DIVISION 15 SPECIFICATIONS

PART I - GENERAL

1.01 SCOPE

A. IT IS THE RESPONSIBILITY OF CONTRACTOR TO READ ALL SPECIFICATIONS AND CONSULT ALL DRAWINGS WHICH MAY AFFECT THE INSTALLATION AND COORDINATION OF WORK WITH OTHER TRADES. CONTRACTOR SHALL COORDINATE AND MAKE MINOR ADJUSTMENTS IN LOCATION OF EQUIPMENT AND MATERIALS AS NECESSARY FOR COORDINATION.

B. COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.

C. SYSTEM LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY STRUCTURAL CONDITIONS, COORDINATION WITH OTHER TRADES, COORDINATION WITH FINISHES AND OTHER CONDITIONS. STRUCTURAL SUPPORTS SHALL NOT BE CUT OR ALTERED TO ASSURE FIT OF HVAC SYSTEM. TEN FOOT CLEARANCE SHALL BE MAINTAINED BETWEEN OUTSIDE AIR INTAKES AND EXHAUST FANS AND PLUMBING VENT TERMINALS.

D. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFECTS, REPAIRS AND REPLACEMENTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER FINAL PAYMENT IS APPROVED. CONTRACTOR SHALL HONOR FACTORY WARRANTIES ON ALL EQUIPMENT PROVIDED AS PART OF THIS SYSTEM.

E. UPON COMPLETION OF PROJECT, ALL SYSTEM EQUIPMENT AND MATERIALS SHALL BE IN NEW, CLEAN CONDITION WITH ALL DAMAGE RESTORED TO CONDITION ACCEPTABLE TO THE OWNERS REPRESENTATIVE. ALL EQUIPMENT, COMPONENTS, DUCTWORK AND AIR DEVICES SHALL BE INSPECTED AND THOROUGHLY CLEANED, CLEARED OF DEBRIS, AND READY FOR USE. AT COMPLETION OF JOB, ALL MISCELLANEOUS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, RUBBISH AND DEBRIS SHALL BE REMOVED BY CONTRACTOR.

F. CONTRACTOR SHALL PROVIDE TWO SETS OF 2" MERV 8 OR HIGHER THROW AWAY TYPE FILTERS. A CLEAN SET SHALL BE PROVIDED PRIOR TO TEST AND BALANCE AND AGAIN PRIOR TO OPENING.

PART II - PRODUCTS

2.01 HEATING AND COOLING EQUIPMENT

A. FURNISH AND INSTALL R-410A ROOFTOP SINGLE PACKAGE COMBINATION ELECTRIC COOLING AND NATURAL GAS FIRED HEATING UNITS AS SHOWN ON DRAWINGS. EQUIPMENT SHALL BE ARI CERTIFIED AND A.G.A. AND U.L. LISTED.

B. ACCESSORIES SHALL INCLUDE LOW AND HIGH PRESSURE SAFETIES, CRANK CASE HEATER, OVERCURRENT AND OVERTEMPERATURE SAFETY, COMPRESSOR VIBRATION ISOLATORS, FILTER DRIERS, REFRIGERANT SERVICE VALVES, COIL HAIL GUARDS WHERE SCHEDULED, CONVENIENCE OUTLETS FACTORY INSTALLED ON SCHEDULED UNITS, UNIT MOUNTED NON-FUSED DISCONNECTS, LOW AMBIENT OPERATION DOWN TO 30 DEGREES F AND EVAPORATOR FREEZE STAT.

C. COMPRESSORS SHALL BE HERMETIC SCROLL TYPE WITH INTERNAL VIBRATION ISOLATORS. COMPRESSORS SHALL BE PROVIDED WITH A MINIMUM FIVE (5) YEAR FULL WARRANTY.

D. THE UNIT HEAT EXCHANGERS SHALL BE ALUMINIZED STEEL COATING. HEATING CONTROLS SHALL CONSIST OF REDUNDANT GAS VALVES, INTERMITTENT PILOT WITH ELECTRONIC SPARK OR HOT PLATE IGNITION SYSTEM, COMBUSTION/EXHAUST FAN PROTECTED BY CENTRIFUGAL SWITCHES, HEAT LIMIT SWITCHES, TIME-DELAY RELAY, FLAME, AND PILOT SENSORS. HEAT EXCHANGERS SHALL HAVE A TEN (10) YEAR WARRANTY. BURNERS SHALL BE IN-SHOT TYPE. THE DRAFT MOTOR SHALL BE MONITORED BY THE CONTROL SYSTEM.

2.02 DUCTWORK (C15735)

A. ACCEPTABLE MANUFACTURERS OF INSULATION SHALL BE: JOHNS MANVILLE, OWENS CORNING OR KNAUF.

B. ALL DUCTWORK SHALL BE SHEET METAL, UNLESS NOTED OTHERWISE (U.N.O.).

C. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS, U.N.O.

D. CONSTRUCTION OF DUCTWORK SHALL MEET SMACNA 1" W.C. PRESSURE CLASS STANDARD AND RECOMMENDATIONS. SMACNA SHALL BE FOLLOWED WITH RESPECT TO GAGE THICKNESS, JOINTS, REINFORCING, CONSTRUCTION, INSTALLATION AND SUPPORT FOR PRESSURE CLASS STATED. ALL TRANSVERSE JOINTS IN RECTANGULAR AND ROUND DUCT INCLUDING DUCT CONNECTION TO AIR DEVICE COLLAR SHALL BE SEALED PER SMACNA SEAL CLASS C WITH U.L. DUCT MASTIC SEALANT APPROVED FOR INTENDED USE. DUCT TAPE IS NOT AN ACCEPTABLE SUBSTITUTE FOR MASTIC UNLESS EQUAL TO HARDCAST FOIL-GRIP 1402 BUTYL RUBBER ADHESIVE TAPE.

E. DUCT SHALL BE SUPPORTED AT BASE OF DUCT DROPS. CURB DUCT RAILS ARE NOT INTENDED TO AND SHALL NOT SUPPORT THE WEIGHT OF THE DUCT.

F. ALL DUCT WRAP SHALL BE MINIMUM 2" THICK, 3/4 PCF AND 6 R-VALUE INSTALLED WITH EITHER A VAPOR BARRIER WITH MAXIMUM PERMEANCE 0.05 OR A MINIMUM 2 MIL ALUMINUM REINFORCED FOIL/KRAFT FACING.

G. ALL DUCT DROPS FROM THE ROOFTOP UNITS SHALL BE EXTERNALLY INSULATED.

H. SUPPLY AND RETURN AIR DUCTWORK SERVING ALL AREAS SHALL BE EXTERNALLY INSULATED.

I. ALL AIR CONVEYANCE COMPONENTS SUCH AS, BUT NOT LIMITED TO DUCT, DUCT PLENUMS, GRILLES/DIFFUSERS, BACK PANS, AND BOOTS SHALL BE INSULATED. INSULATION TYPE IS COVERED ELSEWHERE IN THIS SPECIFICATION.

J. RESTROOM RECTANGULAR EXHAUST AIR DUCTWORK SHALL BE LINED WITH 1" THICK, 1-1/2 PCF INSULATION. RESTROOM ROUND EXHAUST DUCT SHALL BE EXTERNALLY INSULATED PER SECTION 2.02F.

K. DUCT DROPS SHALL BE ISOLATED FROM UNIT VIBRATION WITH THE USE OF NFPA AND U.L. APPROVED FLEXIBLE CONNECTORS INSTALLED AT THE TOP OF BOTH SUPPLY AND RETURN DROPS.

L. INSULATED FLEXIBLE DUCT MAY BE UTILIZED FOR RUNOUTS TO GRILLES AND DIFFUSERS ONLY IN THE HORIZONTAL POSITION AND IN MAXIMUM LENGTHS OF 4'-0", NO EXCEPTIONS.

M. CONSTRUCTION OF FLEXIBLE DUCTWORK SHALL INCLUDE SPIRAL METAL HELIX BONDED TO A POLYESTER CORE, FIBERGLASS INSULATION WITH POLYETHYLENE OR MYLAR VAPOR BARRIER. ALL COMPONENTS SHALL HAVE APPROPRIATE U.L. APPROVAL AND SHALL BE EQUIVALENT TO THERMAFLEX MKE. FLEX DUCT SHALL HAVE A MINIMUM R-VALUE OF 6.

N. FLEXIBLE DUCT SHALL BE INSTALLED PER THE "ADC FLEXIBLE DUCT PERFORMANCE AND INSTALLATION STANDARDS, 4TH ED" USING FOIL TAPE AND DRAWBAND ON THE INNER CORE AND TAPE OR DRAWBAND ON THE OUTER JACKET.

O. DUCT TAPE SHALL BE EQUAL TO FASSON 181-B FX, 2-1/2" WIDE.

P. SINGLE THICKNESS TURNING VANES SHALL BE INSTALLED AT ALL 90 DEGREE ELBOWS WHERE THE CENTERLINE RADIUS (R) IS LESS THAN THE WIDTH OF THE DUCT AND ANY ONE DIMENSION IS GREATER THAN 12".

Q. EXTERNAL INSULATION ON BOTTOM OF DUCTS 24" OR WIDER SHALL BE SUPPORTED WITH STICK PINS ON 18" CENTERS. STICK PIN WASHERS SHALL BE COVERED WITH DUCT TAPE OR MASTIC.

2.03 CONTROLS

A. SYSTEMS SHALL BE COMPLETE WITH CONNECTIONS TO CFA-500 TEMPERATURE CONTROL PANEL AS MANUFACTURED BY SUNCOAST ENVIRONMENTAL CONTROLS (S.E.C.) (PH: 877-544-6679). THE PANEL IS PROVIDED AND MOUNTED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING TERMINATIONS ARE BY THE MECHANICAL CONTRACTOR WHERE PERMITTED BY AHJ.

B. THE SMOKE DETECTORS SHALL BE FACTORY INSTALLED AND WIRED BY THE ROOFTOP UNIT MANUFACTURER.

C. A FACTORY INSTALLED SMOKE DETECTOR IN THE RETURN AIR SECTION OF EACH AIR CONDITIONING UNIT SHALL STOP THE INDOOR FAN AND CLOSE THE OUTSIDE AIR DAMPER IN THE EVENT OF EXCESSIVE TEMPERATURE OR SMOKE. SMOKE DETECTOR SHALL BE LOCATED PRIOR TO ANY EXHAUST FROM THE BUILDING OR MIXING WITH FRESH AIR MAKE-UP. UPON DETECTION, THE SYSTEM SHALL NOT RESTART UNTIL THE DEVICE IS MANUALLY RESET. DEVICES SHALL BE LOCATED WHERE THEY CAN BE EASILY ACCESSED AND WHERE CLEAR OF FILTERS.

D. CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH SUNCOAST ENVIRONMENTAL CONTROLS FOR THE SMOKE DETECTOR TEST/RESET ANNUNCIATOR STATIONS. THE TEST/RESET STATIONS WILL BE PURCHASED BY THE ELECTRICAL CONTRACTOR AS A PART OF A NATIONAL ACCOUNT PACKAGE AND TURNED OVER TO THE MECHANICAL CONTRACTOR FOR INSTALLATION.

E. THE REMOTE TEST/RESET ANNUNCIATORS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. INSTALLATION BY MECHANICAL SHALL INCLUDE MOUNTING OF THE ANNUNCIATORS AND ALL WIRING FROM EACH DEVICE TO THE RTU. ELECTRICAL WILL PROVIDE A JUNCTION BOX IN THE WALL WITH 1/2" CONDUIT STUBBED UP ABOVE THE CEILING FOR EACH REMOTE TEST STATION AS SHOWN ON THE ELECTRICAL PLANS. ANNUCIATOR SHALL BE SUNCOAST CONTROLS REMOTE TEST/RESET STATION WITH POWER LED, TROUBLE LED, ALARM LED, 90DB HORN AND TEST/RESET BUTTON.

F. THE RESTROOM FAN SHALL BE INTERLOCKED TO THE LIGHTS SERVING THE MEN AND WOMEN'S RESTROOMS. THE HOOD FANS SHALL BE CONTROLLED VIA THE SUNCOAST CFA-500 CONTROL PANEL. WIRING, RELAYS AND SWITCHES FOR CONTROL OF ALL FANS ARE BY ELECTRICAL CONTRACTOR.

G. THERMOSTATS ARE PROVIDED AND INTEGRATED INTO THE TEMPERATURE CONTROL PANEL BY SUNCOAST ENVIRONMENT CONTROLS. SUNCOAST WILL PROVIDE A NETWORK THERMOSTAT US32-CFA THERMOSTAT PRE-WIRED IN THE TEMPERATURE CONTROL PANEL. REMOTE TEMPERATURE SENSOR(S) FOR EACH THERMOSTAT IS ALSO PROVIDED. MECHANICAL CONTRACTOR SHALL INSTALL ALL WIRING BETWEEN THE THERMOSTAT, THE REMOTE SENSOR(S) AND THE ROOFTOP UNIT.

H. MECHANICAL CONTRACTOR SHALL INSTALL CONTROL WIRING IN 1/2" CONDUIT WHERE REQUIRED BY CODE. WHERE NOT REQUIRED TO BE IN CONDUIT, ALL WIRING SHALL BE RUN PARALLEL TO STRUCTURAL MEMBERS OR PERPENDICULAR WITH NO DIAGONAL ROUTING. ALL WIRING SHALL BE SECURED TO THE FRAMING TO PREVENT SAGGING IN RUNS. WIRING TO ROOFTOP UNITS SHALL BE ROUTED THROUGH THE FACTORY THRU-BASE FITTING IN THE UNIT BASE. NO SPLICING OF WIRING WILL BE ACCEPTED. ALL WIRING ABOVE THE ROOF SHALL BE INSTALLED IN EXTERIOR GRADE FLEXIBLE CONDUIT. ALL CONTROL WIRING AND CONTROL WIRING CONDUIT SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. WIRING SHALL BE INSTALLED IN ACCORDANCE WITH LATEST EDITION OF NEC. ALL LOW VOLTAGE CONTROL WIRING SHALL BE NO LESS THAN 18 AWG MIN. CONTROL WIRING CONDUCTORS SHALL BE SIZED TO ACCOUNT FOR LOAD AND LENGTH OF RUN TO ALLOW SUFFICIENT VOLTAGE AVAILABLE AT CONTROLLED DEVICE TO OPERATE THE SYSTEM RELIABLY.

2.04 PIPING

A. ALL ABOVE GRADE NATURAL GAS PIPING SHALL BE SCHEDULE 40 STEEL MEETING ASTM A53 WITH SCREWED OR WELDED FITTINGS AND GASKET TYPE UNIONS AND FLANGES. FOR SCREWED PIPING, PIPING SHALL BE JOINED WITH BLACK 150 POUND MALLEABLE IRON SCREWED FITTINGS AS ALLOWED BY LOCAL AUTHORITY. CONTRACTOR SHALL VERIFY THE NEED FOR WELDED PIPING AS REQUIRED BY THE LOCAL GAS CODE AND/OR APPLICABLE LOCAL ORDINANCES AND AMENDMENTS.

B. ALL BELOW GRADE NATURAL GAS PIPING SHALL BE MEDIUM DENSITY POLYETHYLENE (PE) MEETING ASTM D2513 AS MANUFACTURED BY GASTITE WITH JOINING SYSTEM AS MANUFACTURED BY CON-STAB. TRANSITIONS FROM ABOVE GRADE RIGID PIPING TO PE BELOW GRADE PIPING SHALL BE MADE WITH ANODE-LESS RISER ASSEMBLY AS MANUFACTURED BY CON-STAB.

C. PROVIDE AND INSTALL A CUT-OFF VALVE, UNION AND FULL SIZE DIRT LEG AT CONNECTION TO EACH GAS-FIRED PIECE OF EQUIPMENT. INSTALL PIPING AT AND AROUND EQUIPMENT SO AS TO NO WAY OBSTRUCT EQUIPMENT ACCESS PANELS AND/OR ACCESS DOORS.

D. ALL GAS PIPING ABOVE ROOF SHALL BE CLEANED FREE OF RUST AND PAINTED WITH COAT OF ZINC RUST PRIMER AND ONE COAT OF ALUMINUM BASE PAINT. METER AND GAS RISER SHALL BE PRIMED AND PAINTED TO MATCH BUILDING.

E. NATURAL GAS PIPING SHALL BE LEAK TESTED IN ACCORDANCE WITH APPLICABLE CODE REQUIREMENTS AND MANUFACTURERS RECOMMENDATIONS.

PART III - EXECUTION

3.01 SCOPE

A. FURNISH AND INSTALL SYSTEM IN ACCORDANCE WITH REFERENCED STANDARDS, APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED ON DRAWINGS.

B. CONTRACTOR SHALL INSTRUCT THE OWNER'S REPRESENTATIVE IN ALL MATTERS PERTAINING TO THE PROPER MAINTENANCE OF EQUIPMENT FURNISHED UNDER THIS CONTRACT THROUGH DEMONSTRATION AND EXPLANATION OF OPERATING & MAINTENANCE MANUALS.

C. CONTRACTOR SHALL PROVIDE A "SAMPLE MAINTENANCE PROPOSAL" TO THE OWNER'S REPRESENTATIVE IN ALL MATTERS PERTAINING TO THE PROPER MAINTENANCE OF EQUIPMENT FURNISHED UNDER THIS CONTRACT.

D. CONTRACTOR SHALL COMPLETE A/C EQUIPMENT STARTUP DOCUMENTATION PROVIDED BY OWNER AND/OR MANUFACTURER. THIS SHALL INCLUDE RE-TORQUE OF ALL FIELD AND FACTORY HIGH VOLTAGE CONNECTIONS.

3.02 LEED PROJECTS

A. CONTRACTOR SHALL COMPLETE RECEIPT INSPECTION CHECKLISTS PROVIDED IN THE COMMISSIONING PLAN WITHIN 5 DAYS OF RECEIVING EQUIPMENT ON SITE.

B. CONTRACTOR SHALL COMPLETE PRE-FUNCTIONAL CHECKLISTS PROVIDED IN THE COMMISSIONING PLAN. CHECKLISTS SHALL BE RETURNED AT LEAST 5 DAYS PRIOR TO SCHEDULING FUNCTIONAL PERFORMANCE TESTING.

C. CONTRACTOR SHALL PROVIDE A TECHNICIAN TO ASSIST THE THIRD PARTY COMMISSIONING AUTHORITY WITH FUNCTIONAL TESTING. FUNCTIONAL TESTING SHALL OCCUR AFTER ALL CONTROLS HAVE BEEN INSTALLED AND VERIFIED AND AFTER TEST AND BALANCE IS COMPLETE. THE FUNCTIONAL PERFORMANCE TEST PROCEDURES CAN BE FOUND IN THE COMMISSIONING PLAN.

D. IF THE TOTAL TIME REQUIRED TO CORRECT PROBLEMS DURING TESTING IS GREATER THAT FORTY-FIVE (45) MINUTES (UNLESS EXTENUATING CIRCUMSTANCES EXIST), THE TEST SHALL BE CONSIDERED FAILED AND MUST BE REPEATED IN ITS ENTIRETY.

E. RE-TESTING: DURING THE COURSE OF THE RETEST, IF AT ANY POINT A MAJOR DEFICIENCY IS DISCOVERED, THE TEST WILL BE STOPPED. REPEAT TESTS UNTIL ACCEPTABLE RESULTS ARE ACHIEVED. IF MORE THAN TWO FUNCTIONAL PERFORMANCE TESTS (ONE INITIAL TEST AND ONE RETEST) FOR ANY TYPE OF EQUIPMENT DUE TO ISSUES THAT THE CONTRACTOR HAD DIRECT OR INDIRECT CONTROL OVER ARE REQUIRED, THE COSTS FOR THE CXA TO WITNESS RETESTING OF SIMILAR TYPES OF EQUIPMENT UNTIL SATISFACTORY RESULTS ARE OBTAINED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3.03 TEST & BALANCE

A. OWNER SHALL TEST AND BALANCE MECHANICAL SYSTEM IN ACCORDANCE WITH NEBB, NBC OR AABC STANDARDS TO ASSURE CONFORMANCE WITH DESIGN. G.C. WILL MAKE MECHANICAL CONTRACTOR AVAILABLE DURING TEST AND BALANCE TO ASSIST TESTING AGENCY AND TO MAKE CORRECTIONS IMMEDIATELY NECESSARY. CONTRACTOR SHALL CORRECT ITEMS ON WRITTEN TEST AND BALANCE REPORT.

B. ALL EQUIPMENT TO BE BALANCED MUST HAVE GONE THRU SUCCESSFUL START-UP PROCEDURE BY THE MECHANICAL CONTRACTOR (MC) PRIOR TO TAB VISIT.

C. THE FLOOR OF THE RESTAURANT SHALL BE CLEARED OF DEBRIS, STAGED CONSTRUCTION MATERIALS, EQUIPMENT, ETC. WHICH MAY, IN THE OPINION OF THE TAB TECHNICIAN, OBSTRUCT ACCESS TO AIR DISTRIBUTION COMPONENTS IN AND ABOVE THE CEILING.

D. EQUIPMENT ACCESS PANELS, DUCT AIR DEVICES SUCH AS BALANCING DAMPERS AND ACTUATORS SHALL BE ACCESSIBLE AND CLEAR OF PIPING, CONDUIT, FRAMING, SUPPORTS ETC...

E. PROVIDE AN 8 FT PORTABLE A-FRAME STYLE LADDER DEDICATED FOR THE TAB TECHNICIAN'S USE DURING THE ENTIRE TAB EFFORT DURATION.

KITCHEN HOOD SYSTEMS NOTES

1. CHICK-FIL-A MAINTAINS A NATIONAL ACCOUNT WITH HALTON CO. FOR THE HOODS. CHICK-FIL-A WILL PURCHASE AND PROVIDE THE HOODS FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING THE HOODS. CONTACT HALTON CO. AT 270-237-5600 FOR MORE INFO.
2. THE FIRE SUPPRESSION SYSTEM SHALL CONSIST OF A COMPLETE WET CHEMICAL SYSTEM FURNISHED BY HALTON. THE HOOD SHALL BE FURNISHED PRE-PIPED BY HALTON.
3. THE FIRE SUPPRESSION SYSTEM EXTERNAL TO THE HOODS SHALL BE INSTALLED IN ACCORDANCE WITH HOOD MANUFACTURER'S SHOP DRAWINGS BY AN AUTHORIZED INSTALLER SELECTED AND HIRED BY HALTON. COST FOR INSTALLATION INCLUDED IN PRICE OF HOODS TO CFA.
4. HOOD EXHAUST DUCTWORK SHALL BE 16 GA. BLACK STEEL WITH CONTINUOUS LIQUID TIGHT WELD OF JOINTS & SEAMS.
5. TURNS IN GREASE EXHAUST DUCTWORK SHALL BE LONG RADIUS TYPE, WITH A CENTERLINE RADIUS R=3W/2, UNLESS OTHERWISE NOTED. NO MITERED FITTINGS ALLOWED.
6. ALL STAINLESS STEEL CLOSURE PANELS SHALL BE SUPPLIED BY HOOD MANUFACTURER AND INSTALLED BY THE MECHANICAL CONTRACTOR ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. SLOPE ALL GREASE EXHAUST DUCT BACK TO HOOD AT 1/4" PER FOOT OF RUN.
8. WRAP NEW GREASE DUCT WITH UNIFRAX FYREWRAP. INSULATION ON ACCESS DOORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS. UNIFRAX FYREWRAP PRODUCT USED SHALL MEET LOCAL CODE REQUIREMENTS.
9. SUPPORT ALL HOODS WITH THREADED ROD AT EACH FACTORY SUPPORT POINT. EACH SUPPORT POINT MUST SUPPORT THE HOOD WEIGHT EQUALLY. ATTACH TO STRUCTURE AS DETAILED ON STRUCTURAL DRAWINGS. ATTACH HOOD TO WALL AT 16" INTERVALS ALONG FULL LENGTH OF HOOD ON TOP AND BOTTOM. ATTACHMENT TO WALL REQUIRES FIELD DRILLING OF SUPPORT ANGLE AT BACK OF HOODS. EACH WALL ATTACHMENT POINT MUST OCCUR AT A WALL STUD. ATTACHMENT HARDWARE TO BE #12-24 HEX HEAD SHEET METAL SCREW EQUAL TO TEXTRON SDS EDT265, LENGTH AS REQUIRED TO FULLY PENETRATE THE STUD.

GENERAL NOTES

1. DUCT SIZES SERVING DIFFUSERS AND GRILLES ARE SAME SIZE AS DIFFUSER OR GRILLE NECK UNLESS NOTED OTHERWISE.
2. FLEXIBLE DUCT AND INSULATION NOT SHOWN FOR CLARITY.
3. FOR ALL ROOF EQUIPMENT, PROVIDE A PLASTIC ENGRAVED LABEL WITH 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND. WITH A SELF ADHESIVE BACKING.
4. UNLESS NOTED OTHERWISE, MC TO ADJUST ALL DIFFUSER AIR PATTERN DEFLECTORS TO THROW HORIZONTALLY ALONG THE CEILING.
5. ALL EXHAUST DUCTWORK AND UNFINISHED METAL ON ROOF EXCEPT STAINLESS SHALL BE PREPARED WITH TWO COATS OF SHERWIN WILLAIMS PRO INDUSTRIAL DTM ACRYLIC COATING, SEMI-GLOSS, WHITE. DEGREASE AND PRIME BARE METAL SURFACE WITH ONE COAT OF SHERWIN WILLAIMS PRO INDUSTRIAL PRO-CRYLACRYLIC UNIVERSAL PRIMER, WHITE, PRIOR TO PAINTING.
6. MAINTAIN 18" CLEARANCE FROM GREASE EXHAUST DUCTWORK ABOVE ROOF TO ANY COMBUSTIBLE CONSTRUCTION INCLUDING PARAPET WALLS.

CANOPY GENERAL NOTES

1. COORDINATE WORK WITH CONDUIT, STRUCTURE, AND PIPING. FIELD VERIFY CONDITIONS PRIOR TO START OF WORK.
2. COORDINATE LOCATION AND RESPONSIBILITIES FOR UNDERGROUND PIPING AND ASSOCIATED TRENCHING WITH GENERAL CONTRACTOR PRIOR TO START OF WORK.
3. EXPOSED GAS PIPING SHALL BE COVERED WITH A RUST INHIBITING PAINT SUCH AS RUST-OLEUM 5200. PAINT COLOR SHALL MATCH STRUCTURE. ROOF MOUNTED GAS PIPING COLOR SHALL BE YELLOW.
4. CONTROL WIRING FOR HEATERS BY EC. COORDINATE REQUIRED WIRE GAUGE WITH EC. SEE CONTROLS PLAN AND ELECTRICAL DRAWINGS, (TYP.).

LEGEND

A-12-400	TYPE - NECK SIZE - CFM	EF#1	EXHAUST FAN #1 (TYP.)
	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITHOUT SCOOP	AC#1	AIR CONDITIONING UNIT #1 (TYP.)
	SPIN-IN HARD⌀ FLEXIBLE⌀ DIFFUSER		RETURN/EXHAUST (TYP.)
	REMOTE TEMPERATURE SENSOR		SUPPLY DIFFUSER, SQ FACE (TYP.)
H	HUMIDITY SENSOR	1	PLAN NOTE REFERENCE
SD	SMOKE DETECTOR		MANUAL VOLUME DAMPER
12x18	DUCT SIZE (reverse for elevation views) 1ST NUMBER - HORIZONTAL DIMENSION 2ND NUMBER - VERTICAL DIMENSION		DIRECTION OF THROW ON DIFFUSER
			CLOSED AIR PATTERN DEFLECTOR
SW	AIR DOOR SWITCH	GIH	GAS INFRARED HEATER (TYP.)
EIH	ELECTRIC INFRARED HEATER	B/G	BELOW GRADE
		T	THERMOSTAT

ABBREVIATIONS

EC	ELECTRICAL CONTRACTOR
GC	GENERAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
PC	PLUMBING CONTRACTOR
O.C.	ON CENTER
IRH	INFRARED HEATER
CF	CIRCULATING FAN
TF	TRANSFER FAN
EF	EXHAUST FAN

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FSR#04942

BUILDING TYPE / SIZE: P14 SE BN
RELEASE: 24.05
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CONSTRUCTION

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 24122.EH.S
DATE 10/22/2024
DRAWN BY BLM

SHEET
GENERAL NOTES, LEGENDS, SYMBOLS, AND ABBREVIATIONS
SHEET NUMBER
M-001

2021 IECC Commissioning Requirements for Mechanical

2021 IECC COMMISSIONING REQUIREMENTS

C408.1 MECHANICAL SYSTEMS SHALL BE DOCUMENTED IN ACCORDANCE WITH THE FOLLOWING SECTIONS.

C408.1.1 PROVIDE AN OPERATION AND MAINTENANCE MANUAL WHICH INCLUDES THE FOLLOWING:

1. PROVIDE HVAC EQUIPMENT SUBMITTAL DATA.
2. PROVIDE MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS FOR HVAC EQUIPMENT. ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
3. PROVIDE THE NAME AND ADDRESS OF AT LEAST ONE HVAC SERVICE AGENCY.
4. PROVIDE HVAC CONTROL SYSTEM MAINTENANCE AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCES. TENANT DESIRED OR FIELD-DETERMINED SETPOINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR IN SYSTEM PROGRAMMING INSTRUCTIONS.
5. PROVIDE A NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING RECOMMENDED SETPOINTS.

C408.2 COMMISSIONING OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS.

C408.2.1 A COMMISSIONING PLAN SHALL BE DEVELOPED IN ACCORDANCE WITH THIS SECTION AND SHALL INCLUDE THE FOLLOWING ITEMS.

1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES TO BE PERFORMED.
2. A LIST OF THE SYSTEMS AND EQUIPMENT REQUIRED TO BE COMMISSIONED.
3. A LIST OF THE TEST FUNCTIONS TO BE PERFORMED ON THE CORRESPONDING EQUIPMENT.
4. CONDITIONS UNDER WHICH THE TEST WILL BE PERFORMED.
5. MEASUREABLE CRITERIA FOR PERFORMANCE.

C408.2.2 MECHANICAL SYSTEMS SHALL UNDERGO TEST AND BALANCE AND SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AS WELL AS THE 2021 IECC. AIR AND WATER FLOW RATES SHALL BE MEASURED AND ADJUSTED TO DELIVER FINAL FLOW RATES WITHIN THE TOLERANCES PROVIDED IN THE CONSTRUCTION SPECIFICATIONS.

C408.2.2.1 CONDUCT AIR SYSTEMS TEST AND BALANCE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION AND THE CONSTRUCTION SPECIFICATIONS.

C408.2.2.2 CONDUCT WATER SYSTEMS TEST AND BALANCE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION AND THE CONSTRUCTION SPECIFICATIONS.

C408.2.3 PERFORM FUNCTIONAL PERFORMANCE TESTING IN ACCORDANCE WITH THE FOLLOWING SECTIONS.

C408.2.3.1 PERFORM FUNCTIONAL PERFORMANCE TESTING FOR HVAC EQUIPMENT IN ORDER TO DEMONSTRATE THE OPERATION OF COMPONENTS, SYSTEMS AND SYSTEM-TO-SYSTEM INTERRACTION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER REQUIREMENTS. TESTING SHALL INCLUDE FULL-LOAD, PART-LOAD AND EMERGENCY OPERATING CONDITIONS AND SHALL COVER ALL OPERATING MODES LISTED IN THE SEQUENCE OF OPERATION AS DEFINED IN THE CONSTRUCTION DOCUMENTS.

C408.2.3.2 HVAC SYSTEMS SHALL BE TESTED IN ORDER TO DOCUMENT THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT AND SYSTEMS ARE CALIBRATED AND ADJUSTED TO OPERATE IN ACCORDANCE WITH CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. HVAC CONTROL SYSTEMS SHALL BE TESTED FOR ALL OPERATING MODES LISTED IN THE SEQUENCE OF OPERATION AS DEFINED IN THE CONSTRUCTION DOCUMENTS.

C408.2.3.3 AIRSIDE ECONOMIZERS SHALL UNDERGO FUNCTIONAL PERFORMANCE TESTING IN ORDER TO ENSURE OPERATIONAL MODES ARE FUNCTIONING IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

C408.2.4 COMPLETE A PRELIMINARY COMMISSIONING REPORT OUTLINING TEST PROCEDURES AND RESULTS IN ACCORDANCE WITH THIS SECTION. THE REPORT SHALL IDENTIFY:

1. ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING REQUIRED BY THIS SECTION THAT HAVE NOT BEEN CORRECTED AT THE TIME OF REPORT PREPARATION.
2. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF THE REPORT PREPARATION DUE TO CLIMATIC CONDITIONS.
3. CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF THE DEFERRED TESTS.
4. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
5. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS, INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE.

C408.2.4.1 THE OWNER SHALL RECEIVE A COPY OF THE PRELIMINARY COMMISSIONING REPORT BEFORE FINAL INSPECTION BY THE CODE OFFICIAL OCCURS.

C408.2.4.2 THE PRELIMINARY COMMISSIONING REPORT SHALL BE MADE AVAILALBE TO THE PROJECT CODE OFFICIAL UPON REQUEST.

C408.2.5 COMMISSIONING DOCUMENTATION OUTLINED IN SECTION C408 SHALL BE PROVIDED TO THE OWNER WITHIN 90 DAYS OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY.

C408.2.5.1 PROVIDE AIR AND WATER SYSTEM TEST AND BALANCES REPORTS IN ACCORDANCE WITH SECTION C408.2.2.

C408.2.5.2 PROVIDE A FINAL COMMISSIONING REPORT TO THE OWNER INCLUDING THE FOLLOWING.

1. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
2. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.
3. FUNCTIONAL PERFORMANCE TESTING PROCEDURES USED DURING THE COMMISSIONING PROCESS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED FOR REPEATABILITY.
4. LIST OUT ANY DEFERRED TESTS STILL OUTSTANDING DUE TO CLIMATIC CONDITIONS.

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COMMONWEALTH OF VIRGINIA
MARK TRENTON KURZYNSKE
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PROFESSIONAL ENGINEER
01/29/25

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JEFFERSON AND BUCHANAN FSU
12839 Jefferson Avenue
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FSR#04942

BUILDING TYPE / SIZE: P14 SE BN
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REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT #	24122.EH.S
DATE	10/22/2024
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SHEET
COMMISSIONING REQUIREMENTS - MECHANICAL
SHEET NUMBER
M-002

KEY NOTES

1 10" UP THRU ROOF.

4 AIR CURTAIN MOUNTED OVER DOOR HEADER AT 7'-2" AFF TO BOTTOM OF UNIT. PROVIDE BLOCKING IN WALL BEHIND AIR CURTAIN. USE FACTORY PRE-PUNCHED MOUNTING HOLES ON BACK SIDE OF AIR CURTAIN ONLY. ATTACH AIR CURTAIN TO WALL USING 3/8" LAG BOLTS, LENGTH AS REQUIRED TO FULLY PENETRATE BLOCKING. LOCATE MAGNETIC CONTACT TYPE MICROSWITCH IN DOOR FRAME ON STRIKE SIDE.

9 BRANCH TAKE-OFFS ARE NOT TO BE LOCATED CLOSER THAN 3'-0" FROM ANY OFFSET OR ELBOW INCLUDING THE SUPPLY AIR DROP FROM CURB.

21 HALTON KBD DAMPER AT HOOD COLLAR BY MECHANICAL CONTRACTOR. SEE HOOD ELEVATIONS ON M-201 FOR LOCATION.

26 MECHANICAL CONTRACTOR TO ADJUST PATTERN DEFLECTORS TO THROW STRAIGHT DOWN.

27 MECHANICAL CONTRACTOR TO CLOSE THE AIR PATTERN DEFLECTORS ON SHADED SIDE.

35 MOUNT HUMIDITY SENSOR ON WALL ABOVE SPACE TEMP SENSOR AND ROUTE WIRING TO UNIT ON ROOF.

38 MOUNT REMOTE SENSOR ON WALL AT 5-0" AFF U.N.O. AND ROUTE WIRING BACK TO SUNCOAST TEMP CONTROL PANEL. FOR SENSOR SERVING AC#1, COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT.

43 ROUTE DUCT WITHIN STRUCTURE.

45 TRANSFER AIR DUCT, NO BALANCING DAMPERS AT GRILLES.

47 TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. SEE DETAIL 6/M-501 FOR REQUIRED TRANSITION GEOMETRY. TRANSITION WITHIN CURB WHERE REQUIRED TO AVOID STRUCTURE. WHERE THE DUCT IS SHOWN OFFSET HORIZONTALLY, PROVIDE ELBOW WITHOUT TURNING VANES. FOR DROPS WITH NO HORIZONTAL OFFSET, EXTEND DROP BELOW STRUCTURE TO ACCOMMODATE START COLLARS. TERMINATE DROP A MINIMUM 0'-10" ABOVE CEILING (0'-4" ABOVE CEILING IF REQUIRED TO ACCOMMODATE TAKE-OFF AND DROP IS NOT LOCATED DIRECTLY ABOVE A LIGHT).

48 TRANSITION IN VERTICAL DROP FROM FULL SIZE OF CURB OPENING TO SIZE SHOWN. TRANSITION WITHIN CURB WHERE REQUIRED TO AVOID STRUCTURE. WHERE THE DUCT IS SHOWN OFFSET HORIZONTALLY, PROVIDE ELBOW WITH TURNING VANES. FOR DROPS WITH NO HORIZONTAL OFFSET, EXTEND DROP BELOW STRUCTURE TO ACCOMMODATE START COLLARS. TERMINATE DROP A MINIMUM 0'-10" ABOVE CEILING (0'-4" ABOVE CEILING IF REQUIRED TO ACCOMMODATE TAKE-OFF AND DROP IS NOT LOCATED DIRECTLY ABOVE A LIGHT).

53 RUSKIN MDRS25 MVD W/LOCKING QUADRANT HANDLE.

54 SEE ELEVATIONS ON M-201 FOR CJ FAN DUCTING REQUIREMENT.

61 PROVIDE RUSKIN CD35 MANUAL BALANCING DAMPER WITH 6" MAXIMUM BLADE WIDTH. OPPOSED BLADE ACTION, LOCKING QUADRANT HANDLE WITH 2" STANDOFF AND 16 GA GALVANIZED BLADE AND FRAME CONSTRUCTION.

65 TO AC#4, SENSOR #1. SEE 2/M-701.

66 TO AC#4, SENSOR #2. SEE 2/M-701.

67 TO AC#4, SENSOR #3. SEE 2/M-701.

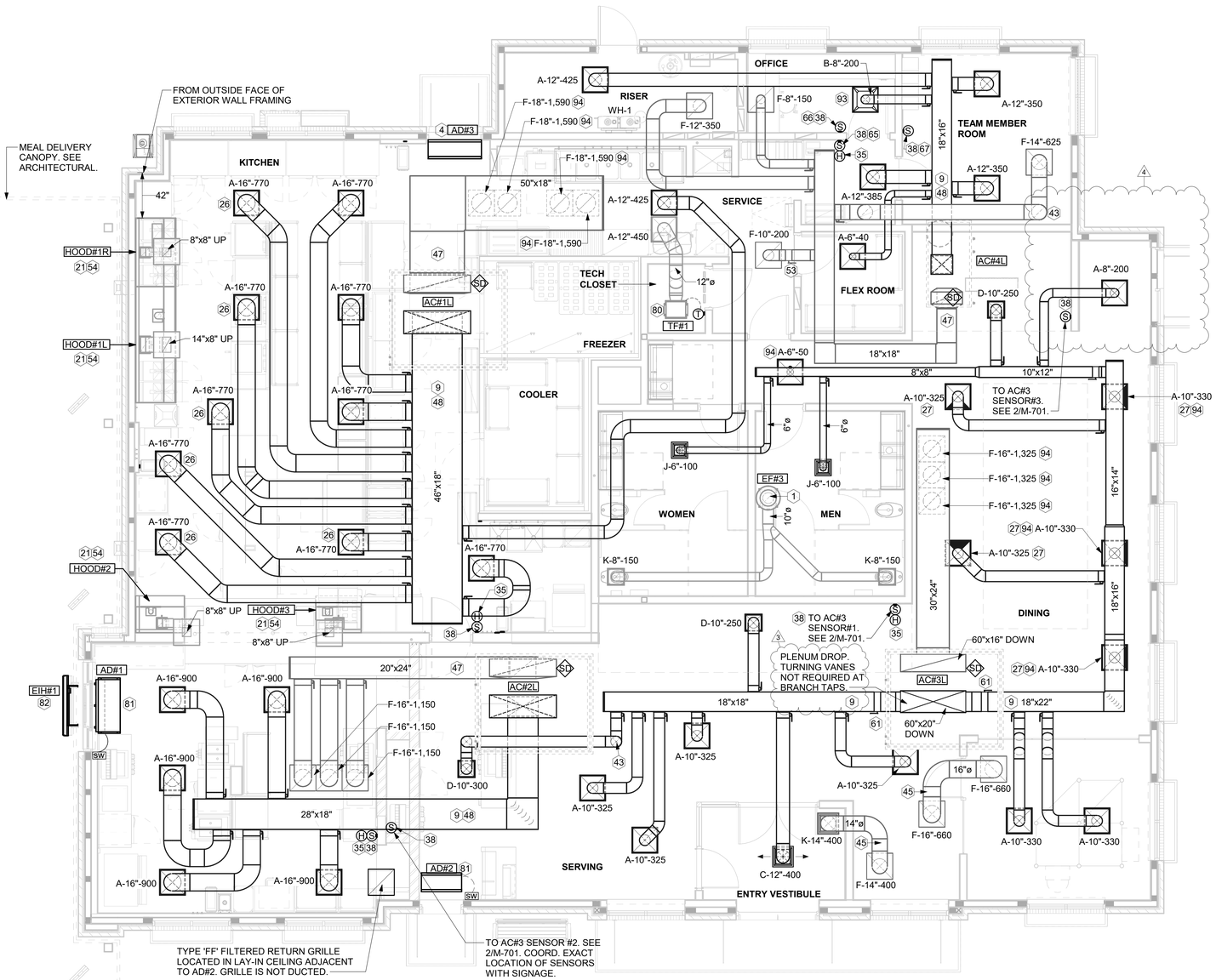
80 CEILING MOUNTED RECIRCULATING FAN. DUCT AND DISCHARGE TO TYPE 'A' DIFFUSER AS SHOWN. MOUNT THERMOSTAT FOR RECIRCULATING FAN ON WALL AT 4'-0" AFF.

81 MOUNT AIR DOOR IN CEILING. CENTERED ON DRIVE-THRU/MFA DOOR OPENING. REFER TO WIRING DIAGRAM ON SHEET M-702 FOR MORE INFORMATION.

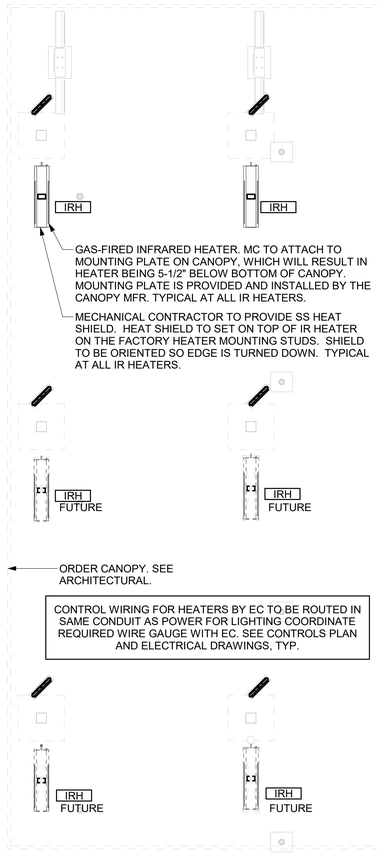
82 ELECTRIC HEATER. MC TO MOUNT ON WALL PER MANUFACTURER'S RECOMMENDATIONS.

93 MAXIMUM HEATING AND COOLING AIRFLOWS INDICATED. SET MINIMUM AIRFLOW TO 25 CFM.

94 TAKE OFF WITH DAMPER AT THE BOTTOM OF DUCTWORK, TYP.



1 EQUIPMENT AND DUCTWORK PLAN
1/4" = 1'-0"



2 MECHANICAL FLOOR PLAN - ORDER CANOPY
1/4" = 1'-0"

AIR BALANCE SCHEDULE

Mark	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR	BUILDING POSITIVE PRESSURE
AC#1L	8,125	6,360	1,765	0	
AC#2L	4,500	3,450	1,050	0	
AC#3L	5,250	3,975	1,275	0	
AC#4L	1,750	1,325	425	0	
EF#1	0	0	0	1,913	
EF#2	0	0	0	1,402	
EF#3	0	0	0	300	
	19,625	15,110	4,515	3,615	900

H.E.S. SYSTEM

MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL SUNCOAST H.E.S. SYSTEM FOR ALL HOODS. SEE HOOD FAN/EQUIPMENT INTERLOCK WIRING DIAGRAM ON M-702 FOR MORE INFORMATION.

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3	01/29/2025	DESIGNOTES
4	02/12/2025	CFA

CONSULTANT PROJECT # 24122.EH.S
DATE 10/22/2024
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SHEET
EQUIPMENT AND DUCTWORK PLAN - LENNOX
SHEET NUMBER
M-101L

KEY NOTES

11 ROUTE POLYETHYLENE GAS BELOW GRADE FROM THE METER. FOR TRANSITION FROM POLYETHYLENE PIPING BELOW GRADE TO STEEL AT THE METER, INSTALL ANODELESS RISER WITH INTEGRAL CONSTAB PE-TO-IPS TRANSITION FITTING BY CONTINENTAL INDUSTRIES OR EQUAL BY ELSTER.

16 VERIFY EXHAUST TERMINATION IS A MINIMUM 10'-0" FROM PARAPETS AND OUTSIDE AIR INTAKES. REFER TO MH-1.4 AND MH-1.5 FOR DETAILS.

19 1-1/2" GAS BELOW GRADE TO ORDER CANOPY, SEE DETAIL 2 SHEET M-102.

20 GREASE EXHAUST DUCT LOCATED ON ROOF SHALL SLOPE 1/4" PER FOOT TOWARDS THE HOOD, THE FAN, OR A COMBINATION OF THE TWO SUCH THAT NO PORTION OF THE RADIUS ELBOW AT THE CURB IS BELOW THE CURB CAP AND SUCH THAT THE FAN BASE SETS DIRECTLY ON THE CURB RAILS. THE BOTTOM OF THE RADIUS ELBOW MAY BE EVEN OR FLUSH WITH THE CURB CAP, BUT NOT BELOW THE CAP. THE DUCT AT THE FAN MUST BE CENTERED ON THE FAN INLET.

28 PROVIDE FULL PORT BALL VALVE EQUAL TO APOLLO 50GB SERIES WITH WINGS HANDLE OPTION ABOVE GRADE AT THE METER. PROVIDE BRASS VALVE TAG WITH JACK CHAIN AT VALVE MARKED "SERVICE SHUTOFF FOR CANOPY HEATERS."

30 MECHANICAL CONTRACTOR TO SEE ARCHITECTURAL ROOF PLAN FOR NOTES REGARDING LEVELING FRAMES FOR RTUS. COORDINATE WITH GENERAL CONTRACTOR EXACT LOCATIONS AND SIZE NEEDED.

44 1-1/2" GAS DOWN THRU ROOF TO WATER HEATER. SEE DETAIL 2/M-502 FOR MORE INFORMATION ON CONSTRUCTION AND PENETRATION.

55 SEE ARCHITECTURAL DETAILS FOR ROOFTOP PIPE PENETRATIONS.

56 GC SHALL PROVIDE EQUIPMENT STANDS AS MANUFACTURERED BY AVCOA OR EQUAL. STANDS SHALL BE INSTALLED PRIOR TO ROOF INSULATION SO THAT THE INSULATION IS CONTINUOUS UP TO THE PIPE POSTS. POSTS SHALL BE FLASHED IN ACCORDANCE WITH ROOFING MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE BLOCKING BELOW THE ROOF DECK AS REQUIRED.

83 DO NOT DISCHARGE OF CONDENSING UNITS INTO CONDENSER SECTION OF ROOFTOP UNITS, TYP.

84 ROOF CURB FOR DUCT PENETRATION. REFER TO MH-1.4 AND MH-1.5 FOR DETAILS.

85 TURN DOWN THRU ROOF. SEE M-101L/M-101T FOR CONTINUATION.

87 DUCT PENETRATIONS ON ROOF MUST BE AT LEAST 18" FROM ADJACENT PARAPETS.

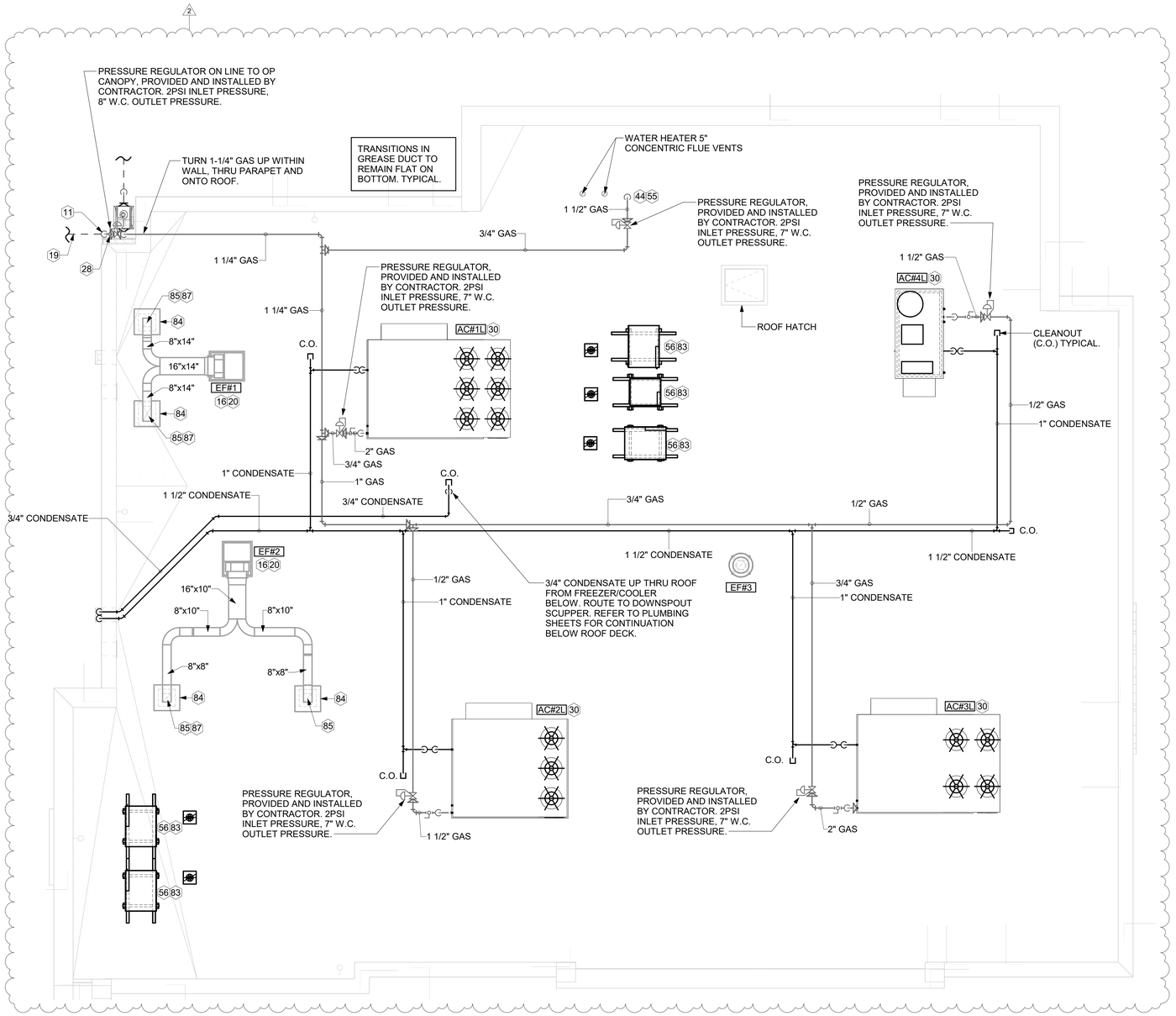
95 GAS PIPING TO BE ROUTED ABOVE CANOPY, ON TOP OF STRUCTURAL MEMBERS, EXCEPT WHERE ROUTED DOWN THROUGH PENETRATIONS AS INDICATED.

96 GAS PIPING DOWN THROUGH DECK. WEATHERPROOF DECK PENETRATION PER DETAIL 6/M-502, TYPICAL.

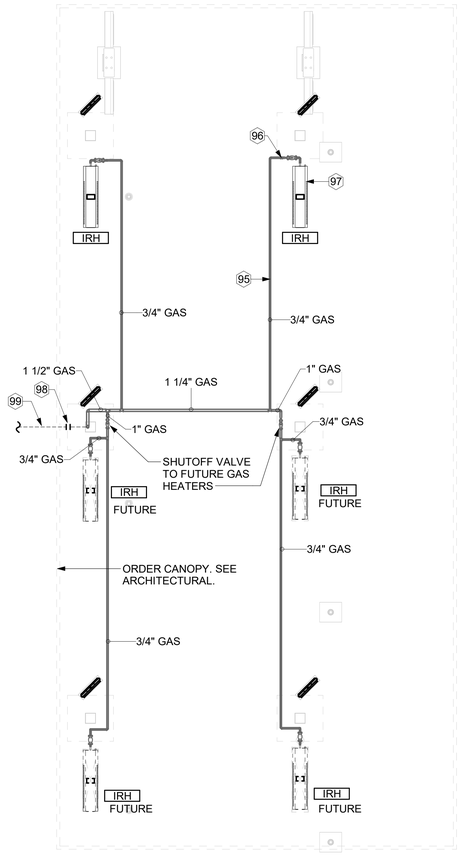
97 SEE DETAIL 1/M-502 FOR PIPING AT IRH, TYPICAL.

98 GAS TRANSITION FITTING TO GAS PIPE STUB-OUT. GAS PIPING INSIDE COLUMN AND STUB-OUTS BY CANOPY MFR. JOIN UNDERGROUND POLYETHYLENE GAS PIPING TO TRANSITION FITTING WITH ELSTER PERMASERT COUPLING. CANOPY MFR'S EXPOSED STEEL PIPING BELOW GRADE SHALL BE PROTECTED WITH TWO COATS ASPHALT TUM BASE PAINT AND POLY SLEEVE.

99 1-1/2" GAS B/G TO METER SEE 1/M-102L OR 1/M-102T.



1 EQUIPMENT ROOF PLAN - LENNOX
1/4" = 1'-0"



2 ORDER CANOPY GAS PIPING PLAN
1/4" = 1'-0"

3. GAS LOAD SCHEDULE

EQUIPMENT	GAS LOAD
AC#1L	480,000 BTUS
AC#2L	260,000 BTUS
AC#3L	360,000 BTUS
AC#4L	108,000 BTUS
IRH (2 @ 50,000 BTU EA.)	100,000 BTUS
IRH (FUTURE 4 @ 50,000 BTU EA.)	200,000 BTUS
WATER HEATER	398,000 BTUS
TOTAL FUTURE CONNECTED LOAD	1,906,000 BTUS

REMARKS:
1. EQUIVALENT TO 1,906.0 CFH
2. 2 PSI DELIVERY PRESSURE
3. DEVELOPED LENGTH: 180 FT, (METER TO AC#4)
4. GAS PIPING SIZED FOR FUTURE LOAD
5. SIZED PER IFGC TABLE 402.4(5).

/2

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2	01/02/2025	MECH

CONSULTANT PROJECT # 24122.EH.S
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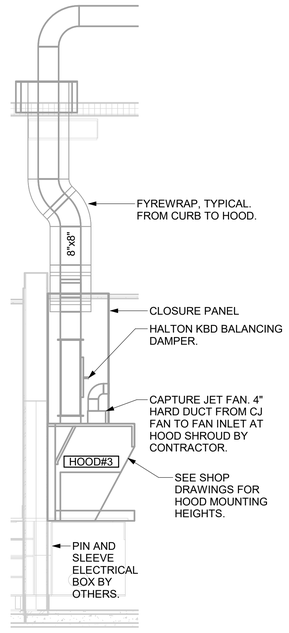
SHEET
EQUIPMENT ROOF PLAN - LENNOX

SHEET NUMBER
M-102L

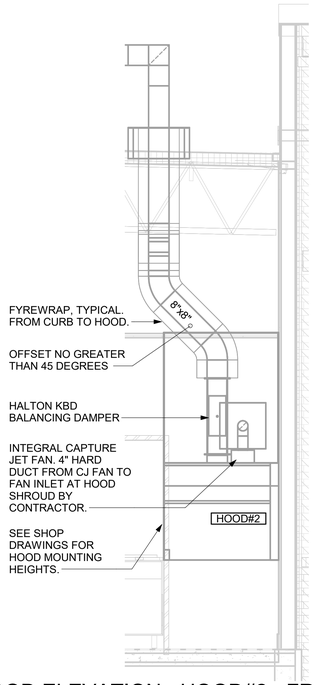
GREASE EXHAUST DUCT CLEARANCE NOTE:
CLEARANCES ABOVE CEILING ARE TIGHT. MECHANICAL CONTRACTOR TO FIELD VERIFY EXACT ROUTING AND CLEARANCES PRIOR TO FABRICATING GREASE EXHAUST DUCT.

CLEANOUT DOOR NOTE:
DUCT WRAP SHALL BE APPLIED TO THE CLEANOUT DOOR PER THE WRAP MFR'S INSTALLATION INSTRUCTIONS, NO EXCEPTIONS. ALSO, THE CLEANOUT DOOR MUST BE REMOVABLE WITHOUT TOOLS AND MUST BE CLEARLY AND PERMANENTLY LABELED.

CRITICAL: MOUNT RIGHT SIDE OF HOOD#3 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.

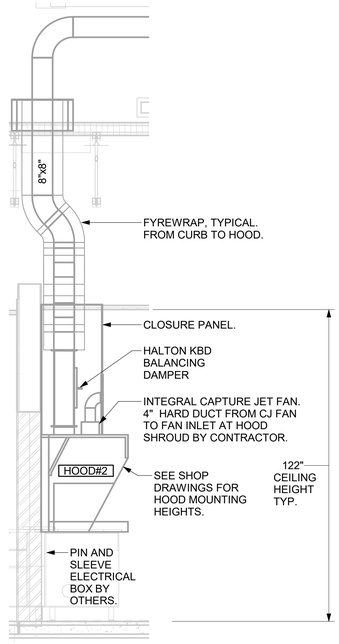


6 HOOD ELEVATION - HOOD#3
NOT TO SCALE

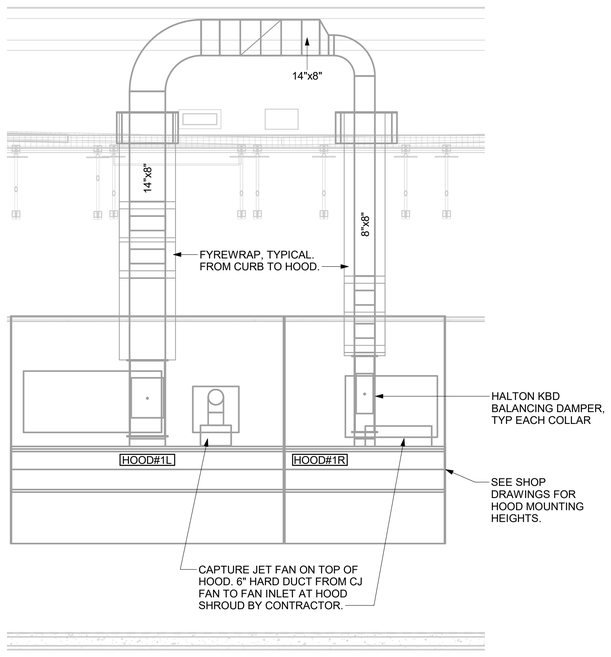


5 HOOD ELEVATION - HOOD#2 - FRONT
NOT TO SCALE

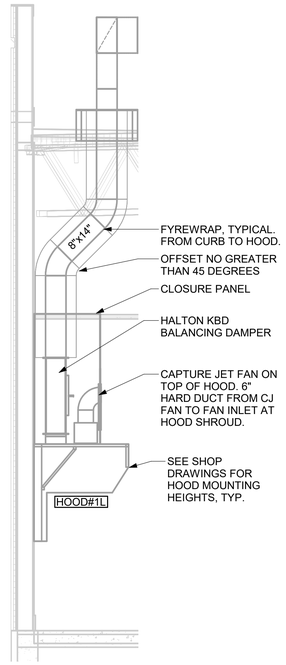
CRITICAL: MOUNT LEFT SIDE OF HOOD#2 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.



4 HOOD ELEVATION - HOOD#2 - SIDE
NOT TO SCALE



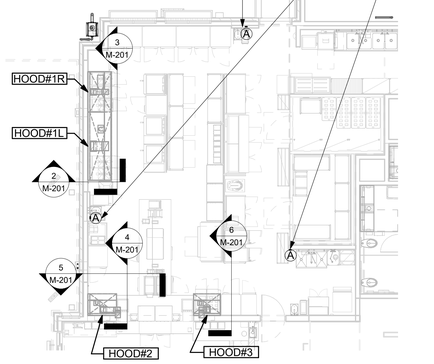
3 HOOD ELEVATION - HOOD#1 - FRONT
NOT TO SCALE



2 HOOD ELEVATION - HOOD#1 - SIDE
NOT TO SCALE

PULL STATION SERVING BOTH HOOD#2 AND HOOD#3 ON WALL WHERE SHOWN. LOCATE PULL STATION BETWEEN 42" AND 48" AFF. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT ELEVATIONS. J-BOX AND CONDUIT ARE BY ELECTRICAL. PROVIDE RED BAKELITE LABEL WITH 1/4" HIGH WHITE LETTERS INDICATING THE HOODS SERVED, I.E.: "PASS THRU HOODS".

PULL STATION SERVING HOOD#1 ADJACENT TO HANDSINK. LOCATE PULL STATION BETWEEN 42" AND 48" AFF. COORDINATE EXACT LOCATION WITH KITCHEN EQUIPMENT ELEVATIONS. J-BOX AND CONDUIT ARE BY ELECTRICAL. PROVIDE RED BAKELITE LABEL WITH 1/4" HIGH WHITE LETTERS INDICATING THE HOODS SERVED, I.E.: "MAIN COOKLINE HOOD".



1 HOOD LAYOUT
NOT TO SCALE

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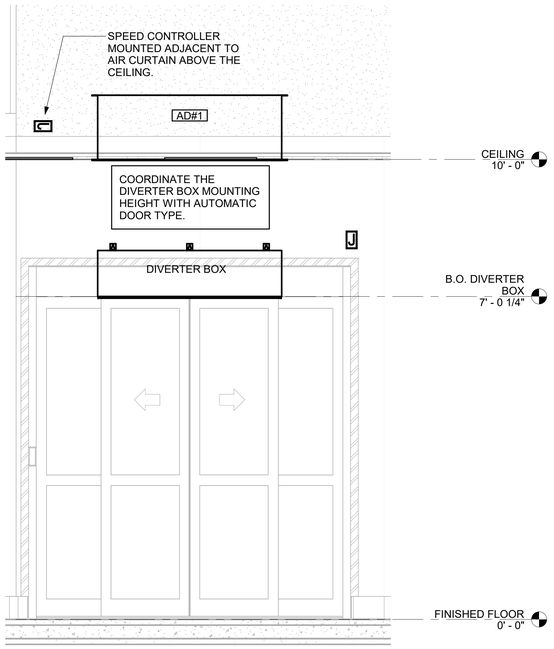
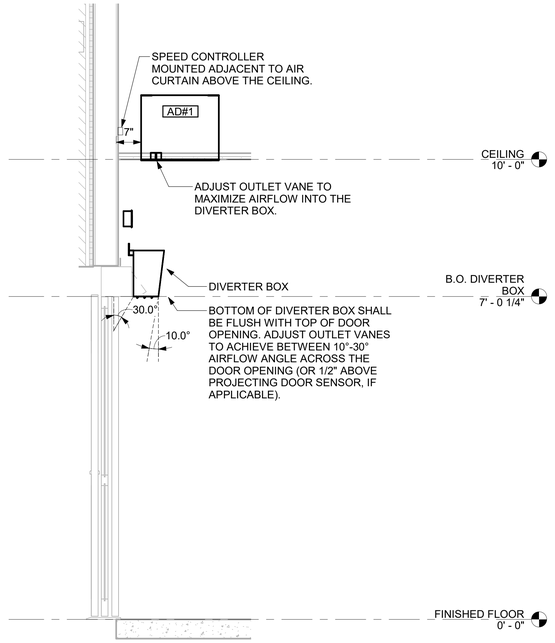
SHEET
EXHAUST HOOD ELEVATIONS

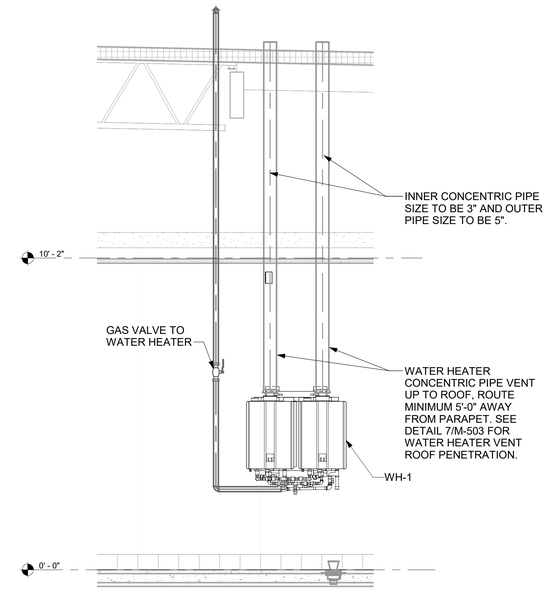
SHEET NUMBER
M-201



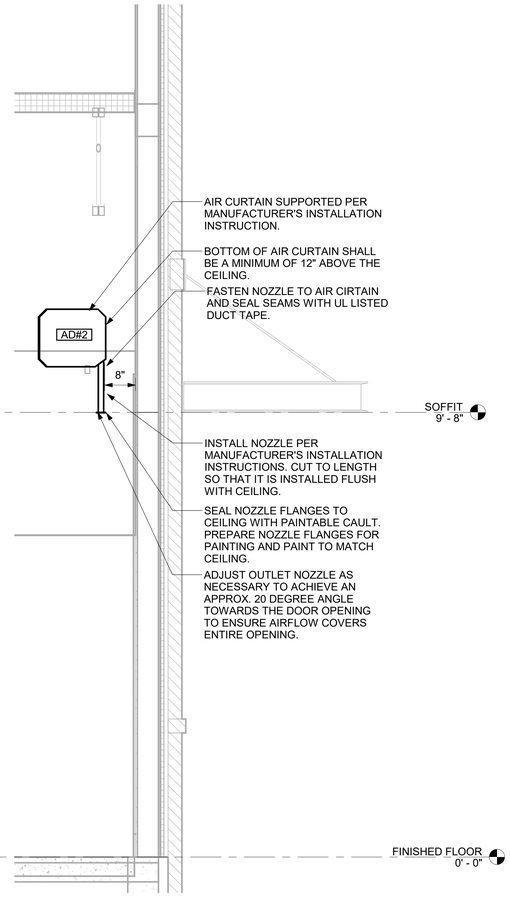
2 AD#1 FRONT VIEW
3/4" = 1'-0"



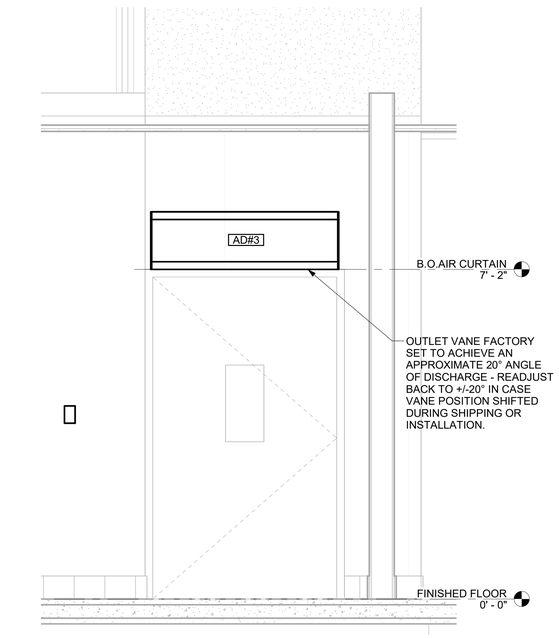
3 AD#1 SIDE VIEW
3/4" = 1'-0"



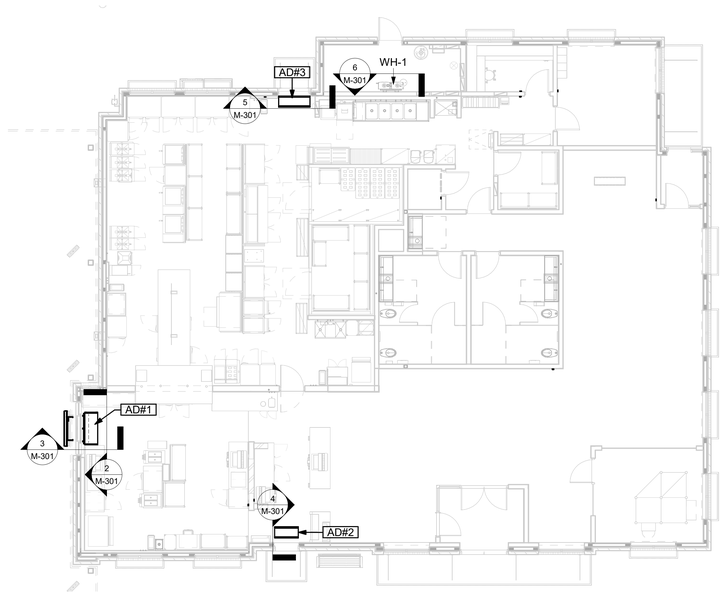
6 WATER HEATER GAS PIPING AND VENTING
NOT TO SCALE



4 AD#2 SIDE VIEW
3/4" = 1'-0"



5 AD#3 FRONT VIEW
3/4" = 1'-0"



1 VARIOUS SECTIONS
1/8" = 1'-0"

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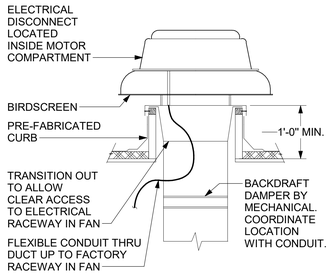
SHEET
SECTIONS

SHEET NUMBER
M-301

SECURE FAN TO CURB WITH HEX WASHER HEAD SELF-DRILLING SCREW (#12 x 2"). THE FASTENERS SHALL BE 2" FROM EACH CORNER OF THE FAN BASE AND THE DISTANCE BETWEEN FASTENERS SHALL BE 4" OR LESS. MINIMUM 5 FASTENERS PER SIDE OF CURB. ALL FASTENERS ARE TO BE HIGH QUALITY CORROSION RESISTANT STEEL OR STAINLESS STEEL.

REFER TO STRUCTURAL DRAWINGS FOR ANCHORAGE OF FAN/CURB TO STRUCTURE.

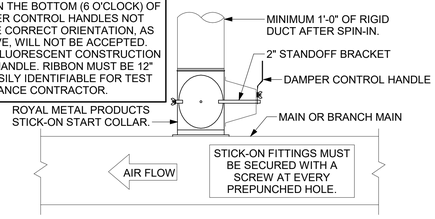


3 RESTROOM EXHAUST FAN
NOT TO SCALE

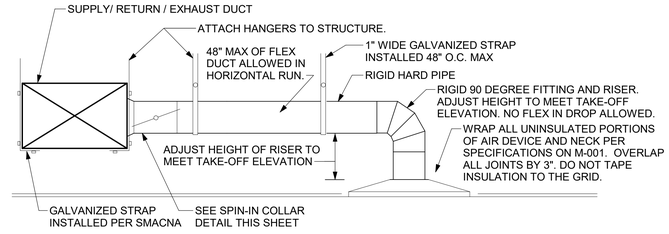
CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE ROYAL METAL PRODUCTS START COLLARS FOR BOTH WITH AND WITHOUT A MANUAL BALANCING DAMPER. THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE ROYAL METAL PRODUCTS START COLLARS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE AT 404-351-1010 FOR PRICING AND AVAILABILITY. ROYAL METAL PRODUCTS START COLLARS NOT PURCHASED THRU TOM BARROW COMPANY WILL NOT BE ACCEPTED.

DAMPER CONTROL HANDLE MUST BE EXPOSED, AND DAMPER SHAFT MUST ALWAYS BE PARALLEL TO AIRFLOW IN DUCT MAIN. AS AN EXAMPLE, FOR HORIZONTAL TRUNK DUCT, HANDLE MUST BE LOCATED ON THE LEFT OR RIGHT (9 OR 3 O'CLOCK) OF COLLAR, AND FOR VERTICAL TRUNK DUCT, LOCATED ON THE BOTTOM (6 O'CLOCK) OF COLLAR. DAMPER CONTROL HANDLES NOT INSTALLED IN THE CORRECT ORIENTATION, AS SPECIFIED ABOVE, WILL NOT BE ACCEPTED. ATTACH YELLOW FLUORESCENT CONSTRUCTION RIBBON TO THE HANDLE. RIBBON MUST BE 12" LONG AND BE EASILY IDENTIFIABLE FOR TEST AND BALANCE CONTRACTOR.

DO NOT APPLY START COLLAR OVER DUCT WRAP



2 START COLLAR
NOT TO SCALE

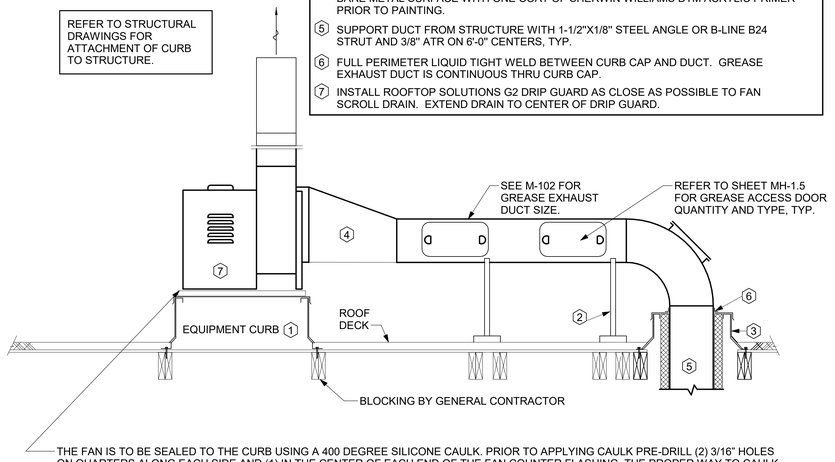


1 SAG/RAG/GRILLE TAKE-OFF
NOT TO SCALE

KEYED NOTES:

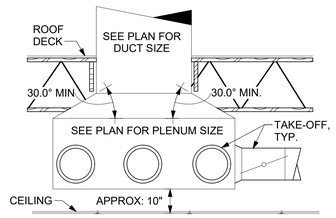
1. 22" EQUIPMENT CURB FURNISHED BY HALTON.
2. DUCT SUPPORT SHALL BE PROVIDED EVERY 8', AND WITHIN 12" OF ANY FITTING OR WELD SEAM. SUPPORTS SHALL BE SECURELY ATTACHED TO THE STRUCTURE AND DESIGNED TO CARRY GRAVITY, WIND, AND SEISMIC LOADS PER CODE.
3. 12" HIGH INSULATED CURB FURNISHED BY HALTON. MECHANICAL CONTRACTOR TO PROVIDE MINIMUM 18 GA STAINLESS STEEL CURB CAP AND FLASHING.
4. ALL DUCTWORK AND UNFINISHED METAL ON ROOF EXCEPT STAINLESS SHALL BE PREPARED WITH TWO COATS OF SHERWIN WILLIAMS B66-200 SERIES DTM WHITE ACRYLIC SEMI-GLOSS INDUSTRIAL MAINTENANCE COATING. DEGREASE AND PRIME BARE METAL SURFACE WITH ONE COAT OF SHERWIN WILLIAMS DTM ACRYLIC PRIMER PRIOR TO PAINTING.
5. SUPPORT DUCT FROM STRUCTURE WITH 1-1/2"X1/8" STEEL ANGLE OR B-LINE B24 STRUT AND 3/8" ATR ON 6'-0" CENTERS, TYP.
6. FULL PERIMETER LIQUID TIGHT WELD BETWEEN CURB CAP AND DUCT. GREASE EXHAUST DUCT IS CONTINUOUS THRU CURB CAP.
7. INSTALL ROOFTOP SOLUTIONS G2 DRIP GUARD AS CLOSE AS POSSIBLE TO FAN SCROLL DRAIN. EXTEND DRAIN TO CENTER OF DRIP GUARD.

REFER TO STRUCTURAL DRAWINGS FOR ATTACHMENT OF CURB TO STRUCTURE.



THE FAN IS TO BE SEALED TO THE CURB USING A 400 DEGREE SILICONE CAULK. PRIOR TO APPLYING CAULK PRE-DRILL (2) 3/16" HOLES ON QUARTERS ALONG EACH SIDE AND (1) IN THE CENTER OF EACH END OF THE FAN COUNTER FLASHING. THE PROPER WAY TO CAULK IS TO CUT THE THREADED BUTTON THAT SEALS THE TUBE. DO NOT USE A CAULK TIP. THIS PROVIDES APPROXIMATELY A ¼" THICK BEAD OF SILICONE THAT WILL SEAL THE BASE OF THE FAN TO THE TOP OF THE CURB AND DUCT. SEAL THE FULL PERIMETER AND ALL FOUR SIDES OF THE TOP DUCT PLATE. USE GENEROUS AMOUNTS OF CAULK TO BE SURE ANY IRREGULARITIES IN THE SHEET METAL SURFACES ARE FILLED. WITH THE CAULK IN PLACE AND THE FAN INSTALLED ON THE CURB, PRESS THE FAN DOWN FIRMLY TO ASSURE GOOD CONTACT. WHILE HOLDING THE FAN FIRMLY IN PLACE, DRIVE 5/16" SCREWS THROUGH THE PREDRILLED HOLES IN THE COUNTER FLASHING INTO THE CURB CAP. THIS WILL HOLD THE FAN SECURELY IN PLACE. THE CAULK IS THE PREFERRED METHOD AS IT WILL SEAL BETWEEN THE IRREGULARITIES BETWEEN THE SHEET METAL SURFACES. WITH THE FAN OPERATING YOU SHOULD FEEL NO AIR BEING SUCKED INTO THE FAN WHERE THE FAN COUNTER FLASHING MEETS THE CURB CAP. ONCE FAN IS SECURELY IN PLACE, PRE-DRILL 3/16" HOLES EVENLY SPACED AROUND THE EXHAUST FAN CABINET & DRIVE 5/16" SCREWS THROUGH THE PREDRILLED HOLES IN THE COUNTER FLASHING INTO THE CURB CAP. MINIMUM 13 FASTENERS ON EACH SIDE AND 8 FASTENERS ON EACH END.

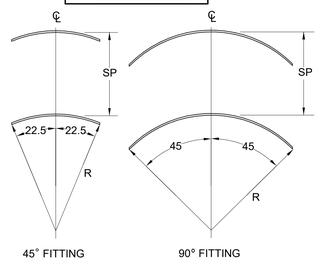
5 KITCHEN HOOD EXHAUST FAN
NOT TO SCALE



6 RETURN DROP GEOMETRY
NOT TO SCALE

TURNING VANE SCHEDULE		
R	SP	GA
2"	1.5"	24

1. NO TRAILING EDGE.
2. SINGLE THICKNESS CONSTRUCTION.



4 TURNING VANES
NOT TO SCALE

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Kurzynske & Associates
2705 Lebanon Pike - Suite One
Nashville, Tennessee 37214
Telephone: (615) 255-5203

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01/29/25

CHICK-FIL-A
JEFFERSON AND BUCHANAN FSU
12839 Jefferson Avenue
Newport News, VA 23608

FSR#04942

BUILDING TYPE / SIZE: P14 SE BN
RELEASE: 24.05
PRINTED FOR
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REVISION SCHEDULE

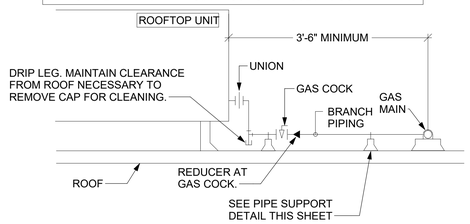
NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 24122.EH.S
DATE 10/22/2024
DRAWN BY BLM

SHEET
DETAILS

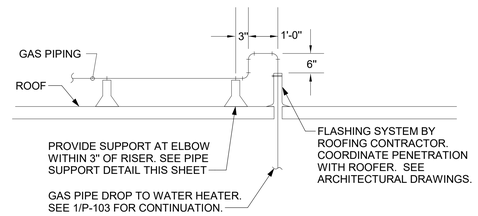
SHEET NUMBER
M-501

NOTES:
1. INSTALL GAS PIPING SUCH THAT HVAC EQUIPMENT ACCESS PANELS AND/OR DOORS ARE IN NO WAY OBSTRUCTED BY PIPING, VALVES, OR SUPPORTS.
2. TO AVOID CONFLICT WITH AC UNIT ACCESS DOORS, INSTALL GAS PIPING NO CLOSER THAN 3'-6" FROM AC UNIT. (EXCEPT FOR BRANCH LINE CONNECTED TO AC UNIT.)
3. ROUTE BRANCH TAKE-OFF DIRECTLY FROM MAIN TO ROOFTOP UNIT AS SHOWN ON PLAN AND DETAILS WITHOUT LATERAL OFFSETS WHICH MAY OBSTRUCT UNIT ACCESS DOORS.



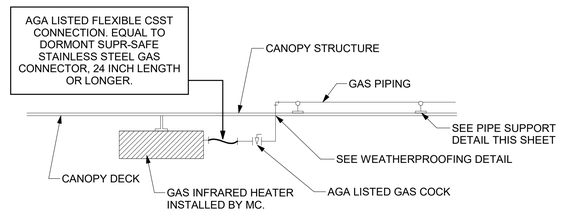
3 GAS PIPING AT RTU
NOT TO SCALE

OFFSET PIPING A MINIMUM OF 6" ABOVE TOP EDGE OF FLASHING.

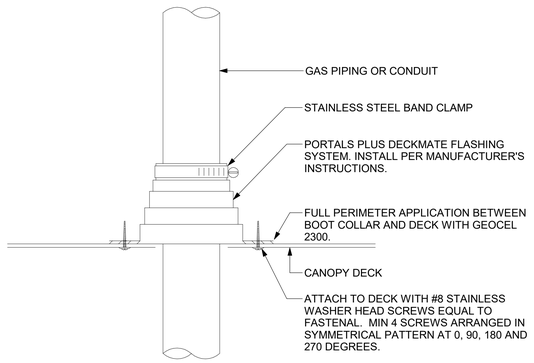


2 GAS PIPE DROP TO WATER HEATER
NOT TO SCALE

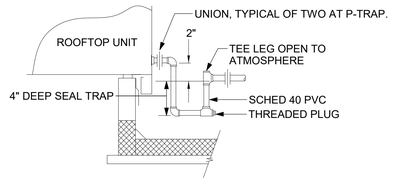
AGA LISTED FLEXIBLE CSST CONNECTION. EQUAL TO DORMONT SUPR-SAFE STAINLESS STEEL GAS CONNECTOR, 24 INCH LENGTH OR LONGER.



1 GAS CONNECTION AT APPLIANCE
NOT TO SCALE

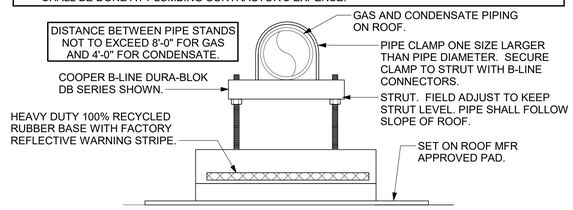


6 WEATHERPROOFING AT CANOPY PENETRATION
NOT TO SCALE

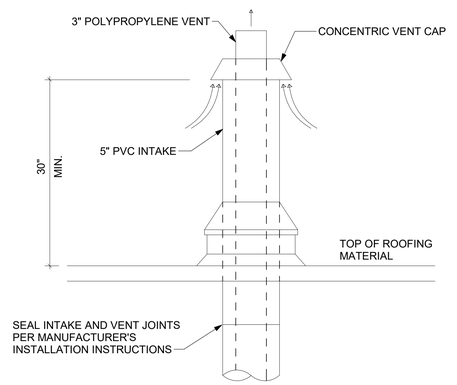


5 CONDENSATE DRAIN PIPING
NOT TO SCALE

NOTES:
1. NON ADJUSTABLE MODEL DB610 PIPE STAND TO BE USED FOR NON-ELEVATED PIPING INSTALLED FLAT ON ROOF DECK.
2. PROVIDE MODEL DBE 10-8 OR DBE 10-12 OR DBE 10-16 AS NEEDED FOR ELEVATING CONDENSATE PIPING TO MAINTAIN PROPER SLOPE AND FOR GAS PIPING CROSSING OVER CONDENSATE PIPING.
3. ENSURE GAS AND CONDENSATE PIPING DO NOT OBSTRUCT ROOFTOP EQUIPMENT ACCESS OPENINGS. RE-PIPING OF SYSTEMS DUE TO CONFLICTS WITH EQUIPMENT ACCESS OPENINGS SHALL BE DONE AT PLUMBING CONTRACTOR'S EXPENSE.



4 PIPING SUPPORT ON ROOF
NOT TO SCALE



7 WATER HEAT VENT ROOF PENETRATION
NOT TO SCALE

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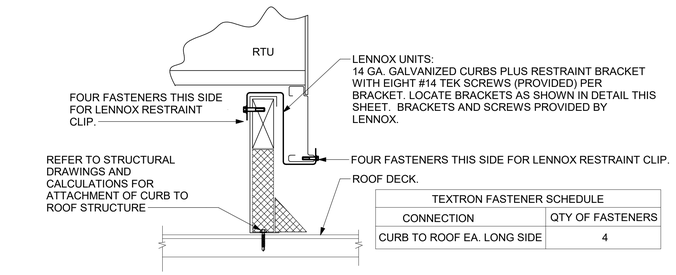
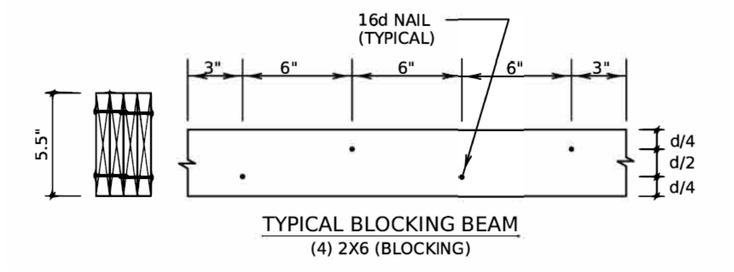
SHEET DETAILS
SHEET NUMBER **M-502**

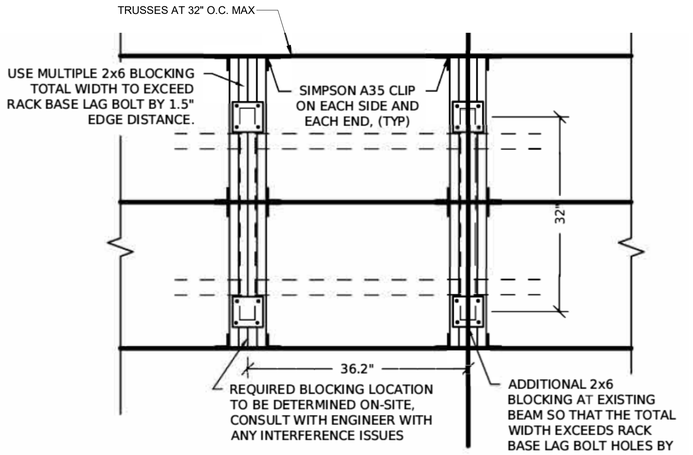


TEXTRON FASTENER SCHEDULE	
CONNECTION	QTY OF FASTENERS
CURB TO ROOF EA. LONG SIDE	4

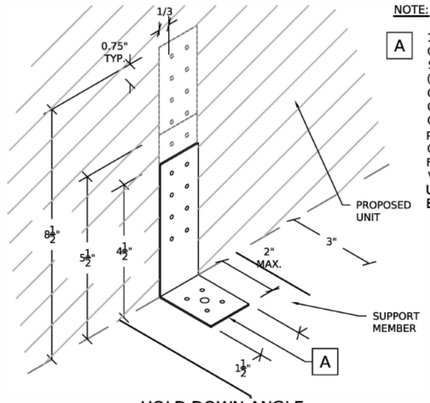
3 RTU CURB BRACKET
NTS



TYPICAL BLOCKING BEAM
(4) 2X6 (BLOCKING)



PLAN VIEW

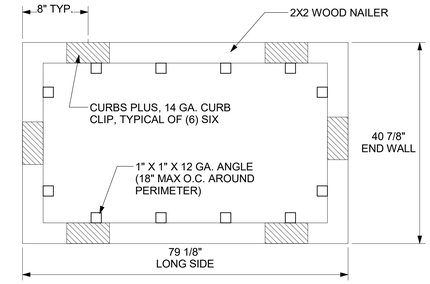


NOTE:

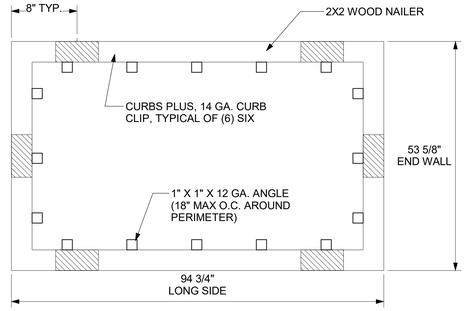
A — 1", 1.5" or 2" WIDE x 4.5" , 5.5", 8" or 10" x 14 GA. OR 16 GA. GALVANIZED OR (16 OR 18 GA.) STAINLESS STEEL HOLD DOWN CLIP. USE (4)-#10 SMS INTO A/C UNIT FOR 4.5" AND 5.5" CLIP AND (2)-#10 SMS INTO 8", 8.5" OR 10" CLIP. IT IS RECOMMENDED TO USE 1/4" CARBON STEEL SIMPSON STRONG BOLT, OR POWERS WEDGE BOLT WITH 1 ¾" EMBEDMENT OR EQUAL TAPCON. WITH 2.5" EDGE DISTANCE FROM EDGE OF PAD . BASE PROVIDER TO VERIFY BASE AND CONNECTION.
UNIT SHALL HAVE A MINIMUM OF 20 GA. ENCLOSURE FOR HOLD DOWN ANGLE.

HOLD DOWN ANGLE
SCALE: N.T.S.

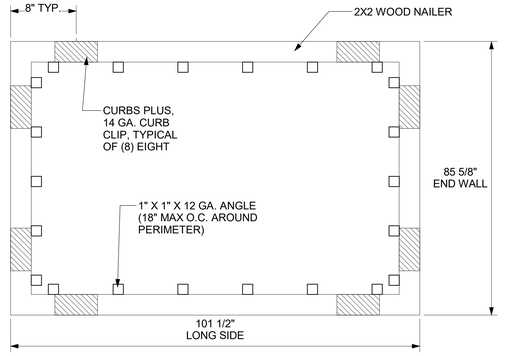
5 CONDENSER STAND DETAILS
NOT TO SCALE



LENNOX LGT MODELS 024 THRU 072

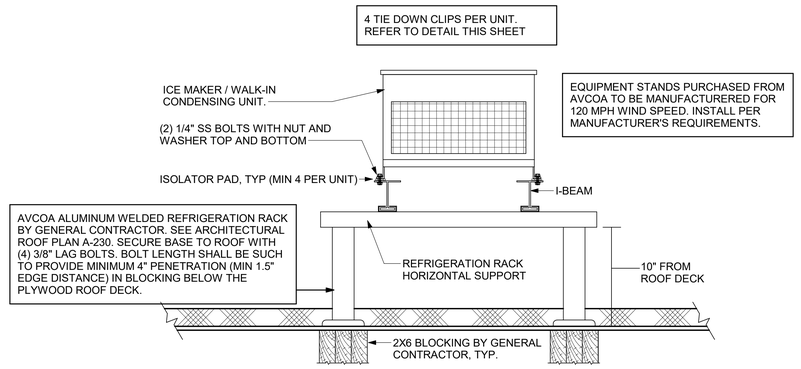


LENNOX LGT MODELS 092 THRU 150



LENNOX LGT MODELS 156 THRU 300

4 RTU CURB CLIP INSTALLATION
NOT TO SCALE



1 CONDENSING UNIT TIE DOWN DETAIL
NTS

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SHEET: WIND DETAILS

SHEET NUMBER
M-503

ROOFTOP UNIT SCHEDULE - LENNOX

MARK	MANUFACTURER	MODEL	EER	IEER/ SEER	TOTAL WEIGHT	SUPPLY AIRFLOW (CFM)	OA (CFM)	HP	ESP (in-wg)	TOTAL COOLING MBH	SENSIBLE COOLING MBH	HEATING INPUT MBH	HEATING OUTPUT MBH	VOLTAGE (V)	PHASE	MCA (A)	MOCP (A)	REMARKS
AC#1L	LENNOX	LGT300H5M	10.6	14.3	3205.00 lb	8,125	1,765	7.5	0.80	278.3	210.5	480	389	208	3	138	150	1,3,4,5,6,7,8,9,10,11,12,13,14
AC#2L	LENNOX	LGT156H5M	12.0	15.4	2568.00 lb	4,500	1,050	3	0.80	156	109.9	260	211	208	3	71	90	1,3,4,5,6,7,8,9,10,11,12,13,14
AC#3L	LENNOX	LGT180H5M	12.0	15	2682.00 lb	5,250	1,275	5	0.80	174.7	131.7	360	292	208	3	76	90	1,3,4,5,6,7,8,9,10,11,12,13,14
AC#4L	LENNOX	LGT060H5E	12.7	17.1	1038.00 lb	1,750	425	1.5	0.80	60.1	44.8	108	87	208	3	23	35	2,3,4,5,6,7,8,9,10,11,12,13,14

NOTES
- MECHANICAL CONTRACTOR TO VERIFY LENNOX SUBMITTAL WITH CONSTRUCTION DOCUMENTS. NATIONAL ACCOUNT - NO SUBSTITUTIONS PERMITTED - SEE DRAWING G-004.

REMARKS
1. DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EXHAUST.
2. DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC EXHAUST.
3. 14" HIGH ROOF CURB. PROVIDE WITH CURB RESTAINT CLIP KIT FOR PROJECT WIND SPEED. WIND SPEED = 120 MPH.
4. SEE DETAIL 2/M-701L FOR SETTING OF CONTROL PARAMETERS BY MC.
5. FACTORY INSTALLED 115V GFI SERVICE OUTLET, SEPERATE 115V CIRCUIT PROVIDED BY ELECTRICAL CONTRACTOR.
6. FACTORY INSTALLED RETURN AIR SMOKE DETECTOR.
7. FACTORY INSTALLED NON-FUSED DISCONNECT.
8. 2" MERV 8 THROW AWAY FILTERS.
9. HINGED PANELS FOR ACCESS TO FILTER(S), FAN BLOWER & MOTOR, COMPRESSOR(S) ACCESS AND CONTROLS.
10. FACTORY INSTALLED COIL HAIL GUARD.
11. HOT GAS DEHUMIDIFICATION OPTION WITH WALL MOUNTED HUMIDITY SENSOR.
12. FACTORY CONFIGURED PHASE LOSS PROTECTION.
13. FACTORY INSTALLED CONDENSATE PAN DRAIN OVERFLOW SWITCH.
14. HIGH FAULT (100K) SCCR RATING.

HOOD SCHEDULE

MARK	EXHAUST CFM	SP @ TAB PORT (in-wg)	CAPTURE JET CFM & S.P.	TYPE	COLLAR SIZE	WIDTH	DEPTH	HEIGHT	MANUFACTURER	MODEL	REMARKS
HOOD#1L	1,204	0.13	80 @ 0.30"	BACKSHELF	14"X8"	107"	37"	38"	HALTON	KVL-2 IC	1
HOOD#1R	709	0.13	47 @ 0.30"	BACKSHELF	8"X8"	63"	37"	38"	HALTON	KVL-2 IC	1
HOOD#2	701	0.3	30 @ 0.29"	BACKSHELF	8"X8"	45"	34"	38"	HALTON	KVL-C-IC	1
HOOD#3	701	0.3	30 @ 0.29"	BACKSHELF	8"X8"	42"	34"	38"	HALTON	KVL-C-IC	1

NOTES
- DIMENSIONS OF HOODS INCLUDE BACK AND SIDE SPACERS (HEIGHT DOES NOT INCLUDE CLOSURE PANELS). NATIONAL ACCOUNTS - NO SUBSTITUTIONS PERMITTED - SEE DRAWING G-004.

REMARKS
1. REFER TO HOOD SHOP DRAWINGS FOR HOOD CONSTRUCTION AND OPTIONS. PRELIMINARY HOOD SHOP DRAWINGS ARE INCLUDED FOR REFERENCE ON SHEETS MH-1.1, MH-1.2, AND MH-1.3.

HEATER SCHEDULE

MARK	HEATIING INPUT INPUT (kW)	HEATIING INPUT INPUT (MBH)	FRAME LENGTH	FRAME WIDTH	FRAME HEIGHT	MOUNTING TYPE	VOLTAGE (V)	PHASE	FLA (A)	MOCP (A)	MODEL	MANUFACTURER	REMARKS
EIH#1	6.00	0.0	56"	8.5"	3.5"	WALL BRACKET	208	1	28.9	40	BH0420035	BROMIC	1, 2, 3, 4
IRH	0.00	50.0	48"	13.37"	9.5"	BRACKET	120	1	0.4	20	WB50	SPACE-RAY	1, 5, 6, 7

NOTES
- CONFIRM HEATER QUANTITY WITH CANOPY SHOP DRAWINGS.
- NATIONAL ACCOUNT NO SUBSTITUTIONS PERMITTED - SEE DRAWING G-004.

REMARKS
1. STAINLESS STEEL LENS WITH BLACK EMISSIVE COATING
2. PROVIDE ENGRAVED PLASTIC LABEL AT EACH UNIT WITH UNIT DESIGNATION IN 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND.
3. PROVIDE BLACK HEATER WITH HIGH TEMPERATURE COATING, AND MANUFACTURER MOUNTING BRACKETS.
4. PROVIDE BROMIC WALL MOUNTED ELECTRIC HEATER MODEL: BH0420033 FOR 220-240V SITES.
5. STEEL BURNER WITH CERAMIC BURNER TILES.
6. PROVIDE ENGRAVED PLASTIC LABEL AT EACH UNIT WITH UNIT DESIGNATION IN 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND. MOUNT TO CANOPY DECK, FACING FORWARD, 12" LATERALLY FROM THE LONG SIDE OF THE HEATER.
7. STAINLESS STEEL HEAT SHIELDS.

FAN SCHEDULE

MARK	FAN CFM	ESP (in-wg)	MOTOR RPM	HP	AREA SERVED	VOLTAGE (V)	PHASE	FLA (A)	MOCP (A)	MODEL	MANUFACTURER	REMARKS
CF#1	1,900	0.01	1,625	0.1	OUTDOOR CANOPY	120	1	1.1	20	U-18-TE-HD	TPI	20,21,22
EF#1	1,913	0.75	1,331	0.75	HOOD#1	120	1	12.8	25	KEFB-14-CFA	HALTON	1,2,3,4,5,6,7,8,9,10,11
EF#2	1,402	0.95	1,199	0.75	HOOD#2 & HOOD#3	120	1	12.8	25	KEFB-14-CFA	HALTON	1,2,3,4,5,6,7,8,9,10,11
EF#3	300	0.375	1,550	0.125	RESTROOMS	120	1	2.2	20	XRED-095-VG	ACCUREX	1,3,11,12,13,14,15,16
TF#1	450	0.3	1,144	0.127	TECH CLOSET	120	1	2.5	20	SP-A510-VG	GREENHECK	1,17,18,19

NOTES
- GREASE EXHAUST FAN RPM BASED ON 80 DEGREE F AIR AT 1000 FEET ABOVE SEA LEVEL.

REMARKS
1. FANS SUPPLIED BY HALTON.
2. U.L. 705 LISTED AND LABELED FOR RESTUARANT APPLICATIONS.
3. FACTORY INSTALLED PREWIRED DISCONNECT SWITCH.
4. 22" HIGH ROOF CURB.
5. INSTALL ROOFTOP SOLUTIONS G2 DRIP GUARD. MECHANICAL CONTRACTOR TO CONTACT ROOFTOP SOLUTIONS AT 800-913-7034.
6. FACTORY WEATHER HOUSING W/ HINGED ACCESS DOOR.
7. FACTORY DRAIN CONNECTION.
8. FACTORY BOLTED ACCESS DOOR ON SCROLL.
9. FACTORY INSTALLED BELT DRIVE WITH ADJUSTABLE MOTOR SHEAVE, SPARE BELT, AND BELT TENSIONER.
10. FACTORY INSTALLED OUTLET WITH QUICK RELEASE, HINGED ACCESS, AND GRAVITY BACKDRAFT DAMPER.
11. INTEGRAL THERMAL OVERLOAD.
12. BIRDSCREEN.
13. BACKDRAFT DAMPER IN DUCT BY MECHANICAL CONTRACTOR AS SHOWN ON 3/M-501.
14. STARTER BY ELECTRICAL CONTRACTOR. INTERLOCK WITH LIGHTS BY ELECTRICAL CONTRACTOR.
15. 12" HIGH CURB.
16. FACTORY INSTALLED AND WIRED SPEED CONTROLLER.
17. PROVIDE NEMA 1 PREWIRED DISCONNECT.
18. INTEGRAL POTENTIOMETER ON FAN MOTOR. SET TO FULL SPEED.
19. PROVIDE THERMOSTAT / TEMPERATURE CONTROLLER, SET TO 76°F.
20. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
21. PROVIDE WITH ON/OFF SWITCH.
22. FAN SUPPLIED BY TOM BARROW OR POWERS OF ARKANSAS FOR THE SOUTHWEST REGION.

AIR DOOR SCHEDULE

MARK	CFM	VELOCITY (FPM)	HEATING (KW)	MOTOR HP	MCA (A)	MOCP (A)	VOLTAGE (V)	PHASE	AREA SERVED	MODEL	MANUFACTURER	REMARKS
AD#1	1,543	2,338	10	0.75	31.4	40	208	3	DRIVE THRU	CHA-1-48E	POWERED AIRE	1,2,3,5
AD#2	1,401	2,060	0	0.75	8	20	120	1	SERVING	ETA-1-36	POWERED AIRE	2,4,6
AD#3	3,867	4,218	0	0.75	8	20	120	1	REAR DOOR	RBT-1-48	POWERED AIRE	4

NOTES
- NATIONAL ACCOUNT - NO SUBSTITUTIONS PERMITTED - SEE DRAWING G-004

REMARKS
1. FACTORY PROVIDED, WIRED, AND UNIT MOUNTED SPEED CONTROLLER ABOVE CEILING.
2. FACTORY WIRED DISCONNECT.
3. FACTORY PROVIDED, FIELD INSTALLED BY MC, REMOTE WALL SWITCHES FOR HEATING ON/OFF AND FAN ON/AUTO SWITCH. SEE DETAILS ON M-702.
4. FACTORY PROVIDED MAGNETIC DOOR CONTACT WITH FACTORY INSTALLED LOW VOLTAGE CONTROLS LOCATED IN AIR DOOR CABINET.
5. PROVIDE WITH A DIVERTER BOX. PROVIDE WITH MOUNTING BRACKETS PER MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE WITH NOZZLE EXTENSION, SEE DETAIL 3/M-301.

AIR DEVICE SCHEDULE

MARK	DESCRIPTION	LOCATION	NECK SIZE	FACE SIZE	FRAME TYPE	REMARKS
A	PRICE MODEL APDC ALUMINUM SUPPLY AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE CURVED AIR PATTERN CONTROLLERS.	DINING/KITCHEN	VARIES	24"x24"	LAY-IN	1,7
B	VARITHERM PLAQUE DIFFUSER	OFFICE	8"	24"x24"	LAY-IN	1,7,8
C	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY	16"x16"	19"x19"	BEVELLED	1,3,5,6
D	PRICE MODEL APDC ALUMINUM SUPPLY AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE CURVED AIR PATTERN CONTROLLERS.	DINING	VARIES	16"x16"	SURFACE	1,3,5,6
F	PRICE MODEL 80 EGGCRATE RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND ROUND NECK.	DINING / OFFICE / KITCHEN	VARIES	24"x24"	LAY-IN	1,7
FF	PRICE MODEL 80FF STEEL FILTER RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND 2" FILTER FRAME.	MFA	VARIES	24"x24"	LAY-IN	1,7
J	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	RESTROOMS	10"x10"	15"x15"	BEVELLED	1,2,3,5,6
K	PRICE MODEL APDDR ALUMINUM PERFORATED FACE RETURN AIR GRILLE.	RESTROOMS/ ENTRY	14"x14"	16"x16"	SURFACE	1,2,5,6

NOTES
- NATIONAL ACCOUNT - NO SUBSTITUTIONS PERMITTED - SEE DRAWING G-004

REMARKS
1. STANDARD OFF WHITE FINISH.
2. PROVIDE MODEL VCS3 NECK DAMPER.
3. SEE DRAWING M-101 FOR THROW.
4. PROVIDE MODEL VCR7 NECK DAMPER ON GRILLES IN RESTROOMS SERVING EXHAUST FAN.
5. PROVIDE BACKPAN. MC TO SEAL JOINTS WITH MASTIC AND INSULATE EXTERNALLY.
6. FIELD INSULATE BACKPAN AS SHOWN ON DETAIL 1/M-501.
7. FACTORY INSULATED R-6 BACKPAN.
8. PROVIDE RELIEF COLLAR ACCESSORY FOR VAV DIFFUSER.

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FSR#04942

BUILDING TYPE / SIZE: P14 SE BN
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REVISION SCHEDULE

NO.	DATE	DESCRIPTION
3	01/29/2025	DESIGNOTES

CONSULTANT PROJECT # 24122.EH.S
DATE 10/22/2024
DRAWN BY AUTHOR

SHEET
EQUIPMENT SCHEDULES - LENNOX

SHEET NUMBER
M-601L

VENTILATION SCHEDULE

General			Ventilation													Exhaust							Served by	
			People				Area									Area		Toilet						
Room #	Room Name	Area Az ft2	Occupant Density People/1,000 ft2	Occupants People Pz	Outdoor Airflow Rate CFM/Person Rp	Outdoor Airflow CFM Pz x Rp	Outdoor Airflow Rate CFM/ft2 Ra	Outdoor Airflow CFM Az x Ra	Breathing Zone Outdoor Airflow CFM Vbz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Airflow CFM Voz	Primary Zone Airflow CFM Vpz	Primary Outdoor Air Fraction Zp	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft2	Total Required Exhaust CFM	Exhaust Control/ Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust
1	Kitchen	1,060	20	22	7.5	165	0.12	127	292	0.8	366	7,700	0.05	1,673	1	742	-	-	-	3,315	AC#1	EF-1 / EF-2
2	Kitchen (Dish Washing)	161	15	3	7.5	23	0.18	29	51	0.8	65	425	0.15	92	-	-	-	-	-	-	AC#1	-
	Total Area	**1,221**						**Total Vbz**	**344**			**Total Supply Airflow**	**8,125**		**1,765**	**Actual Outdoor Airflow**							
								Diversity (D)	**0.80**				**Maximum Zp**	**0.15**										
								Uncorrected Outdoor Air Intake (Vou)	**312**			**System Ventilation Efficiency (Ev)**		**0.90**										
								Required Outdoor Air Intake (CFM)				**347**												

VENTILATION SCHEDULE

General			Ventilation													Exhaust							Served by	
			People				Area									Area		Toilet						
Room #	Room Name	Area Az ft2	Occupant Density People/1,000 ft2	Occupants People Pz	Outdoor Airflow Rate CFM/Person Rp	Outdoor Airflow CFM Pz x Rp	Outdoor Airflow Rate CFM/ft2 Ra	Outdoor Airflow CFM Az x Ra	Breathing Zone Outdoor Airflow CFM Vbz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Airflow CFM Voz	Primary Zone Airflow CFM Vpz	Primary Outdoor Air Fraction Zp	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft2	Total Required Exhaust CFM	Exhaust Control/ Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust
5	Meal Fulfillment Area	453	15	7	7.5	52.5	0.18	82	134	0.8	168	4,500	0.04	1,050	-	-	-	-	-	-	AC#2	-
	Total Area	**453**						**Total Vbz**	**134**			**Total Supply Airflow**	**4,500**		**1,050**	**Actual Outdoor Airflow**							
								Diversity (D)	**1.00**				**Maximum Zp**	**0.03**										
								Uncorrected Outdoor Air Intake (Vou)	**134**			**System Ventilation Efficiency (Ev)**		**1.00**										
								Required Outdoor Air Intake (CFM)				**134**												

VENTILATION SCHEDULE

General			Ventilation													Exhaust							Served by	
			People				Area									Area		Toilet						
Room #	Room Name	Area Az ft2	Occupant Density People/1,000 ft2	Occupants People Pz	Outdoor Airflow Rate CFM/Person Rp	Outdoor Airflow CFM Pz x Rp	Outdoor Airflow Rate CFM/ft2 Ra	Outdoor Airflow CFM Az x Ra	Breathing Zone Outdoor Airflow CFM Vbz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Airflow CFM Voz	Primary Zone Airflow CFM Vpz	Primary Outdoor Air Fraction Zp	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft2	Total Required Exhaust CFM	Exhaust Control/ Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust
1	Dining	1,374	70	97	7.5	727.5	0.18	247	975	0.8	1219	3,900	0.312	947	-	-	-	-	-	-	AC#3	-
2	Serving	300	15	5	7.5	38	0.18	54	92	0.8	115	500	0.23	121	-	-	-	-	-	-	AC#3	-
3	Men's RR	155	-	-	-	-	-	-	-	0.8	-	100	-	24	-	-	Continuous	50	100	150	AC#3	EF-3
4	Women's RR	156	-	-	-	-	-	-	-	0.8	-	100	-	24	-	-	Continuous	50	100	150	AC#3	EF-3
5	RR Vestibule	100	-	-	-	-	0.06	6	6	0.8	8	50	0.15	12	-	-	-	-	-	-	AC#3	-
6	Exit Vestibule	36	-	-	-	-	0.06	2	2	0.8	3	200	0.01	49	-	-	-	-	-	-	AC#3	-
7	Entry Vestibule	77	-	-	-	-	0.06	5	5	0.8	6	400	0.01	97	-	-	-	-	-	-	AC#3	-
	Total Area	**2,198**						**Total Vbz**	**1,079**			**Total Supply Airflow**	**5,250**		**1,275**	**Actual Outdoor Airflow**							
								Diversity (D)	**0.80**				**Maximum Zp**	**0.312**										
								Uncorrected Outdoor Air Intake (Vou)	**1,018**			**System Ventilation Efficiency (Ev)**		**0.80**										
								Required Outdoor Air Intake (CFM)				**1,271**												

VENTILATION SCHEDULE

General			Ventilation													Exhaust							Served by	
			People				Area									Area		Toilet						
Room #	Room Name	Area Az ft2	Occupant Density People/1,000 ft2	Occupants People Pz	Outdoor Airflow Rate CFM/Person Rp	Outdoor Airflow CFM Pz x Rp	Outdoor Airflow Rate CFM/ft2 Ra	Outdoor Airflow CFM Az x Ra	Breathing Zone Outdoor Airflow CFM Vbz	Zone Air Distribution Effectiveness Ez	Zone Outdoor Airflow CFM Voz	Primary Zone Airflow CFM Vpz	Primary Outdoor Air Fraction Zp	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft2	Total Required Exhaust CFM	Exhaust Control/ Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust
1	Storage	62	-	-	-	-	0.12	7	7	0.8	9	40	0.15	10	-	-	-	-	-	-	AC#4	-
2	Service	122	-	-	-	-	0.12	15	15	0.8	19	385	0.05	94	-	-	-	-	-	-	AC#4	-
3	Team Member Room	171	50	9	5	45	0.06	10	55	0.8	70	700	0.10	170	-	-	-	-	-	-	AC#4	-
4	Office	70	5	1	5	5	0.06	4	9	0.8	12	200	0.06	49	-	-	-	-	-	-	AC#4	-
5	Riser Room	107	-	-	-	-	0.12	13	13	0.8	17	425	0.04	103	-	-	-	-	-	-	AC#4	-
	Total Area	**532**						**Total Vbz**	**99**			**Total Supply Airflow**	**1,750**		**425**	**Actual Outdoor Airflow**							
								Diversity (D)	**1.00**				**Maximum Zp**	**0.15**										
								Uncorrected Outdoor Air Intake (Vou)	**99**			**System Ventilation Efficiency (Ev)**		**1.00**										
								Required Outdoor Air Intake (CFM)				**99**												

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FSR#04942

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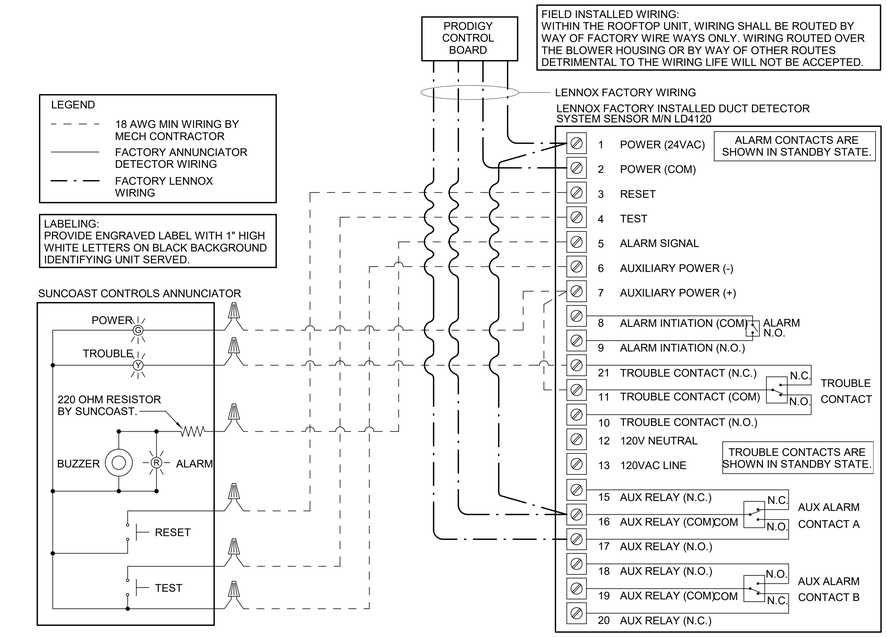
SHEET
VENTILATION SCHEDULES

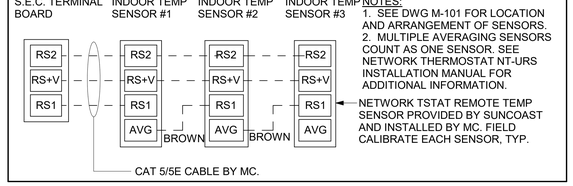
SHEET NUMBER
M-602

PROVIDE A PROFESSIONALLY LAMINATED COPY OF THESE DETAILS TO BE INSTALLED INSIDE THE ROOFTOP UNIT CONTROL CABINENT. USE A SETON CHART FRAME STYLE #68624, TELEPHONE NUMBER 800-243-6624, FOR MOUNTING THE DETAIL. ATTACH THE FRAME TO THE INTERIOR OF THE UNIT IN PLAIN AND EASY VIEW OF THE CONTROLS SECTION. CONTACT ENGINEER OF RECORD FOR A REPRODUCIBLE COPY OF THE DETAIL.



1 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM
NOT TO SCALE

AVERAGING SENSORS (WHERE SHOWN ON PLANS)



NOTES:
1. SEE DWG M-101 FOR LOCATION AND ARRANGEMENT OF SENSORS.
2. MULTIPLE AVERAGING SENSORS COUNT AS ONE SENSOR. SEE NETWORK THERMOSTAT NT-URS INSTALLATION MANUAL FOR ADDITIONAL INFORMATION.

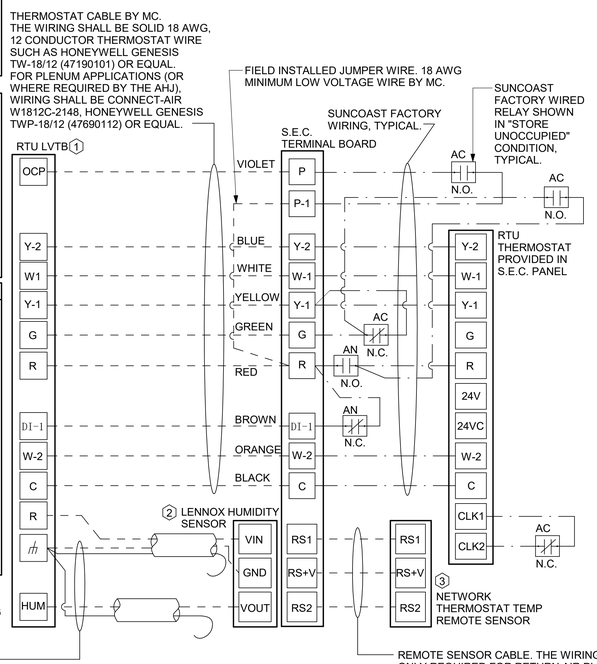
NETWORK TSTAT REMOTE TEMP SENSOR PROVIDED BY SUNCOAST AND INSTALLED BY MC. FIELD CALIBRATE EACH SENSOR, TYP.

NOTES:
1. MECHANICAL CONTRACTOR SHALL MAKE PLASTIC LAMINATE OF THIS DETAIL AND INSTALL PERMANENTLY ON INSIDE DOOR OF ROOFTOP UNIT CONTROL COMPARTMENT.
2. SEE DETAILS THIS SHEET FOR SMOKE DETECTOR AND ANNUNICIATOR WIRING.
3. SET ALL THERMOSTATS FOR AUTO CHANGEOVER.
4. PROVIDE PLASTIC ENGRAVED LABEL AT ALL NEW SENSORS WITH 1/4" HIGH WHITE LETTERING ON BLACK BACKGROUND, I.E. "AC#2 HUMIDITY SENSOR" OR "AC#2 TEMP SENSOR". PLACE LABELS ON WALL ADJACENT TO DEVICE, DO NOT APPLY DIRECTLY TO DEVICE.

KEYED NOTES:
1. LOW VOLTAGE WIRING TO RTU TO BE ROUTED TO UNIT THRU FACTORY WIREWAY.
2. HUMIDITROL UNITS ONLY: WIRING TO HUMIDITY SENSOR TO BE MADE WITH TWO SEPARATE RUNS OF SHIELDED TWISTED PAIR. TERMINATE SHIELD WIRES AT TB-1, LEAVE OPEN AT SENSOR.
3. NETWORK TSTAT REMOTE TEMP SENSOR PROVIDED BY SUNCOAST AND INSTALLED BY MC. SENSOR IS INTENDED TO BE SURFACE MOUNTED AND DOES NOT REQUIRE A SINGLE GANG BOX OF CONDUIT. FIELD CALIBRATE EACH SENSOR.

LEGEND

S.E.C.	SUNCOAST ENVIRONMENTAL CONTROLS (SUPPLIER OF TEMP/FAN CONTROL PANEL) LOCATED IN KITCHEN
(1)	KEY NOTE REFERENCE
MC	MECHANICAL CONTRACTOR
(AC)	SUNCOAST RELAY FACTORY INSTALLED AND WIRED IN CFA-500 PANEL, ENERGIZED BY PUTTING STORE SWITCH IN "STORE OCCUPIED" POSITION.
(AN)	SUNCOAST RELAY FACTORY INSTALLED AND WIRED IN CFA-500 PANEL, DENERGIZED WHEN ANSUL FIRE SUPPRESSION SYSTEM IS ACTIVATED, AS NOTED.
- - -	ALL LOW VOLTAGE CABLING BY MC. ONLY USE CABLE SPECIFIED. NO SUBSTITUTIONS.
— · —	LOW VOLTAGE WIRING BY S.E.C.
———	LINE VOLTAGE BY ELECTRICIAN OR S.E.C.



2 ROOFTOP UNIT CONTROL WIRING - LENNOX
NOT TO SCALE

LENNOX PRODIGY 2.0 OR CORE UNIT CONTROLLER SETTINGS:
1. FOR ALL RTU'S EXCEPT AC#1, ELIMINATE THE MORNING WARMUP/OSA DAMPER DELAY. THE MENU PATH IS:
   - MAIN MENU > SETTIGNS > RTU OPTIONS > EDIT PARAMETERS

   FOR GAS HEAT UNITS (LGT):
   - CHANGE PARAMETER #65 SETTING TO 1

   FOR ELECTRIC HEAT UNITS (LCT):
   - CHANGE PARAMETER #58 TO 1

   ON UNIT AC#1
   - FOR GAS HEAT (LG) LEAVE AT 60-MINUTE DEFAULT
   - FOR ELECTRIC HEAT (LC) CHANGE VALUE TO EQUAL 90-MINUTE
2. FOR HUMIDITROL UNITS THE MENU PATH IS:
   - MAIN MENU > SETTIGNS > RTU OPTIONS > DEHUMIDIFIER MODE > NO CONDITIONS

   SELECT LOCAL SENSOR AND SAVE
   - SET POINT: 60%
   - DEHUMID DEADBAND: 2%
3. FOR ALL UNITS, SET BLOWER TO OPERATE AT ONE AIRFLOW FOR ALL MODES. MENU PATH IS:
   - MAIN MENU > INSTALL > TEST AND BALANCE > BLOWER
   - SET ALL HEATING AND COOLING CFM VALUES TO THE SAME VALUE AS SCHEDULED.
   - ADJUST AIRFLOW BY MEANS OF ADJUSTABLE BLOWER MOTOR SHEAVE.

LENNOX FRESH AIR HEATING SETUP WHEN SPECIFIED:
1. INSTALL FRESH AIR TEMPERING KIT WIRING HARNESS AS RECOMMENDED BY LENNOX.
2. LOCATE SUPPLY AIR TEMPERATURE SENSOR IN SUPPLY DUCT DOWNSTREAM OF FIRST ELBOW. SECURE WIRING TO DUCT OR STRUCTURE WITH RUBBER COATED CLAMPS. DO NOT RUN WIRING INSIDE DUCT WORK. PROTECT ALL WIRING PENETRATIONS WITH RUBBER GROMMETS.
3. FOR PRODIGY 2.0 OR CORE UNIT CONTROLLER PARAMETER #156. WITHIN MAIN MENU GO TO SET-UP TO TEST AND BALANCE TO DAMPER. SET FAH SETPOINT TO 60F FOR KITCHEN RTU, 62F FOR SERVING RTU, 63F FOR DINING/BACK OF HOUSE RTU. THIS WILL TEMPER SUPPLY AIR BELOW SETPOINT WITH INTERMITTENT HEATING WHEN THERMOSTAT IS NOT ACTIVELY CALLING FOR HEAT.
4. CHANGE PRODIGY 2.0 OR CORE UNIT CONTROLLER PARAMETER #157. WITHIN MAIN MENU GO TO SETTINGS TO RTU OPTIONS TO EDIT PARAMETER VALUE TO 5 FOR A 5F FAH DEADBAND AND SAVE.
5. CHANGE PRODIGY 2.0 OR CORE UNIT CONTROLLER PARAMETER #158. WITHIN MAIN MENU GO TO SETTINGS TO RTU OPTIONS TO EDIT PARAMETER ADJUST VALUE TO 300 SECONDS FOR 5 MINUTE CYCLE TIME AND SAVE.

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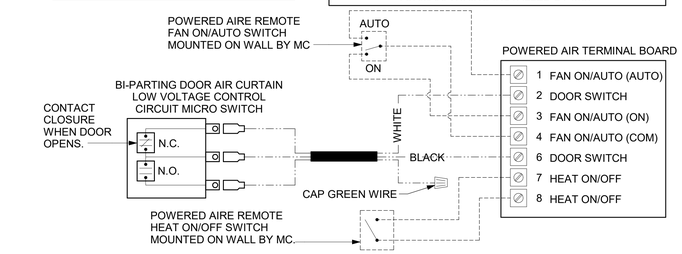
SHEET
CONTROL WIRING DIAGRAMS - LENNOX

SHEET NUMBER
M-701L

AD#2 IS NOT PROVIDED WITH A BIPARTING DOOR SWITCH. AD#2 IS PROVIDED WITH A FACTORY DOOR MICROSWITCH. WIRE AD#2 TO FACTORY MICROSWITCH PER MFGR'S INSTALLATION INSTRUCTIONS.

LEGEND	
- - - - - -	18 AWG MIN LOW VOLTAGE WIRING BY MC, U.N.O.
— · — · —	22 AWG LOW VOLTAGE WIRING PROVIDED BY TORMAX. WIRING INSTALLED BY MC.



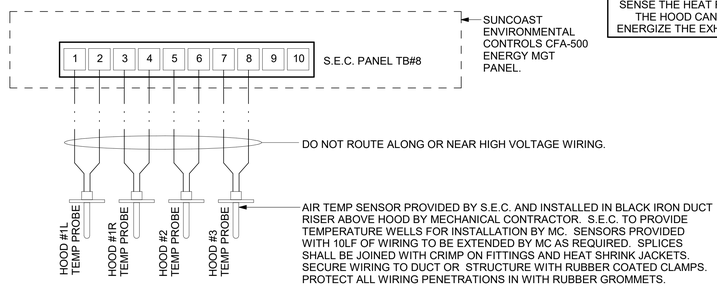
1 AIR CURTAIN WIRING DIAGRAM
NOT TO SCALE

LEGEND	
S.E.C.	SUNCOAST ENVIRONMENTAL CONTROLS CFA-500 ENERGY MGT PANEL
M.C.	MECHANICAL CONTRACTOR
— · · —	18 AWG MIN UNSHIELDED LOW VOLTAGE WIRING BY MC, U.N.O.

GENERAL NOTES

1. THE SUNCOAST H.E.S. SYSTEM HAS BEEN INTEGRATED INTO THE SUNCOAST ENVIRONMENTAL CONTROLS CFA-500 ENERGY MGT PANEL.

S.E.C. H.E.S. OPERATION
IN THE EVENT THAT ANY COOKING EQUIPMENT ITEM BENEATH ANY HOOD IS STARTED WITHOUT THE 'STORE SWITCH' BEING IN THE 'OCCUPIED' POSITION, THE H.E.S. CONTROLLER WILL SENSE THE HEAT RISE WITHIN THE HOOD CANOPY AND ENERGIZE THE EXHAUST FANS.



2 HOOD/FAN INTERLOCK - T500 INTEGRATED
NOT TO SCALE

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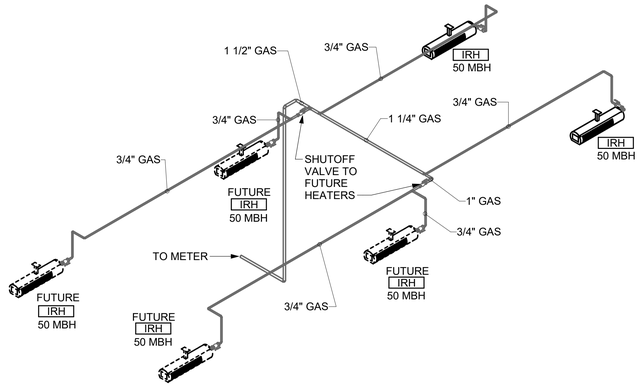
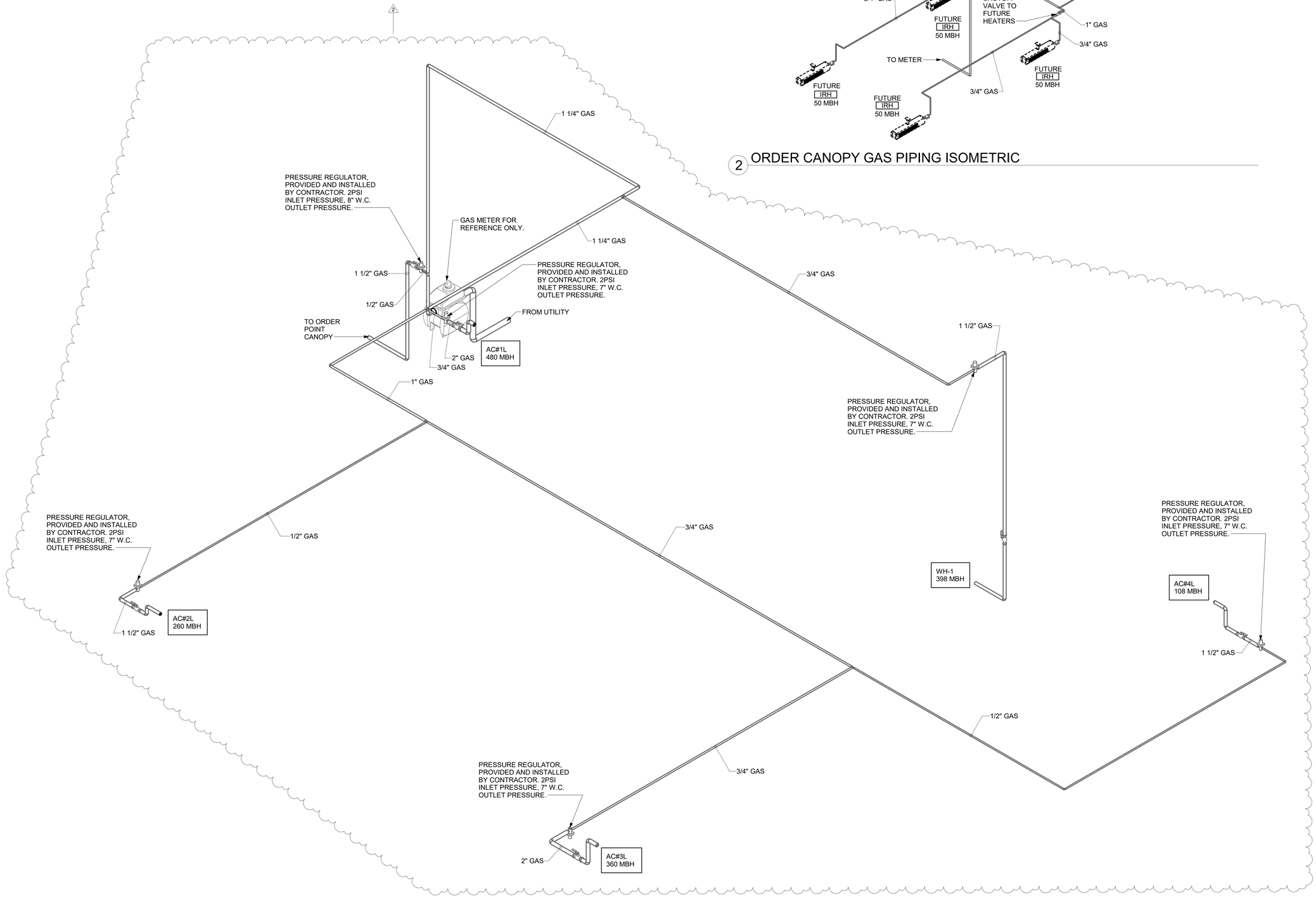
SHEET
CONTROL WIRING DIAGRAMS

SHEET NUMBER
M-702



2 ORDER CANOPY GAS PIPING ISOMETRIC



1 GAS PIPING ISOMETRIC - LENNOX

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NO.	DATE	DESCRIPTION
2	01/02/2025	MECH

CONSULTANT PROJECT # 24122.EH.S
DATE 10/22/2024
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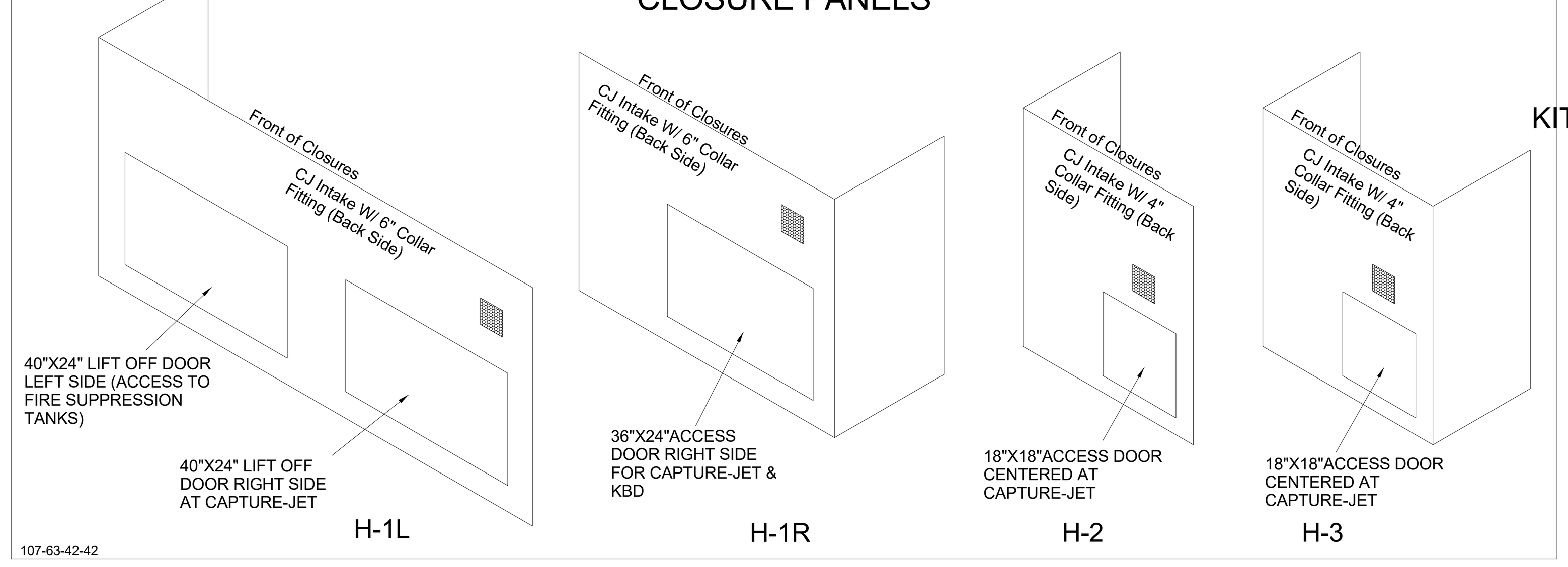
SHEET
GAS AND CONDENSATE ISOMETRIC - LENNOX

SHEET NUMBER
M-901L

HOOD MODEL	HOOD NUMBER	EXHAUST COLLAR			EXHAUST AIR INFORMATION			CAPTURE AIR INFORMATION		S.S. KSA FILTERS		LED LIGHTS	CEILING CLOSURES			HOOD WEIGHT	KBD DAMPER	K FACTOR (CFM = K FACTOR * √DP)	MATERIAL
		QTY	LENGTH	WIDTH	CFM	TAB	SP	CFM	SP	FULL	HALF		QTY	CLOSURE HEIGHT	CEILING HEIGHT				
KVL-2-IC	H-1L	1	14"	8"	1204	0.13"	0.22"	80	0.30"	5	-	3	2	51"	122"	669 LBS	*	3365	EXPOSED SURFACES 18 GA. S.S.
KVL-2-IC	H-1R	1	8"	8"	709	0.13"	0.23"	47	0.30"	3	-	2	2			394 LBS	*	1959	
KVL-C-IC	H-2	1	8"	8"	701	0.30"	0.39"	30	0.29"	2	-	1	2			245 LBS	*	1291	
KVL-C-IC	H-3	1	8"	8"	701	0.30"	0.39"	30	0.29"	2	-	1	3			245 LBS	*	1291	

FOR REFERENCE ONLY

CLOSURE PANELS

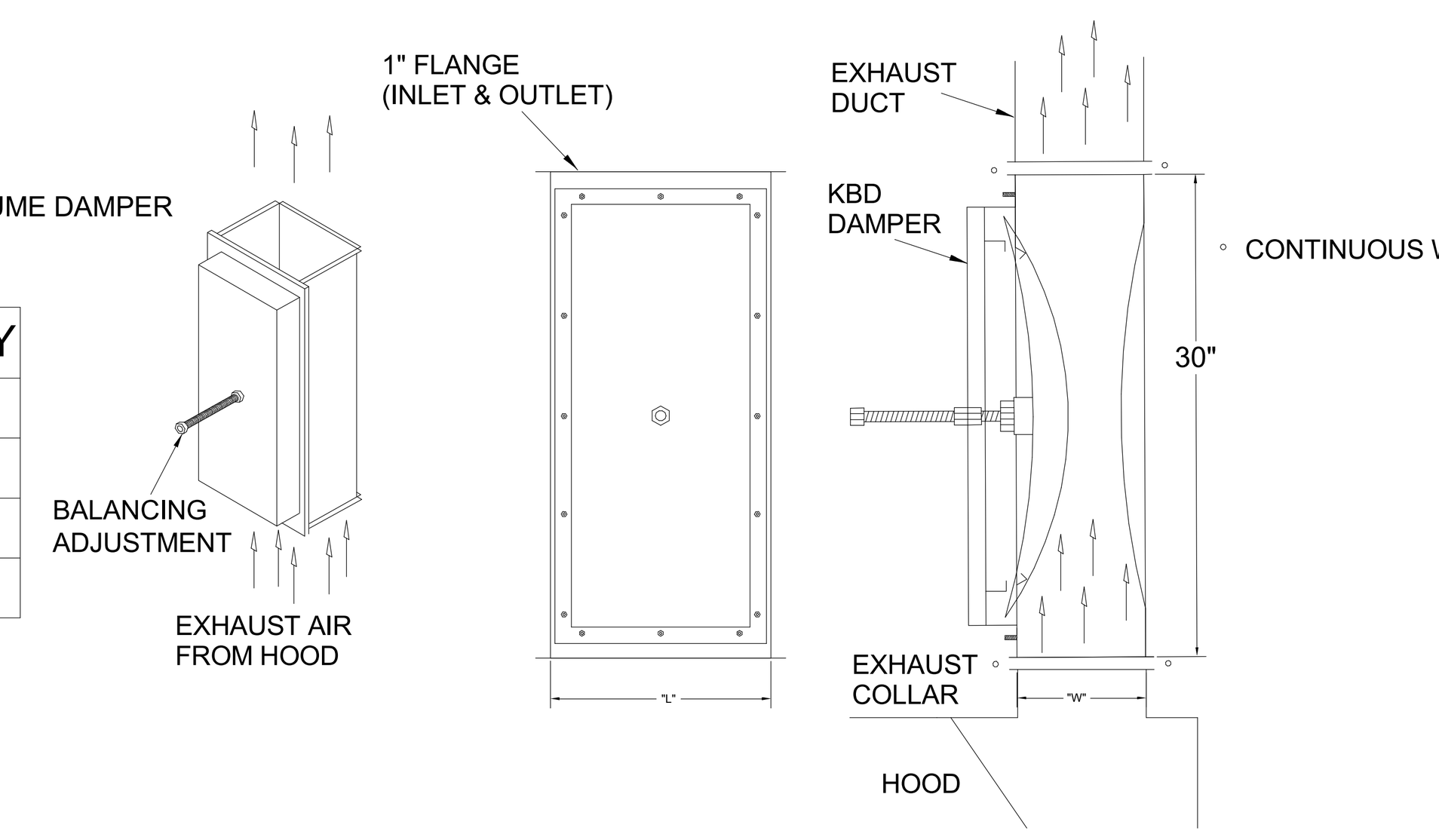


MODEL:KBD CALIBRATED

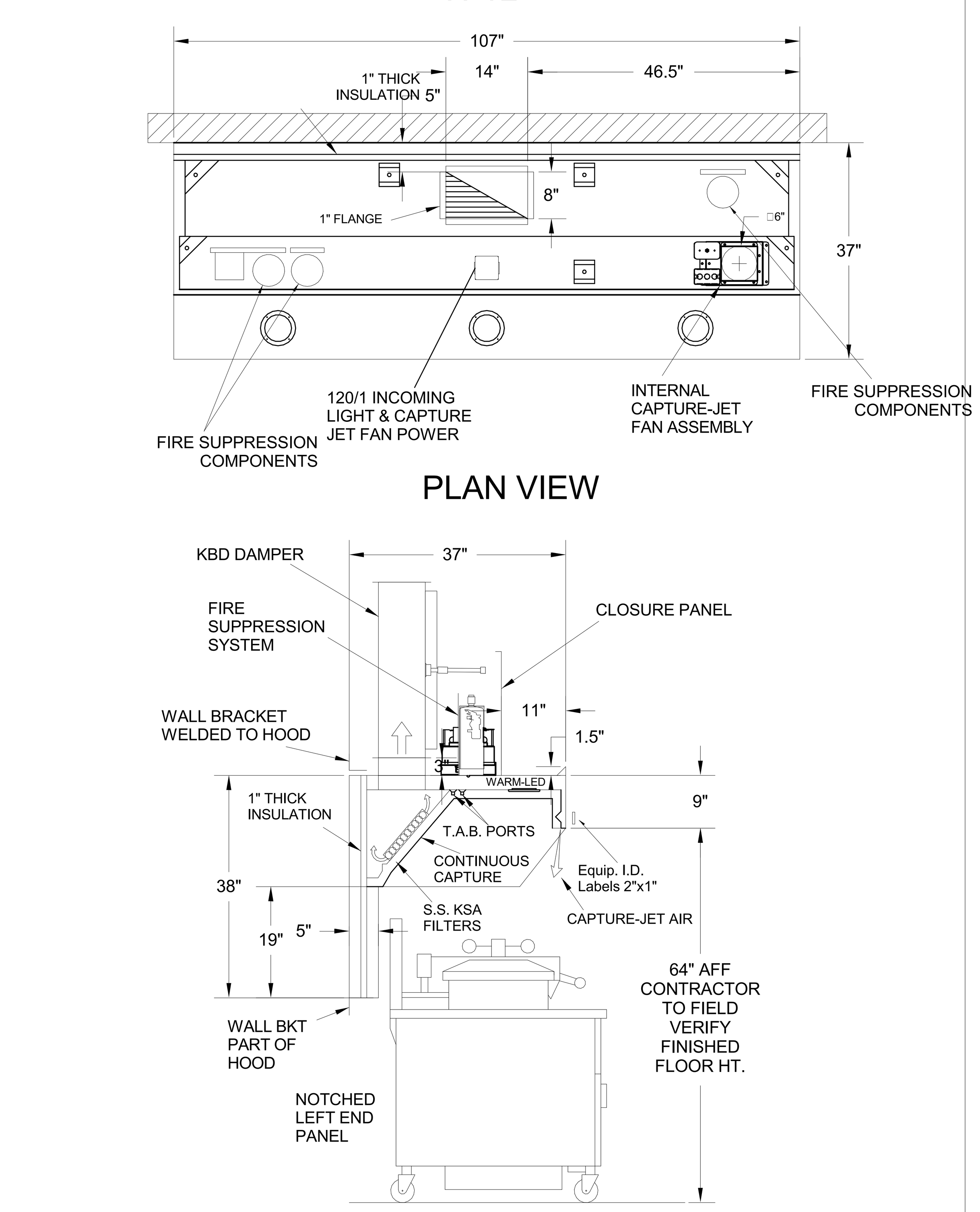
KITCHEN BALANCING DAMPER

TAG	"L"	"W"	QUANTITY
H-1L	14"	8"	1
H-1R	8"	8"	1
H-2	8"	8"	1
H-3	8"	8"	1

MATERIAL: FRAME - 16GA CONT. GALV.
ADJUSTABLE PANEL 18GA S.S.



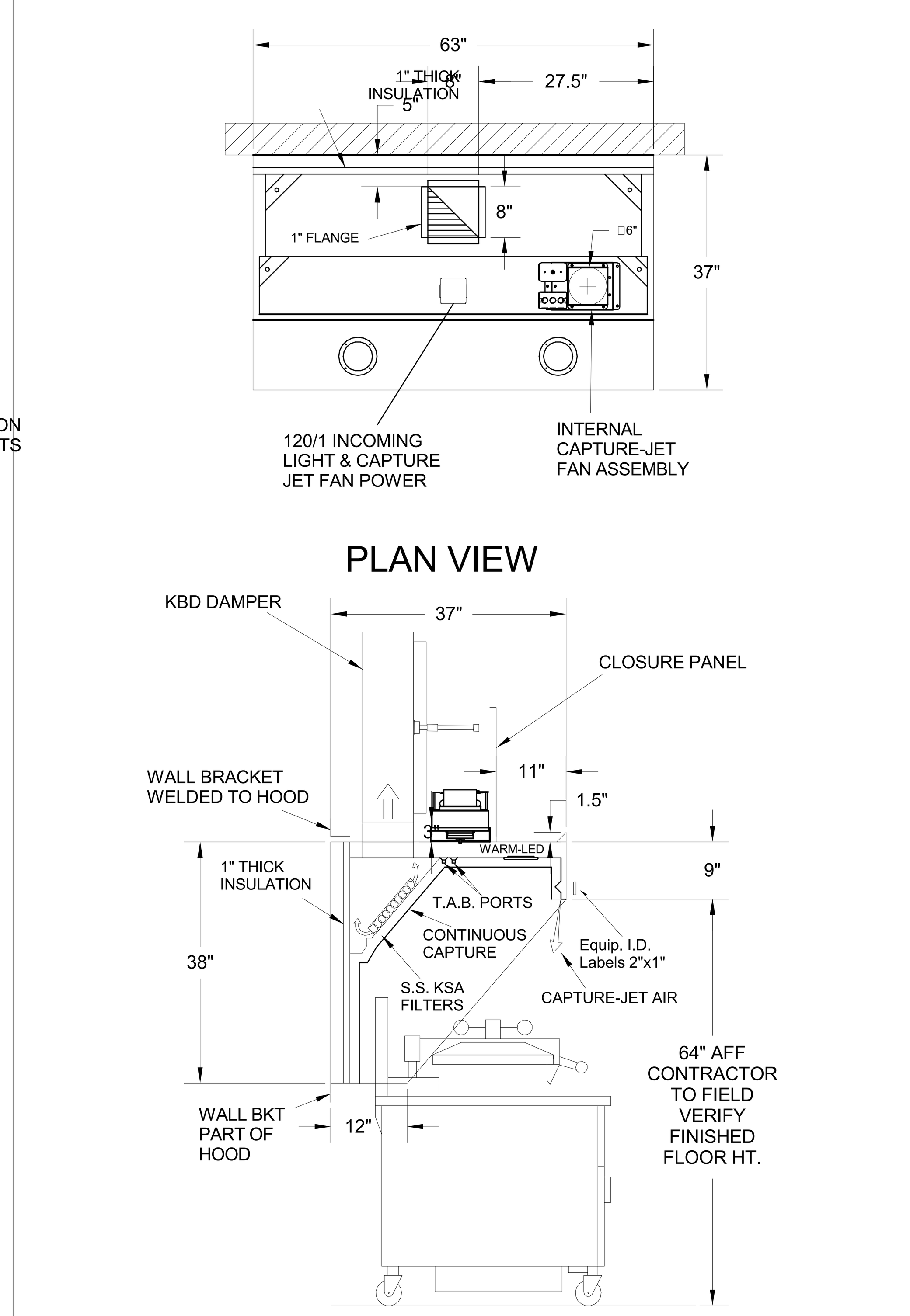
H-1L



H-1L SECTION VIEW

- CEILING CLOSURE RECESSED 11" FROM FRONT TO CREATE SHELF
  - FRONT CLOSURE PANEL WITH 40"X24" LIFT OUT DOOR LEFT SIDE (ACCESS TO FIRE SUPPRESSION
  - 40"X24" LIFT DOOR RIGHT SIDE AT CAPTURE-JET WITH FRONT CJ INTAKE
  - CONTINUOUS CAPTURE INTERNAL RIGHT END CUTOUT
  - 3" REAR STAND-OFF TO HAVE 1" THICK INSULATION
  - NOTCHED LEFT END PANEL
  - EQUIPMENT COVERED:
    (4) PRESSURE FRYERS
    (2) GRILLS
- ANSUL WEIGHT = 286 LBS
- AMEREX WEIGHT = 264 LBS

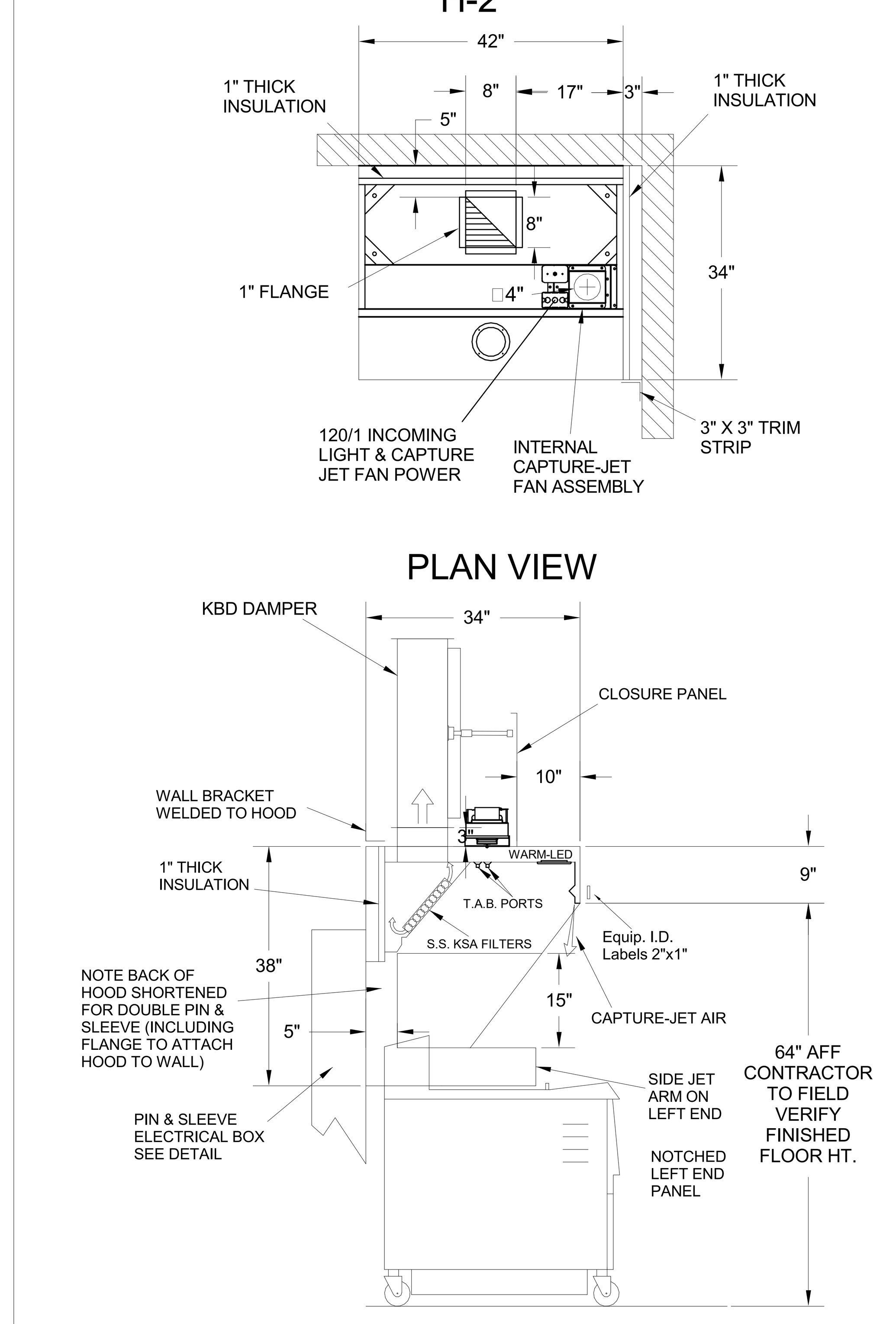
H-1R



H-1R SECTION VIEW

- CEILING CLOSURE RECESSED 11" FROM FRONT TO CREATE SHELF
- 36"X24" ACCESS DOOR RIGHT SIDE FOR ACCESS TO CAPTURE-JET WITH FRONT CJ INTAKE & KBD
- CONTINUOUS CAPTURE INTERNAL LEFT END CUTOUT
- 3" REAR STAND-OFF TO HAVE 1" THICK INSULATION
- EQUIPMENT COVERED:
  (3) PRESSURE FRYERS

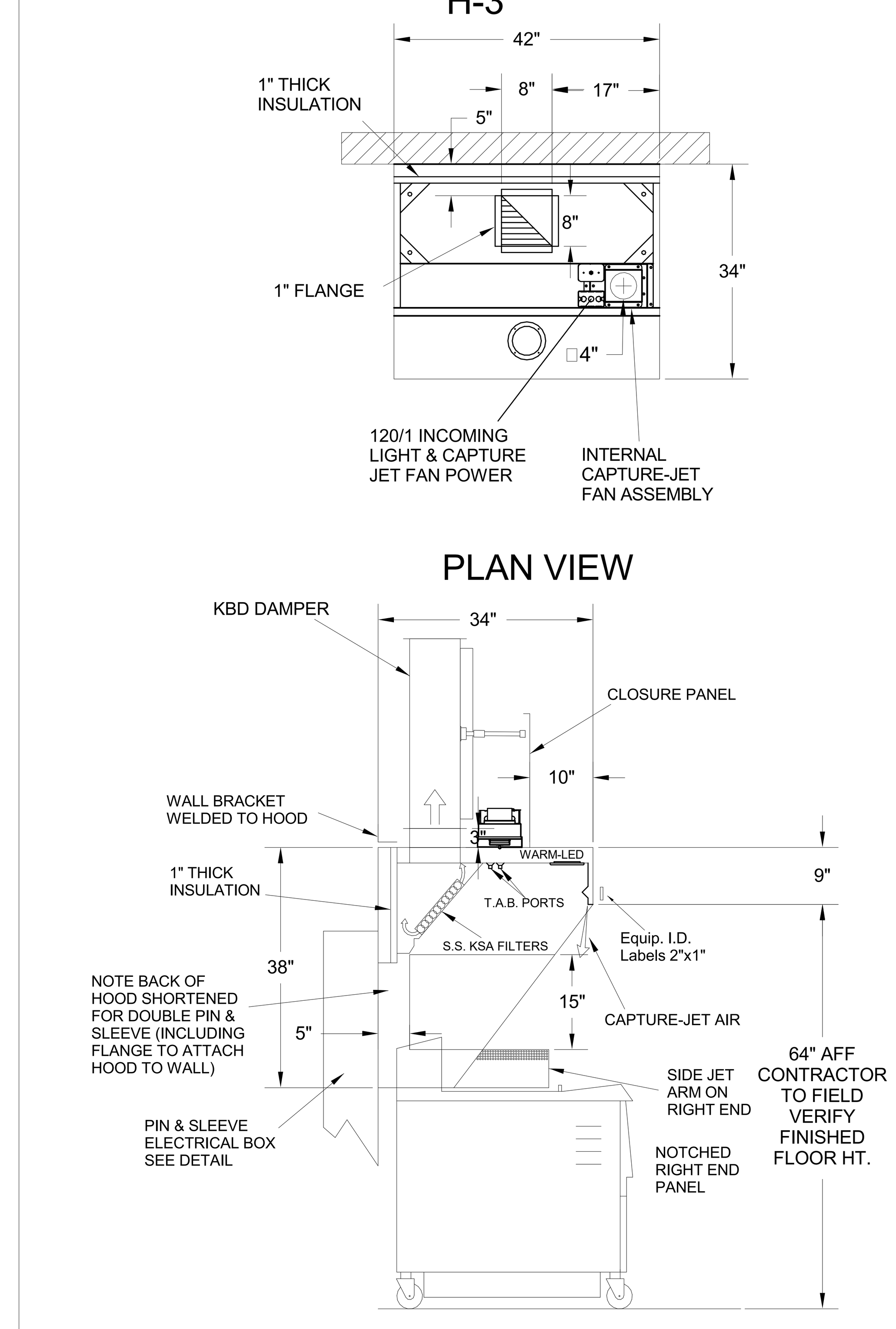
H-2



H-2 SECTION VIEW

- CEILING CLOSURE RECESSED 10" FROM FRONT TO CREATE SHELF
- 18"X18" ACCESS DOOR CENTERED AT CAPTURE-JET WITH FRONT CJ INTAKE
- NOTCHED LEFT END PANEL
- DOUBLE RECEPTACLE PIN & SLEEVE
- 3"X3" TRIM STRIP FOR STANDOFF ON RIGHT END
- 3" SIDE & REAR STAND-OFF TO HAVE 1" THICK INSULATION
- EQUIPMENT COVERED:
  (2) FRYERS

H-3



H-3 SECTION VIEW

- CEILING CLOSURE RECESSED 10" FROM FRONT TO CREATE SHELF
- 18"X18" ACCESS DOOR CENTERED AT CAPTURE-JET WITH FRONT CJ INTAKE
- NOTCHED RIGHT END PANEL
- DOUBLE RECEPTACLE PIN & SLEEVE
- 3" REAR STAND-OFF TO HAVE 1" THICK INSULATION
- EQUIPMENT COVERED:
  (2) FRYERS

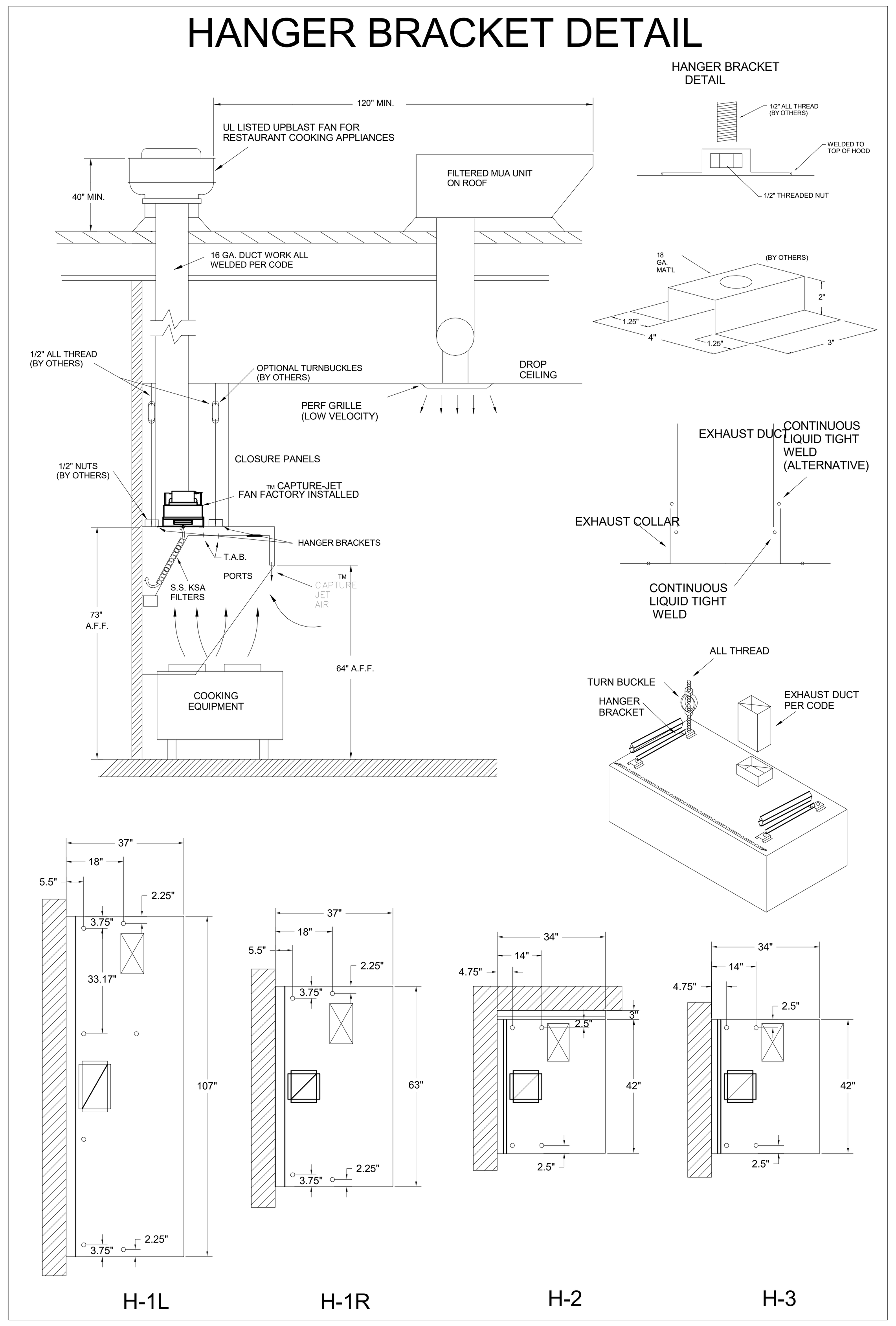
PROJECT: CHICK-FIL-A
LOCATION: JEFFERSON AND BUCHANAN FSU
DRAWN BY:
DATE: 10/22/2024
SCALE: NTS
Halton Dwg: SN#: 04942

HALTON CO. (CANADA) 1021 BREVIK PLACE MISSISSAUGA, ON L4W 3R7
HALTON CO. (USA) 101 INDUSTRIAL DRIVE SCOTTSVILLE, KY 42164
WEBSITE: WWW.HALTONCOMPANY.COM

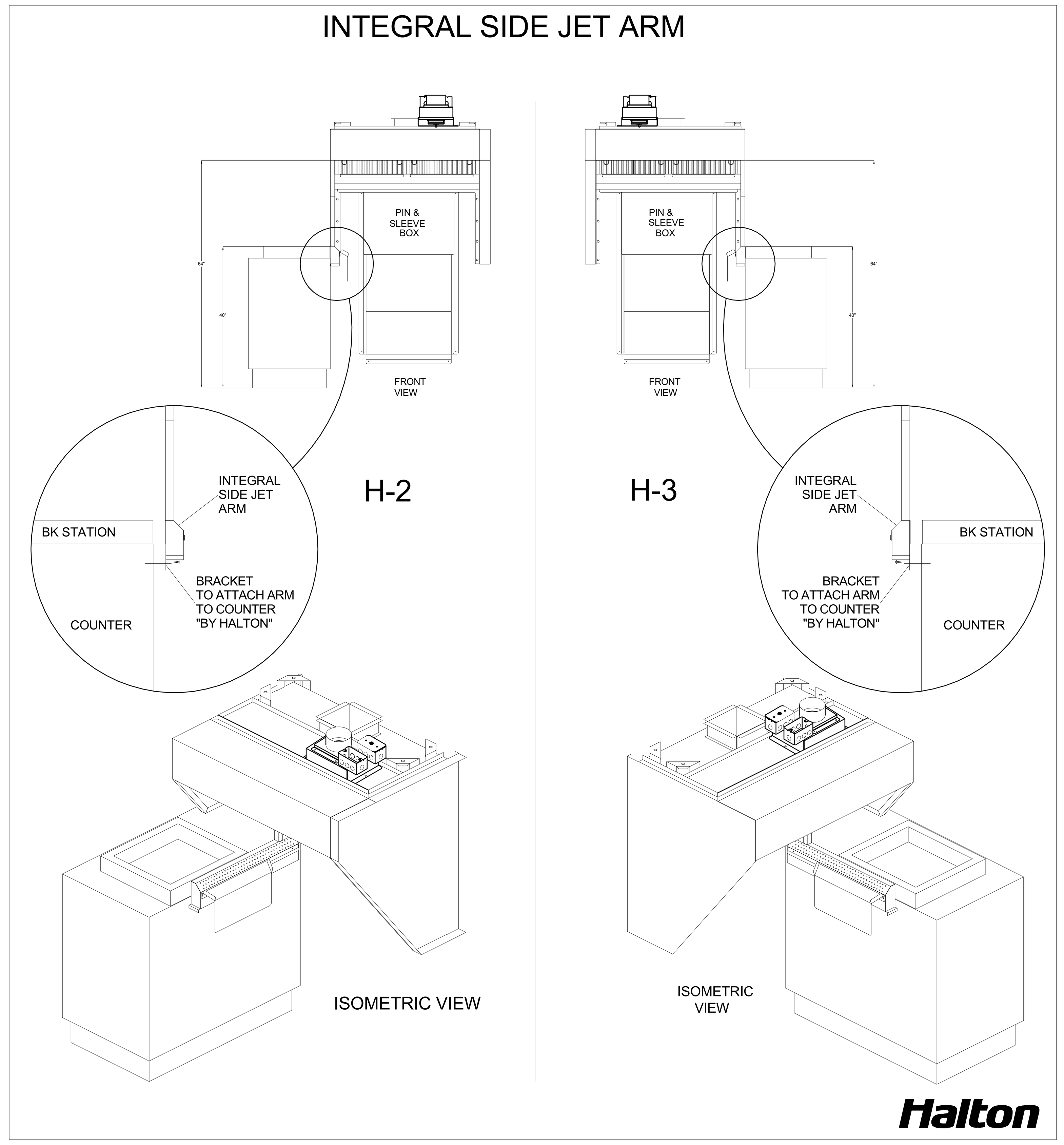
Halton CARE FOR INDOOR AIR

Sheet MH-1.1

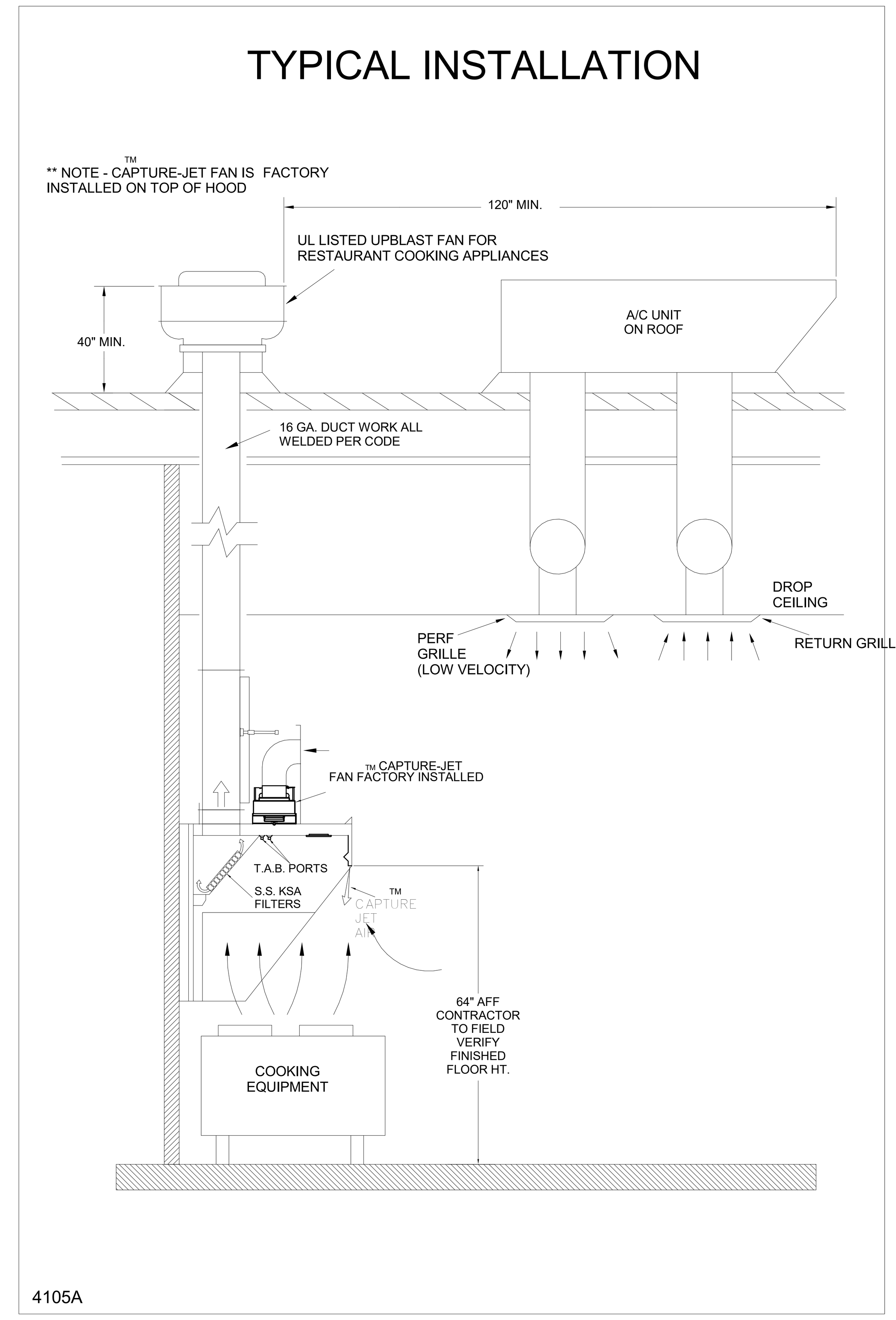
HANGER BRACKET DETAIL



INTEGRAL SIDE JET ARM



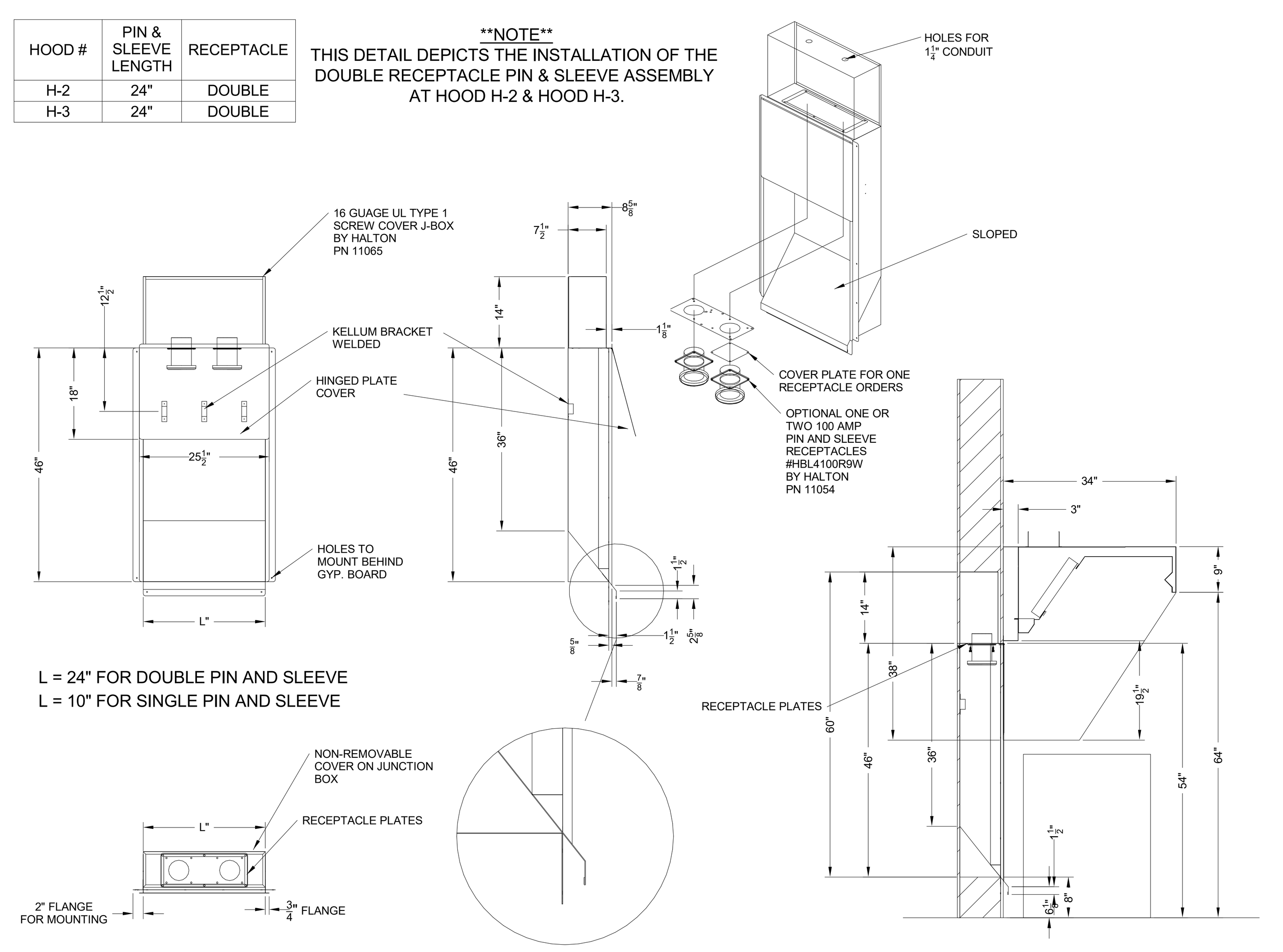
TYPICAL INSTALLATION



PIN & SLEEVE BOX DETAIL

HOOD #	PIN & SLEEVE LENGTH	RECEPTACLE
H-2	24"	DOUBLE
H-3	24"	DOUBLE

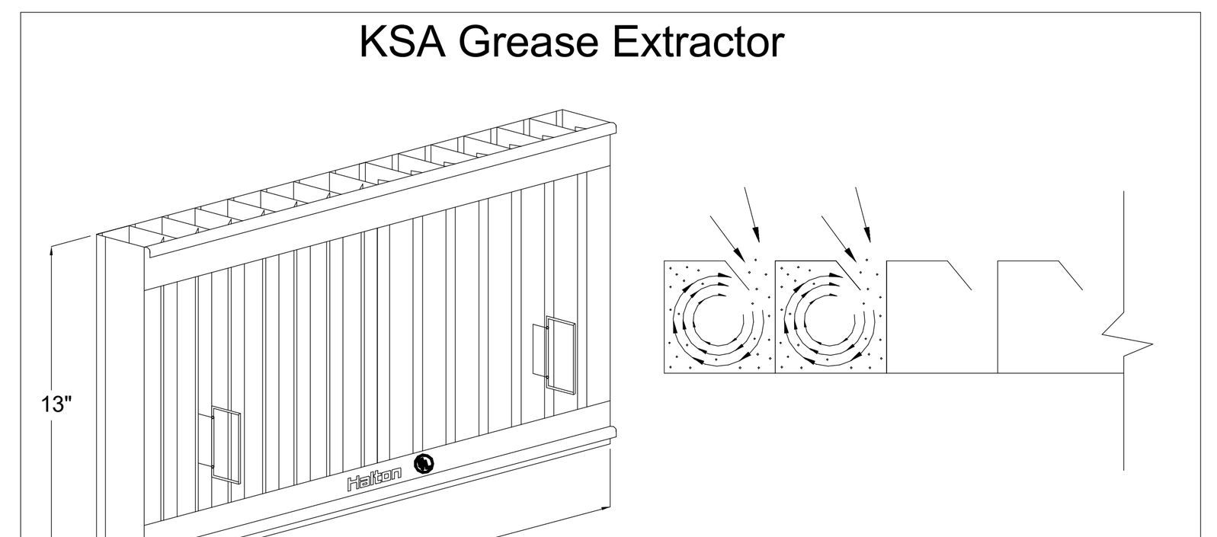
NOTE
THIS DETAIL DEPICTS THE INSTALLATION OF THE DOUBLE RECEPTACLE PIN & SLEEVE ASSEMBLY AT HOOD H-2 & HOOD H-3.



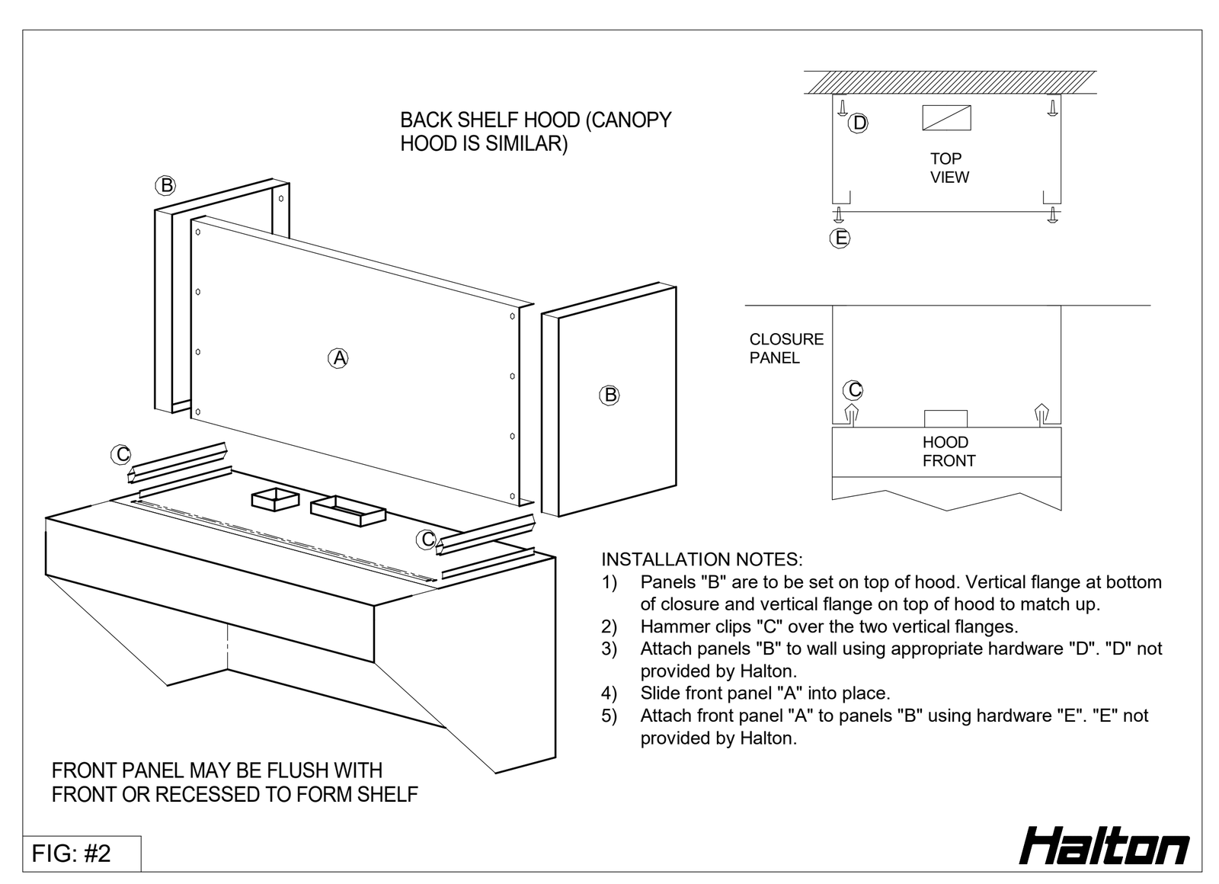
L = 24" FOR DOUBLE PIN AND SLEEVE
L = 10" FOR SINGLE PIN AND SLEEVE

FOR REFERENCE ONLY

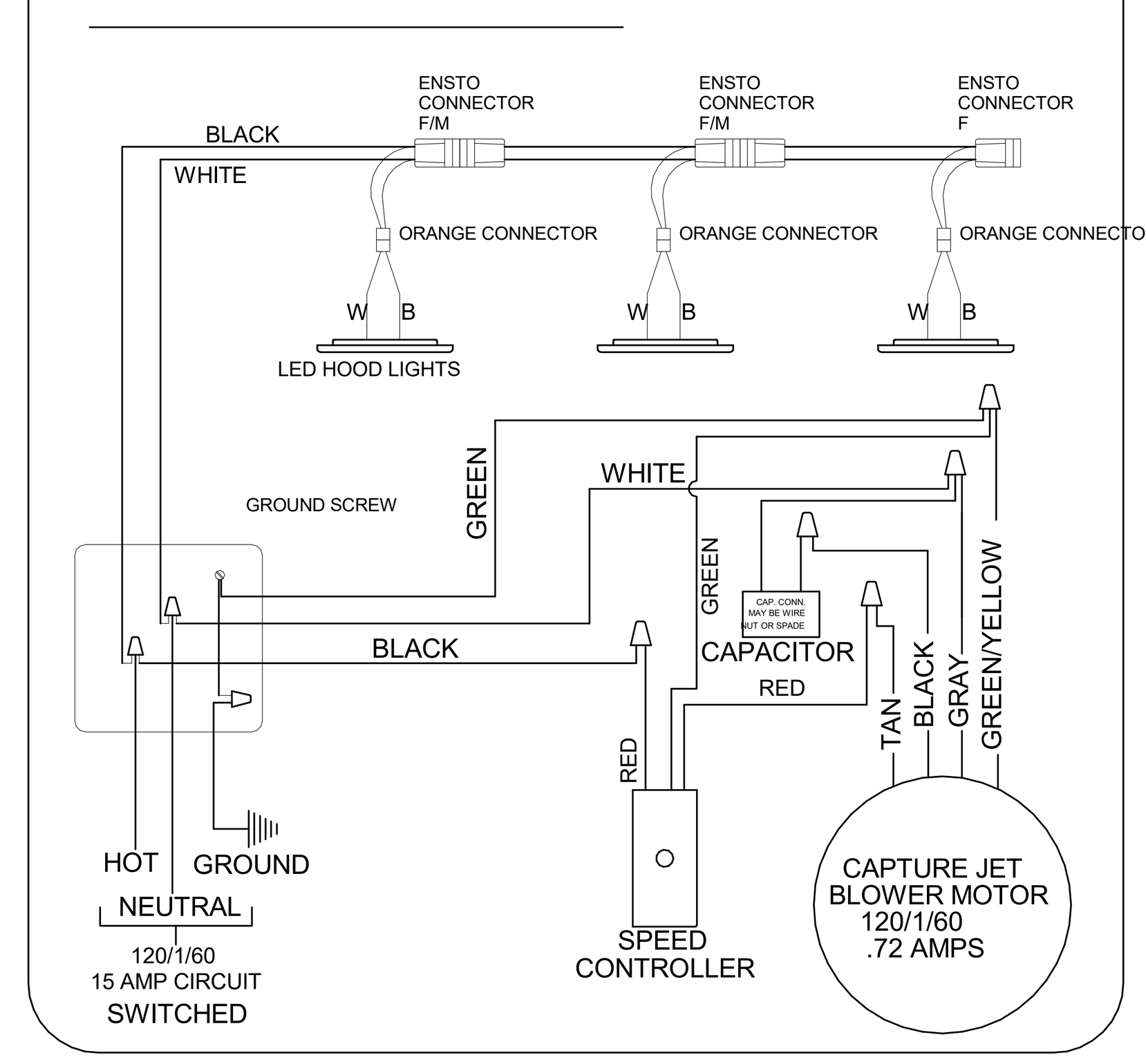
KSA Grease Extractor



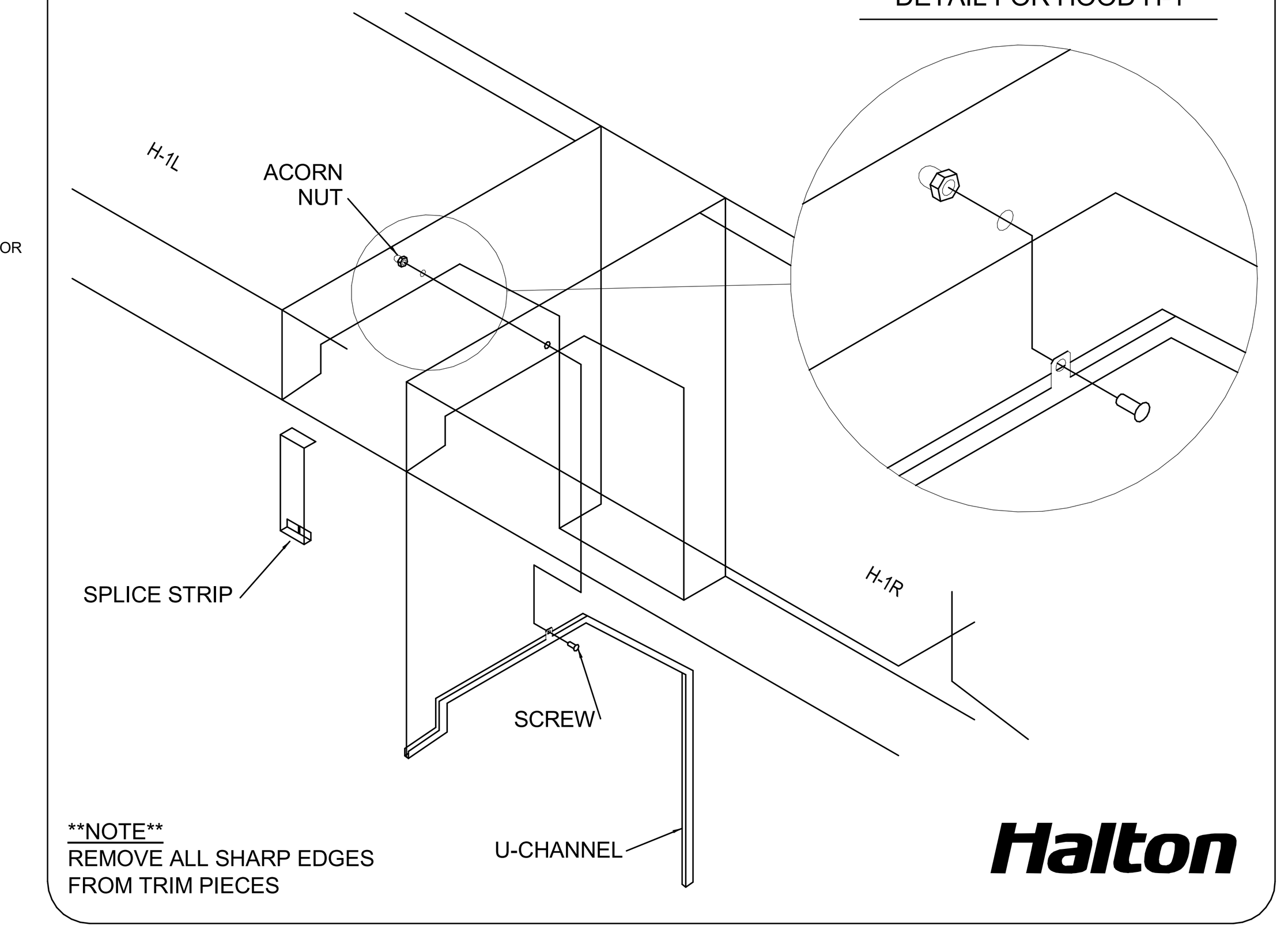
Extraction of contaminants from the exhaust air is provided by the KSA Multi-Cyclone™ grease extractors. Efficient grease extraction is achieved by forcing the exhaust air to spiral continuously in the same direction in the multiple chambers of the extractor, thus separating the grease particles from the air flow centrifugally. High extraction efficiency and low pressure loss over the KSA remain practically constant in use.



TYPICAL WIRING OF CAPTURE-JET FAN



SPLICE STRIP/U-CHANNEL DETAIL FOR HOOD H-1



HALTON HOODS
- ETL LISTED PER LATEST 710 STANDARD
- BUILT PER NFPA 96
- NSF LISTED

NSF Halton ETL — CONFORMS TO UL STD UL STD 710 CERTIFIED TO ULC STD S646
INTERTEK 3012225

HALTON COMPANY, 101 INDUSTRIAL DR., SCOTTSVILLE, KY 42164

MODEL NO.	SERIAL NO.	ITEM NO.
KVL-C-IC		

GENERAL REQUIREMENTS

FILTER TYPE EXHAUST HOOD FOR COMMERCIAL AND INSTITUTIONAL KITCHENS
THE FAN CIRCUIT IS RATED FOR 125V, 15A, 60HZ.
THE LIGHTING CIRCUIT IS RATED FOR 125V, 15A, 60HZ.
THE HOOD HAS BEEN CERTIFIED BY ETL FOR 0 INCH CLEARANCE TO COMBUSTIBLE
MATERIALS (TOP, SIDES, FRONT AND REAR) IN COMPLIANCE WITH UL710 WITH CONSIDERATIONS TO NFPA 96.
THE HOOD IS PROVIDED WITH REPLACEABLE KSA FILTERS AND LIGHTING FIXTURES
REPLACE FILTERS ONLY WITH UL CLASSIFIED FILTER TYPE OF THE SAME MODEL AND MANUFACTURER.
SUITABLE FOR USE TO MEDIUM DUTY COOKING APPLIANCES.

DUTY LEVEL	MINIMUM OVERHANG		DISTANCE BETWEEN FRONT EDGE OF HOOD AND COOKING SURFACE, IN		MIN. EXHAUST CFM/FT OF HOOD LENGTH
	FRONT, IN	SIDE, IN	MIN	MAX	
MEDIUM	0	0	21	31	138
JET SUPPLY AIR FLOW SHALL ONLY BE SET AT 0.30 IN H20					

NSF Halton ETL — CONFORMS TO UL STD UL STD 710 CERTIFIED TO ULC STD S646
INTERTEK 3012225

HALTON COMPANY, 101 INDUSTRIAL DR., SCOTTSVILLE, KY 42164

MODEL NO.	SERIAL NO.	ITEM NO.
KVL-2-IC		

GENERAL REQUIREMENTS

FILTER TYPE EXHAUST HOOD FOR COMMERCIAL AND INSTITUTIONAL KITCHENS
THE FAN CIRCUIT IS RATED FOR 125V, 15A, 60HZ.
THE LIGHTING CIRCUIT IS RATED FOR 125V, 15A, 60HZ.
THE HOOD HAS BEEN CERTIFIED BY ETL FOR 0 INCH CLEARANCE TO COMBUSTIBLE
MATERIALS (TOP, SIDES, FRONT AND REAR) IN COMPLIANCE WITH UL710 WITH CONSIDERATIONS TO NFPA 96.
THE HOOD IS PROVIDED WITH REPLACEABLE KSA FILTERS AND LIGHTING FIXTURES
REPLACE FILTERS ONLY WITH UL CLASSIFIED FILTER TYPE OF THE SAME MODEL AND MANUFACTURER.
SUITABLE FOR USE TO HEAVY DUTY COOKING APPLIANCES.

DUTY LEVEL	MINIMUM OVERHANG		DISTANCE BETWEEN FRONT EDGE OF HOOD AND COOKING SURFACE, IN		MIN. EXHAUST CFM/FT OF HOOD LENGTH
	FRONT, IN	SIDE, IN	MIN	MAX	
MEDIUM	6 (+)	0	20	30	121
MEDIUM	6	0	20	32	106
MEDIUM	6	0	20	36	133
HEAVY	0	2	20	25	191
HEAVY	0	2	20	30	216
+ - SETBACK/UNDERHANG DISTANCE					
JET SUPPLY AIR FLOW SHALL ONLY BE SET AT 0.26 IN H20					

THIS DRAWING MUST BE CHECKED, SIGNED AND RETURNED TO THE APPROPRIATE FACTORY. PLEASE VERIFYING THE FOLLOWING:
1. ALL DIMENSIONAL INFORMATION, MOUNTING POSITIONS AND CLEARANCES.
2. THE LOCATION AND TYPE OF COOKING EQUIPMENT.
NOTE: IF APPROVED COOKING EQUIPMENT SUCH AS INCREASED ENERGY INPUTS OR EQUIPMENT POSITION MAY AFFECT EXHAUST AIRFLOW. HALTON MUST BE NOTIFIED IF ANY OF THESE CHANGES OCCUR, A RECALCULATION EXHAUST AIRFLOW MAY BE REQUIRED.

☐ REVISE AND RESUBMIT
APPROVED FOR FABRICATION
☐ WITH NO CHANGES ☐ WITH CHANGES AS NOTED
APPROVED BY | DATE

MAIL APPROVED DRAWINGS TO APPROPRIATE FACTORY BELOW. WEBSITE: WWW.HALTONCOMPANY.COM

HALTON CO. (CANADA) ☐
1021 BREVIK PLACE
MISSISSAUGA, ON L4W 3R7
1-905-624-0301

HALTON CO. (USA) ☒
101 INDUSTRIAL DRIVE
SCOTTSVILLE, KY 42164
1-270-237-5600

REV.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			
7			

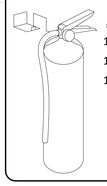
PROJECT: **CHICK-FIL-A**
LOCATION: JEFFERSON AND BUCHANAN FSU
SN#: 04942
DRAWN BY: | DATE: 10/22/2024
SCALE: NTS
Halton Dwg:

Halton CARE FOR INDOOR AIR

Sheet
MH-1.2

ISO VIEW W/BRACKET

FIRE EXTINGUISHER



ANSUL

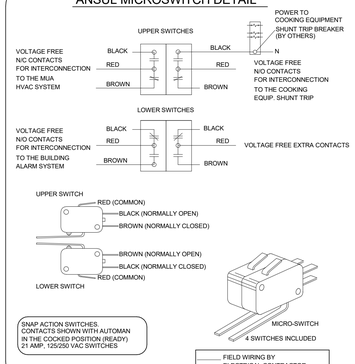
13051 5 LBS ABC MODEL AA05 QTY_____

13052 10 LBS ABC MODEL AA10S QTY_____

13053 6 LTR CLASS K-GUARD K01-3 QTY_____

SUPPLIED BY HALTON

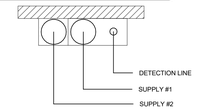
ANSUL MICROSWITCH DETAIL



PROTECTS HOODS H-2 & H-3

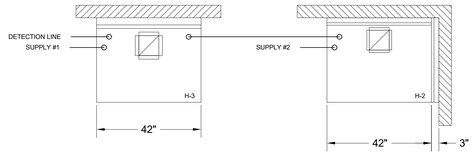
REMOTE MOUNTED:

(1) REGULATED RELEASE (WITH ONE TANK)
(1) SINGLE TANK ENCLOSURE (WITH ONE TANK)



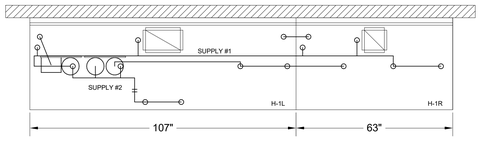
NOTE:

FIRE SYSTEM TYPE TO BE DETERMINED AT TIME OF ORDER RELEASE.



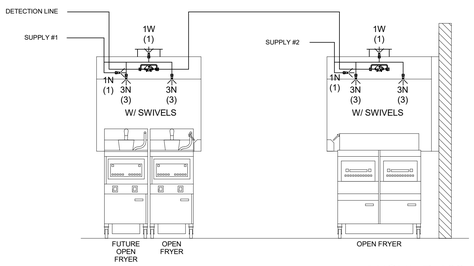
ANSUL R-102 FIRE SYSTEM
A) 6 GALLON SYSTEM (2 TANKS)
(REMOTE MOUNTED) (FOR HOOD H-2 & H-3)
B) 3/8" BLACK IRON PIPING WITH 3/8" S.S. APPLIANCE DROPS

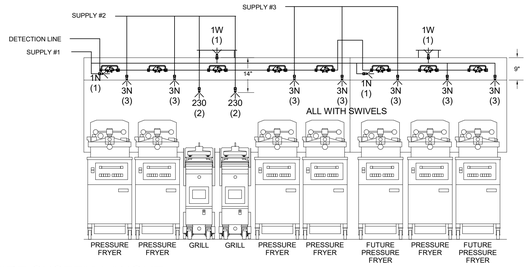
(1) REGULATED RELEASE
(2) EXTRA MICRO SWITCH ASSEMBLIES (MOUNTED IN REG. REL.)
(1) SINGLE TANK ENCLOSURE
(2) 3 GALLON TANKS



ANSUL R-102 FIRE SYSTEM
A) 9 GALLON SYSTEM (3 TANKS)
(MOUNTED ON HOOD H-1L)
(FOR HOODS H-1L & H-1R)
B) 3/8" BLACK IRON PIPING WITH 3/8" S.S. APPLIANCE DROPS

(1) OEM REGULATED RELEASE
(2) EXTRA MICRO SWITCH ASSEMBLIES
(MOUNTED IN OEM REG. REL.)
(3) 3 GALLON TANKS





ANSUL R-102 FIRE SYSTEM LAYOUT

ANSUL

FUSIBLE LINK RATINGS
ITEM TEMP
OPEN FRYERS 450°
2 BURNER / FLAT TOP 450°
PRESSURE FRYERS 450°
GRILL 450°
EXHAUST COLLARS 450°
ANSUL R-102 FIRE SYSTEM NOTES
THREE TANK SYSTEM MOUNTED ON TOP OF (H-1L)
MAXIMUM FLOW POINTS = 33
ANSUL R-102 FIRE SYSTEM NOTES
TWO TANK SYSTEM REMOTE MOUNTED
MAXIMUM FLOW POINTS = 22

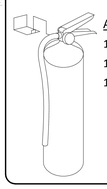
ITEM	PART #	QTY	DESCRIPTION	FLOW PTS (TOTAL)
1W	10023	4	DUCT NOZZLES	4
1N	10022	4	PLENUM NOZZLES	4
230	10025	2	APPLIANCE NOZZLES	4
3N	10021	11	APPLIANCE NOZZLES	33
			TOTAL FLOW POINTS	45
ITEM		QTY	DESCRIPTION	
#200	10035	8	SERIES DETECTORS W/ FUSIBLE LINKS	
#201	11973	2	TERMINAL DETECTORS W/ FUSIBLE LINKS	
#202	10046	1	OEM REGULATED RELEASE W/ DOUBLE POLE MICRO SWITCH	
#202	10033	1	REGULATED RELEASE W/ DOUBLE POLE MICRO SWITCH	
#203	10333	5	3 GALLON TANKS	
#204	10044	1	SINGLE TANK ENCLOSURE	
#205	10040	2	REMOTE PULL STATION	
#206	10065	4	DOUBLE TANK NITROGEN CARTRIDGE	
#207	11128	5	3 GALLON ANSULEX CONTAINER	

ANSUL R-102 FIRE SYSTEM
UL LISTED PER STD LATEST STD 300
1. FINAL INSTALLATION IS TO BE MADE IN ACCORDANCE WITH ALL APPLICABLE CODES
2. ALL ELECTRICAL COMPONENTS FOR EQUIPMENT SHUT DOWN TO BE PROVIDED BY THE ELECTRICIAN. MICRO-SWITCH INSTALLED IN REGULATED RELEASE BY ANSUL INSTALLER
3. REMOTE PULL STATION LOCATED PER MECHANICAL DRAWINGS

FOR REFERENCE ONLY

ISO VIEW W/BRACKET

FIRE EXTINGUISHER



AMEREX

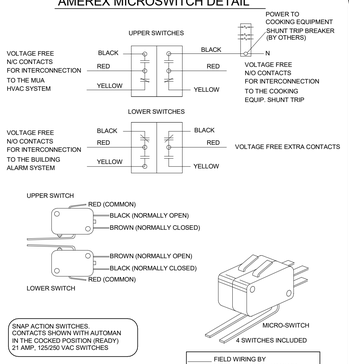
11238 5 LBS ABC MODEL B402 QTY_____

11239 10 LBS ABC MODEL B456 QTY_____

11240 6 LTR CLASS K MODEL C-260 QTY_____

SUPPLIED BY HALTON

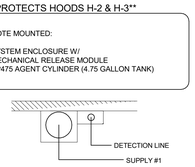
AMEREX MICROSWITCH DETAIL



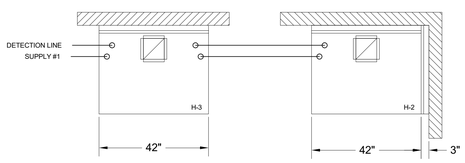
PROTECTS HOODS H-2 & H-3

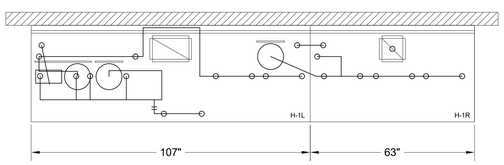
REMOTE MOUNTED:

(1) SYSTEM ENCLOSURE W/
(1) MECHANICAL RELEASE MODULE
(1) KP475 AGENT CYLINDER (4.75 GALLON TANK)



1/2" BLACK IRON SUPPLY LINE REQ'D FROM TANK TO FIRST BRANCH LINE FOR 475 TANKS ONLY!





AMEREX FIRE SYSTEM
A) (1) KP475 TANKS - 14 FLOW POINTS
(REMOTE MOUNTED) (FOR HOOD H-2 & H-3)
B) 3/8" BLACK IRON PIPING W/ 3/8" S.S. APPLIANCE DROPS

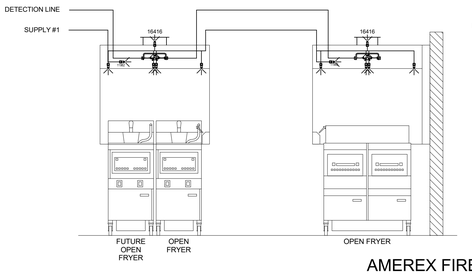
(1) SYSTEM ENCLOSURE
(1) MECHANICAL RELEASE MODULE
(2) EXTRA MICRO SWITCH ASSEMBLIES (MOUNTED IN MECHANICAL REL. MODULE)
(1) KP475 AGENT CYLINDERS (4.75 GALLON TANK)

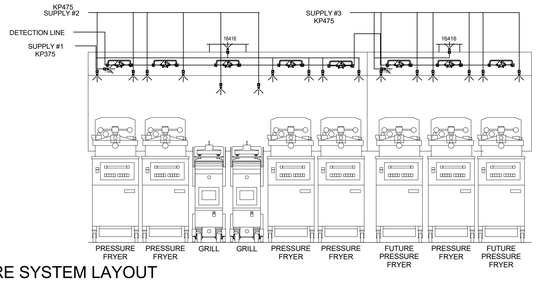
NOZZLE	QTY	DESCRIPTION
16416	1 EA.	DUCT NOZZLES
11982	1 PER 10'	PLENUM NOZZLES
11982	2 PER FRYER	ALL OPEN FRYERS
13729	2 PER FRYER	ALL PRESSURE FRYERS
14178	1 PER GRILL	ALL GRILLS
ALL APPLIANCE NOZZLES WITH SWIVELS		

* SEE ELEVATION VIEW FOR FIRE SYSTEM DESIGN.

AMEREX FIRE SYSTEM
A) (1) KP375 TANK - 11 FLOW POINTS (2) KP475 TANKS - 14 FLOW POINTS
(MOUNTED ON HOOD H-1L)
(FOR HOODS H-1L & H-1R)
B) 1/2" & 3/8" BLACK IRON PIPING W/ 3/8" S.S. APPLIANCE DROPS

(1) MECHANICAL RELEASE MODULE
(2) EXTRA MICRO SWITCH ASSEMBLIES (MOUNTED IN MECHANICAL REL. MODULE)
(1) 3.75 GALLON TANK
(2) 4.75 GALLON TANKS





AMEREX FIRE SYSTEM LAYOUT

AMEREX

FUSIBLE LINK RATINGS
ITEM TEMP
OPEN FRYERS 450°
2 BURNER / FLAT TOP 450°
PRESSURE FRYERS 450°
GRILL 450°
EXHAUST COLLARS 450°
AMEREX FIRE SYSTEM NOTES
(1) KP375 & (2) KP475 TANK SYSTEM MOUNTED ON TOP OF (H-1L)
MAXIMUM FLOW POINTS = 39
AMEREX FIRE SYSTEM NOTES
(1) KP475 TANK SYSTEM REMOTE MOUNTED
MAXIMUM FLOW POINTS = 14

ITEM	QTY	DESCRIPTION	FLOW PTS (TOTAL)
16416	4	DUCT NOZZLES	4
11982	4	PLENUM NOZZLES	4
11982	8	APPLIANCE NOZZLES	8
14178	2	APPLIANCE NOZZLES	4
13729	14	APPLIANCE NOZZLES	28
		TOTAL FLOW POINTS	48
ITEM	QTY	DESCRIPTION	
12508-P001	10	DETECTORS BRACKET ASSEMBLY	
13334	1	KP375 AGENT CYLINDER	
17379	3	KP475 AGENT CYLINDER	
18001	1	MECHANICAL RELEASE MODULE WITH ENCLOSURE WITH DOUBLE POLE MICRO SWITCH	
11977	1	MECHANICAL RELEASE MODULE WITHOUT ENCLOSURE WITH DOUBLE POLE MICRO SWITCH	
21481	2	REMOTE MANUAL PULL STATION	

AMEREX FIRE SYSTEM
UL LISTED PER STD LATEST STD 300
1. FINAL INSTALLATION IS TO BE MADE IN ACCORDANCE WITH ALL APPLICABLE CODES
2. ALL ELECTRICAL COMPONENTS FOR EQUIPMENT SHUT DOWN TO BE PROVIDED BY THE ELECTRICIAN. MICRO-SWITCH INSTALLED IN REGULATED RELEASE BY AMEREX INSTALLER
3. REMOTE PULL STATION LOCATED PER MECHANICAL DRAWINGS

ALL DRAWINGS MUST BE CHECKED, SIGNED AND RETURNED TO THE APPROPRIATE HALTON REPRESENTATIVE AS FOLLOWS:

1. ALL DIMENSIONAL INFORMATION, MOUNTING POSITIONS AND CLEARANCES.
2. THE APPLICATION AND TYPE OF COOKING EQUIPMENT.

NOTE: ANY DEVIATION FROM THE ABOVE MAY AFFECT EXHAUST AIRFLOW. HALTON MUST BE NOTIFIED AND OF THESE CHANGES OCCUR, A RECALCULATION EXHAUST AIRFLOW MAY BE REQUIRED.

☐ REVISE AND RESUBMIT
APPROVED FOR FABRICATION ☐ WITH CHANGES AS NOTED
APPROVED WITH NO CHANGES ☐

APPROVED BY: DATE:

MAIL APPROVED DRAWINGS TO APPROPRIATE FACTORY REPRESENTATIVE

HALTON CO. (CANADA)
1021 BREVIK PLACE
MISSISSAUGA, ON L4W 3R7
1-905-624-0301

HALTON CO. (USA)
101 INDUSTRIAL DRIVE
SCOTTSVILLE, KY 42164
1-270-237-5600

WEBSITE: WWW.HALTONCOMPANY.COM

REV:	DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			
7			

PROJECT: **CHICK-FIL-A**

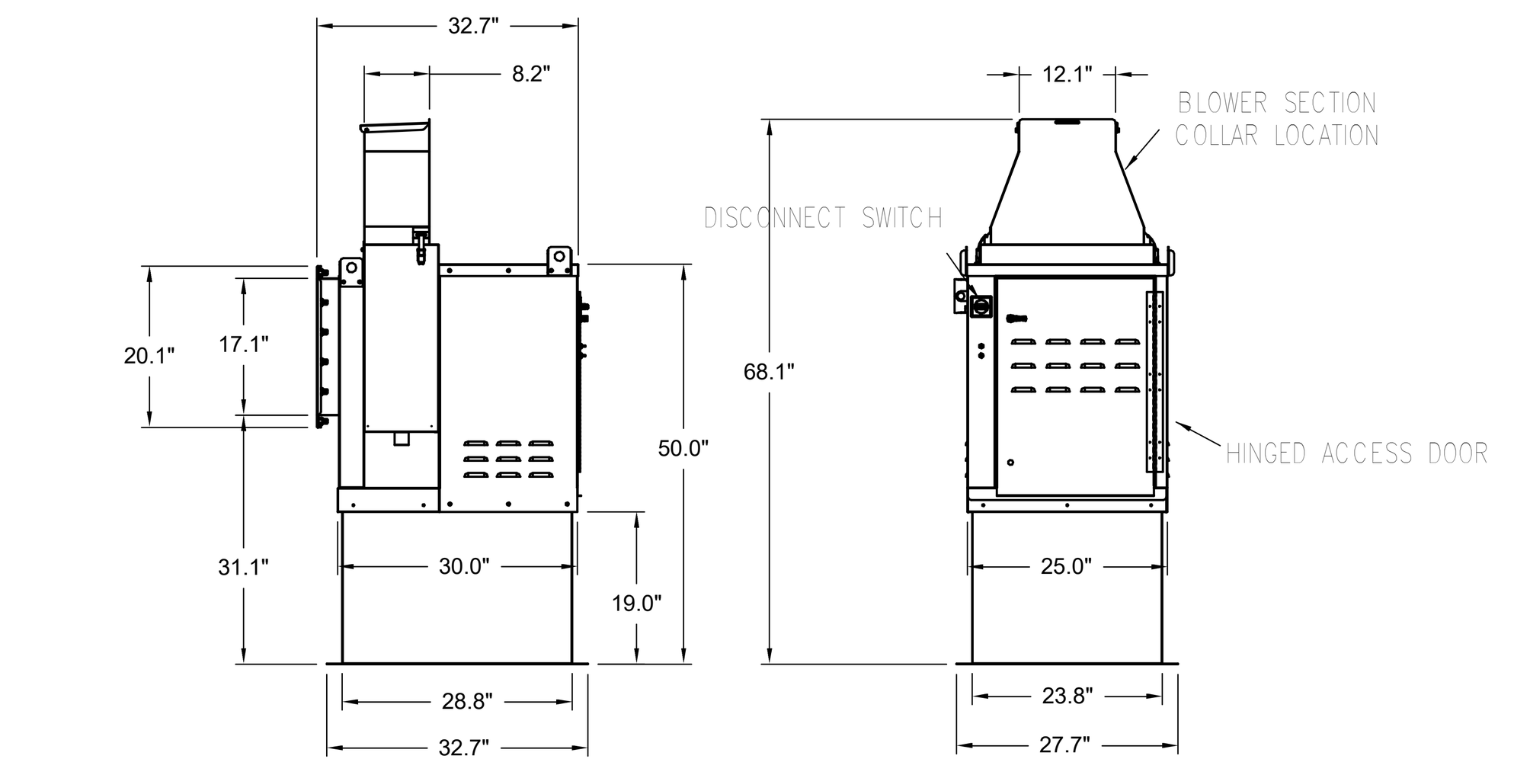
LOCATION: JEFFERSON AND BUCHANAN FSU
DRAWN BY:
SCALE: NTS
Halton Dwg:
SNAP 04942
DATE 10/22/2024

halton CARE FOR INDOOR AIR

Sheet
MH-1.3

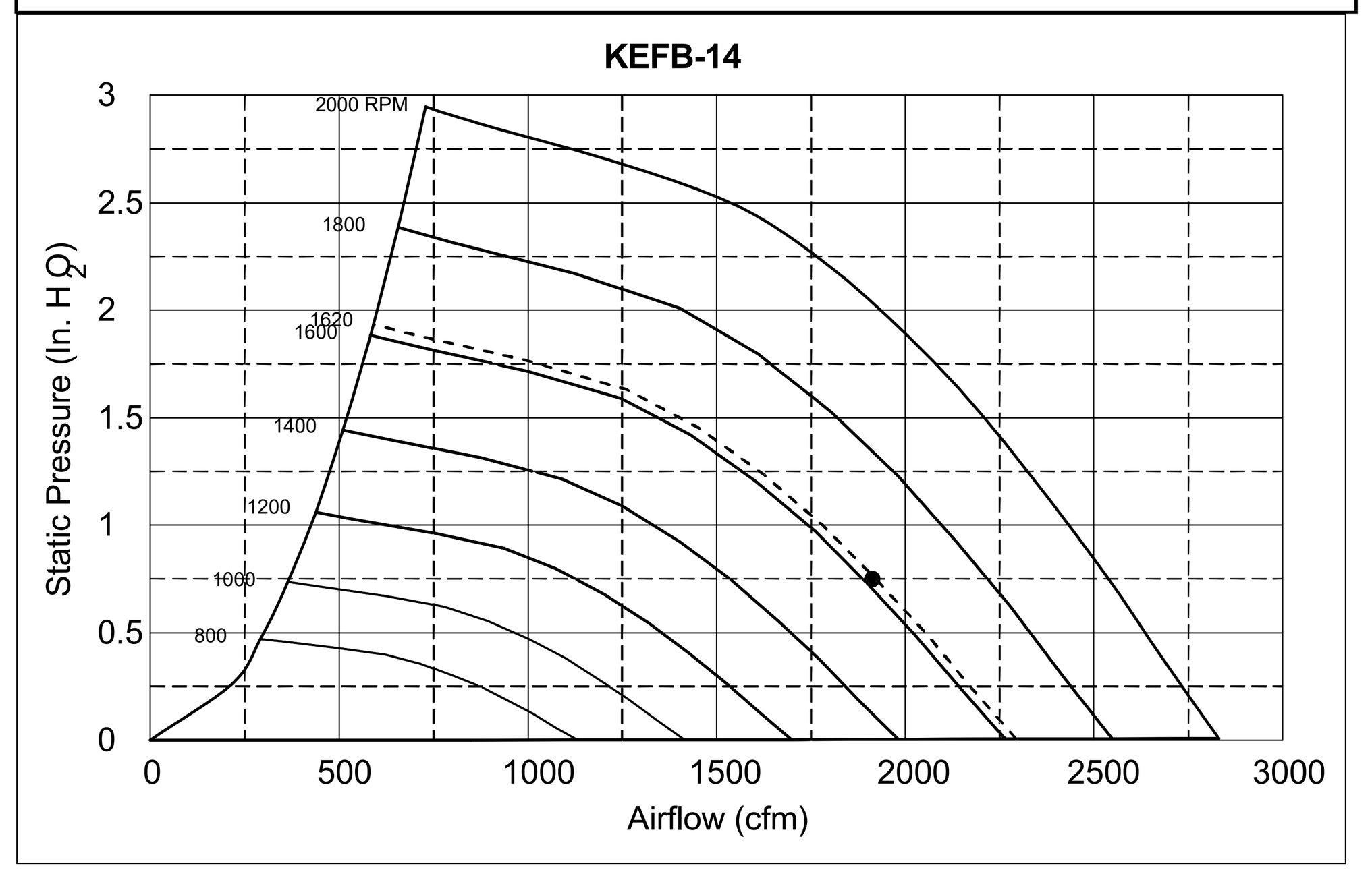
FOR REFERENCE ONLY

EF-1

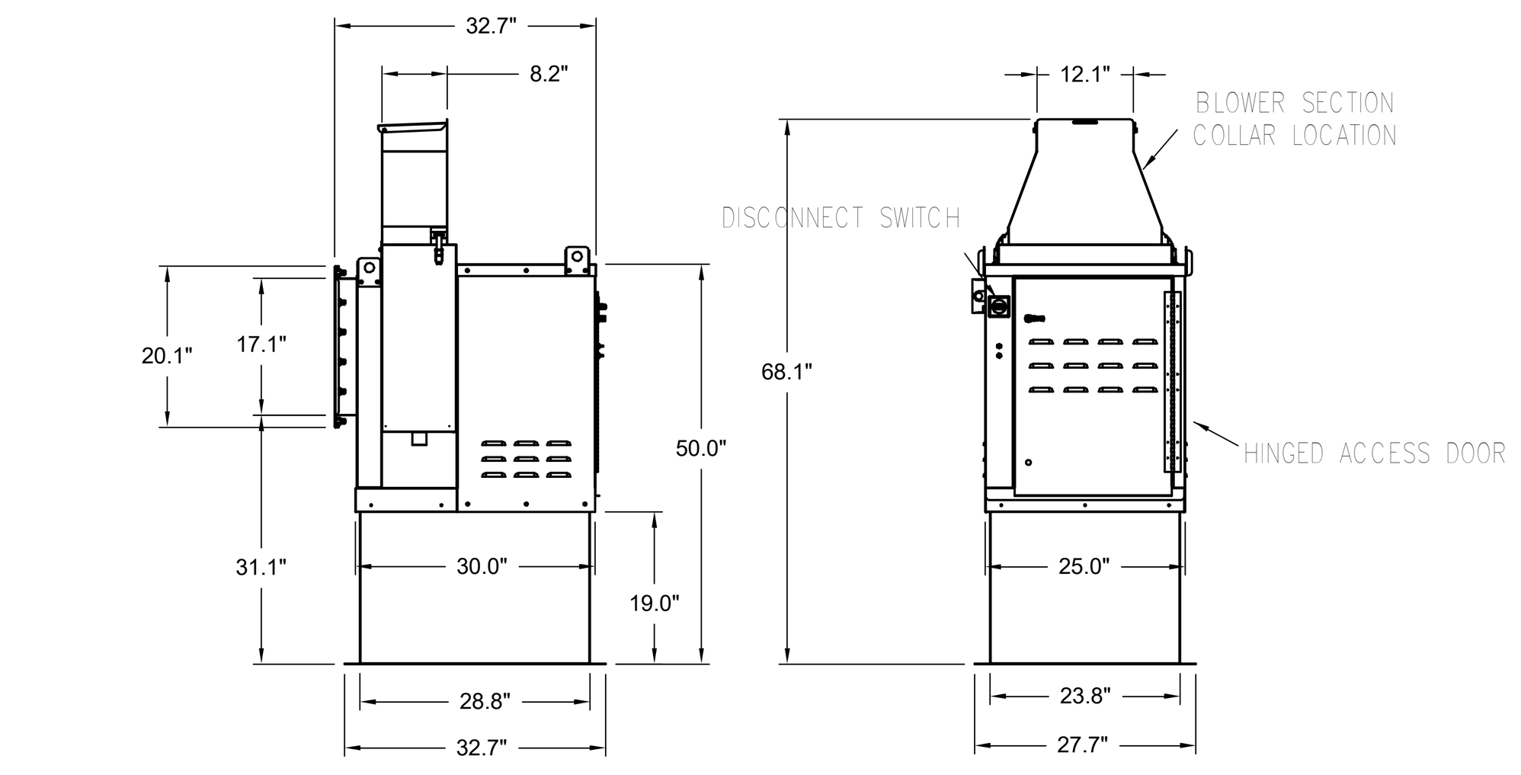


Halton KEFB Exhaust Fan

Job Name	Chick-fil-A								
Location	EF-1								
Date	1/26/2023		Item No			Qty			
Model	KEFB-14	Fan RPM	1,747			Volts/Ph/Amps:	115/1/60		
Airflow, cfm	1,913	Fan BHP	0.55			Motor HP	0.75		
Static Pressure, in WC		0.75		dB		85.3		TAB Port, in WC	4

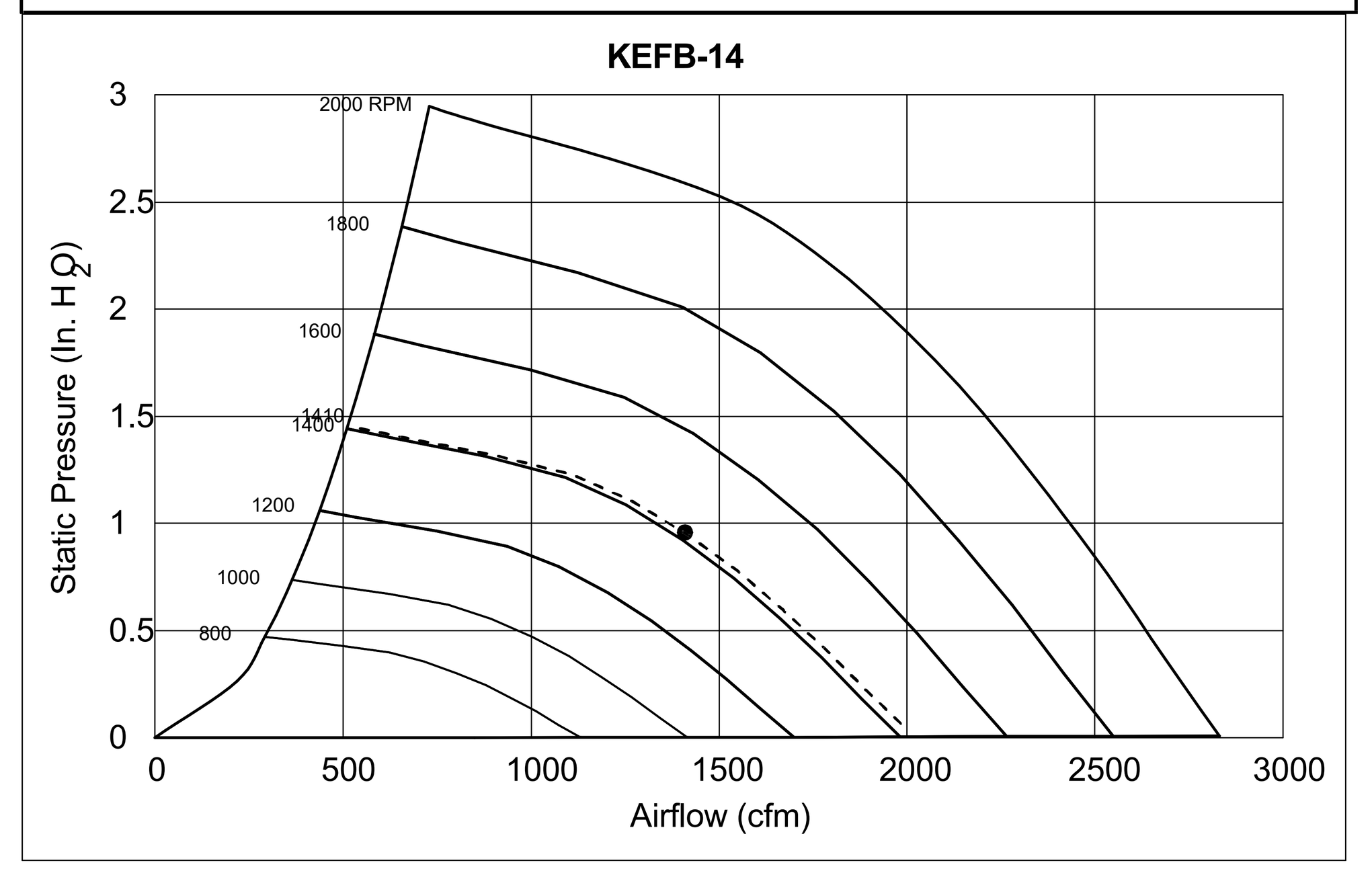


EF-2



Halton KEFB Exhaust Fan

Job Name	Chick-fil-A								
Location	EF-2								
Date	1/26/2023		Item No			Qty			
Model	KEFB-14	Fan RPM	1,522			Volts/Ph/Amps:	115/1/60		
Airflow, cfm	1,402	Fan BHP	0.38			Motor HP	0.75		
Static Pressure, in WC		0.95		dB		81.6		TAB Port, in WC	2.1



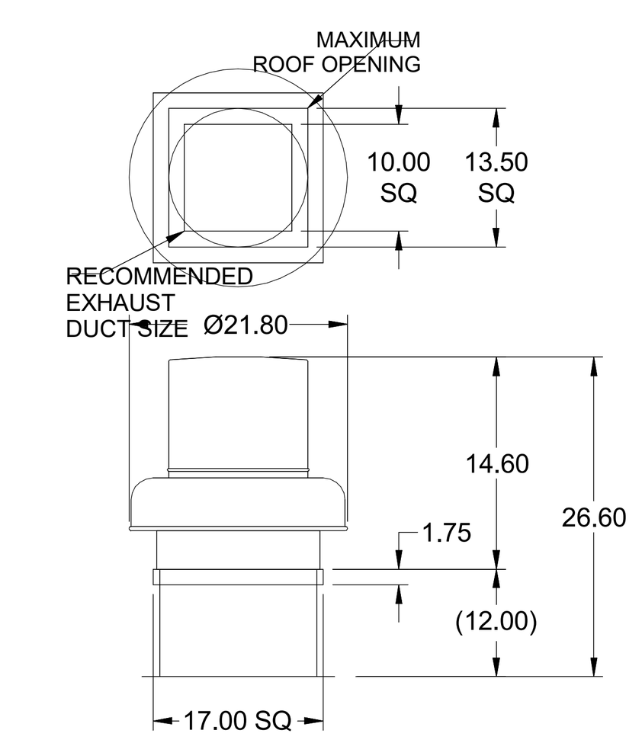
EF-3

Model: XRED-095-VG
Direct Drive Centrifugal Roof Exhaust Fan

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	28
Weight w/ Acc's (lb)	35
Weight w/ Acc's and Curb (lb)	49
Standard Curb Cap Size (in.)	17 x 17
Optional Damper (in.)	10 x 10
Roof Opening (in.)	13.5 x 13.5

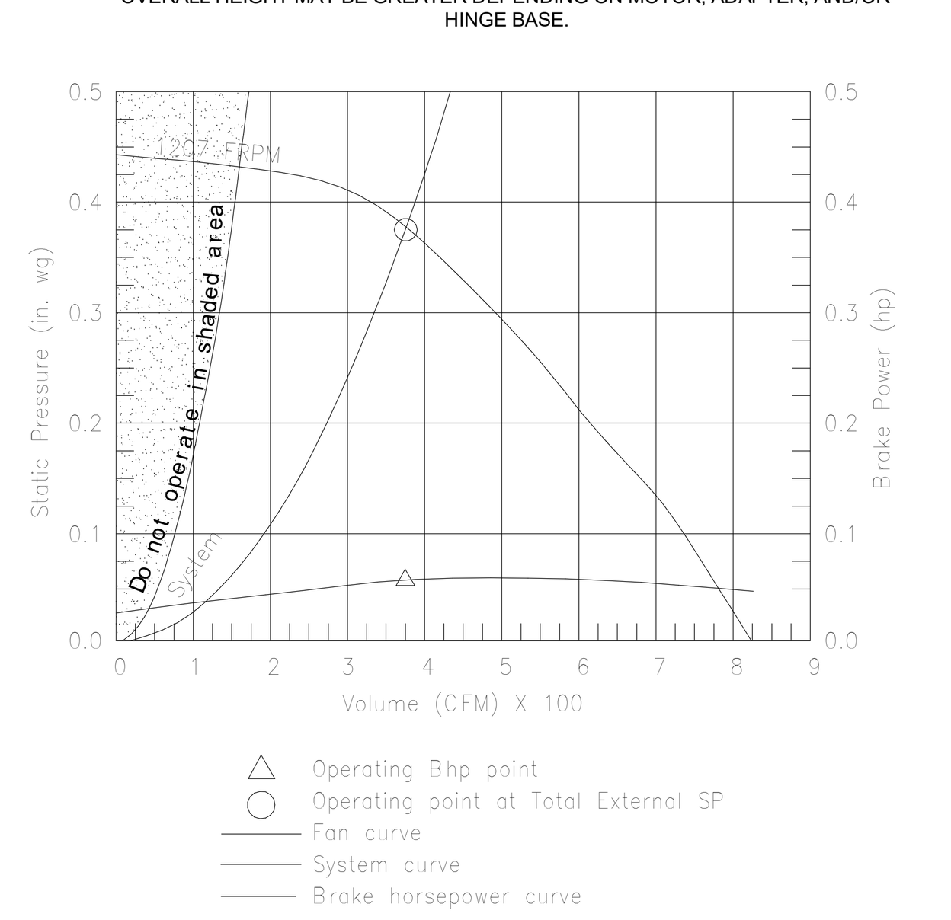
Performance	
Requested Volume (CFM)	375
Actual Volume (CFM)	375
Total External SP (in. wg)	0.375
Fan RPM	1207
Operating Power (hp)	0.05
Elevation (ft)	23
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Tip Speed (ft/min)	3,437
Static Eff. (%)	41

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	323



Motor	
Motor Mounted	Yes
Size (hp)	1/8 (or greater)
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1550
Efficiency Rating	Standard
Windings	1

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



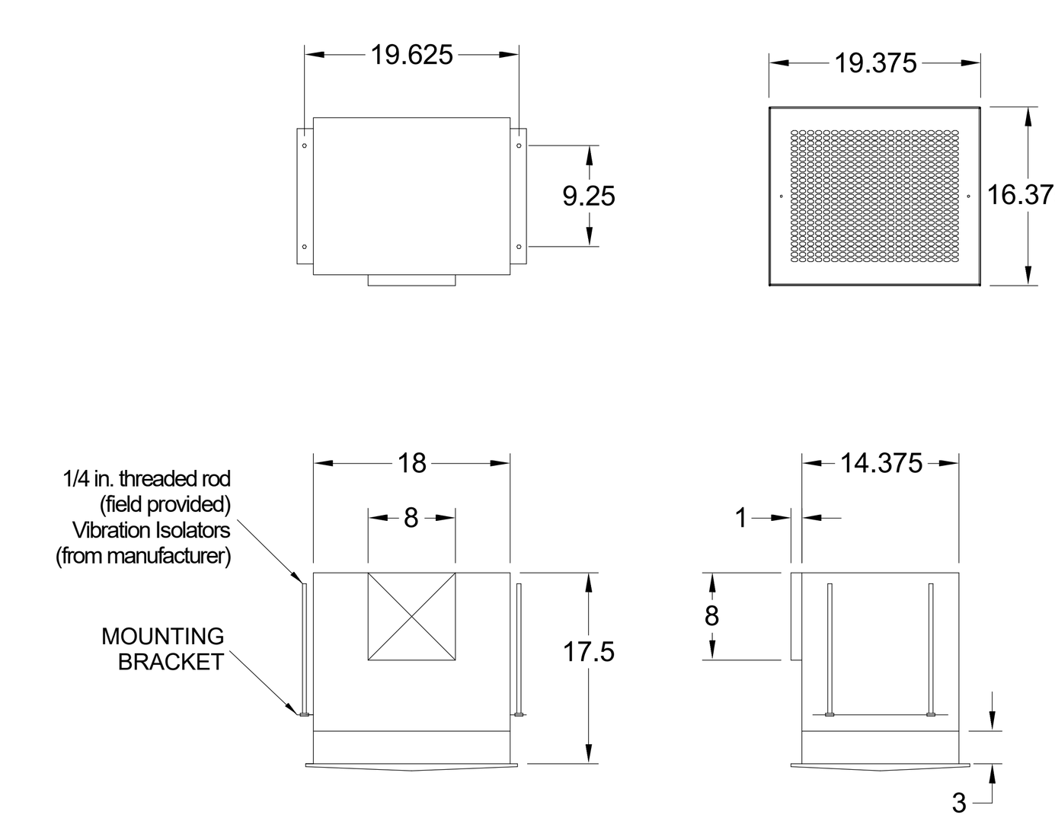
RF-1

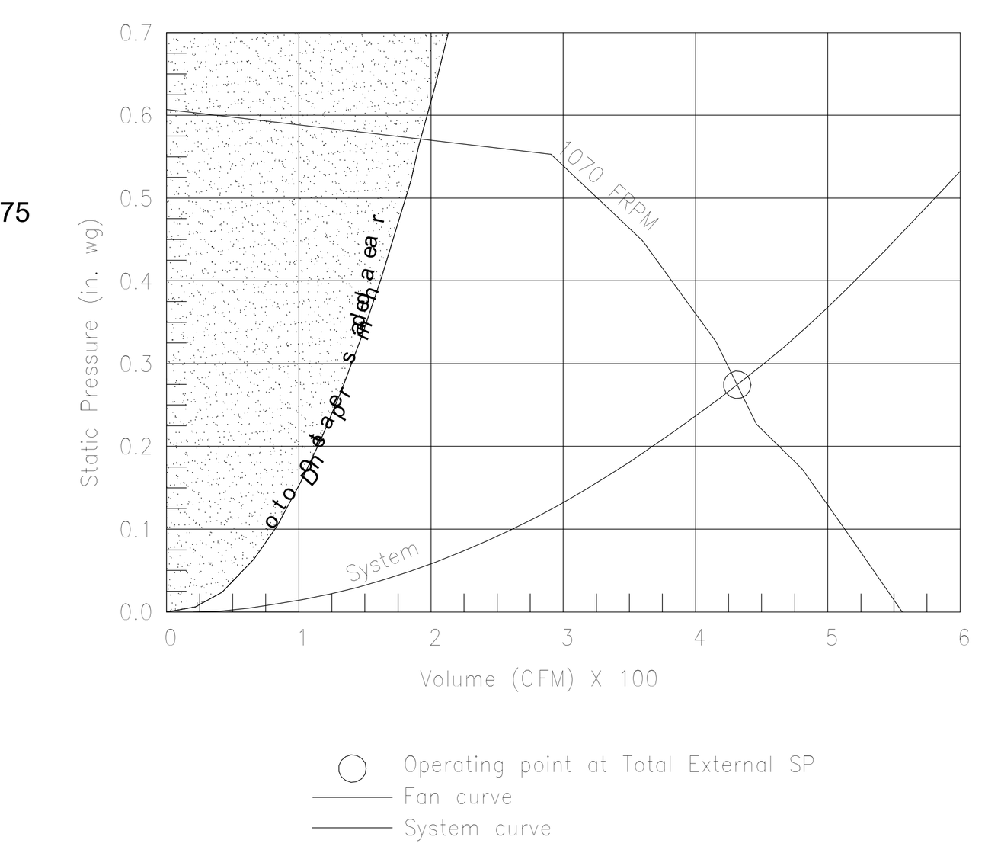
Model: SP-A510-VG

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	31
Weight w/ Acc's (lb)	40

Performance	
Requested Volume (CFM)	450
Actual Volume (CFM)	431
Total External SP (in. wg)	0.275
Fan RPM	1070
* FLA (A)	3.3
Elevation (ft)	23
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Sones	4.5

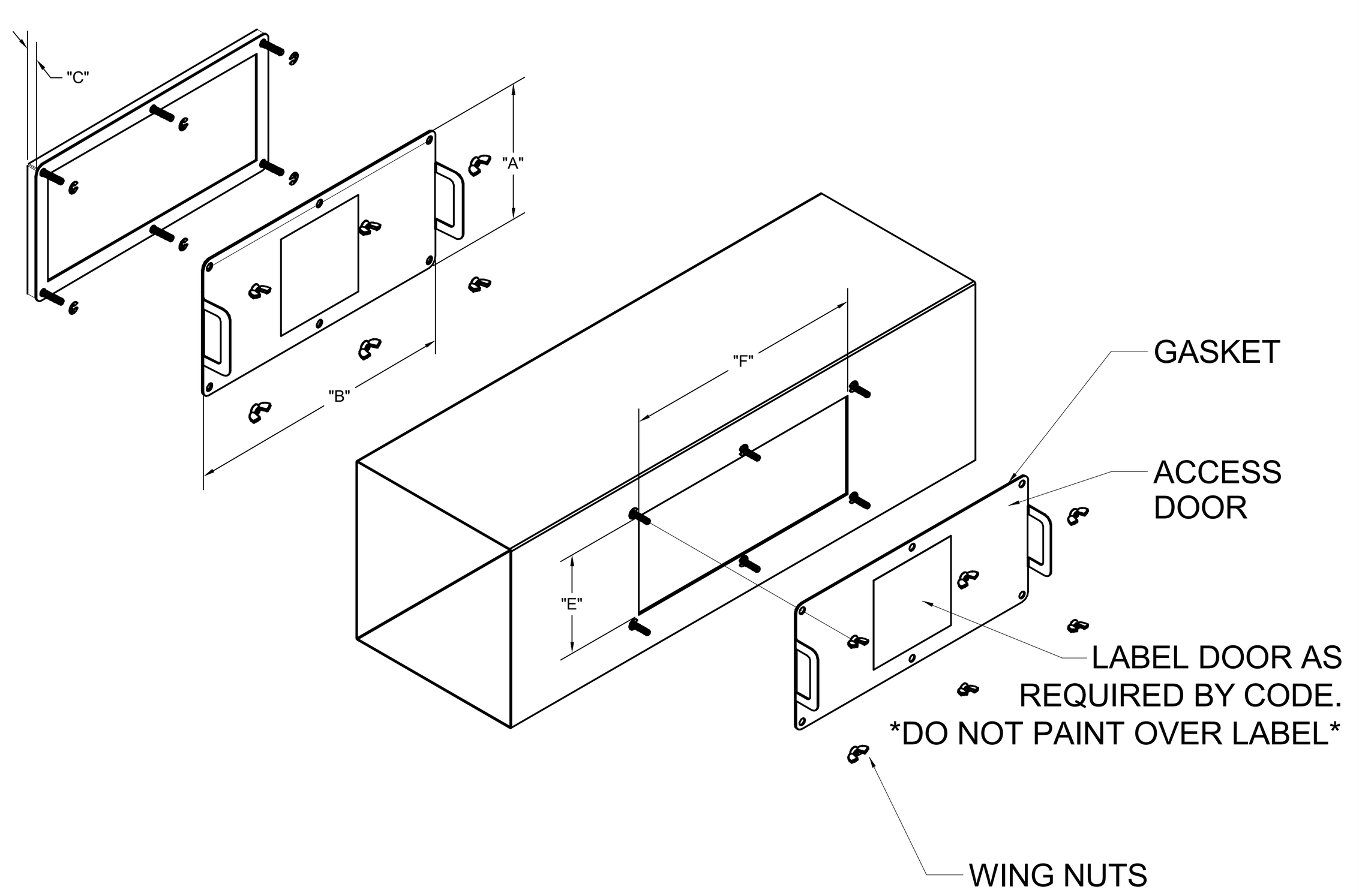
Motor	
Motor Mounted	Yes
** Input Watts (W)	224
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP



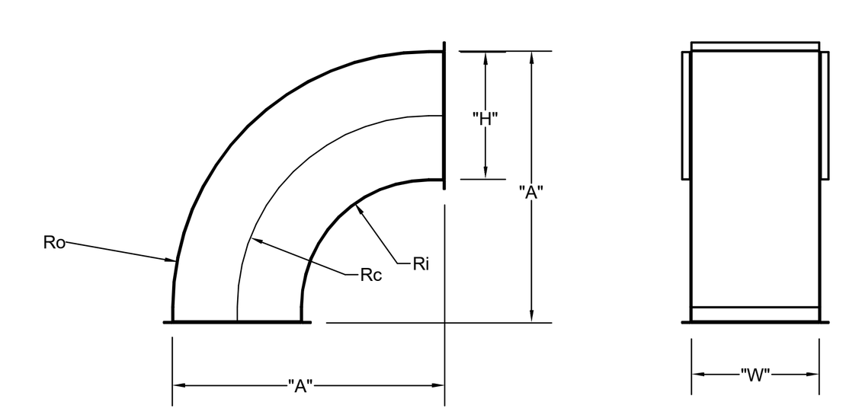


GREASE ACCESS DOOR SCHEDULE					
	DOOR SIZE		OPTIONAL FLANGE	OPENING SIZE	
MODEL	"A"	"B"	"C"	"E"	"F"
KAP0715	7	15	FLAT	5.5	13.5
KAP1015	10	15	1/2	7	12

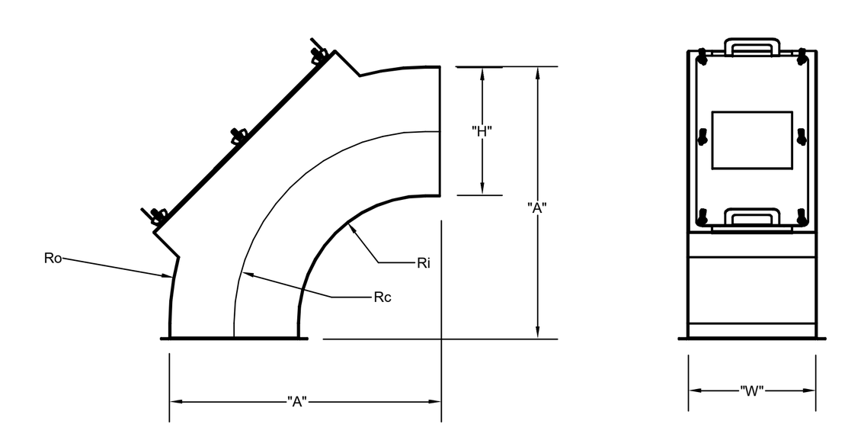
ACCESS DOORS SHALL BE U.L. 1978 LISTED OR FIELD FABRICATED, REQUIRE NO TOOLS FOR REMOVAL AND MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE IMC. ACCESS DOOR SHALL BE SECURED WITH THUMB SCREWS. ACCESS DOORS SHALL BE SEALED WITH A MINIMUM 1500 DEREE GASKET MATERIAL



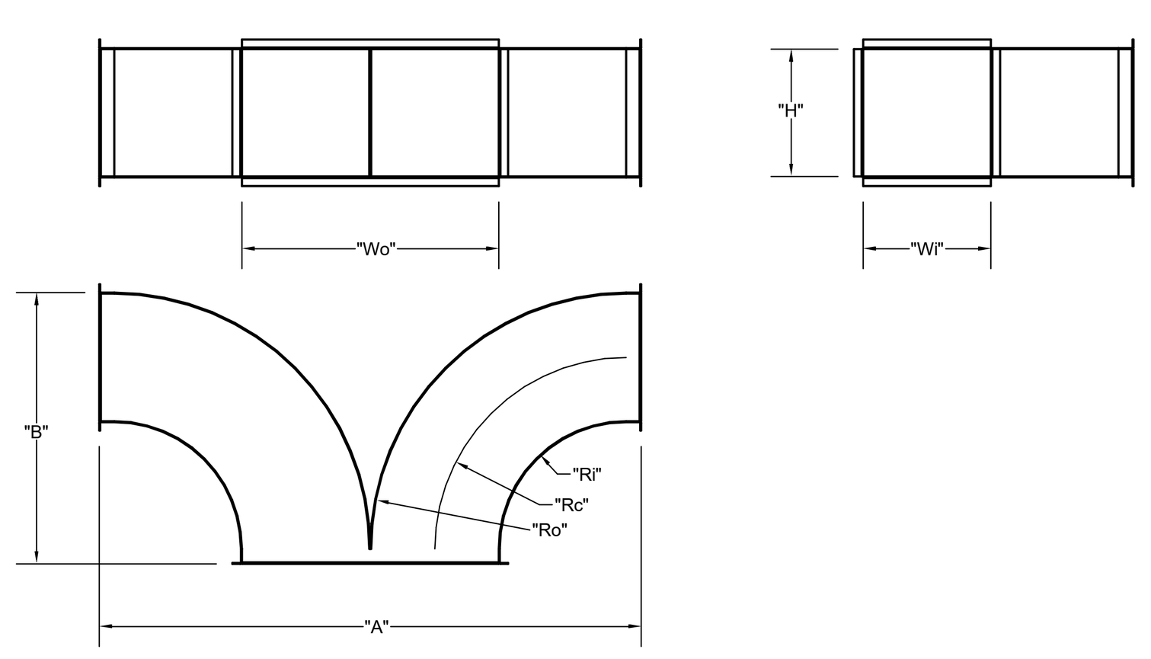
INSTALL PER MANUFACTURER'S INSTRUCTIONS



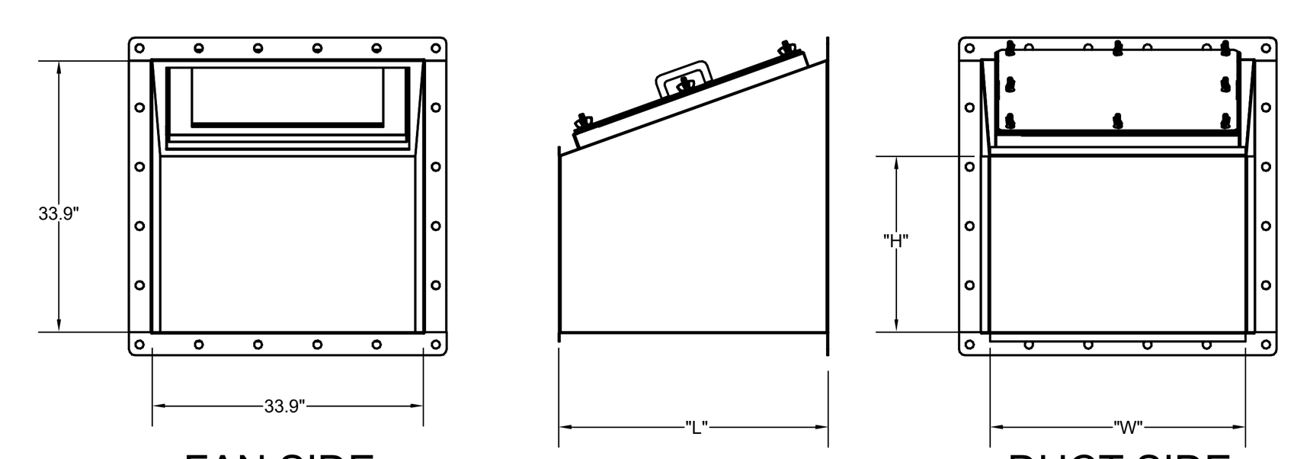
	"H"	"W"	"A"	Ro	Rc	Ri
EF-2	8	8	17	16	12	8
EF-2	8	10	17	16	12	8



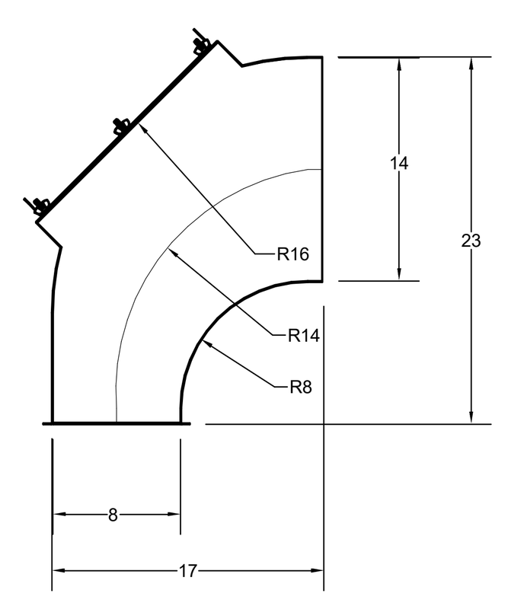
"H"	"W"	"A"	Ro	Rc	Ri
14	8	29	28	21	14
8	8	17	16	12	8

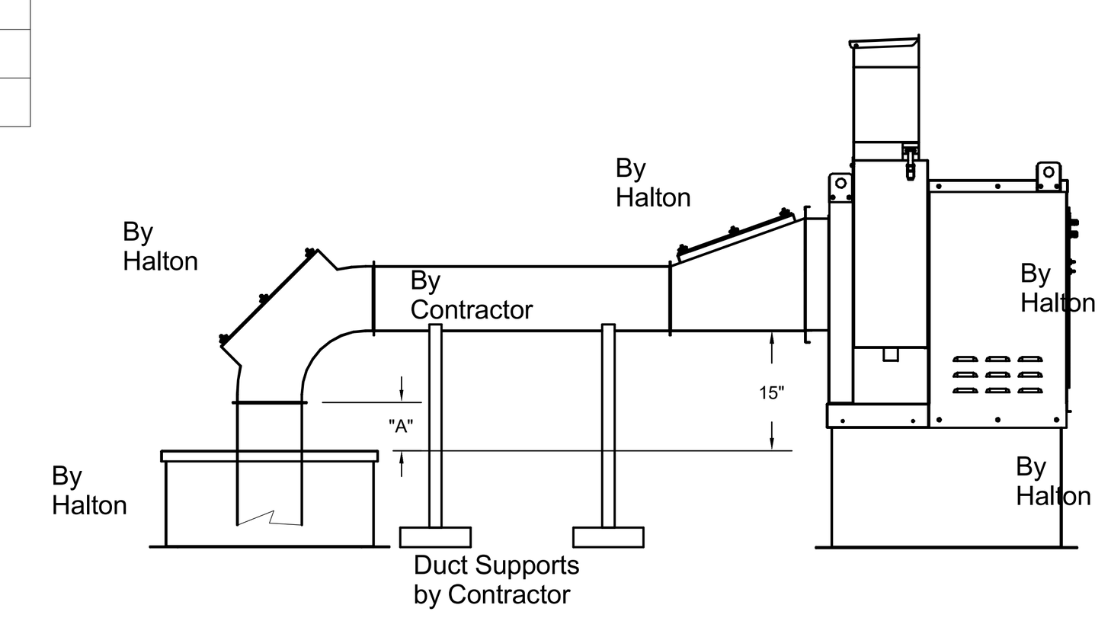


	"Wi"	"H"	Wo	Ro	Rc	Ri	"A"	"B"
EF-1	8	14	16	16	12	8	34	17
EF-2	8	10	16	16	12	8	34	17



TRANSITION	"H"	"W"	"L"
EF-1 (5)	14	16	25
EF-2 (6)	10	16	17



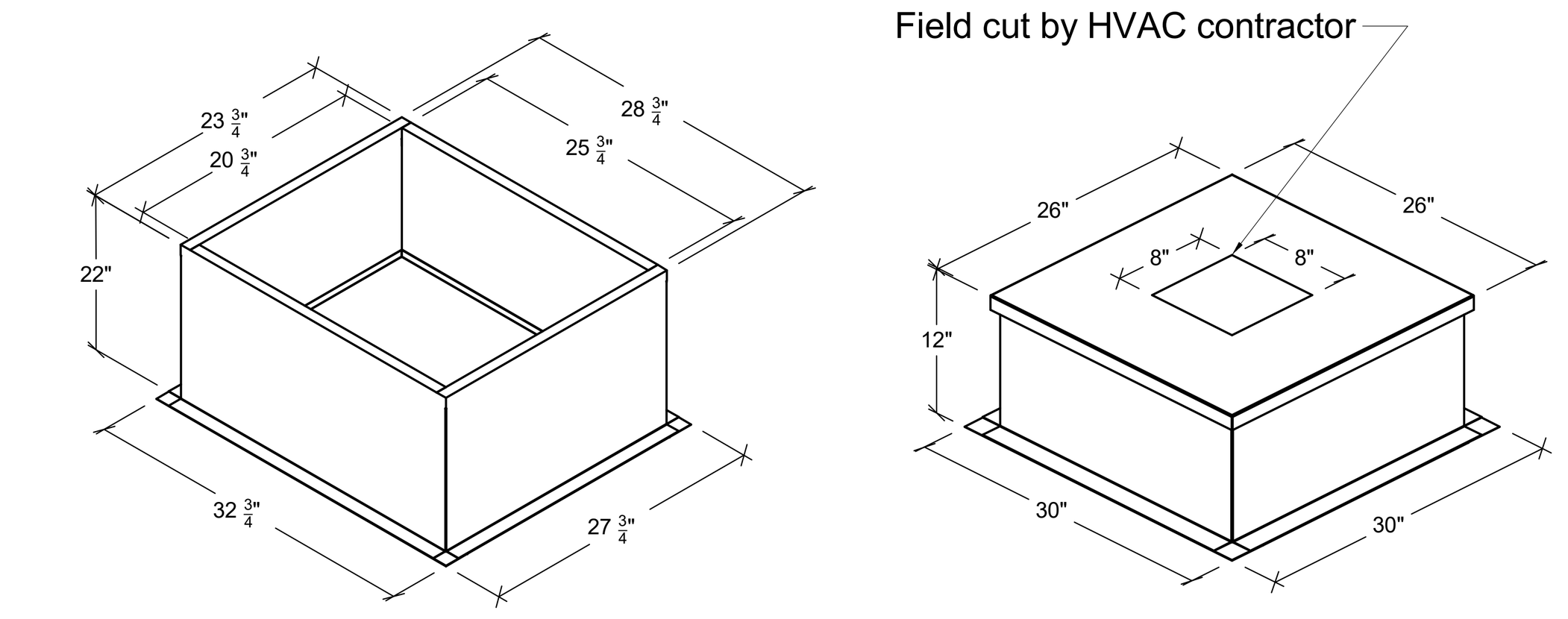


"A" DISTANCE AVAILABLE FOR DUCT SLOPE

	ELBOW	"A"
EF-1	14X8	8
EF-2	8X8	10

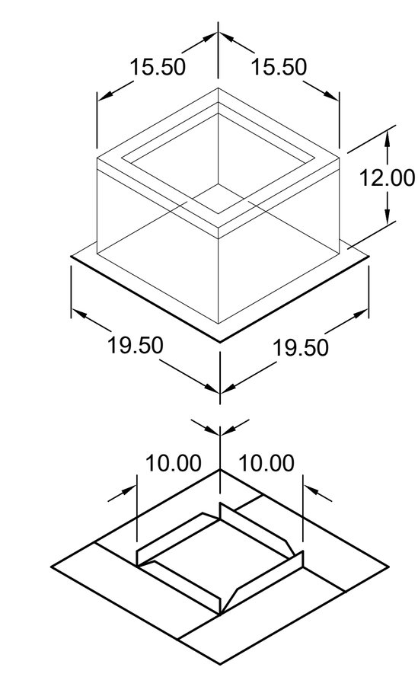
Halton Kitchen Exhaust Fan Curb
Insulated Duct Curb

Field cut by HVAC contractor



Kitchen Exhaust Fan Roof Curb
Standard Construction Features:
- Roof Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of 18 ga aluminized steel - Straight Sided without a cant - 2 in. mounting flange - Height is 22 in.

Insulated Duct Curb
Standard Construction Features:
- Duct Curb fits between the building roof and the fan mounted directly to the roof support structure - Constructed of 18 ga aluminized steel - Straight Sided without a cant - 2 in. mounting flange - Height is 12 in. - 16 ga. cap



Model: GPI
For Model: XRED-090-VG
Curb & Damper Tray

Accessories

Material	Security Bars	Liner	Insulation (in.)	Insulation R Value
Galvanized	No	No	1	R4.3

General

Tag	Qty	Model	Sizing Method	Undersizing (in.)	Weight (lb)	Shipped Assembled	Union Label
EF-3	1	GPI-17	Nominal	1.5	14	Yes	No Preference

Dimensions

Curb Height (in.)	Nominal Outside Width (in.)	Nominal Outside Length (in.)	Actual Outside Width (in.)	Actual Outside Length (in.)	Actual Inside Width (in.)	Actual Inside Length (in.)	Flange Width (in.)	Flange Length (in.)	Hinge Base Width* (in.)	Hinge Base Length* (in.)
12	17	17	15.5	15.5	12	12		19.5	16	

*May not be applicable

MAIL APPROVED DRAWINGS TO APPROPRIATE FACTORY BELOW WEBSITE: WWW.HALTONCOMPANY.COM

HALTON CO. (CANADA)
1021 BREVIK PLACE
MISSISSAUGA, ON L4W 3R7
1-905-624-0301

HALTON CO. (USA)
101 INDUSTRIAL DRIVE
SCOTTSVILLE, KY 42164
1-270-237-5600

REV.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			
7			

PROJECT: **CHICK-FIL-A**
LOCATION: JEFFERSON AND BUCHANAN FSU
SN#: 04942
DRAWN BY:
DATE: 10/22/2024
SCALE: NTS
Halton Dwg:

Halton
CARE FOR INDOOR AIR

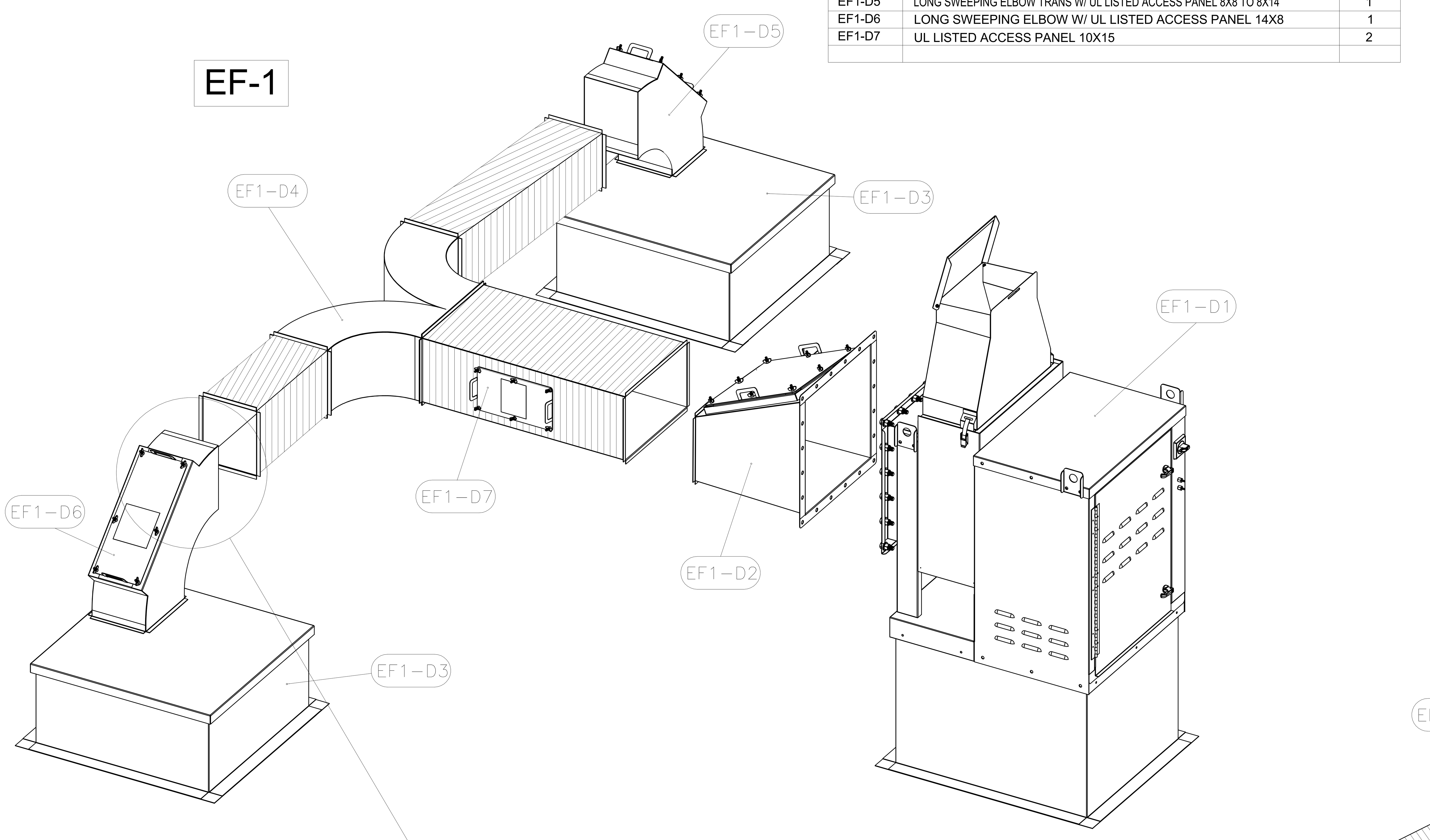
Sheet
MH-1.4

FOR REFERENCE ONLY

EXHAUST FAN #1 (EF-1)		
ITEM	DESCRIPTION	QTY
EF1-D1	KEFB EXHAUST FAN W/ ROOF CURB	1
EF1-D2	FAN TRANSITION W/ UL LISTED ACCESS PANEL 14X16	1
EF1-D3	DUCT ROOF CURB W/ CAP 26X26X12	2
EF1-D4	LONG SWEEPING WYE 14X8	1
EF1-D5	LONG SWEEPING ELBOW TRANS W/ UL LISTED ACCESS PANEL 8X8 TO 8X14	1
EF1-D6	LONG SWEEPING ELBOW W/ UL LISTED ACCESS PANEL 14X8	1
EF1-D7	UL LISTED ACCESS PANEL 10X15	2

EXHAUST FAN #2 (EF-2)		
ITEM	DESCRIPTION	QTY
EF2-D1	KEFB EXHAUST FAN W/ ROOF CURB	1
EF2-D2	FAN TRANSITION W/ UL LISTED ACCESS PANEL 10X16	1
EF2-D3	DUCT ROOF CURB W/ CAP 26X26X12	2
EF2-D4	LONG SWEEPING WYE 8X10	1
EF2-D5	LONG SWEEPING ELBOW W/ UL LISTED ACCESS PANEL 8X8	2
EF2-D6	UL LISTED ACCESS PANEL 7X15	4
EF2-D7	LONG SWEEPING ELBOW 8X8	1
EF2-D8	LONG SWEEPING ELBOW 8X10	1

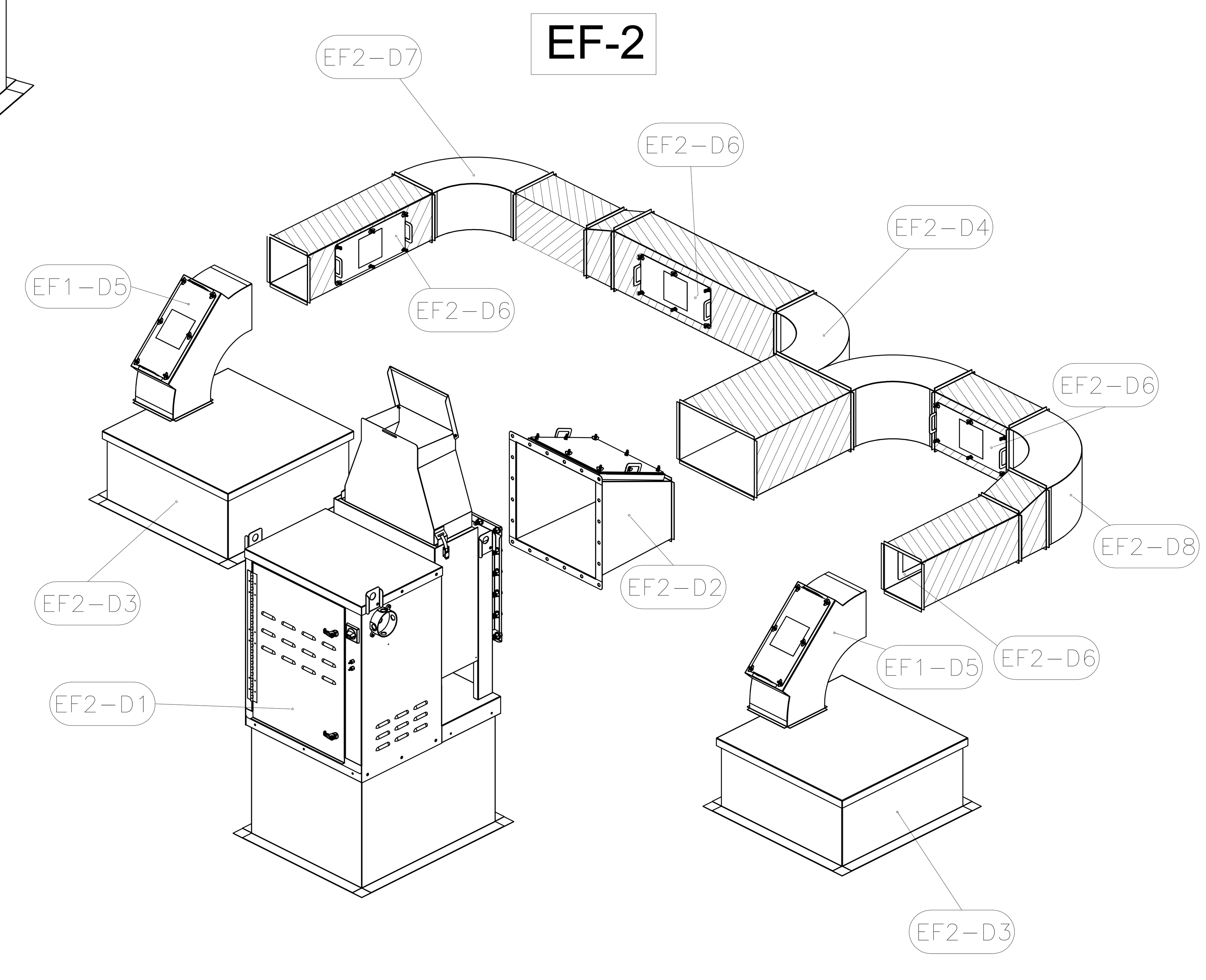
EF-1

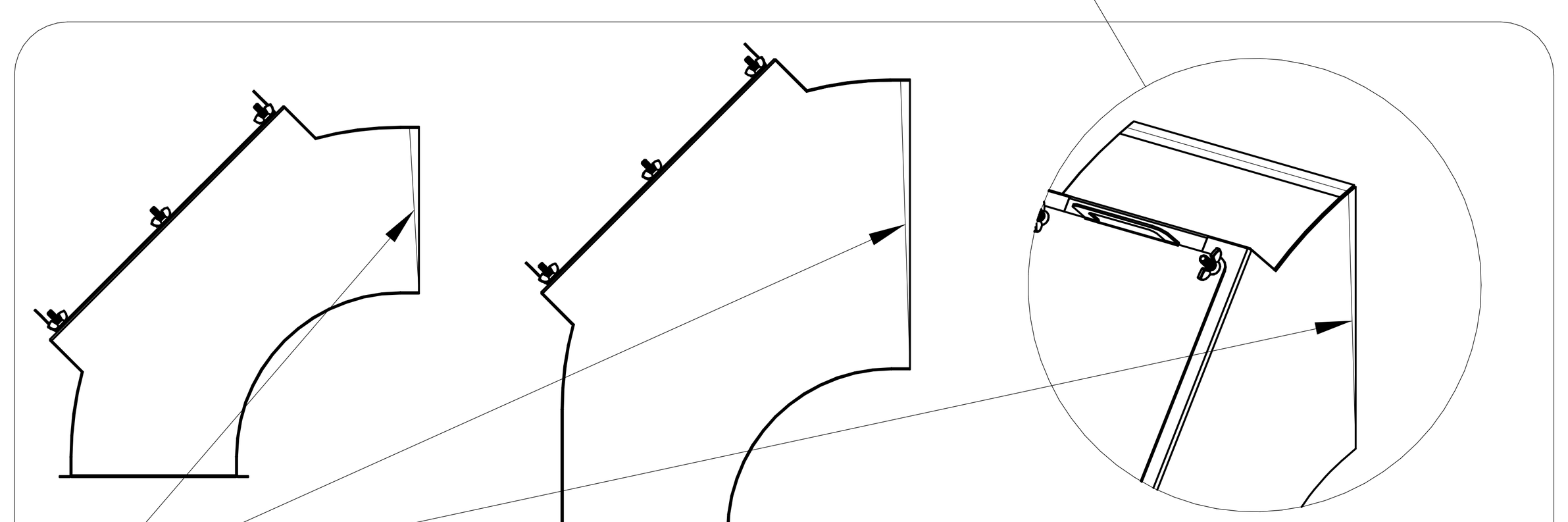


-CONTACT HALTON CUSTOMER SERVICE FOR HALTON PROVIDED ITEMS ONLY DUCT SECTIONS SPECIFIED BY NUMBERS AND SHOWN IN THE ABOVE CHART ARE PROVIDED BY HALTON

-ALL OTHER DUCTS AND FITTINGS BY HVAC CONTRACTOR. DUCT SECTIONS PROVIDED BY HVAC CONTRACTOR ARE SHOWN IN ORDER TO DEPICT TOTAL SYSTEM DESIGN. DUCT SECTIONS SHOWN WITH UL LISTED ACCESS PANELS, THAT ARE NOT HALTON PROVIDED LONG SWEEPING ELBOWS OR FAN TRANSITIONS, ARE PROVIDED BY HVAC CONTRACTOR. THE UL LISTED ACCESS PANELS PROVIDED BY HALTON MUST BE INSTALLED IN DUCT SECTIONS NOT PROVIDED BY HALTON BY HVAC CONTRACTOR.

EF-2





CONTRACTOR TO TRIM AS NEEDED TO ACCOMODATE DUCT SLOPE. ALL ELBOWS WITH ACCESS PANELS. BOTH EF-1 AND EF-2

-ALL DUCTS AND FITTINGS DEPICTED BY HATCH AREAS ARE BY HVAC CONTRACTOR.

THIS DRAWING MUST BE CHECKED, SIGNED AND RETURNED TO THE APPROPRIATE FACTORY. PLEASE VERIFYING THE FOLLOWING:

1. ALL DIMENSIONAL INFORMATION, MOUNTING POSITIONS AND CLEARANCES.
2. THE LOCATION AND TYPE OF COOKING EQUIPMENT.

NOTE TO APPROVER: ANY CHANGES TO COOKING EQUIPMENT SUCH AS INCREASED ENERGY INPUTS OR EQUIPMENT POSITION MAY AFFECT EXHAUST AIRFLOW. HALTON MUST BE NOTIFIED IF ANY OF THESE CHANGES OCCUR, A RECALCULATION EXHAUST AIRFLOW MAY BE REQUIRED.

☐ REVISE AND RESUBMIT

APPROVED FOR FABRICATION

☐ WITH NO CHANGES ☐ WITH CHANGES AS NOTED

APPROVED BY DATE

MAIL APPROVED DRAWINGS TO APPROPRIATE FACTORY BELOW WEBSITE: WWW.HALTONCOMPANY.COM

HALTON CO. (CANADA) ☐
1021 BREVIK PLACE
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REV.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
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7			

PROJECT: **CHICK-FIL-A**

LOCATION: JEFFERSON AND BUCHANAN FSU SN#: 04942

DRAWN BY: DATE: 10/22/2024

SCALE: NTS

Halton Dwg:

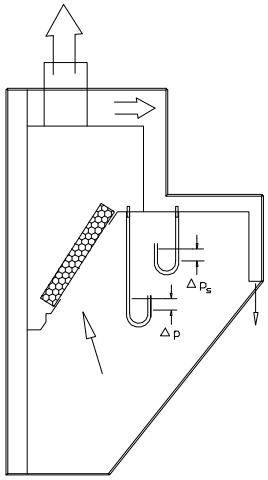
Halton CARE FOR INDOOR AIR

Sheet MH-1.5

Balancing of Capture Jet® Hoods

Exhaust Airflow (CFM) vs. Pressure Differential (inches H_20)

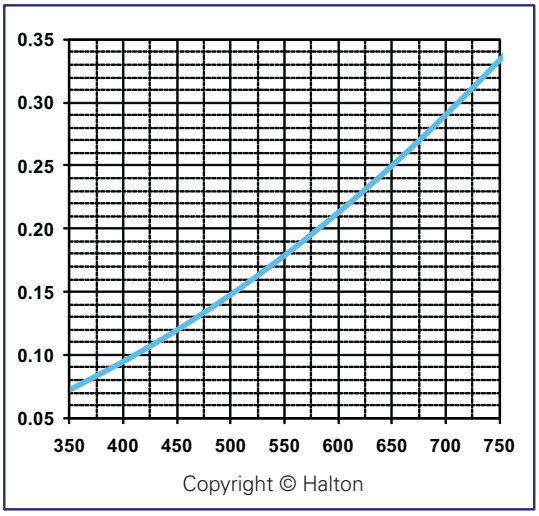
Model KVL, KVL2 with Plate Shelf, KVL2 with Under Hang and KVM Hybrid



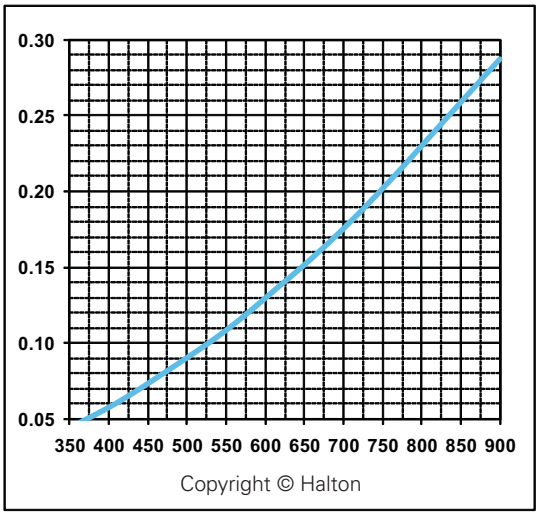
The capture jet and exhaust air flows are easily and accurately determined by measuring the pressure difference from the T.A.B. ports mounted in each plenum. Corresponding air flows can be read from the diagrams provided.

All T.A.B. readings assume cold conditions. To adjust for an exhaust temperature of 110 ºF, multiply the readings by a factor of 0.93.

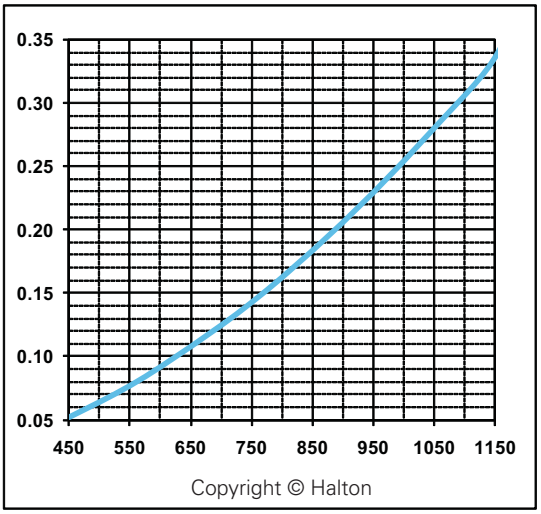
KVL, KVL2 and KVM - 2 Filters



KVL, KVL2 and KVM - 2.5 Filters

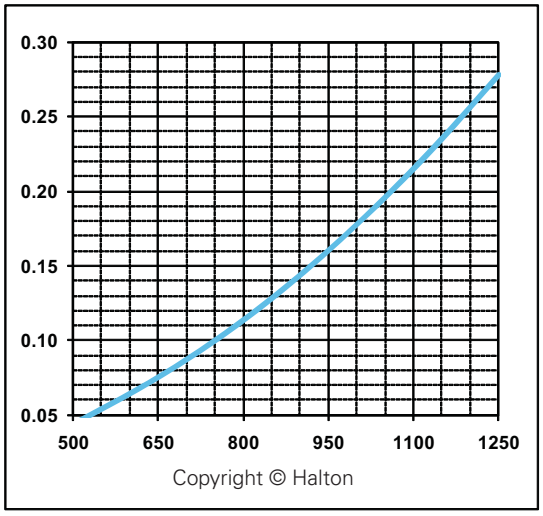


KVL, KVL2 & KVM - 3 Filters

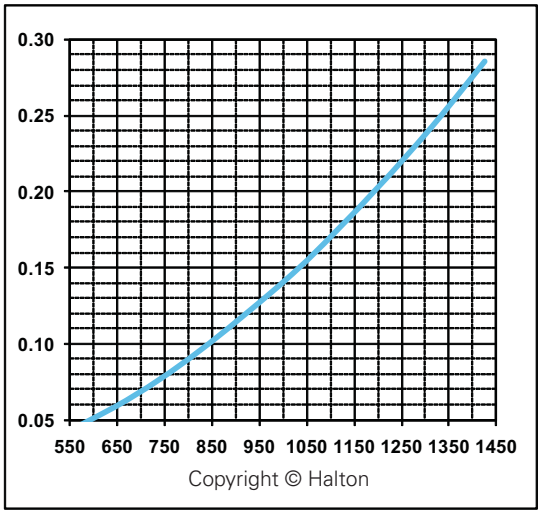


Model KVL, KVL2 with Plate Shelf, KVL-E with Under Hang and KVM Hybrid

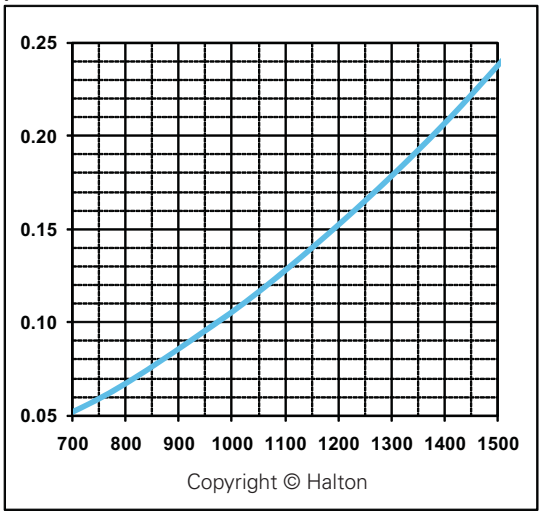
KVL, KVL2 & KVM - 3.5 Filters



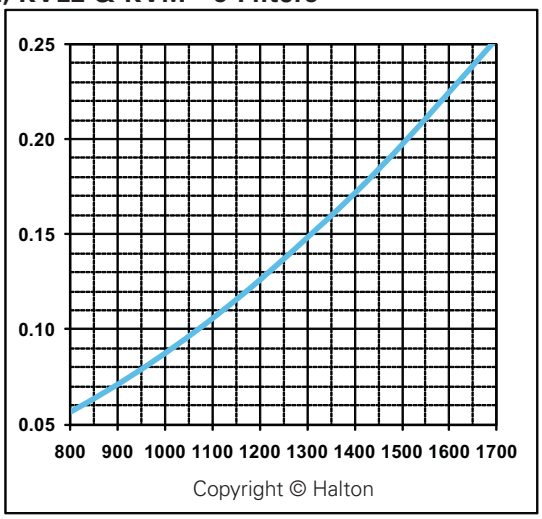
KVL, KVL2 & KVM - 4 Filters



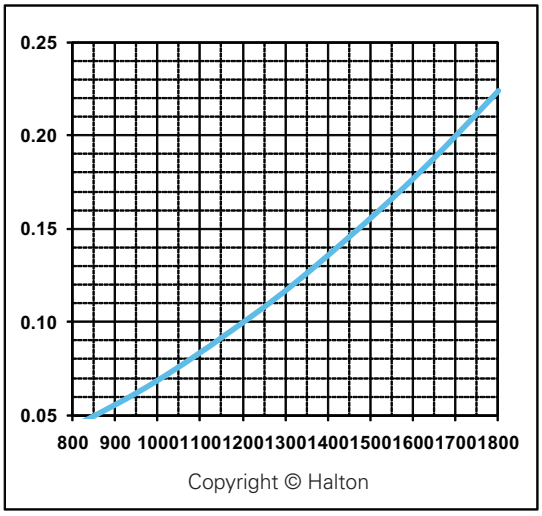
KVL, KVL2 & KVM - 4.5 Filters



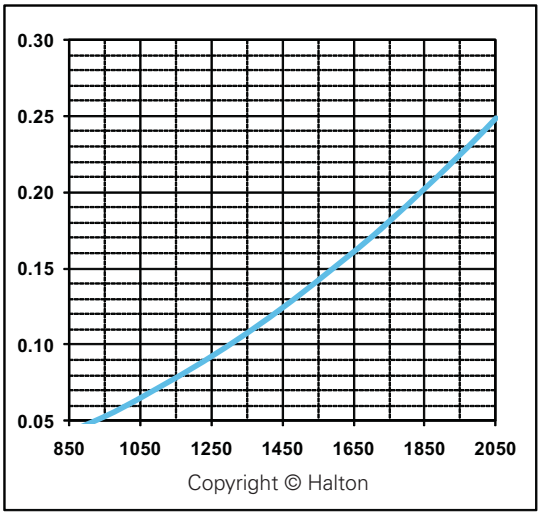
KVL, KVL2 & KVM - 5 Filters



KVL, KVL2 & KVM - 5.5 Filters

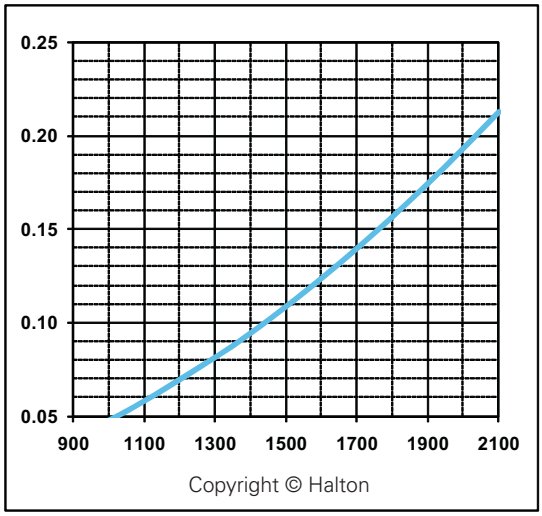


KVL, KVL2 & KVM - 6 Filters

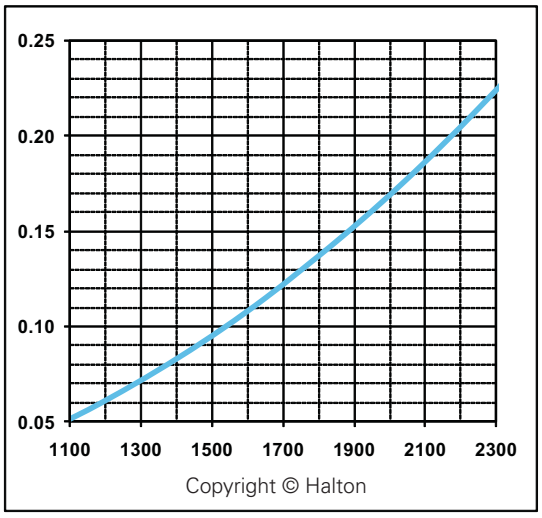


Model KVL, KVL2 with Plate Shelf, KVL-E with Under Hang and KVM Hybrid

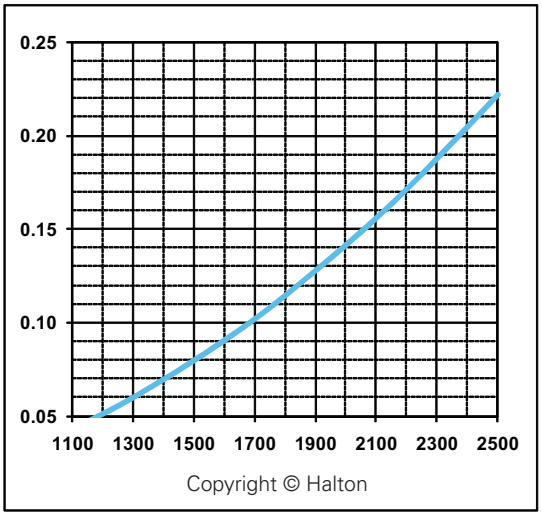
KVL, KVL2 & KVM - 6.5 Filters



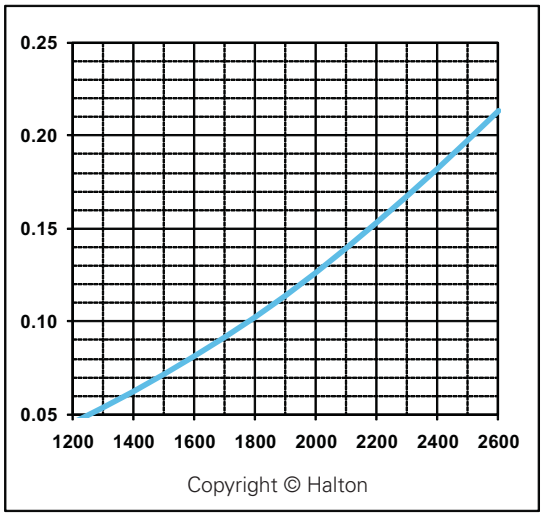
KVL, KVL2 & KVM - 7 Filters



KVL, KVL2 & KVM - 7.5 Filters



KVL, KVL2 & KVM - 8 Filters



TEST & BALANCE
DEFICIENCY CLASSIFICATION

RESTAURANT DEVELOPMENT
EXISTING RESTAURANTS

SITE CONDITIONS

CRITICAL *Unable to Perform T&B Scope until GC corrects*	REVIEW + RECTIFY *Review Deficiency w/ EOR, Owner, GC to determine Action Required*	NON-CRITICAL *Proceed with T&B Scope & Note as Deficiency*
• Building does not have permanent power. • Site conditions: i.e. Ceiling tiles are not installed, ceiling grid is not installed, glass is not installed around play space, no doors on building, too many trades working at once, etc. • No ladders on site, or roof ladder not yet installed on building. • Electrical circuit serving equipment not connected, finalized and/or not per NEC and/or IOM. • Incorrect MFR of devices or equipment Installed-Non-National Accounts Approved Brands.		• Equipment and device labels not installed per plans. Includes RTUs, EFs, T-Stats, Ansul Pull Station, Annunciators.

EXHAUST SYSTEM

CRITICAL *Unable to Perform T&B Scope until GC corrects*	REVIEW + RECTIFY *Review Deficiency w/ EOR, Owner, GC to determine Action Required*	NON-CRITICAL *Proceed with T&B Scope & Note as Deficiency*
• Loose or missing access doors on the grease ductwork. • Grease exhaust duct dampers (Halton – Kitchen Volume Damper (Model K) or Manual Volume Damper (Model MBD) not installed or in wrong locations. • Symmetrical duct wye at hoods not installed per plans. • RR fans are not operational. • Wrong HP motor in rooftop exhaust equipment. • Short radius or mitered (Square 90's) type ells on the grease ductwork. • Exhaust Fan Motors Burn-out due to improper start-up. • Incorrect MFR of devices or equipment Installed-Non-National Accounts Approved Brands.	• Exhaust fans and RTUs on the wrong curbs • Capture Jet duct not installed per plans and/or shops. • Side Capture Jet plenum not installed per plans and/or shops. • Hood(s) installed at incorrect height. • Grease duct not sloped per plans.	• Grease drip trays at grease EF's not installed per plans and/or IOM. • Cabinet penetration in capture jet fan not sealed. • Grease duct insulation not per specifications. • HVAC or grease duct Insulation not per local AHJ requirements. R6 vs R8, 1 or 2 layers, etc. • Hood trim angles not installed. • Hood hangers not installed per plans and shop dwgs. • Equipment and device labels not installed per plans. Includes RTUs, EFs, T-Stats, Ansul Pull Station, Annunciators.

ROOF TOP UNIT

CRITICAL *Unable to Perform T&B Scope until GC corrects*	REVIEW + RECTIFY *Review Deficiency w/ EOR, Owner, GC to determine Action Required*	NON-CRITICAL *Proceed with T&B Scope & Note as Deficiency*
• Wrong HP motor in rooftop equipment. • RTU fan motors burn-out due to improper startup. • Economizers sticking or do not open in unison. • Incorrect MFR of devices or equipment Installed-Non-National Accounts Approved Brands.	• RTU leaking air into curb due to base pan bent, or gasket not installed. • AC P Traps incorrectly constructed. • Incorrect options on equipment. • Barometric and/or power relief damper assembly not functioning.	• Extra set of AC filters not provided per specs. • Equipment not secured to curbs and/or structure per plans or due to High Wind and/or Seismic designs per plans. • Deck not cut at duct penetrations per plans. • RTU's not level. • RTU filters are dirty and/or incorrect type. • Equipment and device labels not installed per plans. Includes RTUs, EFs, T-Stats, Ansul Pull Station, Annunciators.

AIR DISTRIBUTION

CRITICAL *Unable to Perform T&B Scope until GC corrects*	REVIEW + RECTIFY *Review Deficiency w/ EOR, Owner, GC to determine Action Required*	NON-CRITICAL *Proceed with T&B Scope & Note as Deficiency*
• No turning vanes or incorrect turning vanes installed. • No dampers installed in the run-outs on an AC system. • Ductwork leaking enough air to drop below the 10% allowance. (System) • In-line manual volume damper jammed and restricting airflow. • Run-outs not attached to diffusers/missing. ductwork or diffusers, no end cap installed on trunk main. • Duct sizes not per plans. • Damper handles on top of ductwork. • Missing the transition in the supply drop. • Incorrect MFR of devices or equipment Installed-Non-National Accounts Approved Brands.	• Dampers are not opening or closing due to obstructions in the start collars. • Excessive amounts of flex/flex in drops. • Diffusers air pattern deflectors are not field adjusted to prints. Either the 2x2 diffusers in kitchen, office or drive thru, or the hard ceiling supply grills. • Flex ducts are not installed per the M-5.1 print instructions. • 36" gap between the drop and 1st tap was not maintained. • Missing mastic on the runout to diffusers and air devices or duct not sealed per specs and/or SMACNA. • Duct hangers at RTU duct drops must be installed so as to minimize duct weight hanging from curb duct rails.	• Missing or improperly located flex connector in drop. • Duct hangers not installed per SMACNA. • Duct construction not per SMACNA. • HVAC insulation not installed per specs, SMACNA and/or IOM. • Duct insulation damaged due to exposure to elements or due to other trades. • Duct smoke detectors not located per plans and/or sample tubes plugged and/or not operational. • Equipment and device labels not installed per plans. Includes RTUs, EFs, T-Stats, Ansul Pull Station, Annunciators.

CONTROLS

CRITICAL *Unable to Perform T&B Scope until GC corrects*	REVIEW + RECTIFY *Review Deficiency w/ EOR, Owner, GC to determine Action Required*	NON-CRITICAL *Proceed with T&B Scope & Note as Deficiency*
• Hard ceilings electronic dampers are not operational/no diagram of diffuser-damper layout relative to centralized control panel. • Incorrect MFR of devices or equipment Installed-Non-National Accounts Approved Brands.	• Equipment controls not installed or configured per plans. • Incorrect control wiring type/gauge used and/or wiring not installed per plans and/or equipment IOM.	• Sensors not installed as shown on plans. • Thermostat control sensors out of calibration. • Equipment and device labels not installed per plans. Includes RTUs, EFs, T-Stats, Ansul Pull Station, Annunciators.

MISC EQUIPMENT

CRITICAL *Unable to Perform T&B Scope until GC corrects*	REVIEW + RECTIFY *Review Deficiency w/ EOR, Owner, GC to determine Action Required*	NON-CRITICAL *Proceed with T&B Scope & Note as Deficiency*
• Incorrect MFR of devices or equipment Installed-Non-National Accounts Approved Brands.		• Air curtains not installed per plans and IOM. • Air curtain controls not installed or adjusted per plans/IOM. • Equipment and device labels not installed per plans. Includes RTUs, EFs, T-Stats, Ansul Pull Station, Annunciators.

DEFINITIONS:

System or Zone: Roof Top Unit (RTU)/Exhaust Fan (EF) and inter-connected air distribution network (Ductwork).

Building System: All associated individual systems/zones in function with one another to achieve design requirements.

TAB: Testing, Adjusting and Balancing Firm

GC: General Contractor

OR: 3rd Party Owners Representative Construction Manager

Owner: Chick-fil-A, Inc. Program Manager

NOTES:
Mechanical Contractor present and capable of resolving issues while T&B in process can shift status of deficiency.