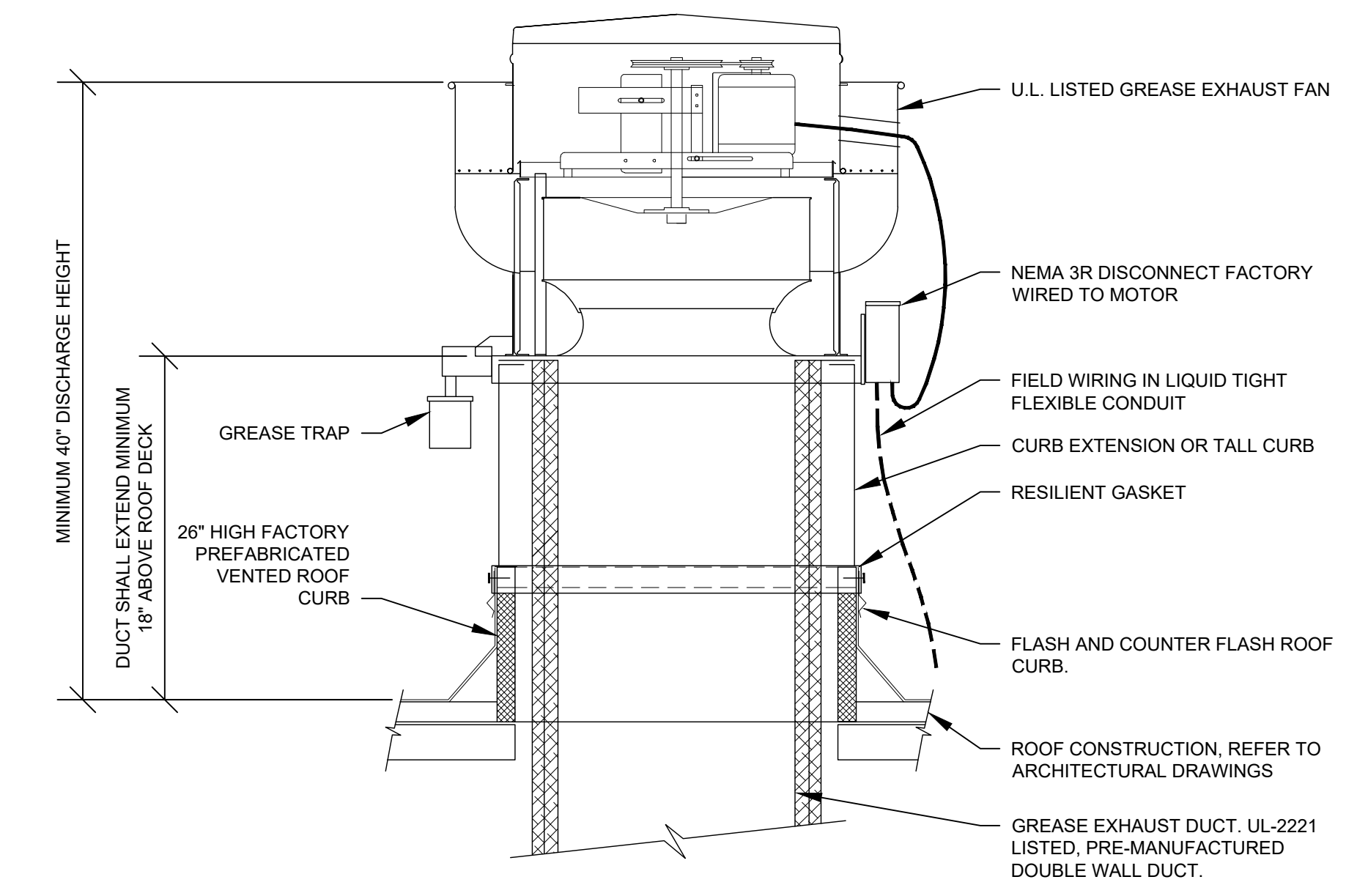
**M200**



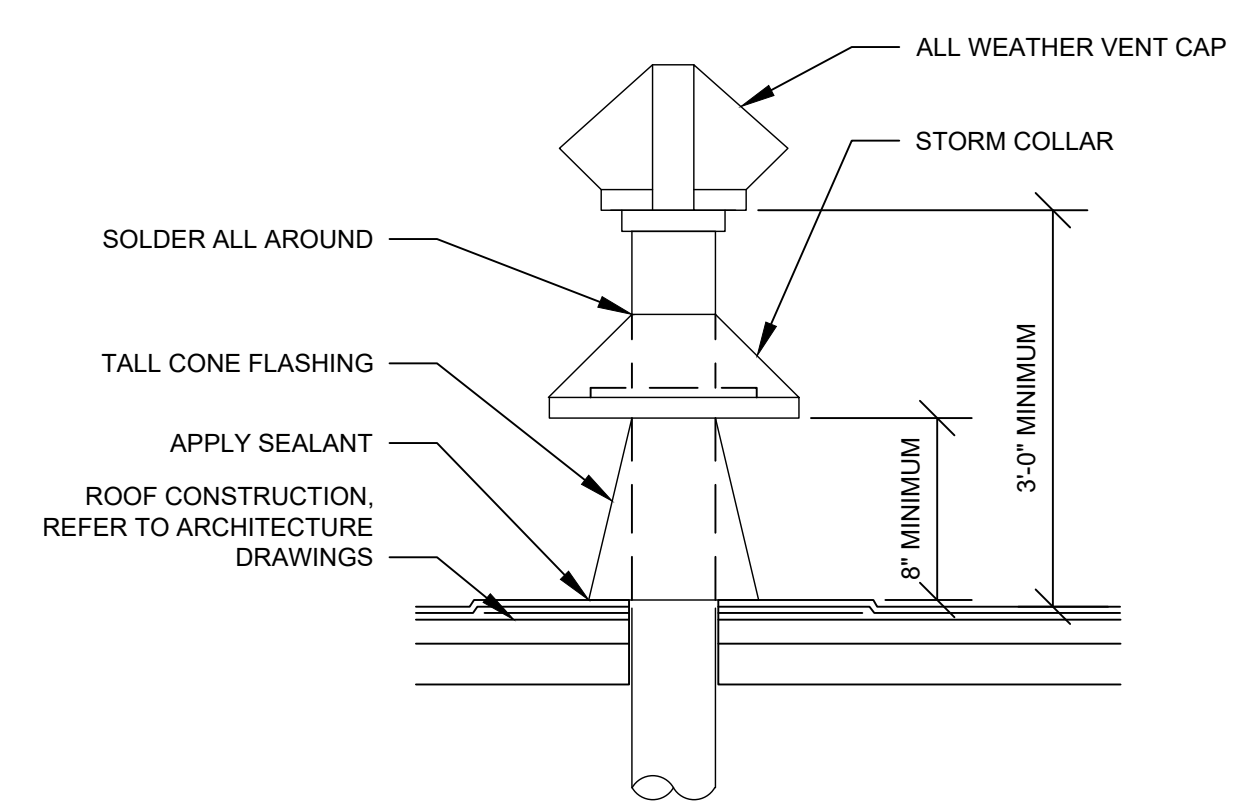
**5 KITCHEN HOOD SCHEMATICS**  
N.T.S.



**6 DIFFUSER CONNECTION**  
N.T.S.



**4 ROOF MOUNTED GREASE EXHAUST FAN DETAIL**  
N.T.S.



**3 DUCT THROUGH ROOF**  
N.T.S.

**2 NOT USED**  
N.T.S.

**1 NOT USED**  
N.T.S.



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MECHANICAL DETAILS

SCALE: AS SHOWN DATE: 09/21/2023

**M300**

EXHAUST SCHEDULE PER TABLE 403.7 OF THE 2022 CALIFORNIA MECHANICAL CODE						
CATEGORY	AREA	NUMBER OF FIXTURES	AIR RATE		EXHAUST REQUIRED (CFM)	EXHAUST PROVIDED (CFM)
			CFM / SF	CFM / FIXTURE		
KITCHEN	844.0	0	-0.70	0.00	-590.8	-2381.0
RESTROOM 104	53.8	1	0.00	-50.00	-50.0	-75.0
RESTROOM 105	54.2	1	0.00	-50.00	-50.0	-75.0

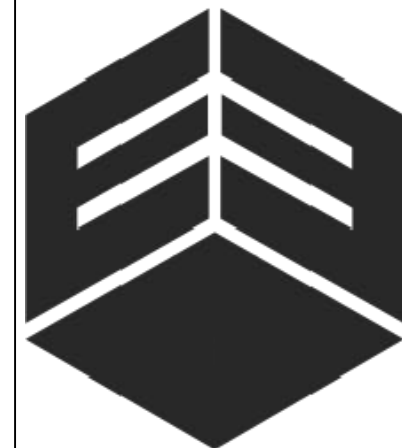
VENTILATION SCHEDULE, RTU-3 & RTU-4 PER TABLE 402.1 OF THE 2022 CALIFORNIA MECHANICAL CODE								
CATEGORY	AREA	OCCUPANT DENSITY (PPL / 1000 SF)	OCCUPANT LOAD (PEOPLE)	AIR RATE		EFFECTIVENESS	VENTILATION REQUIRED (CFM)	VENTILATION PROVIDED (CFM)
				CFM / PERSON	CFM / SF			
DINING ROOM	685.6	70.00	48	7.50	0.18	0.8	604.3	615.0
CORRIDOR	75.8	0.00	1	0.00	0.06	0.8	5.7	10.0

VENTILATION SCHEDULE, RTU-1 & RTU-2 PER TABLE 402.1 OF THE 2022 CALIFORNIA MECHANICAL CODE								
CATEGORY	AREA	OCCUPANT DENSITY (PPL / 1000 SF)	OCCUPANT LOAD (PEOPLE)	AIR RATE		EFFECTIVENESS	VENTILATION REQUIRED (CFM)	VENTILATION PROVIDED (CFM)
				CFM / PERSON	CFM / SF			
KITCHEN	844.0	20.00	17	7.50	0.12	0.8	286.0	290.0
OFFICE	49.8	5.00	1	5.00	0.06	0.8	10.0	10.0

SEQUENCE OF OPERATIONS EF-2 & EF-3
<b>OCCUPIED MODE:</b> FAN OPERATION: WHEN SCHEDULED BY THE TIMECLOCK TO BE IN OCCUPIED MODE, THE EXHAUST FANS ARE TO START AND RUN CONTINUOUSLY.
<b>UNOCCUPIED MODE:</b> FAN OPERATION: WHEN SCHEDULED BY THE TIMECLOCK TO BE IN UNOCCUPIED MODE, THE EXHAUST FANS SHALL REMAIN OFF.
<b>EMERGENCY MODE:</b> FAN/DAMPER OPERATION: UPON A SIGNAL FROM THE FIRE ALARM SYSTEM, THE FANS SHALL STOP.

SEQUENCE OF OPERATIONS EF-1 & MAU-1
<b>STANDARD OPERATION</b> FAN OPERATION: WHEN ACTIVATED BY A BUTTON PRESS ON THE HOOD CONTROL PANEL, OR WHEN COOKING TEMPERATURES ARE DETECTED, THE EXHAUST FAN SHALL START. THE MOTORIZED DAMPER SERVING THE MAKEUP AIR UNIT SHALL OPEN AND THE MAKEUP AIR UNIT FAN SHALL START. INTERLOCK ROOFTOP UNITS SO THAT THE PACKAGED ROOFTOP UNIT FANS START AND THE OUTSIDE AIR DAMPERS POWER OPEN.
<b>EMERGENCY MODE:</b> FAN/DAMPER OPERATION: UPON A SIGNAL FROM THE FIRE ALARM SYSTEM, THE FAN SHALL STOP AND ALL DAMPERS SHALL CLOSE.

SEQUENCE OF OPERATIONS RTU-1 THRU RTU-4
<b>OCCUPIED MODE:</b> FAN OPERATION/OUTSIDE AIR DAMPER: WHEN SCHEDULED BY THE THERMOSTAT TO BE IN OCCUPIED MODE, THE ROOFTOP UNIT FANS ARE TO START AND RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPERS SHALL MODULATE TO THE MINIMUM POSITION. POWER OPEN TO THE SETPOINT POSITION. HEATING: ON A FALL IN SPACE TEMPERATURE BELOW THE SETPOINT OF 70 DEGREES (ADJUSTABLE) THE HEATING SHALL BE ENERGIZED TO MAINTAIN THE SETPOINT. COOLING: ON A RISE IN SPACE TEMPERATURE ABOVE THE SETPOINT OF 72 DEGREES (ADJUSTABLE) THE COOLING SHALL BE ENERGIZED AS REQUIRED TO MAINTAIN THE SETPOINT.
<b>UNOCCUPIED MODE:</b> FAN OPERATION/OUTSIDE AIR DAMPER: WHEN SCHEDULED BY THE THERMOSTAT TO BE IN UNOCCUPIED MODE, THE ROOFTOP UNIT FANS ARE TO BE OFF AND THE OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED. HEATING: ON A FALL IN SPACE TEMPERATURE BELOW THE SETPOINT OF 55 DEGREES (ADJUSTABLE) THE ROOFTOP UNIT FAN SHALL START AND THE HEATING SHALL BE ENERGIZED TO MAINTAIN THE SETPOINT. COOLING: ON A RISE IN SPACE TEMPERATURE ABOVE THE SETPOINT OF 85 DEGREES (ADJUSTABLE) THE ROOFTOP UNIT FAN SHALL START. THE OUTSIDE AIR DAMPER SHALL REMAIN IN THE CLOSED POSITION AND THE COOLING SHALL BE ENERGIZED AS REQUIRED TO MAINTAIN THE SETPOINT.
<b>EMERGENCY MODE:</b> FAN OPERATION/OUTSIDE AIR DAMPER: UPON A SIGNAL FROM THE SMOKE DETECTOR, THE FAN SHALL STOP AND THE OUTSIDE AIR DAMPER SHALL CLOSE.



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RESTAURANT NUMBER: XXXXXX

ISSUE DATE  
B&S SUBMITTAL 09/29/23  
BID SET 12/11/23  
CONSTRUCTION SET 02/16/24

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MECHANICAL SEQUENCE OF OPERATIONS AND VENTILATION CALCULATIONS

SCALE: AS SHOWN DATE: 09/23/2023

AIR BALANCE SCHEDULE					
TAG	SUPPLY FLOW (CFM)	RETURN FLOW (CFM)	OUTSIDE AIRFLOW (CFM)	EXHAUST FLOW (CFM)	SUBTOTAL (CFM)
EF-1	0	0	0	2,381	-2,381
EF-2	0	0	0	75	-75
EF-3	0	0	0	75	-75
MAU-1	1,975	0	1,975	0	1,975
RTU-1	1,600	1,450	150	0	150
RTU-2	1,600	1,450	150	0	150
RTU-3	1,600	1,285	315	0	315
RTU-4	1,500	1,190	310	0	310
NET PRESSURE (CFM)					369

MATERIAL SCHEDULE		
CATEGORY	APPLICATION	ALLOWABLE MATERIAL
DUCT	CONCEALED SUPPLY	RECTANGULAR OR ROUND, INSULATED
	CONCEALED RETURN	RECTANGULAR OR ROUND, INSULATED
	CONCEALED GENERAL EXHAUST	RECTANGULAR OR ROUND, INSULATED
	CONCEALED, TYPE I HOOD EXHAUST	FACTORY-BUILT, COMMERCIAL KITCHEN, DOUBLE-WALL GREASE DUCT WITH 0" CLEARANCE TO COMBUSTIBLES, LISTED AND LABELED IN ACCORDANCE WITH UL1978 AND UL2221 AND INSTALLED IN ACCORDANCE WITH THE MECHANICAL CODE AND THE MANUFACTURER'S UL LISTING OR WELDED RECTANGULAR 16 GAUGE STEEL WITH ZERO CLEARANCE TO COMBUSTIBLE DUCT WRAP.

### GRILLES, REGISTERS & DIFFUSERS SCHEDULE

TAG	DESCRIPTION	FACE SIZE	MATERIAL	FINISH	MOUNTING	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
								MANUFACTURER	MODEL	
CD1	PLAQUE FACE DIFFUSER	24"x24"	ALUMINUM	REF. TO RCP TO MATCH CEILING	GYP CEILING	GC	GC	TITUS	OMNI-AA	PROVIDE WITH RAPID MOUNT FRAME, OBD AND DIRECTIONAL BLOW CLIPS WHEN INDICATED ON PLAN.
CD2	SQUARE CONE DIFFUSER	24"x24"	ALUMINUM	WHITE	LAY-IN CEILING	GC	GC	TITUS	TMS-AA	
SG1	DOUBLE DEFLECTION SUPPLY GRILLE	REFER TO NECK SIZE	ALUMINUM	TO MATCH WALL	WALL	GC	GC	TITUS	300FL	PROVIDE WITH NECK-MOUNTED OBD.
RG1	LOUVERED RETURN GRILLE, BLADES PARALLEL TO LONG DIMENSION	REFER TO NECK SIZE	ALUMINUM	WHITE REF. TO RCP	LAY-IN CEILING	GC	GC	TITUS	355FL	
RG2	LOUVERED RETURN GRILLE, BLADES PARALLEL TO LONG DIMENSION	REFER TO NECK SIZE	ALUMINUM	REF. TO RCP TO MATCH CEILING	GYP GYPSUM BOARD	GC	GC	TITUS	355FL	
TG1	LOUVERED TRANSFER GRILLE, BLADES PARALLEL TO LONG DIMENSION	REFER TO NECK SIZE	ALUMINUM	REF. TO RCP TO MATCH CEILING	GYP GYPSUM BOARD	GC	GC	TITUS	355FL	

### FAN SCHEDULE

TAG	DESCRIPTION	EXHAUST AIRFLOW (CFM)	E.S.P. (IN. W.C.)	DRIVE TYPE	MOTOR POWER (HP)	WEIGHT (LB)	ELECTRICAL			FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL	REMARKS
							MCA (A)	MOCP (A)	V/PH					
EF-1	UPBLAST EXHAUST FAN	2,381	1.3	DIRECT	2.0	250.0	19.4	30	208/1/60	OWNER	GC	CAPTIVEAIRE	DU180HFA	FURNISHED WITH VARIABLE SPEED CONTROL, GREASE DRAIN AND CUP, VENTED ROOF CURB AND NEMA 3R DISCONNECT SWITCH
EF-2 EF-3	CEILING MOUNTED EXHAUST FAN	75	0.3	DIRECT	-	15.0	0.4	15	120/1/60	GC	GC	LOREN COOK	GC-148	FURNISHED WITH DISCONNECT SWITCH, BACKDRAFT DAMPER, BIRDSCREEN, SPEED CONTROLLER AND WHITE ALUMINUM GRILLE.

### AIR CURTAIN SCHEDULE

TAG	DESCRIPTION	NOZZLE WIDTH (INCHES)	AIRFLOW			ELECTRICAL				FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
			MAX VELOCITY (FPM)	AVERAGE VELOCITY (FPM)	AIRFLOW (CFM)	HEATER KW	MOCP (A)	MCA (A)	V/PH			MANUFACTURER	MODEL	
AC-1	REAR DOOR AIR CURTAIN	41.25	3,000	2,115	1,212	---	15	3.4	120/1/60	GC	GC	BERNER	ALC08-1042A	FURNISHED WITH MAGNETIC DOOR SWITCH INTERLOCKED WITH REAR DOOR.

### MAKEUP AIR UNIT SCHEDULE

TAG	DESCRIPTION	AIRFLOW (CFM)	E.S.P. (IN. W.C.)	HEATING			COOLING				ELECTRICAL				WEIGHT (LB)	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS			
				EAT (DEG. F)	GAS INPUT (MBH)	OUTPUT (MBH)	EAT		COOLING CAPACITY (TONS)	TOTAL COOLING CAPACITY		CONDENSING UNIT		MAKEUP AIR UNIT				MANUFACTURER	MODEL				
				DB (DEG. F)	WB (DEG. F)	TOTAL (MBH)	SENSIBLE (MBH)	MCA x 2 (A)	MOCP x 2 (A)	MCA (A)	MOCP (A)												
MAU-1	GAS FIRED MAKEUP AIR UNIT WITH AIR CONDITIONING	1,975	0.50	39.0	74.195	68.259	98.0	69.0	5	43.6	43.6	3.0	208/3/60	11.2	20	10.8	15	1,300	OWNER	GC	CAPTIVEAIRE	A1-D.250-15D-MPU	FURNISHED WITH DISCONNECT, ROOF CURB, TWO CONDENSING UNIT, SCREEN INTAKE AND WASHABLE ALUMINUM FILTERS.

### KITCHEN HOOD SCHEDULE

TAG	DESCRIPTION	MAX COOKING TEMP. (DEG. F)	MATERIAL	EXHAUST PLENUM				PERFORATED SUPPLY PLENUMS												NO. OF LIGHT FIXTURES	WEIGHT (LB)	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
				AIRFLOW (CFM)	E.S.P. (IN. W.C.)	DUCT COLLARS		LENGTH (IN.)	WIDTH (IN.)	MAU PLENUM				AC PLENUM				MANUFACTURER	MODEL							
						NO.	DIAMETER (IN.)			AIRFLOW (CFM)	DUCT COLLARS		AIRFLOW (CFM)	DUCT COLLARS												
											LENGTH (IN.)	WIDTH (IN.)		LENGTH (IN.)	WIDTH (IN.)											
HD-1	TYPE 1 CANOPY HOOD WITH PERFORATED MAU AND AC SUPPLY PLENUMS	600	4030 STAINLESS STEEL	2,381	0.825	1	16	127.00	57.00	140.00	24.00	1,975	3	28	12	730	2	28	6	6	1,200	OWNER	GC	CAPTIVEAIRE	6030 ND-2-ACPSF-F	FURNISHED WITH FIELD WRAPPER, LEFT END STANDOFF, RIGHT VERTICAL END PANEL, VAPORPROOF INCANDESCENT LIGHT FIXTURES, STAINLESS STEEL FILTERS, INTEGRAL UTILITY CABINET, ANSUL SYSTEM AND DUCT COLLAR TEMPERATURE SENSOR

### ROOFTOP UNIT SCHEDULE, HEAT PUMP

TAG	DESCRIPTION	COOLING CAPACITY (TONS)	EER (SEER)	COP	AIRFLOW				COOLING				HEATING				NUMBER OF COMPRESSORS	NUMBER OF CIRCUITS	WEIGHT (LB)	ELECTRICAL					FURNISHED BY	INSTALLED BY	MANUFACTURER	MODEL	REMARKS		
					TOTAL (CFM)	RETURN (CFM)	OA (CFM)	E.S.P. (IN. W.C.)	AHRI NET TOTAL (MBH)	AHRI NET SENSIBLE (MBH)	EAT DB (DEG. F)	EAT WB (DEG. F)	O.A.T. (DEG. F)	EAT (DEG. F)	HEAT PUMP CAPACITY (@17°F, MBH)	ELECTRIC HEATER (KW)				LAT (DEG. F)	UNIT MOCP (A)	UNIT MCA (A)	UNIT V/PH	HEATER MOCP (A)						HEATER MCA (A)	HEATER V/PH
RTU-1	KITCHEN ROOFTOP UNIT	4.0	11.6 (14.0)	4.4	1,600	1,450	150	0.80	49.2	37.2	76.7	64.2	103.0	66.0	27.0	10.0	100.7	1	1	550	25	20.1	208/3/60	35	27.8	208/3/60	LANDLORD	LANDLORD	YORK	PHE4B4834	LANDLORD FURNISHED UNIT WITH OUTSIDE AIR HOOD PACKAGE WITH BAROMETRIC RELIEF, MERV 13 FILTERS AND ROOF CURB.
RTU-2	KITCHEN ROOFTOP UNIT	4.0	11.6 (14.0)	4.4	1,600	1,450	150	0.80	49.2	37.2	76.7	64.2	103.0	66.0	27.0	10.0	100.7	1	1	550	25	20.1	208/3/60	35	27.8	208/3/60	LANDLORD	LANDLORD	YORK	PHE4B4834	LANDLORD FURNISHED UNIT WITH OUTSIDE AIR HOOD PACKAGE WITH BAROMETRIC RELIEF, MERV 13 FILTERS AND ROOF CURB.
RTU-3	DINING ROOM ROOFTOP UNIT	4.0	11.6 (14.0)	4.4	1,600	1,285	315	0.80	49.2	37.2	80.6	64.7	103.0	60.3	27.0	10.0	100.7	1	1	550	25	20.1	208/3/60	35	27.8	208/3/60	LANDLORD	LANDLORD	YORK	PHE4B4834	LANDLORD FURNISHED UNIT WITH OUTSIDE AIR HOOD PACKAGE WITH BAROMETRIC RELIEF, MERV 13 FILTERS AND ROOF CURB.
RTU-4	DINING ROOM ROOFTOP UNIT	4.0	11.6 (14.0)	4.4	1,500	1,190	310	0.80	49.2	37.2	80.6	64.7	103.0	60.3	27.0	10.0	101.7	1	1	550	25	20.1	208/3/60	35	27.8	208/3/60	LANDLORD	LANDLORD	YORK	PHE4B4834	LANDLORD FURNISHED UNIT WITH OUTSIDE AIR HOOD PACKAGE WITH BAROMETRIC RELIEF, MERV 13 FILTERS AND ROOF CURB.



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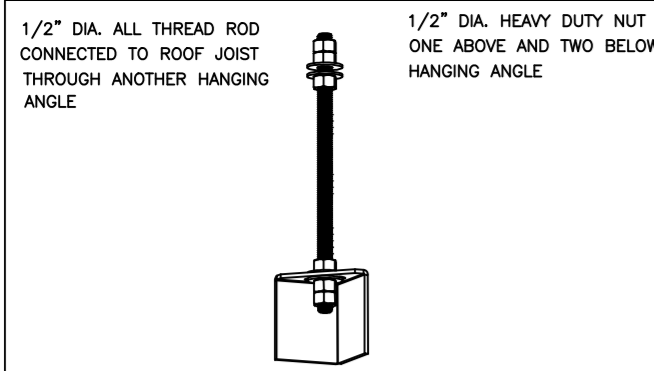
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MECHANICAL SCHEDULES

SCALE: AS SHOWN DATE: 09/21/2023

M400



\*ROD AND NUTS TO BE SUPPLIED BY INSTALLING CONTRACTOR. HANGING ANGLE IS PRE-PUNCHED AT FACTORY.

**HANGING ANGLE DETAILS**

HOOD STYLE / MODEL	450 DEGREES cfm/ft.	600 DEGREES cfm/ft.	700 DEGREES cfm/ft.
CANOPY ND-2	150	200	250
CANOPY ND-2 W/ END PANELS	105	140	175
SLOPED SND-2	228	294	-
ISLAND ND-2WI	269	300	350
ISLAND ND-2I	346	422	475

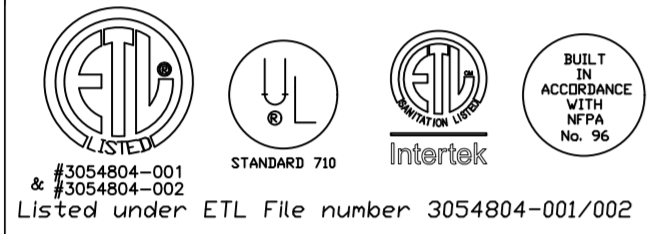
**ETL HOOD LISTING DETAIL**

EXHAUST CFM = LENGTH OF HOOD X CFM/LIN.FT. (LOAD)  
 SUPPLY CFM = EXHAUST CFM X PERCENTAGE REQUIRED  
 TOTAL DUCT AREA (sq. in.) = 144 X  $\frac{CFM}{FPM}$   
 DUCT LENGTH =  $\frac{TOTAL DUCT AREA}{DUCT WIDTH}$

\*CAPTIVEAIRE VENTILATOR DUCT SIZES ARE CALCULATED USING AN EXHAUST VELOCITY OF 1500-1800 FPM AND A SUPPLY VELOCITY OF 1000 FPM.

**CALCULATIONS UTILIZED**

CAPTIVE-AIRE HOODS BUILT IN COMPLIANCE WITH:



Listed under ETL File number 3054804-001/002

**BUILDING CODES**

CAPTIVE-AIRE HOODS HAVE OPTIONAL CLEARANCE REDUCTION SYSTEMS AVAILABLE AS FOLLOWS:

MATERIAL	CLEARANCE REDUCTION SYSTEM
NON-COMBUSTIBLE	NONE REQUIRED
LIMITED-COMBUSTIBLE	3" UNINSULATED STANDOFF
COMBUSTIBLE	1" INSULATED STANDOFF

**CLEARANCE TO COMBUSTIBLES**

**INSTALLATION**

- ALL ELECTRICAL "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY ELECTRICAL CONTRACTORS.
- ALL PLUMBING "FIELD" CONNECTIONS AND RELATED INTERCONNECTIONS BY PLUMBING CONTRACTORS.
- HANGING BRACKETS LOCATED AND WELDED AS SHOWN ON PLANS. ALL OTHER HANGER MATERIALS PROVIDED BY INSTALLING CONTRACTORS.
- ALL CONNECTIONS FROM CAPTIVEAIRE HOOD PER MECHANICAL CONTRACTOR'S PLANS.
- COOKING EQUIPMENT TO SHUT OFF IN EVENT OF FIRE.
- EXHAUST FANS TO TURN ON IN EVENT OF FIRE.
- ALL LIGHT FIXTURES SHOWN INSTALLED BY CAPTIVEAIRE ARE FACTORY PREWIRED. INTERCONNECTIONS BETWEEN HOODS AND TO SWITCHES ARE BY ELECTRICAL CONTRACTOR.
- LAMPS FOR LIGHT FIXTURES BY INSTALLING CONTRACTORS.
- SEISMIC RESTRAINTS ARE RESPONSIBILITY OF INSTALLING CONTRACTOR.
- INSTALLING CONTRACTORS ASSUME ALL RELATED RESPONSIBILITY FOR VERIFICATION OF DIMENSIONAL DATA CONTAINED ON THESE DOCUMENTS FOR ACCURACY, INTEGRATION, AND ADMINISTRATION OF CODE REQUIREMENTS IN EFFECT PRIOR TO ANY RELEASE FOR PRODUCTION OF EQUIPMENT SHOWN.

**BALANCE**

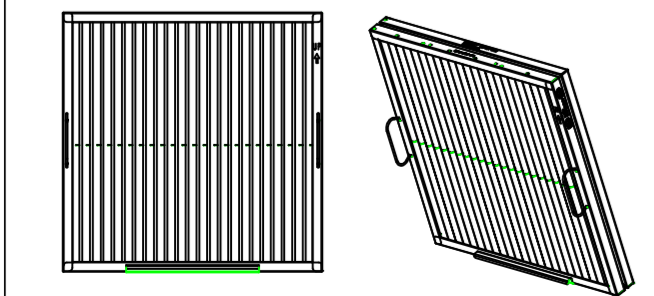
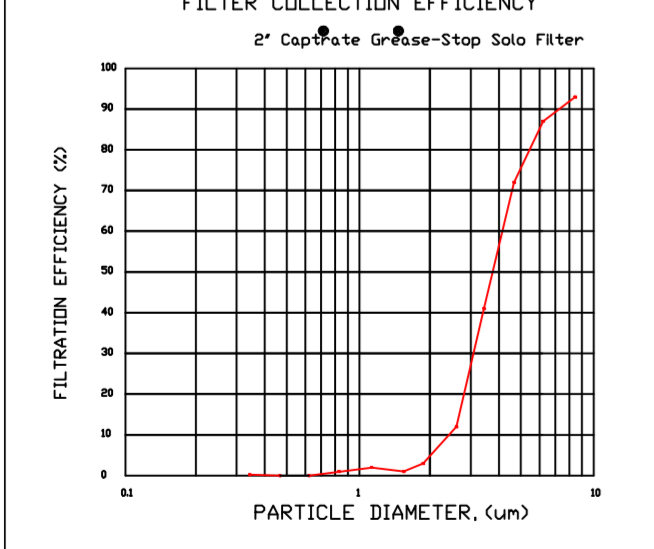
- KITCHEN HOODS MUST BE BALANCED WITH KITCHEN.
- KITCHEN SHALL BE NEGATIVE WITH RESPECT TO DINING AREA.
- RESTAURANT SHALL BE POSITIVE WITH RESPECT TO AMBIENT PRESSURE.

**ADDITIONAL**

- WRITTEN HOOD DIMENSIONS HAVE PRECEDENCE OVER SCALE.
- SIGNED AND "APPROVED" COPIES OF THIS DOCUMENT MUST BE RECEIVED BY THE FACTORY PRIOR TO COMMENCEMENT OF FABRICATION.

**GENERAL NOTES**

FILTER COLLECTION EFFICIENCY



CaptiveAire Captrate Solo Filter  
 ETL Listed Grease Extracting Filter  
 Made From 430 Stainless Steel

**FILTER DETAIL**

**HOOD INFORMATION - JOB#6238165**

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)						MUA CFM	AC CFM	HOOD CONSTRUCTION	HOOD CONFIG		
										WIDTH	LENG	HEIGHT	DIA	CFM	VEL				SP	END TO END	ROW
1	33	6030 ND-2-ACPSP-F	CAPTIVEAIRE	10' 7"	600 DEG	I	HEAVY	225	2381			4'	16'	2381	1705	-0.825"	1976	728	430 SS WHERE EXPOSED	ALONE	ALONE

**HOOD INFORMATION**

HOOD NO	TAG	FILTER(S)				LIGHT(S)			UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT			
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM			SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY
1	33	CAPTRATE SOLD FILTER	7	20"	16"	85% SEE FILTER SPEC	4	L55 SERIES E26	ND	RIGHT	12"x60"x30"	TANK FS	4.0/4.0	DCV-1111	1 LIGHT 1 FAN	YES	1138 LBS

**HOOD OPTIONS**

HOOD NO	TAG	OPTION
1	33	FIELD WRAPPER 10.00' HIGH FRONT, LEFT, RIGHT. LEFT END STANDOFF (FINISHED) 1' WIDE 60' LONG INSULATED. RIGHT VERTICAL END PANEL 27' TOP WIDTH, 21' BOTTOM WIDTH, 80' HIGH INSULATED 430 SS. LEFT WALL AS END PANEL.

**PERFORATED SUPPLY PLENUM(S)**

HOOD NO	TAG	POS	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG	DIA	CFM	SP
1	33	Front	140'	24'	6'	MUA	12"	28"		658	0.165"
						MUA	12"	28"		658	0.165"
						AC	6"	28"		364	0.090"
						AC	6"	28"		364	0.090"

**GREASE DUCT & CHIMNEY SPECIFICATIONS:**  
 PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.  
 PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.  
 IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

**HVAC DISTRIBUTION NOTE**  
 IT IS RECOMMENDED NOT TO INSTALL HIGH VELOCITY DIFFUSERS OR HVAC RETURNS WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

**EXHAUST HOOD DETAILS**

**VERIFY CEILING HEIGHT**

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

**CUSTOMER APPROVAL TO MANUFACTURE:**

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

SIGNATURE \_\_\_\_\_

Your Title \_\_\_\_\_ Date \_\_\_\_\_

**REVISIONS**

DESCRIPTION	DATE

**CAPTIVEAIRE**

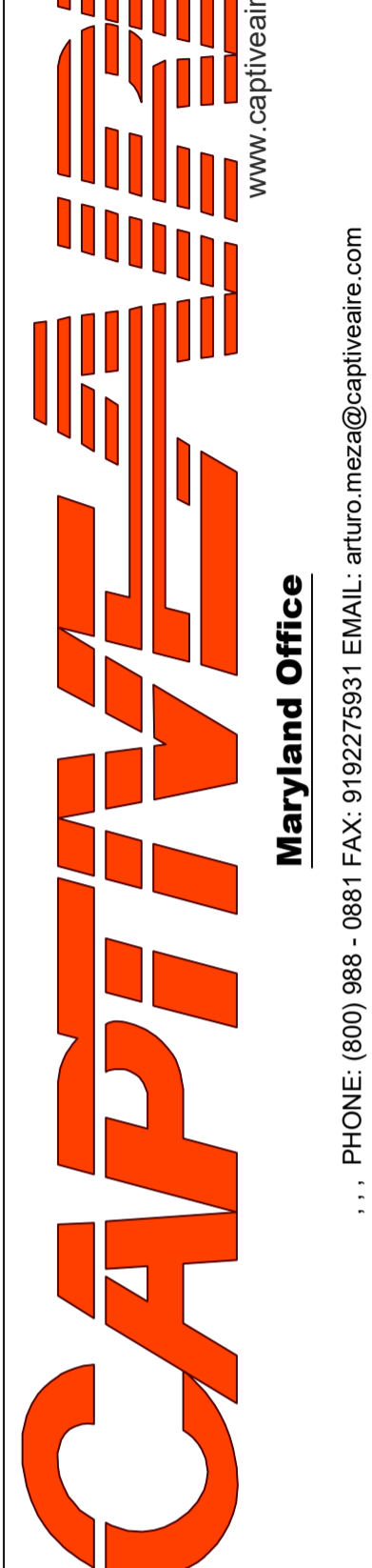
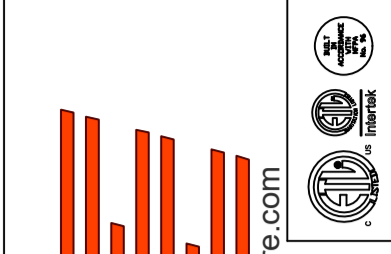
Maryland Office  
 PHONE: (800) 988-0881 FAX: 9192275931 EMAIL: arturo.mez@captivaire.com

CAVA - Burbank, CA  
 1787 North Victory Place,  
 Burbank, CA, 91502

DATE: 9/25/2023  
 DWG.#: 6238165  
 DRAWN BY: AM-32  
 SCALE: NTS  
 MASTER DRAWING

**SHEET NO.**  
 1

REVISIONS	
DESCRIPTION	DATE



CAVA - Burbank, CA  
 1787 North Victory Place,  
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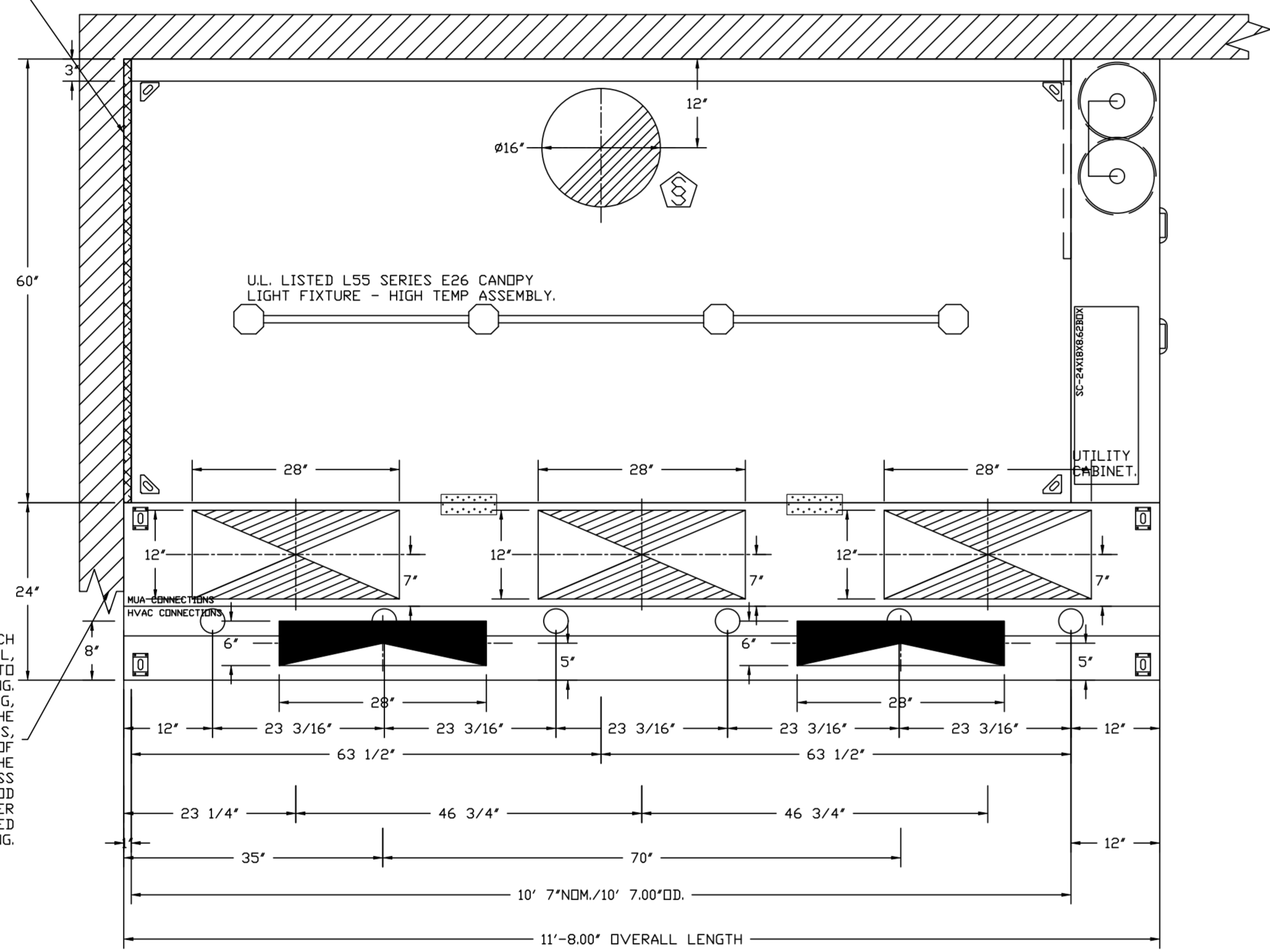
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SHEET NO.  
2

Maryland Office  
 PHONE: (800) 988-0881 FAX: 9192275931 EMAIL: arturo.mez@captivair.com

1" LAYER OF INSULATION  
 FACTORY INSTALLED IN  
 1.00" END STANDOFF MEETS  
 0" REQUIREMENTS CLEARANCE  
 TO COMBUSTIBLE SURFACES.

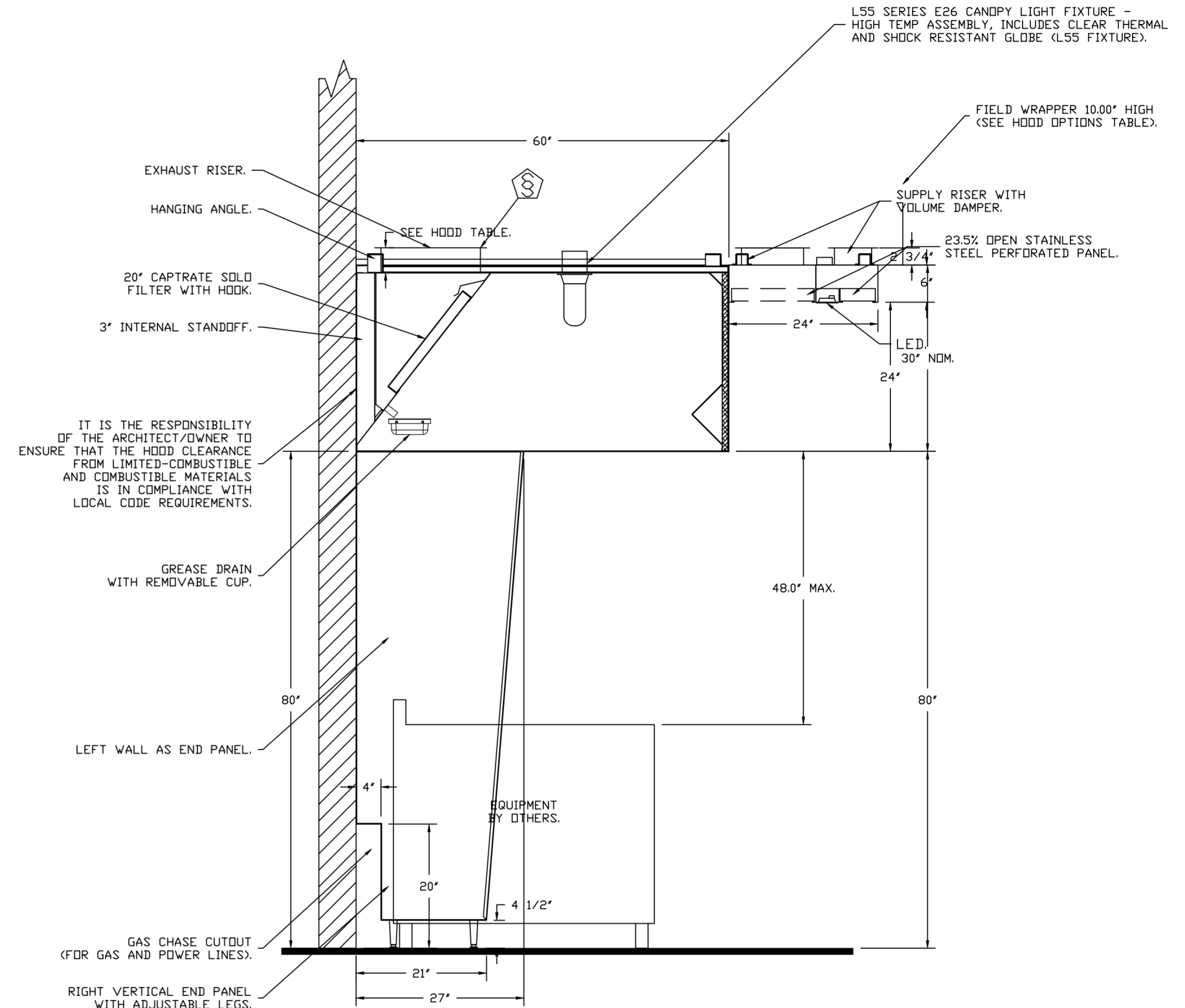


PLAN VIEW - HOOD #1 (33)  
 10' 7.00" LONG 6030ND-2-ACPSP-F

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

INSTALLER MUST CONFIRM HOOD IS INSTALLED SUCH  
 THAT THE SPECIFIED WALL, ACTING AS AN END PANEL,  
 IS MATED TIGHT TO THE CORRECT END OF HOOD TO  
 ACHIEVE A REDUCED MINIMUM EXHAUST CFM LISTING.  
 NON-COMPLIANCE WILL NULLIFY THE ETL LISTING,  
 VOID THE MANUFACTURER'S WARRANTY, AND HOLD THE  
 CONTRACTOR LIABLE FOR ANY AND ALL LOSSES, COSTS,  
 AND EXPENSES RELATED TO THE NON-COMFORMANCE OF  
 THE MANUFACTURER'S SPECIFIED INSTRUCTION. THE  
 WALL, ACTING AS AN END PANEL, MUST EXTEND NO LESS  
 THAN 20" FROM THE INTERSECTING WALL ON WHICH HOOD  
 IS MOUNTED AND MUST EXTEND NO LESS THAN 20" UNDER  
 BOTTOM OF HOOD TO BE ELIGIBLE FOR REDUCED  
 MINIMUM EXHAUST CFM LISTING.

LIGHTING FOR ACPSP JOB # 6238165 - HOOD #1  
 INPUT: 120V AC, 1 PHASE, 50/60HZ, 3.5 WATTS PER LIGHT.  
 TO CONTROL LIGHTS WITH HOOD LIGHT SWITCH, WIRE PER  
 HOOD ELECTRICAL CONTROL PANEL SCHEMATIC.  
 TO CONTROL LIGHTS WITH BUILDING LIGHT SWITCH, WIRE  
 BLACK AND WHITE WIRE TO A 120VAC SERVICE.  
 END TO END ACPSPS REQUIRE 120VAC FIELD WIRING FROM  
 J-BOX TO J-BOX. REPLACE LIGHTS WITH LED LIGHTS ONLY.



SECTION VIEW - MODEL 6030ND-2-ACPSP-F  
 HOOD - #1 (33)

**FIRE SYSTEM INFORMATION - JOB#6238165**

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1	33A	TANK FS	4.0/4.0	37	FIRE CABINET RIGHT	RIGHT, HOOD 1

**NOTES**

- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- DL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 6238165.

JOB NAME: CAVA - BURBANK, CA.

SYSTEM SIZE: TANK-SP-2 TOTAL FP REQUIRED: 37.

HOOD # 1 10' 7.00" LONG x 60" WIDE x 30" HIGH.

RISER # 1 SIZE: 16" DIA.

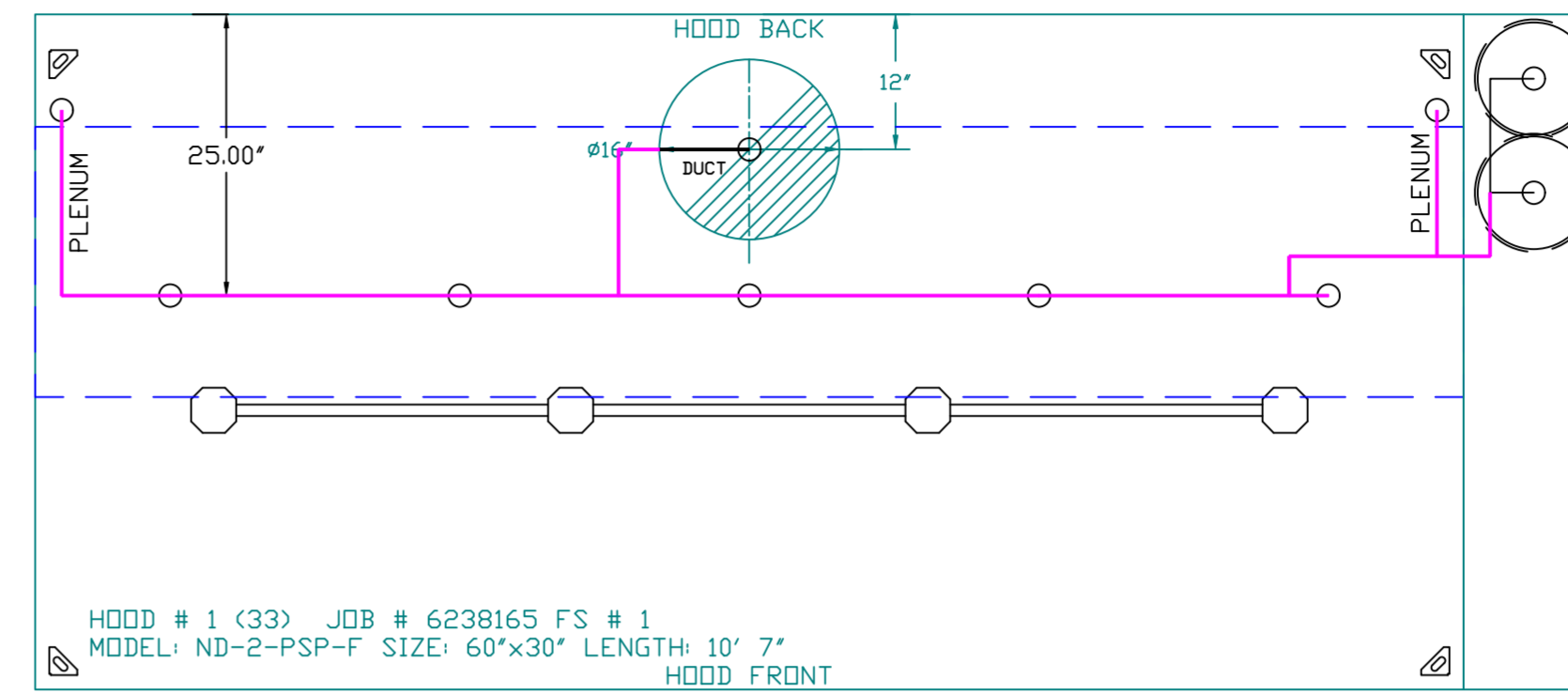
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

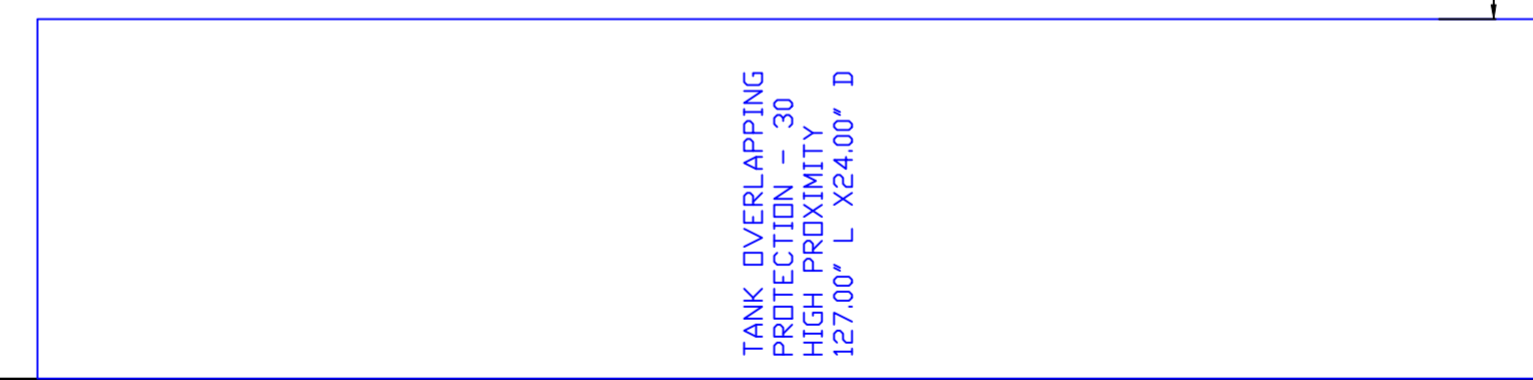
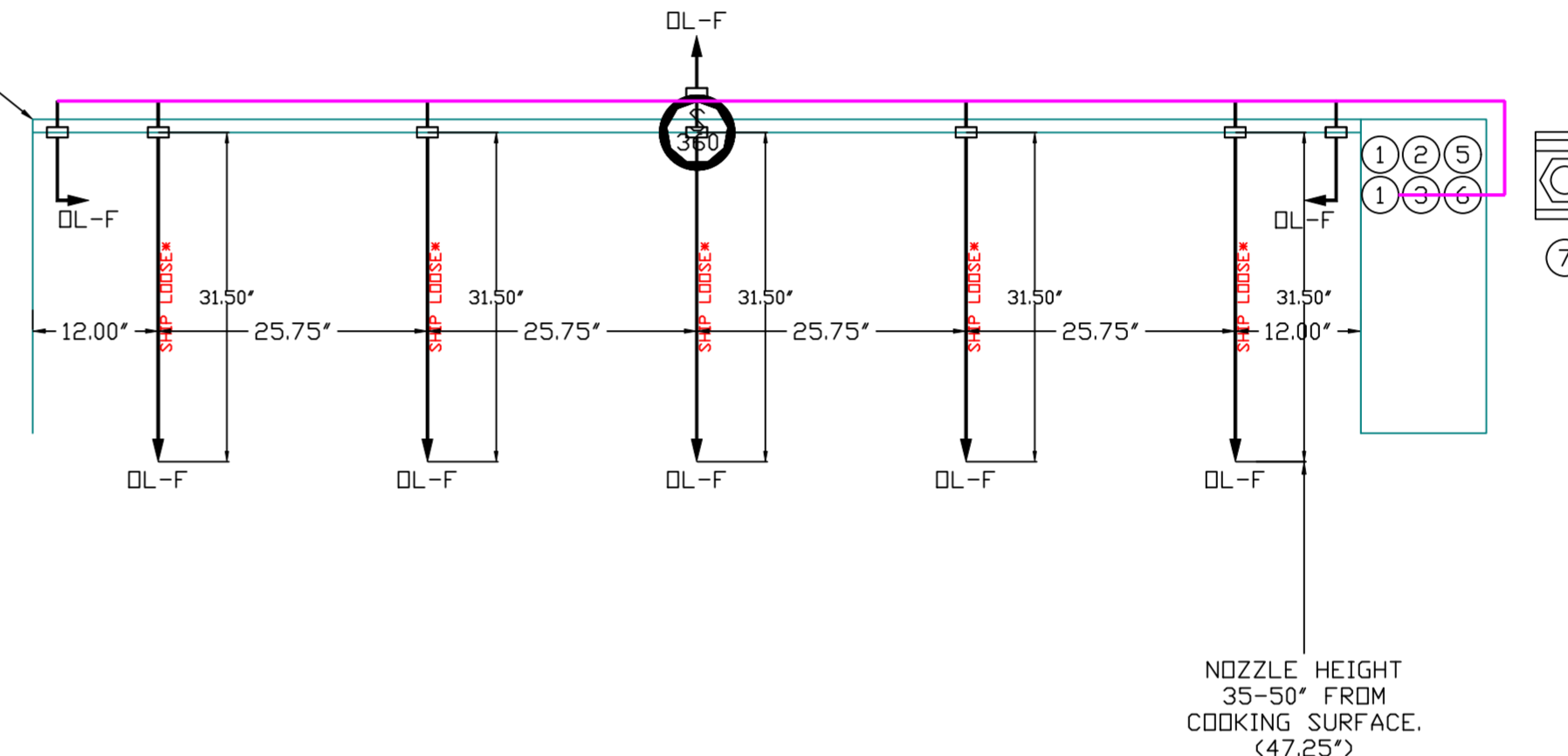
**LEGEND - FIRE CABINET TANK SYSTEM**

- 1 4 GALLON TANK.
- 2 PRIMARY ACTUATOR RELEASE.
- 3 SECONDARY ACTUATOR RELEASE.
- 4 PRESSURE SUPERVISION SWITCH.
- 5 PRIMARY HOSE ASSEMBLY.
- 6 SECONDARY HOSE ASSEMBLY.
- 7 REMOTE MANUAL ACTUATION DEVICE.

SYSTEM REQUIRES A MINIMUM OF 7 FT. OF EQUIVALENT PIPE LENGTH BETWEEN TANK AND NEAREST APPLIANCE NOZZLE FOR MOST APPLIANCES. EACH 90 DEGREE ELBOW ADDS 1.3 FT. OF EQUIVALENT LENGTH. SEE MANUAL FOR DETAILS



FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.



NOZZLE HEIGHT 35-50" FROM COOKING SURFACE. (47.25")

CUSTOMER APPROVAL TO MANUFACTURE:	
Approved as Noted	<input type="checkbox"/>
Approved with NO Exception Taken	<input type="checkbox"/>
Revise and Resubmit	<input type="checkbox"/>
SIGNATURE _____	
Your Title _____	Date _____

VERIFY MAKE/MODEL OF ALL COOKING APPLIANCES BENEATH HOOD PRIOR TO FABRICATION. CHANGES TO COOKING EQUIPMENT SPECIFICATION MAY RESULT IN ADDITIONAL FIRE SUPPRESSION SYSTEM INSTALLATION CHARGES.

**SPECIFICATIONS**

**ELECTRIC WET CHEMICAL (CAS-EWC) SPECIFICATION**

THE CORE ELECTRIC WET CHEMICAL (EWC) FIRE SUPPRESSION SYSTEM IS A HYBRID FIRE SUPPRESSION SYSTEM FOR USE IN COMMERCIAL KITCHENS.

THE CORE EWC MICROPROCESSOR-BASED CONTROL BOARD, PCBCORE BOARD, IS ETL LISTED UNDER REPORT NUMBER 101196419NYM-001 TO THE UL STANDARD 864 AND CAN/ULC-S527-11. THE COREPCB IS DESIGNED TO CONTROL A 24VDC-BASED, LISTED UL 300 WET CHEMICAL RESTAURANT FIRE SUPPRESSION SYSTEM. THE COREPCB CONTROLS PROVIDE ALL NECESSARY MONITORING, TIMING AND SUPERVISION FUNCTIONS REQUIRED FOR THE RELIABLE OPERATION OF THE WET CHEMICAL FIRE SUPPRESSION SYSTEM. ALL DEVICES THAT ARE CRITICAL FOR PROPER OPERATION ARE SUPERVISED AND INCLUDE AN ELECTRIC THERMAL DETECTOR(S) AND MANUAL PULL STATION(S)/MANUAL ACTUATION DEVICE(S). THE COREPCB CONTROL BOARD ALSO SUPERVISES FAULTS WITHIN THE SYSTEM AND WILL ALERT THE USER OF SPECIFIC CONDITION.

THE SYSTEM IS CAPABLE OF AUTOMATIC DETECTION AND ACTIVATION AND/OR REMOTE MANUAL ACTIVATION. THE DETECTION PORTION OF THE FIRE SUPPRESSION SYSTEM ALLOWS FOR AUTOMATIC DETECTION BY MEANS OF AN ELECTRIC THERMAL DETECTOR(S) LOCATED IN THE HOOD DUCT CONNECTION(S). A PULL STATION/MANUAL ACTUATION DEVICE IS ALSO PROVIDED TO ALLOW FOR MANUAL ACTIVATION OF THE FIRE SYSTEM.

WITH THE ELECTRIC THERMAL DETECTION, A BATTERY BACKUP SYSTEM IS PROVIDED. THE BACKUP BATTERY SYSTEM POWERS THE COREPCB BOARD CONTROLS INCLUDING THE AUTOMATIC DETECTION, PULL STATION/MANUAL ACTUATION DEVICE CIRCUITS, AS WELL AS SUPERVISES THOSE DEVICES AND ANY AUXILIARY SUPERVISORY EQUIPMENT IN THE EVENT OF A LOSS OF POWER TO THE BUILDING.

UPON A FIRE CONDITION, THE ELECTRIC THERMAL DETECTOR CONTACTS WILL CLOSE AND SEND A SUPERVISED SIGNAL TO THE COREPCB BOARD. THE COREPCB BOARD THEN SENDS A SIGNAL TO THE 24VDC REGULATED RELEASE SOLENOID, WHICH WILL SIGNAL PRESSURIZED AGENT TAKES TO PROPEL THE WET CHEMICAL AGENT INTO THE DISTRIBUTION LINES TOWARDS THE DISCHARGE NOZZLES.

**FIRE SUPPRESSION SYSTEM DETAILS**

REVISIONS	
DESCRIPTION	DATE

www.captivefire.com

**CAPTIVE FIRE**

Maryland Office

PHONE: (800) 988-0881 FAX: 9192275931 EMAIL: arturo.mez@captivfire.com

CAVA - Burbank, CA  
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SCALE: NTS

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SHEET NO. 3

**EXHAUST FAN INFORMATION - JOB#6238165**

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	KEF-1	1	DUI80HFA	CAPTIVEAIRE	2381	1.250	1107	TEAD-ECM	2.000	1.0330	1	208	15.5	550 FPM	142	12.3

**CONDENSER DETAILS**

FAN UNIT NO	TAG	FAN UNIT MODEL #	CONDENSER NO	TONNAGE	VOLTAGE	PHASE	FREQUENCY	MCA	RLA	MAX FUSE SIZE	MIN WIRE SIZE	SEER
2	MUA-1	A1-D.250-15D-MPU	1	2.5	208-230	3 PHASE	60 HZ	11.2 AMPS	9.07 AMPS	20 AMPS	14 AWG	14
			2	2.5	208-230	3 PHASE	60 HZ	11.2 AMPS	9.07 AMPS	20 AMPS	14 AWG	14

**MUA FAN INFORMATION - JOB#6238165**

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	MCA	MOCP	WEIGHT (LBS)	SDNES
2	MUA-1	1	A1-D.250-15D-MPU	15MF-1-MDD	A1-D.250	1800	1976	0.500	2235	DDP, PREMIUM	3.000	1.7110	3	208	8.6	10.8A	15A	1179	24

**COILS - JOB#6238165**

FAN UNIT NO	TAG	COIL TYPE	DESIGN CFM	COOLING										HEATING										
				ENTERING DB TEMP	ENTERING WB TEMP	LEAVING DB TEMP	LEAVING WB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	TOTAL CAPACITY	SENSIBLE CAPACITY	LATENT CAPACITY	ENTERING DB TEMP	LEAVING DB TEMP	ENTERING FLUID TEMP	LEAVING FLUID TEMP	FLUID FLOW RATE	PERCENT GLYCOL	STEAM PRESSURE	TOTAL CAPACITY	SENSIBLE CAPACITY	
2	MUA-1	DX	1976	95.0°F	68.0°F	73.4°F	60.9°F	---	---	---	---	43.6 MBH	43.6 MBH	0.0 MBH	---	---	---	---	---	---	---	---	---	---

**GAS FIRED MAKE-UP AIR UNIT(S)**

FAN UNIT NO	TAG	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE	BURNER EFFICIENCY(%)
2	MUA-1	74195	68259	33°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

**FAN OPTIONS**

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF-1	1	GREASE BOX
		1	ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION
2	MUA-1	1	2 YEAR PARTS WARRANTY
		1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC
		1	SHIP LOOSE GAS STRAINER 3/4"
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING - MEETS AMCA CLASS 1A RATING
		1	LOW FIRE START
		1	5 TON 2 CIRCUIT (2.5/2.5) MODULAR PACKAGED COOLING OPTION FOR SIZE 1 DF/EH MUA (1,800 TO 3,000 CFM), 208V/230V, 3 PHASE. COOLING THERMOSTAT OR PROGRAMMABLE STAT REQUIRED FOR PROPER OPERATION
		1	DOWNTURN PLENUM FOR SIZE 1 DX COIL MODULE
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY
		1	2 YEAR PARTS WARRANTY

**FAN ACCESSORIES**

FAN UNIT NO	TAG	EXHAUST				SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT	
1	KEF-1	YES							
2	MUA-1						YES		

**CURB ASSEMBLIES**

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF-1	52 LBS	CURB	26.500"W X 26.500"L X 24.000"H VENTED HINGED.
2	# 2	MUA-1	85 LBS	CURB	21.000"W X 71.000"L X 20.000"H INSULATED.
	# 2			RAIL	6.000"W X 21.000"L X 20.000"H.

**CUSTOMER APPROVAL TO MANUFACTURE:**

Approved as Noted

Approved with NO Exception Taken

Revise and Resubmit

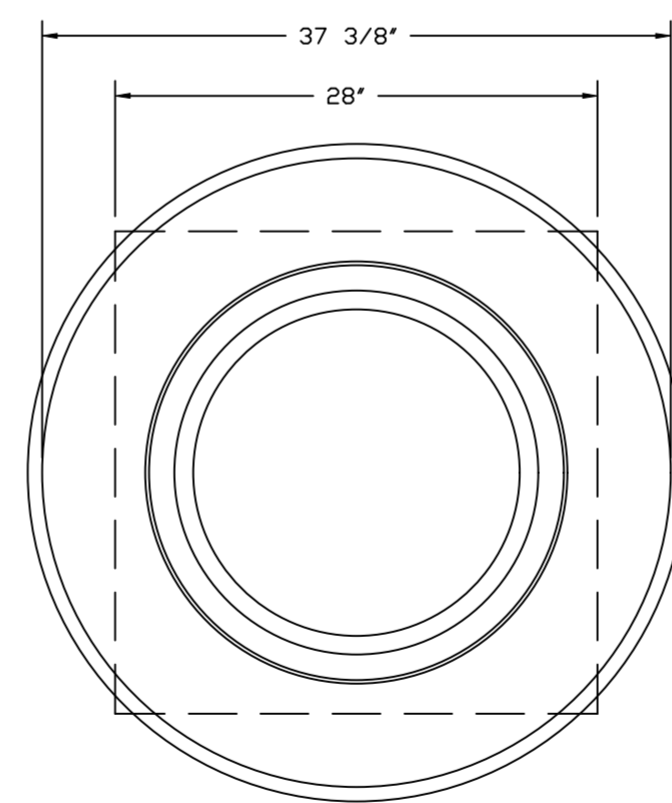
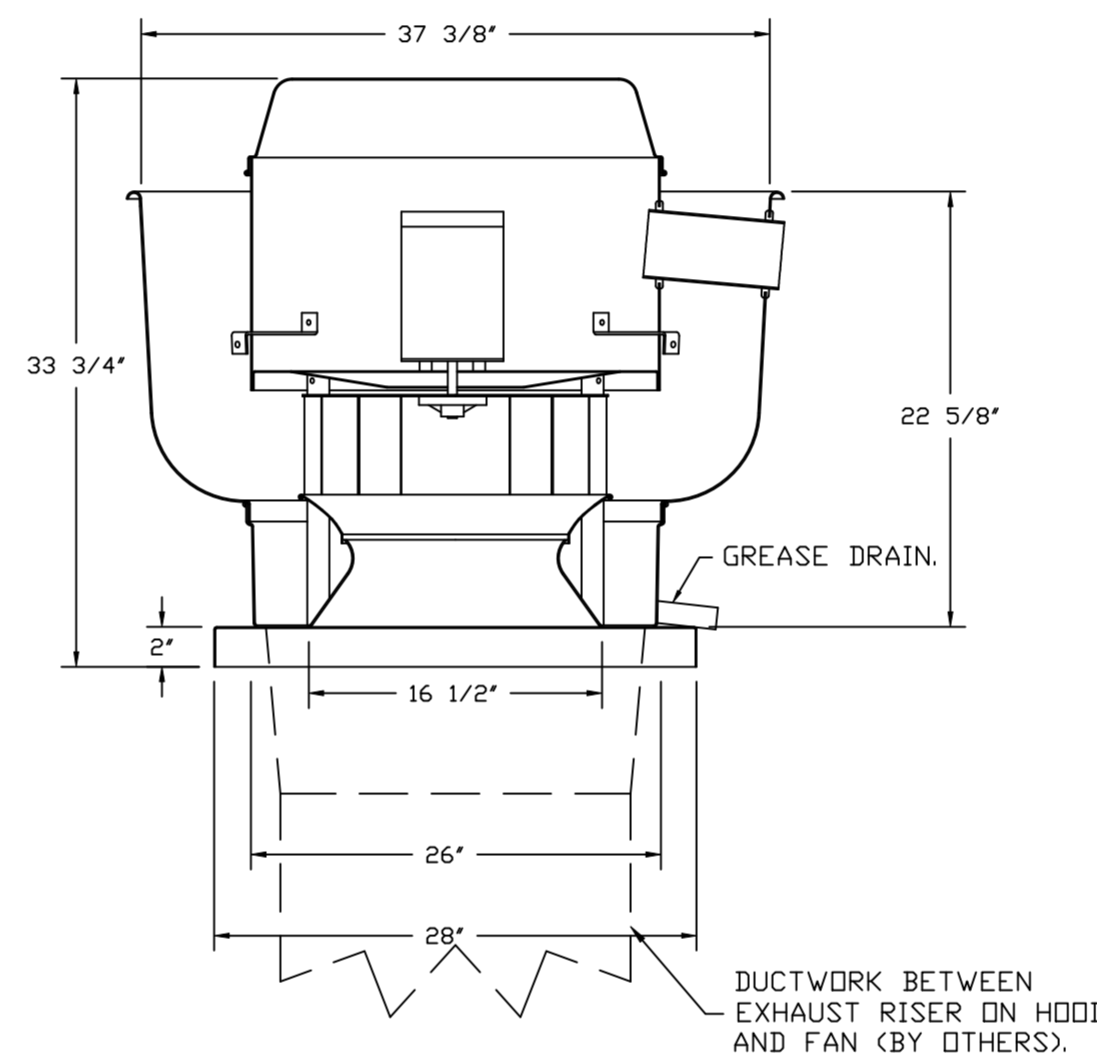
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Your Title \_\_\_\_\_ Date \_\_\_\_\_

**NOTES**

DRAWING CONTAINS IMPORTANT INFORMATION FOR COORDINATION WITH M/E/P ENGINEER

FAN #1 DUI80HFA - EXHAUST FAN (KEF-1)



TOP VIEW

**FEATURES:**

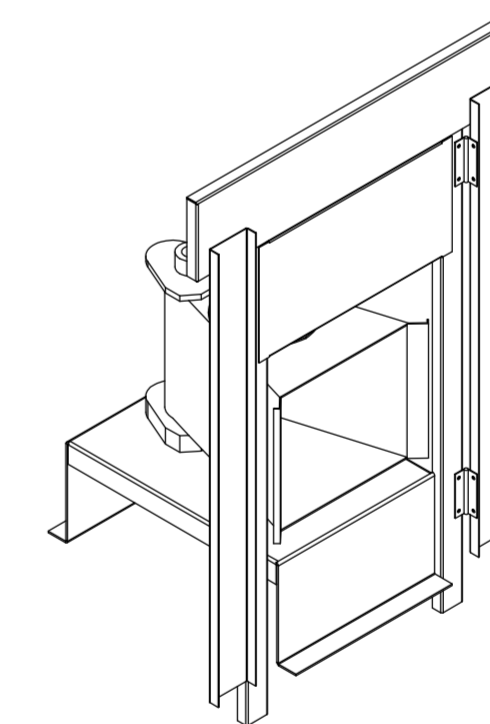
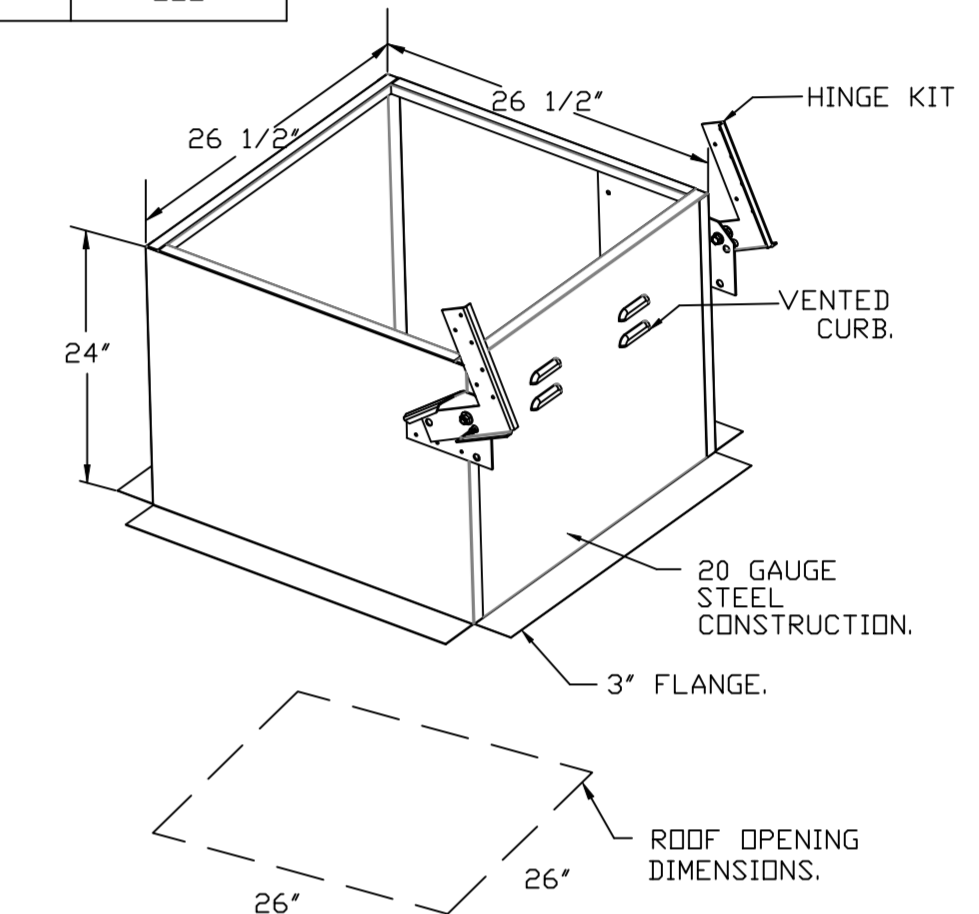
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT 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.
- ECM WIRING PACKAGE - PWM SIGNAL FROM ECPM03 PREWIRE (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

**DIRECT FIRED PROFILE PLATE SPECIFICATIONS:**

**DESCRIPTION:**  
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO: US6629523B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM OF 5PPM OF CARBON MONOXIDE (CO), AND 0.5PPM OF NITROGEN DIOXIDE (NO2/DIRECT FIRED UNITS SHALL BE CONFIGURED WITH THE BLOWER MOUNTED DOWNSTREAM OF THE BURNER. THIS ARRANGEMENT WILL ENSURE A CONSISTENT AIRFLOW, REGARDLESS OF INLET AIR TEMPERATURE.

**APPLICATION:**  
SPRING-LOADED BURNER PROFILE PLATES ARE ENGINEERED TO AUTOMATICALLY REACT TO THE MOMENTUM OF A FRESH AIR STREAM, WITHOUT THE NEED FOR ANY MOTORS OR ACTUATORS TO MECHANICALLY ADJUST THEM. WITH THIS FEATURE, ALL DF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

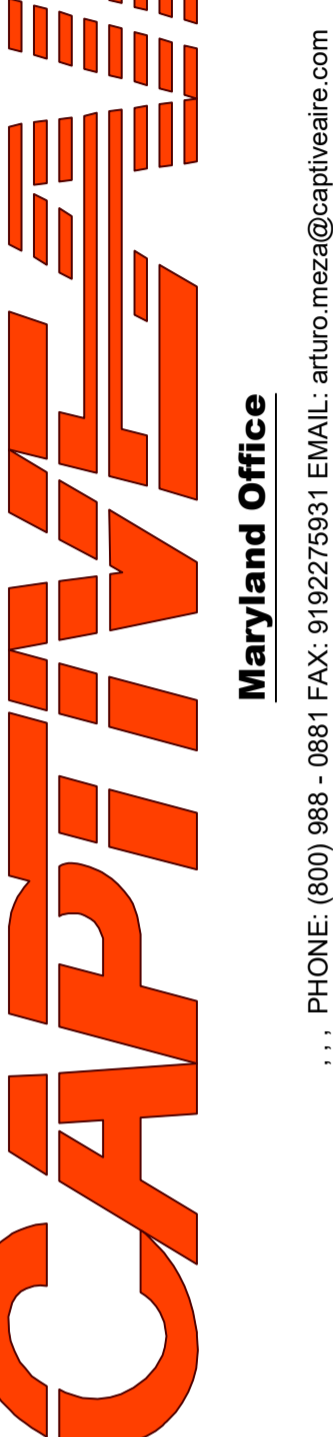
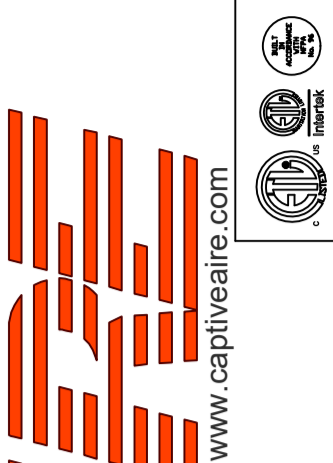
**CERTIFICATIONS:**  
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.8 (RECIRCULATING DF HEATERS).

**GENERAL CONSTRUCTION:**

- PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
- PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
- PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
- DESIGN SHALL INCORPORATE PROPERLY TROUDED, PERMANENTLY MOUNTED SPRING HINGES.
- SPRING HINGES SHALL BE MADE FROM PLATED STEEL.

**REVISIONS**

DESCRIPTION	DATE



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1787 North Victory Place,  
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DATE: 9/25/2023

DWG.#: 6238165

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SCALE: NTS

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SHEET NO. 4

**KITCHEN FAN DETAILS**

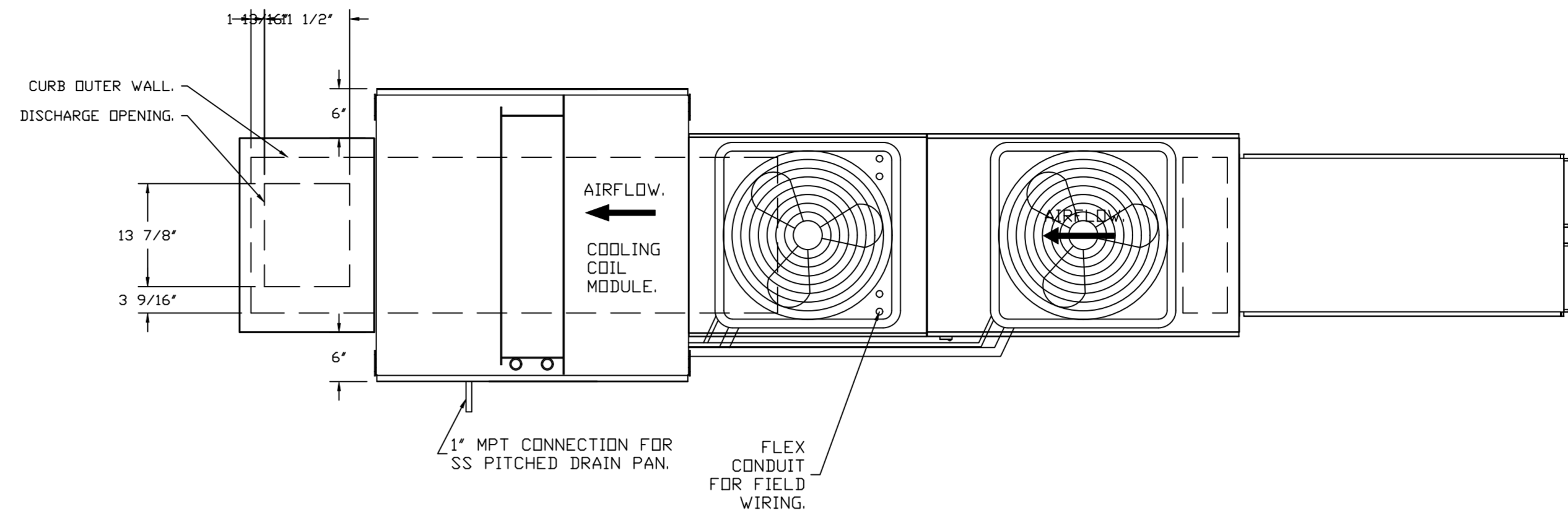
- FAN #2 A1-D250-15D-MPU - HEATER (MUA-1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 15" MIXED FLOW DIRECT DRIVE FAN.
  2. INTAKE HOOD WITH EZ FILTERS.
  3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
  4. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
  5. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
  6. SHIP LODGE GAS STRAINER TO BE INSTALLED UPSTREAM OF UNIT CONNECTION 3/4" CONNECTION.
  7. GASLINK BUILDING MONITORING SYSTEM COMMUNICATIONS MODULE. REQUIRES INTERNET & FIELD WIRED ETHERNET CONNECTION OR 3G CELLULAR SERVICE. INCLUDES REV 3 COMM MODULE, RJ45 TO MODBUS CONVERTER, 3 FT CAT5 CABLE, AND 1 FT OF SHIELDED TWISTED PAIR.
  8. METRIZED BACK DRAFT DAMPER 16" X 19" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, TFB20S ACTUATOR INCLUDED.
  9. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
  10. 5 TON, DUAL CIRCUIT (2S/2S) MODULAR PACKAGED COOLING OPTION FOR SIZE 1 DF/EH MODULAR PACKAGED UNIT. INCLUDES CONDENSER, DX COIL, FILTER/DRYER KIT, THERMAL EXPANSION VALVE, R410A REFRIGERANT, AND REFRIGERANT PIPING (1,800 TO 3,000 CFM) WHEN ORDERED WITH OPPOSITE AIRFLOW CONDENSERS ACCESS AND COIL PIPING WILL REMAIN IN STANDARD POSITION. DRAIN AND SLEDS WILL MOVE TO THE OPPOSITE SIDE. ANY OTHER CHANGE WILL REQUIRE CLT. CONDENSERS REQUIRE SEPARATE 208V, 3 PHASE POWER SUPPLY UNLESS ORDERED WITH SINGLE POINT CONNECTION. COIL = 2E20902ME
  11. DOWNTURN PLENUM FOR SIZE 1 COOLING COIL MODULE - REQUIRED FOR DOWN DISCHARGE COOLING COIL APPLICATIONS.
  12. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
  13. HINGED DOUBLE WALL INSULATED DDDR ASSEMBLY (BURNER/BLOWER/MPU SECTION).
  14. 2 YEAR PARTS WARRANTY

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 14" X 14".

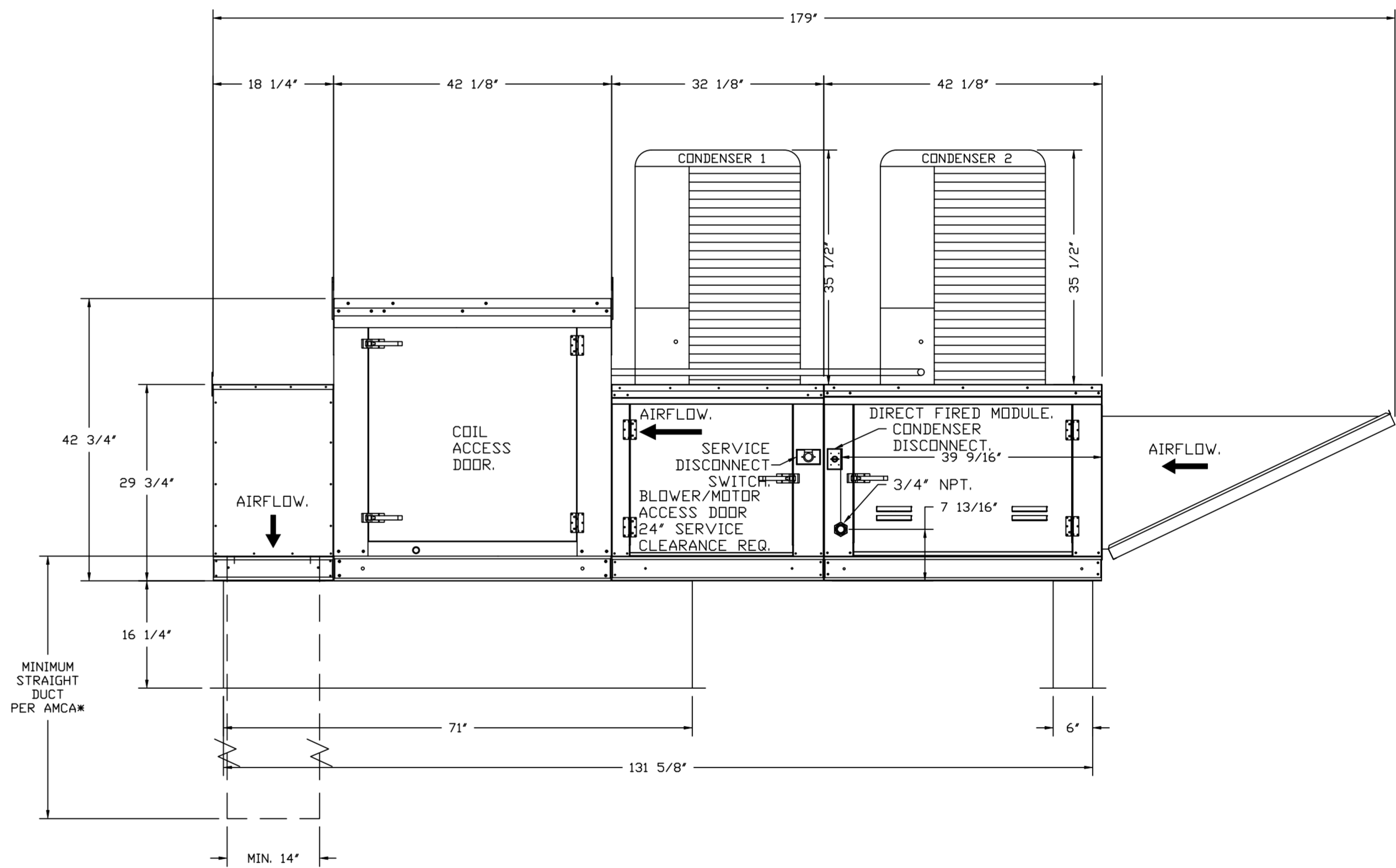
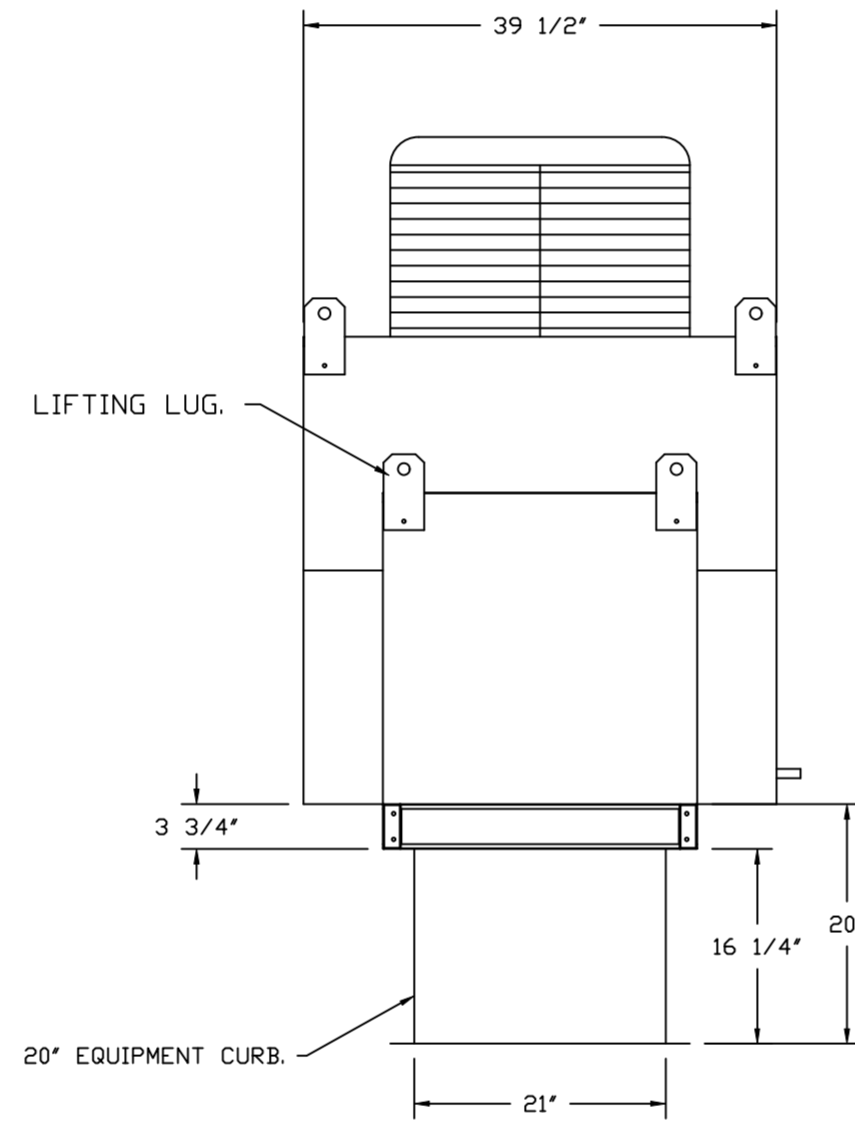
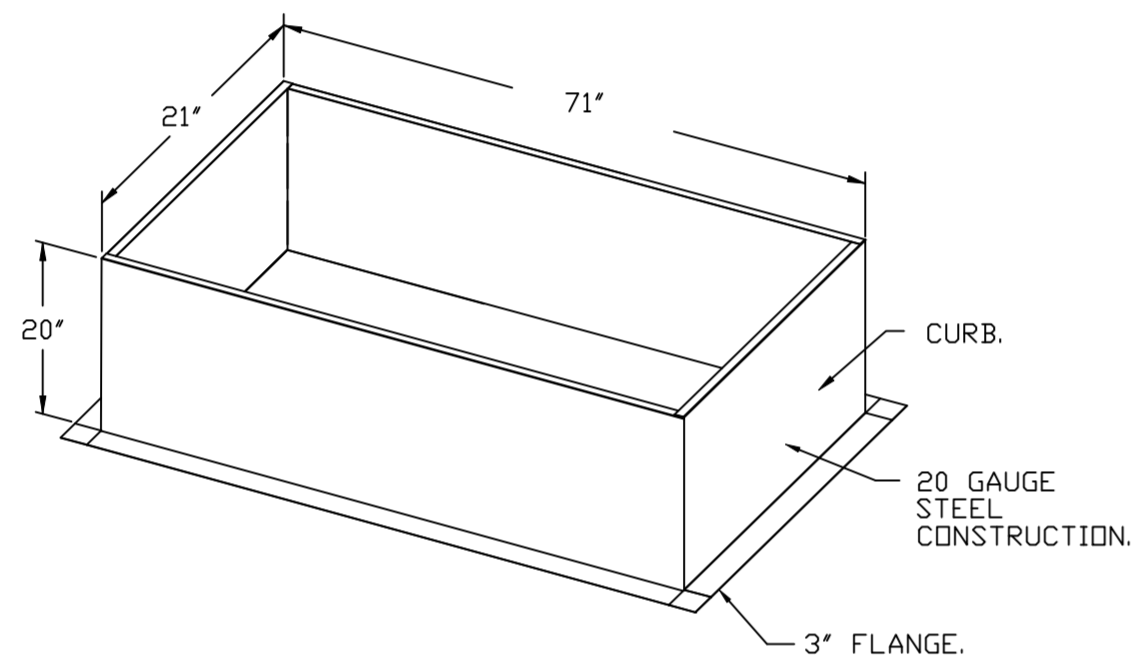


SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 42°F. TEMP. RISE = 33°F.  
 BTUS CALCULATED OFF ACTUAL AIR DENSITY.  
 OUTPUT BTUS AT ALTITUDE OF 00 FT. = 69664.  
 INPUT BTUS AT ALTITUDE OF 00 FT. = 75722.  
 OUTPUT BTUS AT ALTITUDE OF 563 FT. = 68259.  
 INPUT BTUS AT ALTITUDE OF 563 FT. = 74194.



OPTIONS:  
 - FULL BOTTOM CORNERS.



CUSTOMER APPROVAL TO MANUFACTURE:

- Approved as Noted
- Approved with NO Exception Taken
- Revise and Resubmit
- SIGNATURE \_\_\_\_\_
- Your Title \_\_\_\_\_ Date \_\_\_\_\_

NOTES

DRAWING CONTAINS IMPORTANT INFORMATION FOR COORDINATION WITH M/E/P ENGINEER

KITCHEN FAN DETAILS

REVISIONS	
DESCRIPTION	DATE

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CAVA - Burbank, CA  
 1787 North Victory Place,  
 Burbank, CA, 91502

DATE: 9/25/2023

DWG.#: 6238165

DRAWN BY: AM-32

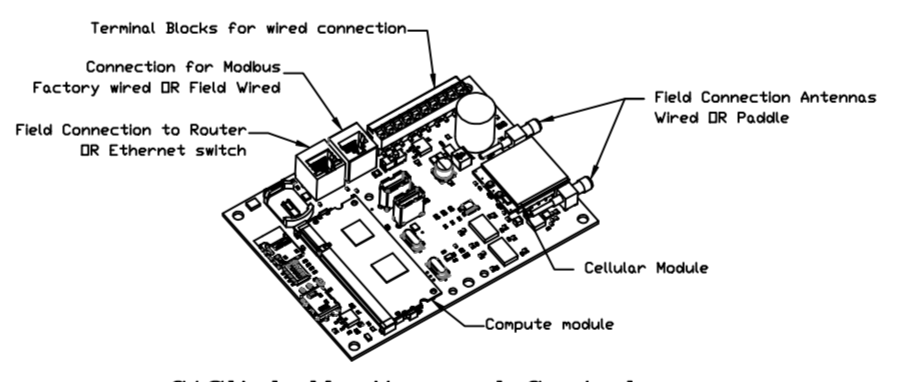
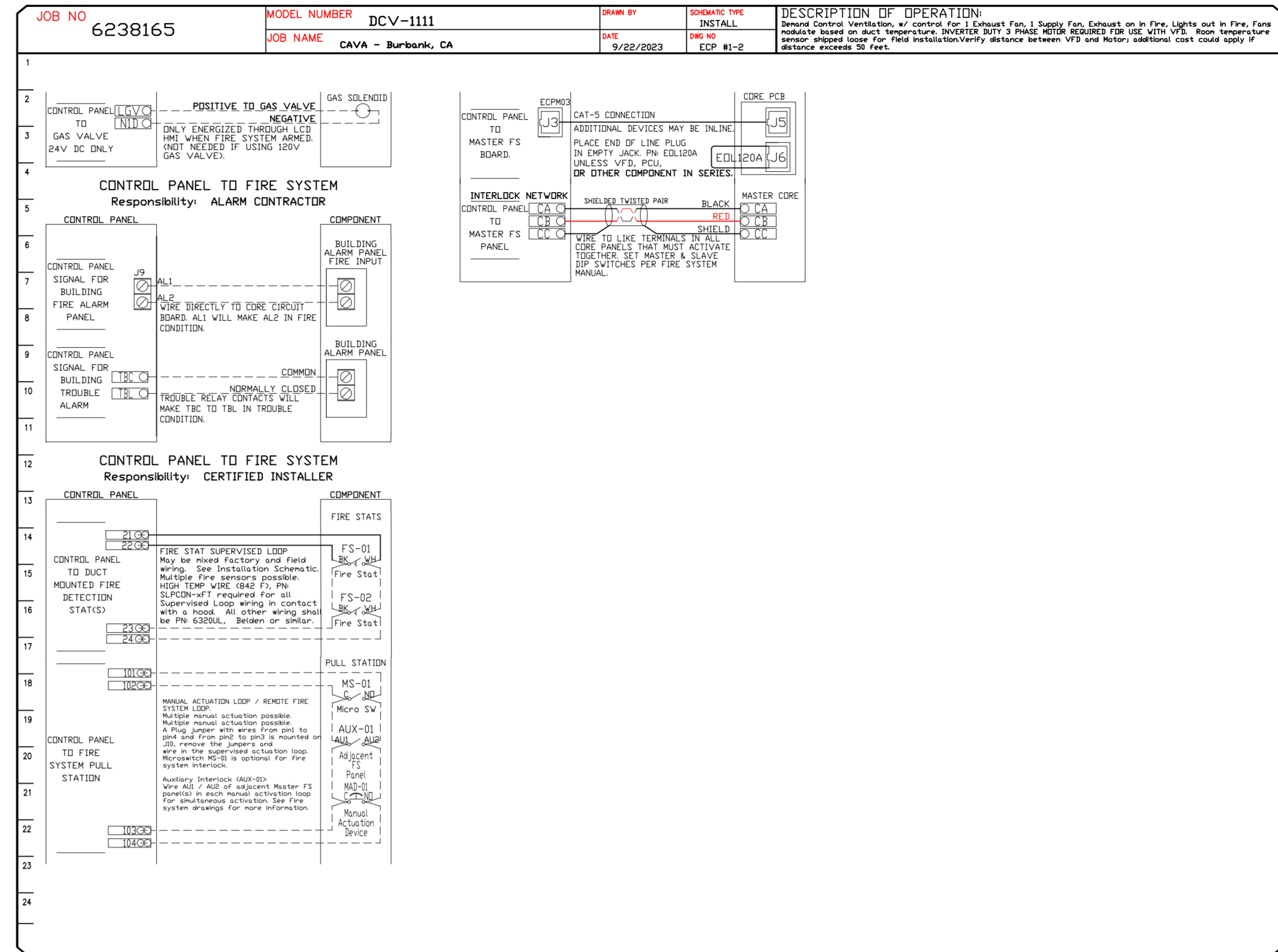
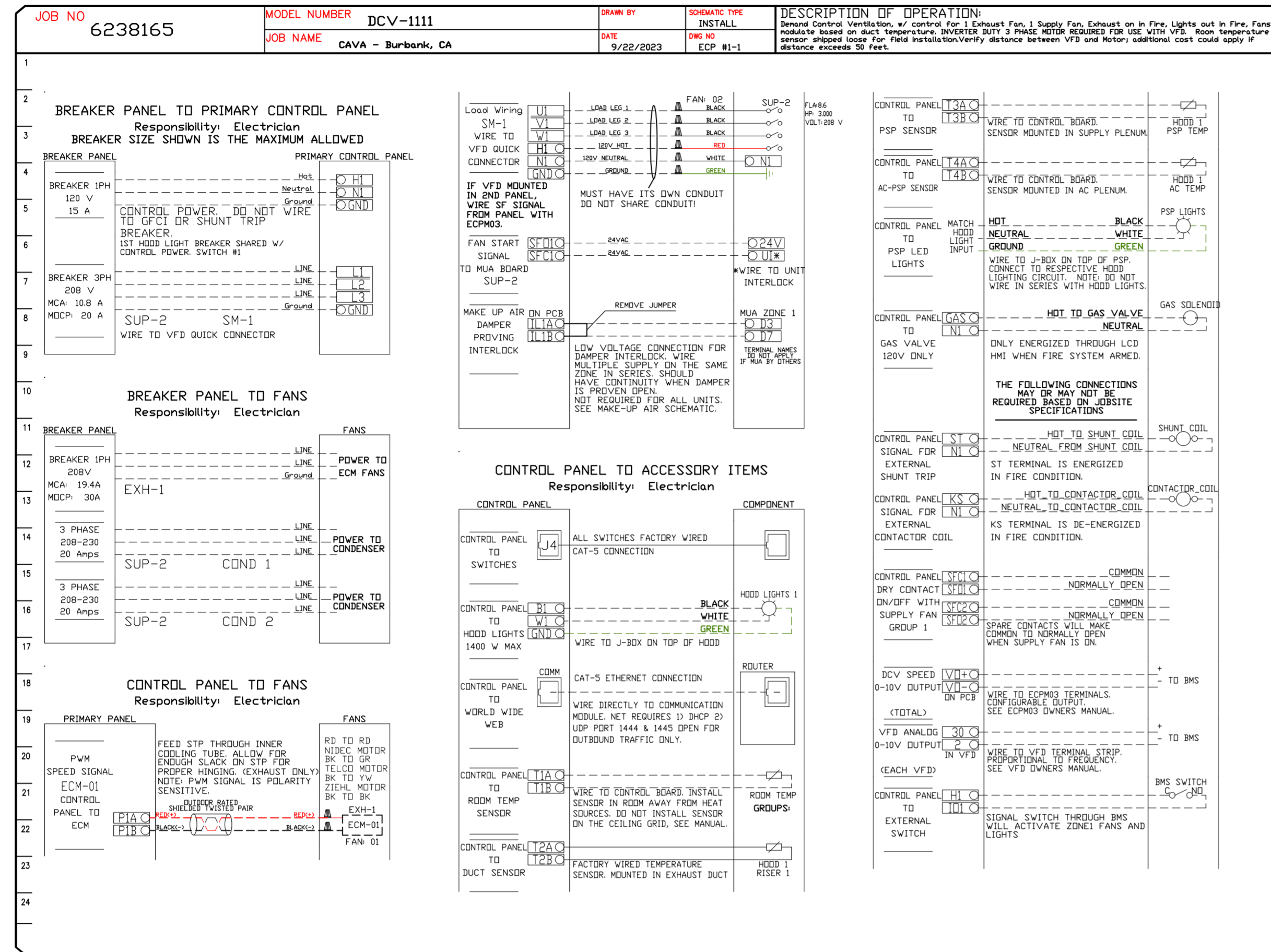
SCALE: NTS

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**ELECTRICAL PACKAGE - JOB#6238165**

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Φ	HP	VOLT	FLA
1		DCV-1111	UTILITY CABINET RIGHT	UTILITY CABINET RIGHT	1 LIGHT	SMART CONTROLS DCV	KEF-1	EXHAUST	1	2,000	208	15.5
				HODD # 1	1 FAN		MUA-1	SUPPLY	3	3,000	208	8.6



**CASlink Monitor and Control**

- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.

**MONITORING AND CONTROL POINTS LIST**

DCV Packages	Function	SC Packages	Function
Room Temperature	MONITOR	Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR	Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR	MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR	Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR	Controller Faults	MONITOR
Fan Amperage	MONITOR	Fan Faults	MONITOR
Fan Power	MONITOR	Fan Status	MONITOR
VFD Faults	MONITOR	PCU Faults	MONITOR
Controller Faults	MONITOR	PCU Filter Clog Percentages	MONITOR
Fan Faults	MONITOR	Pipe Condition	MONITOR
Fan Status	MONITOR	CORE Fire System	MONITOR
PCU Faults	MONITOR	Building Pressures	MONITOR
PCU Filter Clog Percentages	MONITOR	Pana Button(s)	MONITOR & CONTROL
Pipe Condition	MONITOR	Lights Button(s)	MONITOR & CONTROL
CORE Fire System	MONITOR	Flush Button	MONITOR & CONTROL
Building Pressures	MONITOR		
Pana Time Button	MONITOR & CONTROL		
Pana Button	MONITOR & CONTROL		
Lights Button	MONITOR & CONTROL		
Flush Button	MONITOR & CONTROL		

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JOB NO <b>6238165</b>	MODEL NUMBER <b>DCV-1111</b>	DRAWN BY <b>INSTALL</b>	SCHEMATIC TYPE <b>INSTALL</b>	DESCRIPTION OF OPERATION <b>Fire System #1 TANK FS - 40/40 CSMA</b>
JOB NAME <b>CAVA - Burbank, CA</b>		DATE <b>9/22/2023</b>	DWG NO <b>ECP #1-3</b>	

02/10/2021 Rev. 2

## TANK PROTECTION ELECTRICAL DETAIL

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 & NI	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	HI & NI + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & NI	KTS & NI	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	LV & NI (OF 24 VDC) GAS & NI (OF 120 VAC)	RED/RED/GREEN 24 VDC OR 120 VAC	24 VDC OR 120 VAC	< 10 AMPS	IF 24 VDC - 2 WIRES & GROUND, NI TO RED, LV TO RED, AND GREEN TO GROUND IF 120 VAC - 2 WIRES & GROUND, GAS TO RED, NI TO RED, AND GREEN TO GROUND

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

JOB NO <b>6238165</b>	MODEL NUMBER <b>DCV-1111</b>	DRAWN BY <b>INSTALL</b>	SCHEMATIC TYPE <b>INSTALL</b>	DESCRIPTION OF OPERATION <b>Fire System #1 TANK FS - 40/40 CSMA</b>
JOB NAME <b>CAVA - Burbank, CA</b>		DATE <b>9/22/2023</b>	DWG NO <b>ECP #1-4</b>	

02/10/2021 Rev. 2

## TANK PROTECTION LOW-VOLTAGE DETAIL

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 WIRING 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	< 10 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 #11-55518
REMOTE FIRESTAT SENSOR(S)	21 AND 24 23 AND 23	BLACK AND WHITE	24 VDC	< 10 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) #CW0427 (WHT) & #CW0427B (BLK) WIRE (OR SIMILAR ONLY) IS 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, TO CORE SYSTEM (1) ILB, TO CORE SYSTEM (2) ILB, TO CORE SYSTEM (1) ILC, TO CORE SYSTEM (2) ILC, USE BELDEN# 88760 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TDK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSURES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	<10 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER WITH VALID INTERNET CONNECTION

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

JOB NO <b>6238165</b>	MODEL NUMBER <b>DCV-1111</b>	DRAWN BY <b>INSTALL</b>	SCHEMATIC TYPE <b>INSTALL</b>	DESCRIPTION OF OPERATION <b>Fire System #1 TANK FS - 40/40 CSMA</b>
JOB NAME <b>CAVA - Burbank, CA</b>		DATE <b>9/22/2023</b>	DWG NO <b>ECP #1-5</b>	

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## TANK PROTECTION LOW-VOLTAGE FIGURES

FS-1: MASTER

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

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

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