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 IN SUPPLY DUCT 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.

LEGEND

A-12-400	TYPE - NECK SIZE - CFM	EF#1	EXHAUST FAN #1 (TYP.)
[symbol]	SPIN-IN FITTING WITH MANUAL BALANCING DAMPER, WITHOUT SCOOP	AC#1	AIR CONDITIONING UNIT #1 (TYP.)
[symbol]	SPIN-IN HARD∅ FLEXIBLE∅ DIFFUSER	[symbol]	RETURN/EXHAUST (TYP.)
S	REMOTE TEMPERATURE SENSOR	[symbol]	SUPPLY DIFFUSER, SQ FACE (TYP.)
H	HUMIDITY SENSOR	1	PLAN NOTE REFERENCE
SD	SMOKE DETECTOR	[symbol]	MANUAL VOLUME DAMPER
12x18	DUCT SIZE (reverse for elevation views) 1ST NUMBER - HORIZONTAL DIMENSION 2ND NUMBER - VERTICAL DIMENSION	[symbol]	DIRECTION OF THROW ON DIFFUSER
		[symbol]	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

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.).

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12/30/24

CHICK-FIL-A
St. Ann FSU
10897 & 10909 Saint Charles Rock Rd
Saint Ann, MO 63074

FSR#05489

BUILDING TYPE / SIZE: P14 SE BN
RELEASE: 24.05
PRINTED FOR
ISSUED FOR CONSTRUCTION

REVISION SCHEDULE

NO.	DATE	DESCRIPTION
	08/30/2024	ISSUE FOR PERMIT
3	12/30/2024	ISSUE FOR CONSTRUCTION

ISSUE FOR CONSTRUCTION

CONSULTANT PROJECT # 24106.CD.S
DATE 12/30/2024
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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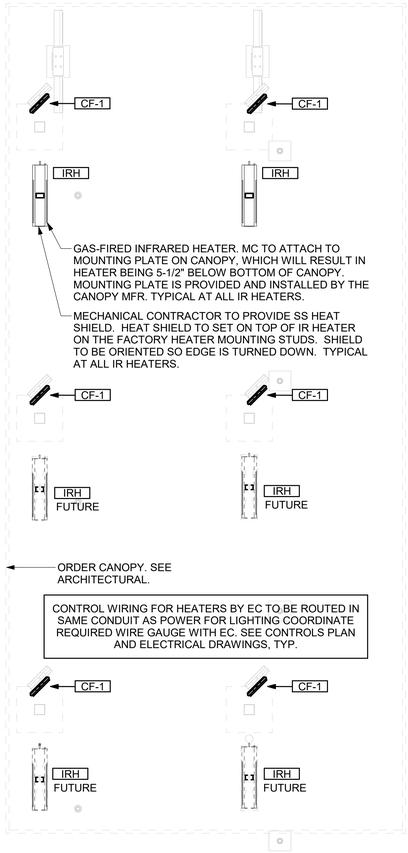
SHEET
COMMISSIONING REQUIREMENTS - MECHANICAL
SHEET NUMBER
M-002

KEY NOTES

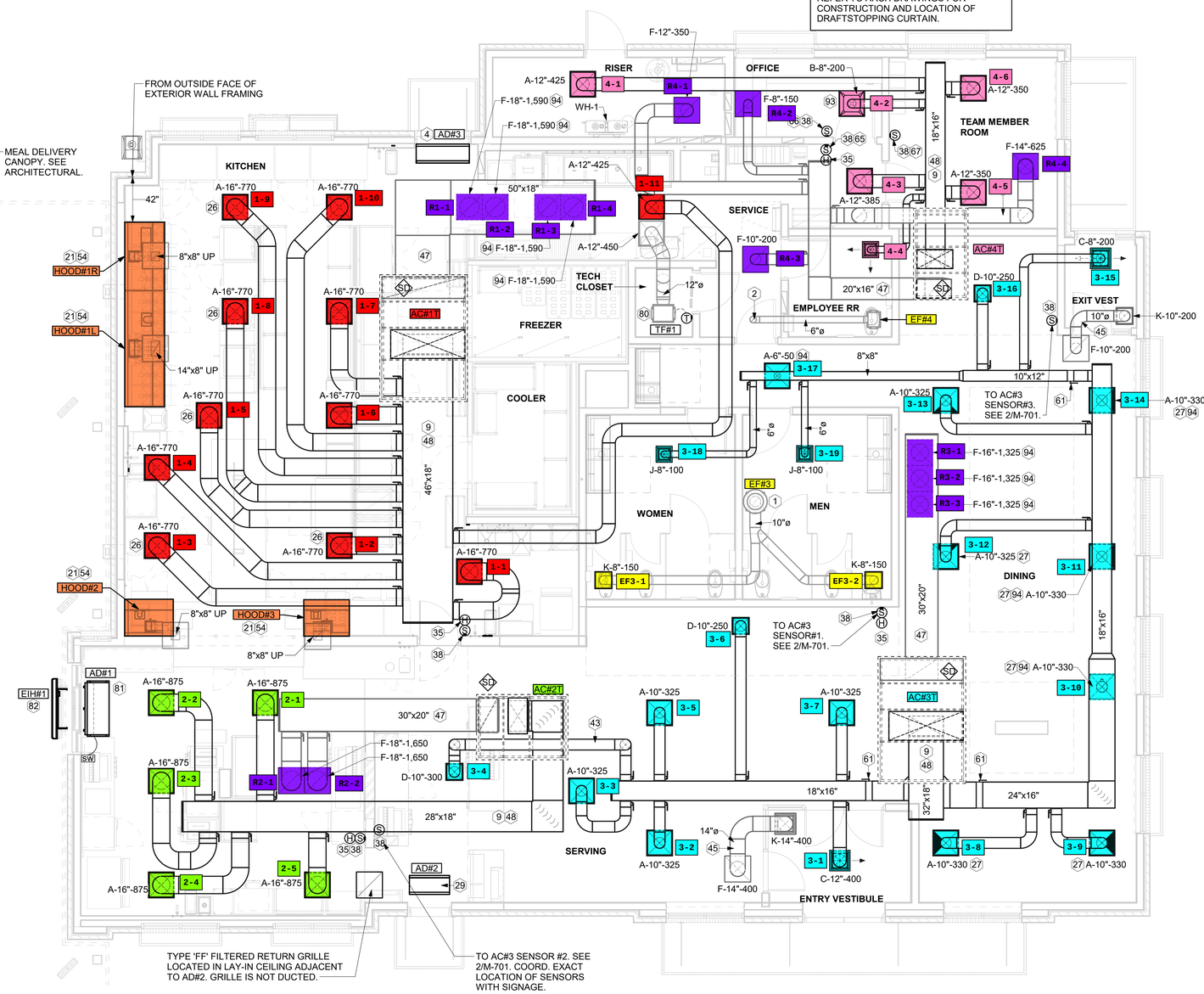
1	10" UP THRU ROOF.
2	PROVIDE DUCT AS SHOWN. TERMINATE DUCT 24" ABOVE ROOF WITH ALUMINUM WEATHER CAP WITH INTEGRAL BIRD SCREEN. EXHAUST DUCT DISCHARGE SHALL BE LOCATED A MINIMUM OF 10 FT FROM ANY OUTSIDE AIR INTAKE.
4	AIR CURTAIN MOUNTED OVER DOOR HEADER AT 7'-2" AFF TO BOTTOM OF UNIT. PROVIDE BLOCKING 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.
29	MOUNT AIR CURTAIN ABOVE CEILING. REFER TO SECTION ON SHEET M-301. LOCATE MAGNETIC CONTACT TYPE MICROSWITCH IN DOOR FRAME ON STRIKE 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).
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.



2 MECHANICAL FLOOR PLAN - ORDER CANOPY

1/4" = 1'-0"

SEAL DUCT PENETRATIONS IN DRAFTSTOPPING CURTAIN AIR-TIGHT. REFER TO ARCH DRAWINGS FOR CONSTRUCTION AND LOCATION OF DRAFTSTOPPING CURTAIN.



1 EQUIPMENT AND DUCTWORK PLAN

1/4" = 1'-0"

AIR BALANCE SCHEDULE TRANE

Mark	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	EXHAUST AIR	BUILDING POSITIVE PRESSURE
AC#1T	8,125	6,360	1,765	0	
AC#2T	4,375	3,300	1,075	0	
AC#3T	5,250	3,975	1,275	0	
AC#4T	1,750	1,750	425	0	
EF#1	0	0	0	1,913	
EF#2	0	0	0	1,402	
EF#3	0	0	0	300	
EF#4	0	0	0	75	
	19,500	15,385	4,540	3,690	850

KITCHEN AIR BALANCE SCHEDULE

SOURCE OF AIR	TYPE OF AIR	TOTAL KITCHEN BALANCE
KITCHEN HOOD EXHAUST (TOTAL)	3,315 CFM EXHAUST	- 3,315 CFM
AC#1 OUTSIDE AIR	1,765 CFM OA	- 1,550 CFM
TRANSFER AIR FROM AC#4 SOURCES (OFFICE, RISER, SERVICE)	310 CFM TRANSFER	- 1,240 CFM
TRANSFER AIR THRU PASS THRU OPENING (LOCATED BETWEEN HOOD#2 AND HOOD#3)	1,240 CFM TRANSFER	0 CFM

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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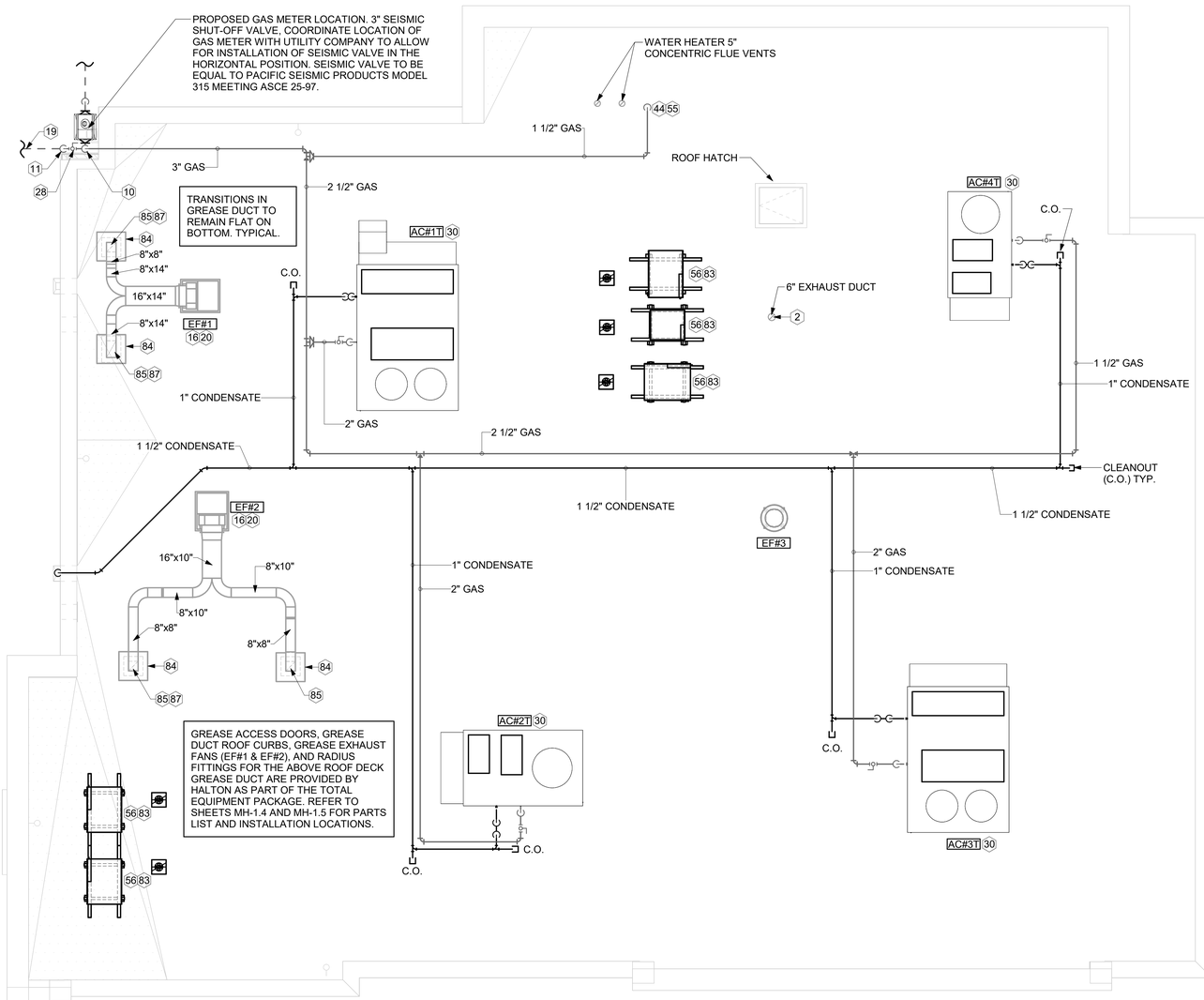
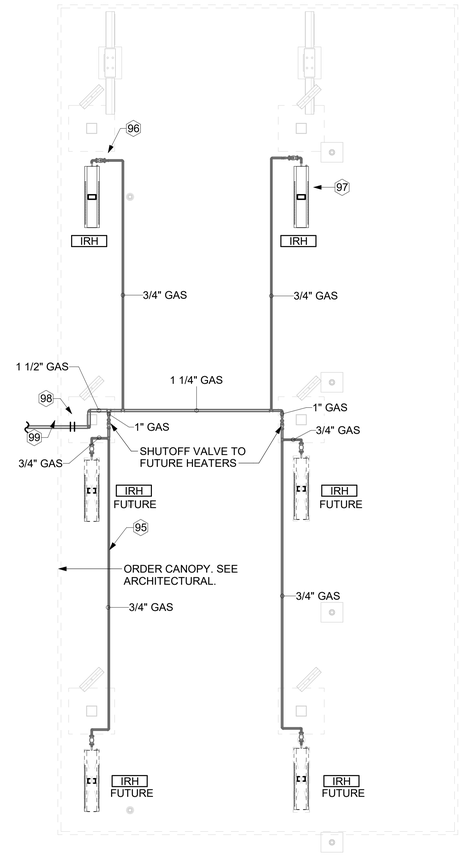
SHEET
EQUIPMENT AND DUCTWORK PLAN - TRANE
SHEET NUMBER
M-101T

KEY NOTES

2	PROVIDE DUCT AS SHOWN. TERMINATE DUCT 24" ABOVE ROOF WITH ALUMINUM WEATHER CAP WITH INTEGRAL BIRD SCREEN. EXHAUST DUCT DISCHARGE SHALL BE LOCATED A MINIMUM OF 10 FT FROM ANY OUTSIDE AIR INTAKE.
10	TURN 3" GAS UP WITHIN WALL, THRU PARAPET AND ONTO ROOF.
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-103.
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 -TRANE
1/4" = 1'-0"



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

3. GAS LOAD SCHEDULE

EQUIPMENT	GAS LOAD
AC#1T	400,000 BTUS
AC#2T	250,000 BTUS
AC#3T	400,000 BTUS
AC#4T	130,000 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	1,878,000 BTUS
REMARKS:	1. EQUIVALENT TO 1,878.0 CFH 2. 7" W.C. DELIVERY PRESSURE 3. DEVELOPED LENGTH: 200 FT, (METER TO AC#4) 4. GAS PIPING SIZED FOR FUTURE LOAD 5. SIZED PER IFGC TABLE 402.4(2).

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SHEET
EQUIPMENT ROOF PLAN - TRANE

SHEET NUMBER
M-102T

REFRIGERATION CALCULATIONS AND OTHER INFORMATION REQUIRED PER CHAPTER 11 IMC

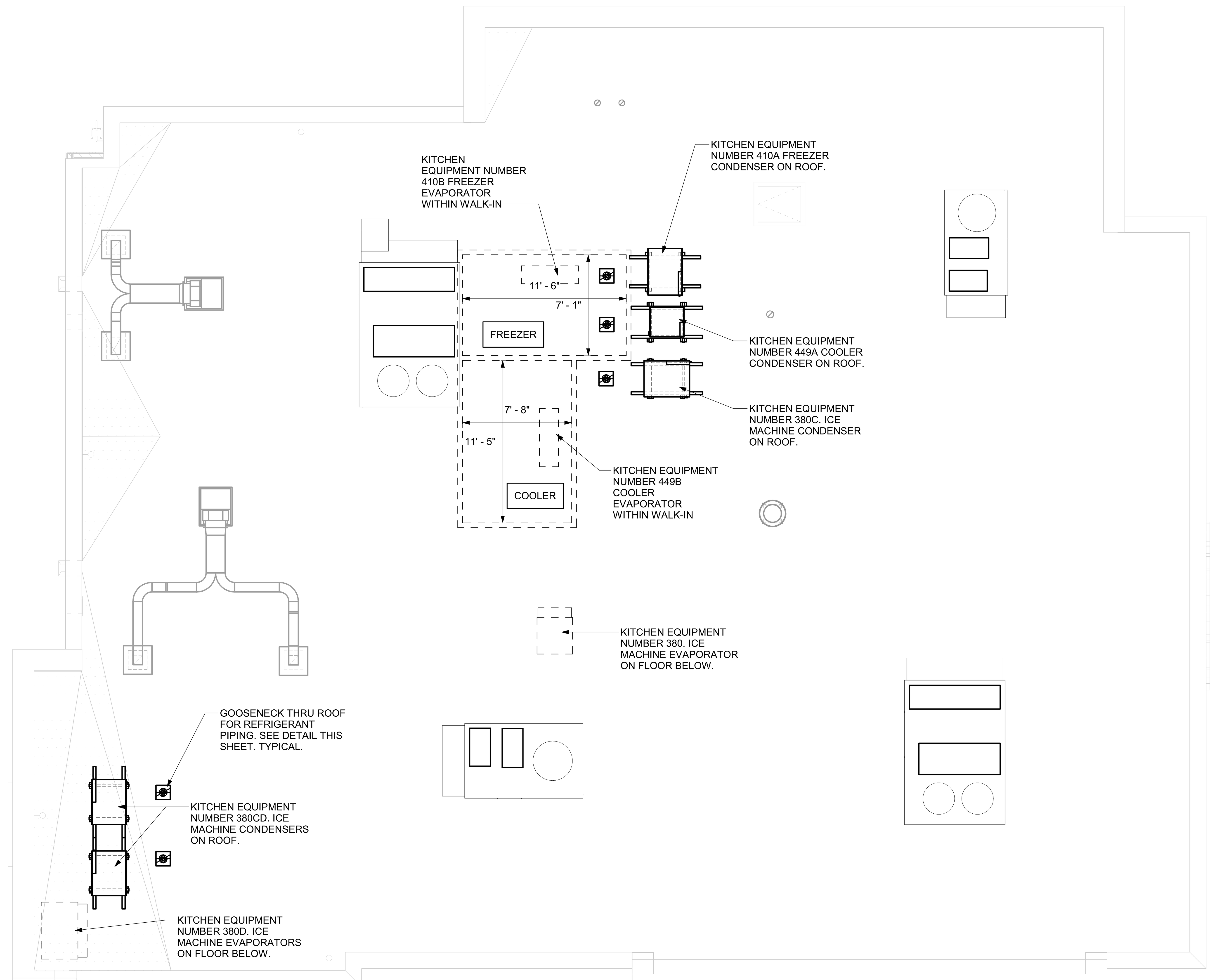
WALK-IN COOLER/FREEZER

1. REFRIGERANT TYPE:	R-448A
2. REFRIGERATION CLASSIFICATION:	A1
3. REFRIGERANT SYSTEM CLASSIFICATION:	LOW PROBABABILITY
4. MAXIMUM REFRIGERANT QUANTITY:	24 LBS./1000FT3
5. SYSTEM APPLICATION/VOLUME CALCULATION:	
A - COOLER VOLUME:	11'-5"L X 7'-8"W X 9'-6"H 832 FT3
B - FREEZER VOLUME:	11'-6"L X 7'-1"W X 9'-6"H 774 FT3
6. MAXIMUM ALLOWABLE REFRIGERANT IN SYSTEM:	
A - COOLER:	832 * (24LB./1000FT3) = 19.9 LB MAX
B - FREEZER:	774 * (24LB./1000FT3) = 18.5 LB MAX

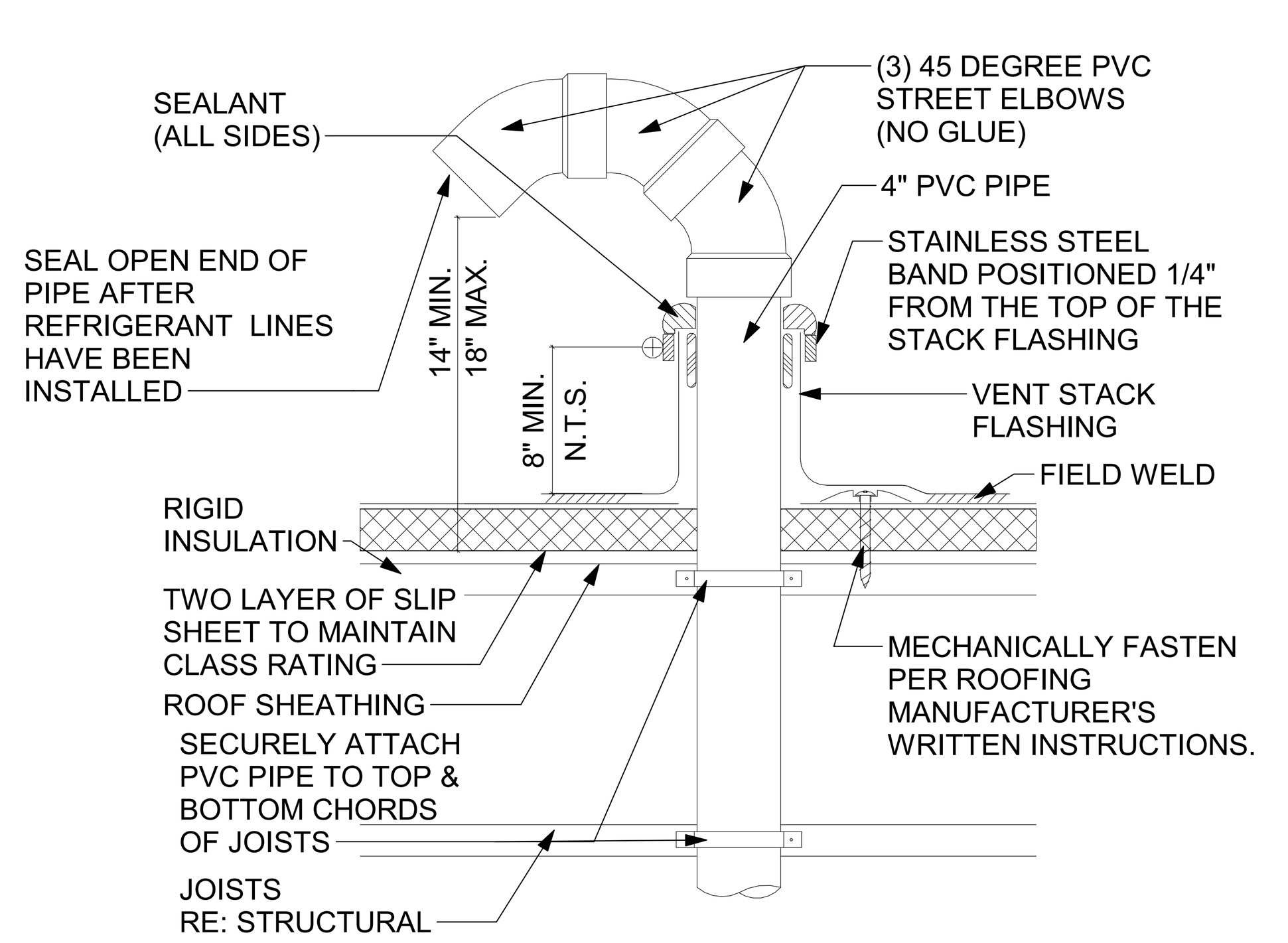
FREEZER AND COOLER SHALL HAVE NO MORE THAN THE MAXIMUM ALLOWABLE REFRIGERANT SHOWN ABOVE.

OTHER ITEMS REQUIRED FOR REVIEW:

1) PIPING MATERIAL SHALL COMPLY WITH 1107.5 IMC. COPPER REFRIGERANT PIPING IS TO BE USED FOR INSTALLATION.
2) ROOF REFRIGERANT PIPE PENETRATION SHOWN ON THIS SHEET, "GOOSENECK PENETRATION DETAIL"
3) EVAPORATOR AND CONDENSING UNIT LOCATIONS ARE SHOWN ON THIS SHEET.
5) EVAPORATOR CONDENSATE PIPING IS SHOWN ON PLUMBING SHEETS.



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



2 GOOSENECK PENETRATION DETAIL
1/4" = 1'-0"

REFRIGERATION EQUIPMENT SCHEDULE

EQUIPMENT	PLAN MARK	MANUFACTURER	MODEL	WIDTH (IN.)	DEPTH (IN.)	HEIGHT (IN.)	REFRIGERANT							PRE-CHARGE LINES (FT)	MATERIAL	WEIGHT (LBS)
							TYPE	CLASSIFICATION	SYSTEM CLASSIFICATION	MAX. ALLOWED (LB / 1000QFT)	SPACE VOLUME (QFT)	MAX. ALLOWED TOTAL (LB)	AMOUNT OF CHARGE (LB)			
ICE MAKER CONDENSER	380C	FOLLET	HCD1410	22.7	24.5	21.25	R 404A	AI	LOW	31	--	--	12.5	35	COPPER	270
ICE MAKER CONDENSER	380CD	FOLLET	HCD1810	30.0	38.5	25.75	R 404A	AI	LOW	31	--	--	14.5	35	COPPER	305
ICE MAKER CONDENSER	380CD	FOLLET	HCD1810	30.0	38.5	25.75	R 404A	AI	LOW	31	--	--	14.5	35	COPPER	305
FREEZER CONDENSER	410A	BOHN	BCHDD35LCBCZX2228	39.125	28.3	19.75	R 448A	AI	LOW	24	774	18.5	14.0	40	COPPER	232
COOLER CONDENSER	449A	BOHN	BCH0010MCACZX2115	25.125	28.5	19.75	R 448A	AI	LOW	24	832	19.9	9	40	COPPER	179

SHEET ADDED TO SET

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SHEET
REFRIGERATION PLAN

SHEET NUMBER
M-103

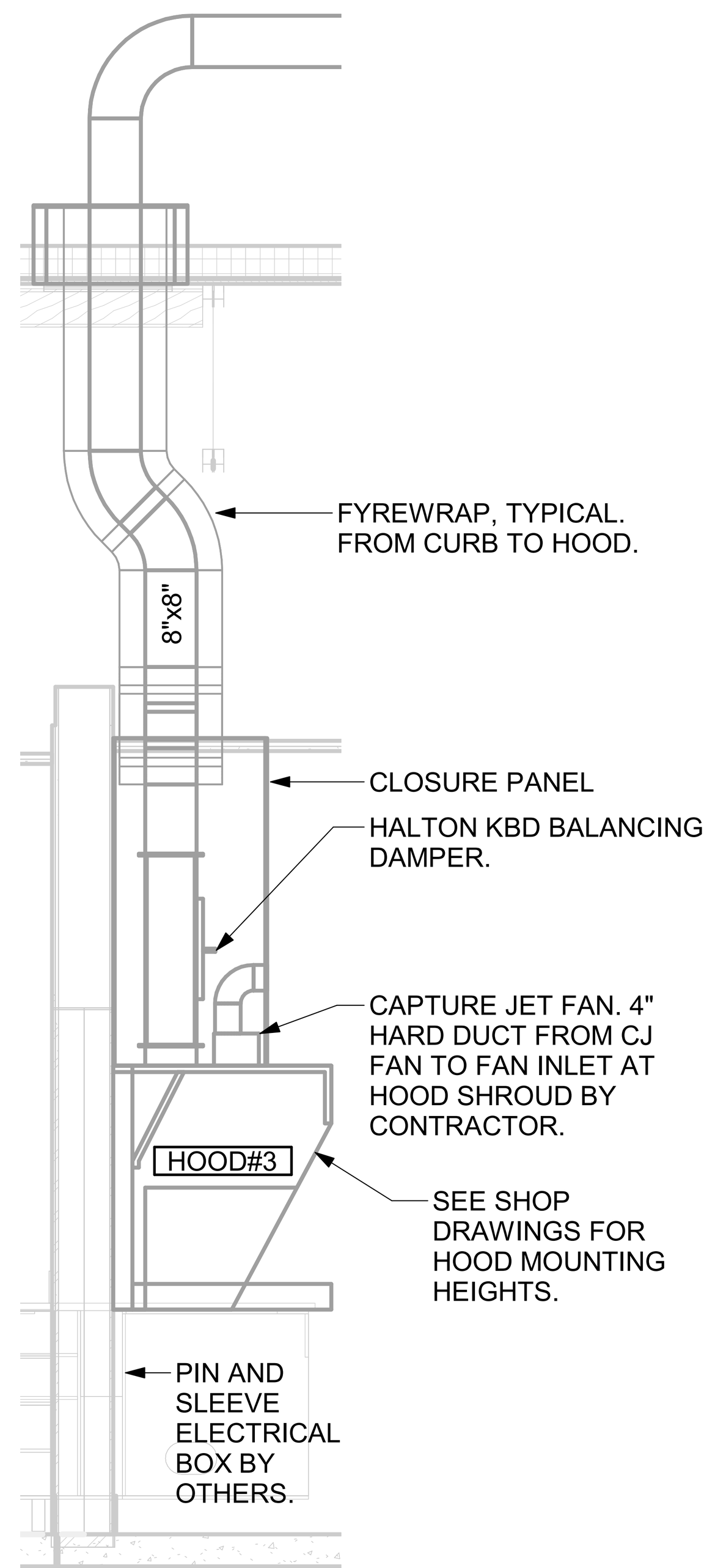
GREASE EXHAUST DUCT CLEARANCE NOTE:

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

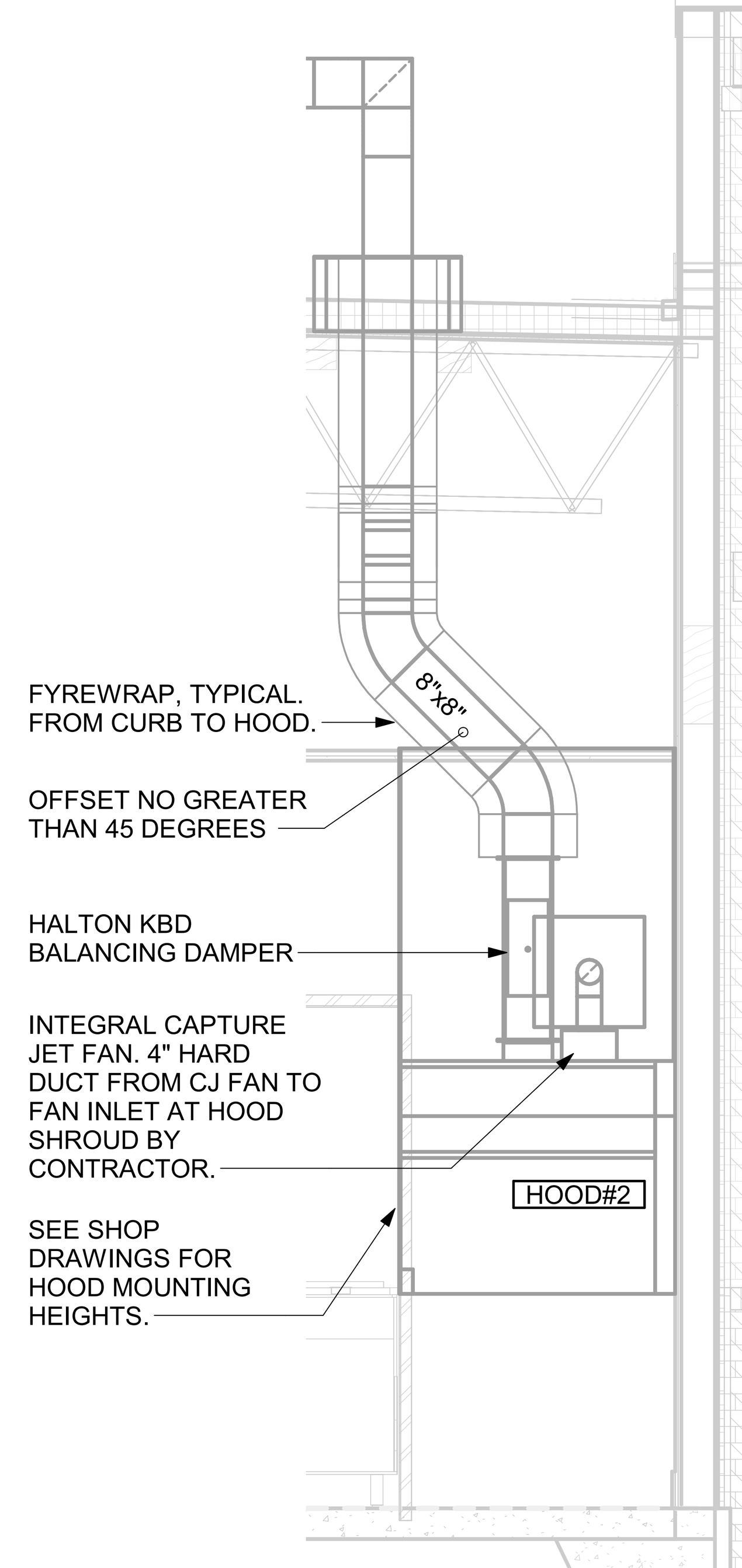
CLEANOUT DOOR NOTE:

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.

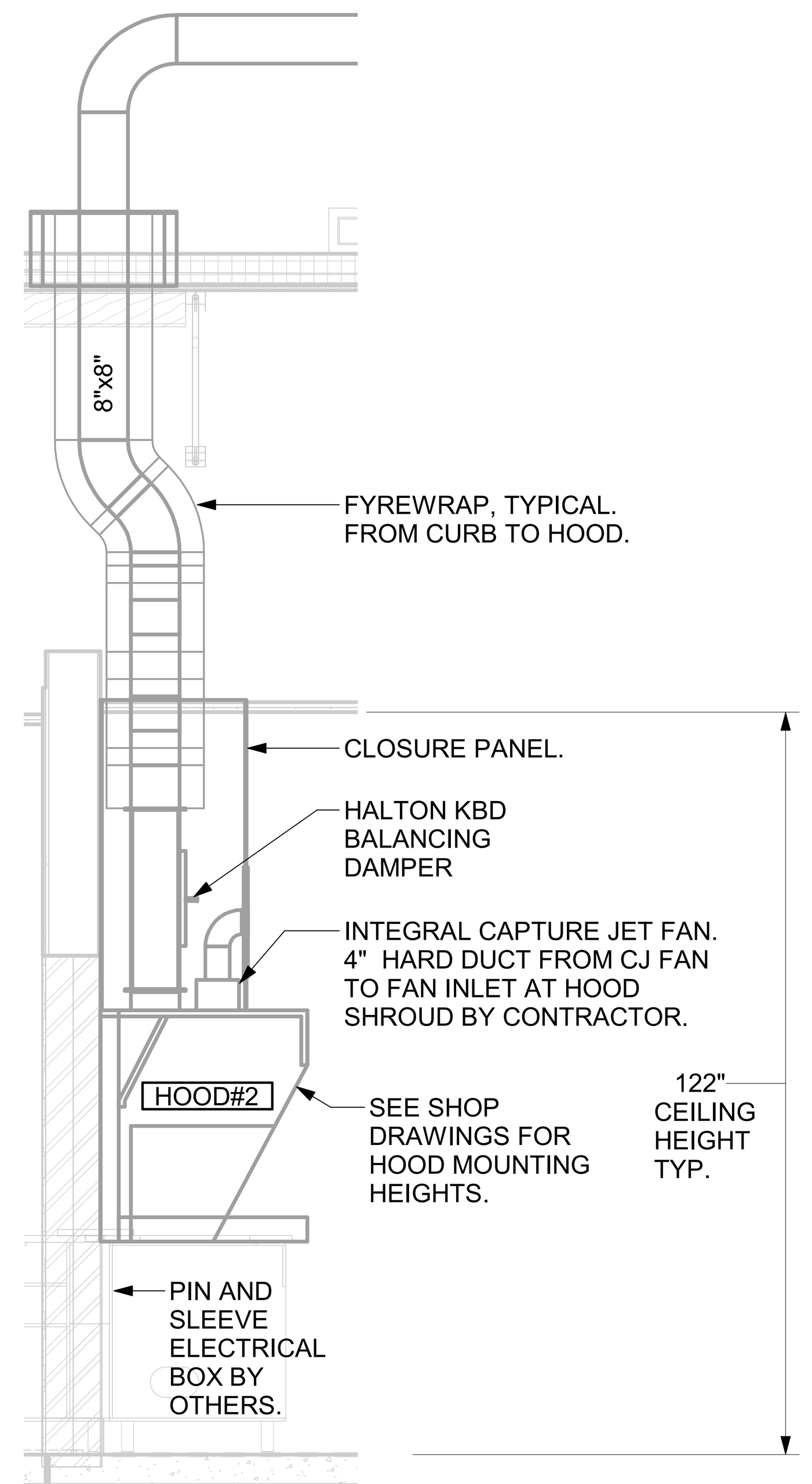


6 HOOD ELEVATION - HOOD#3
NOT TO SCALE

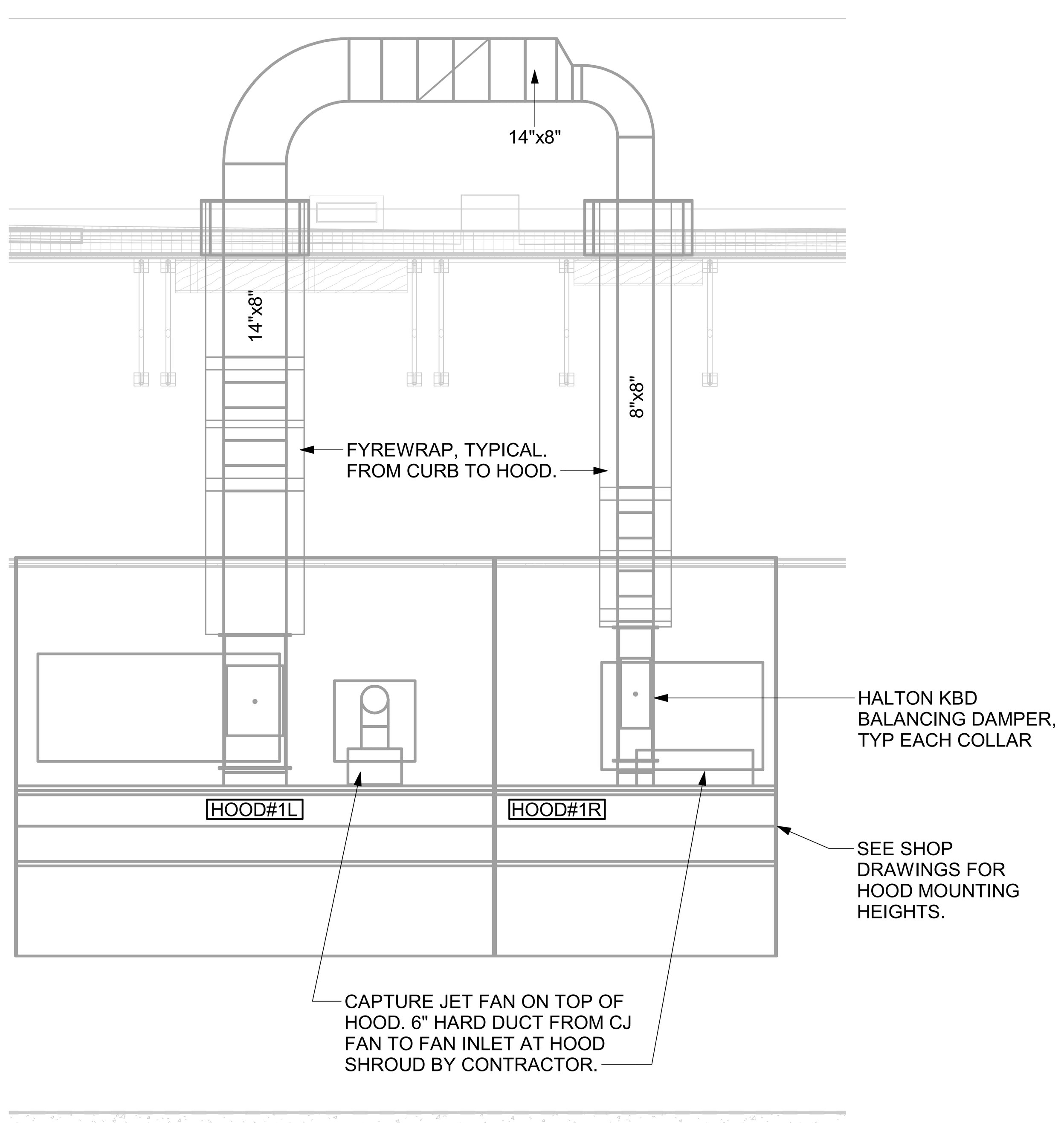


5 HOOD ELEVATION - HOOD#2 - FRONT
NOT TO SCALE

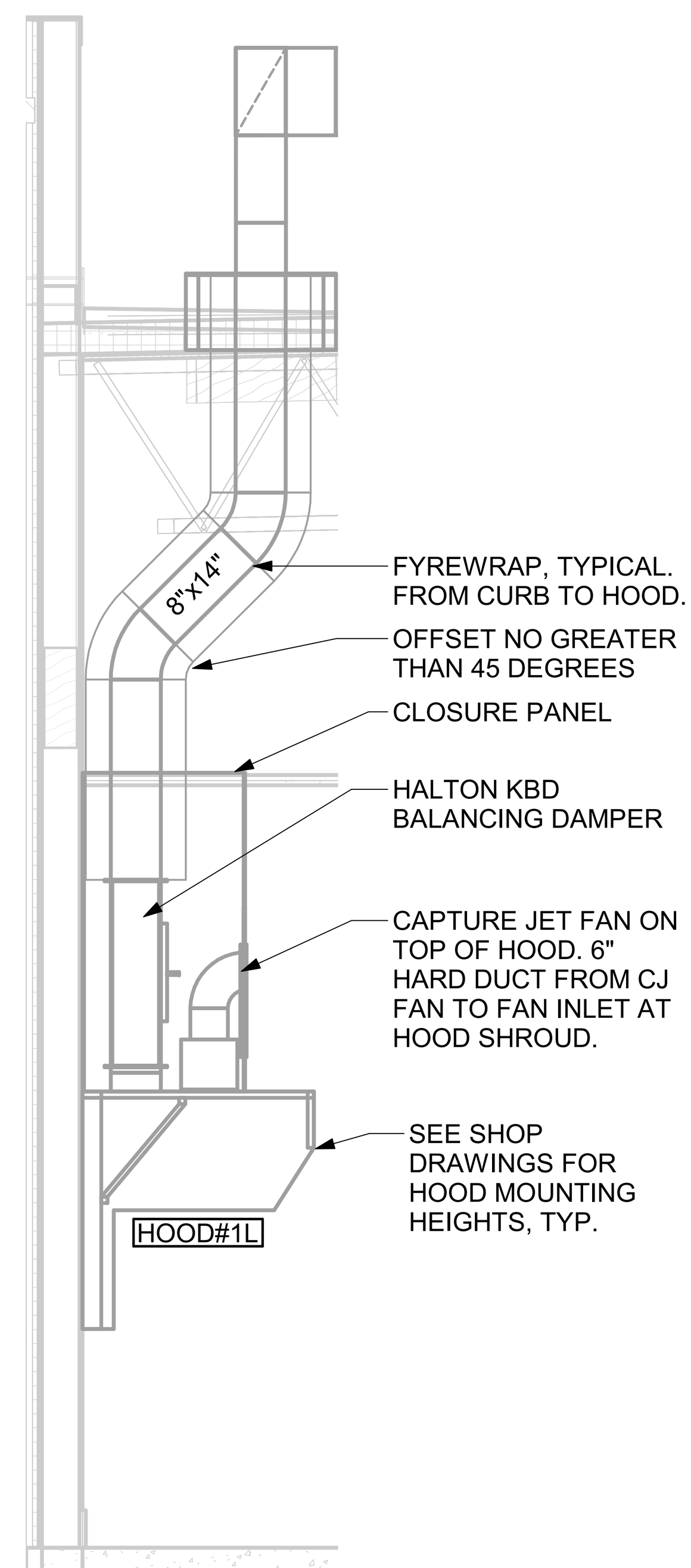
CRITICAL: MOUNT LEFT SIDE OF HOOD#2 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.



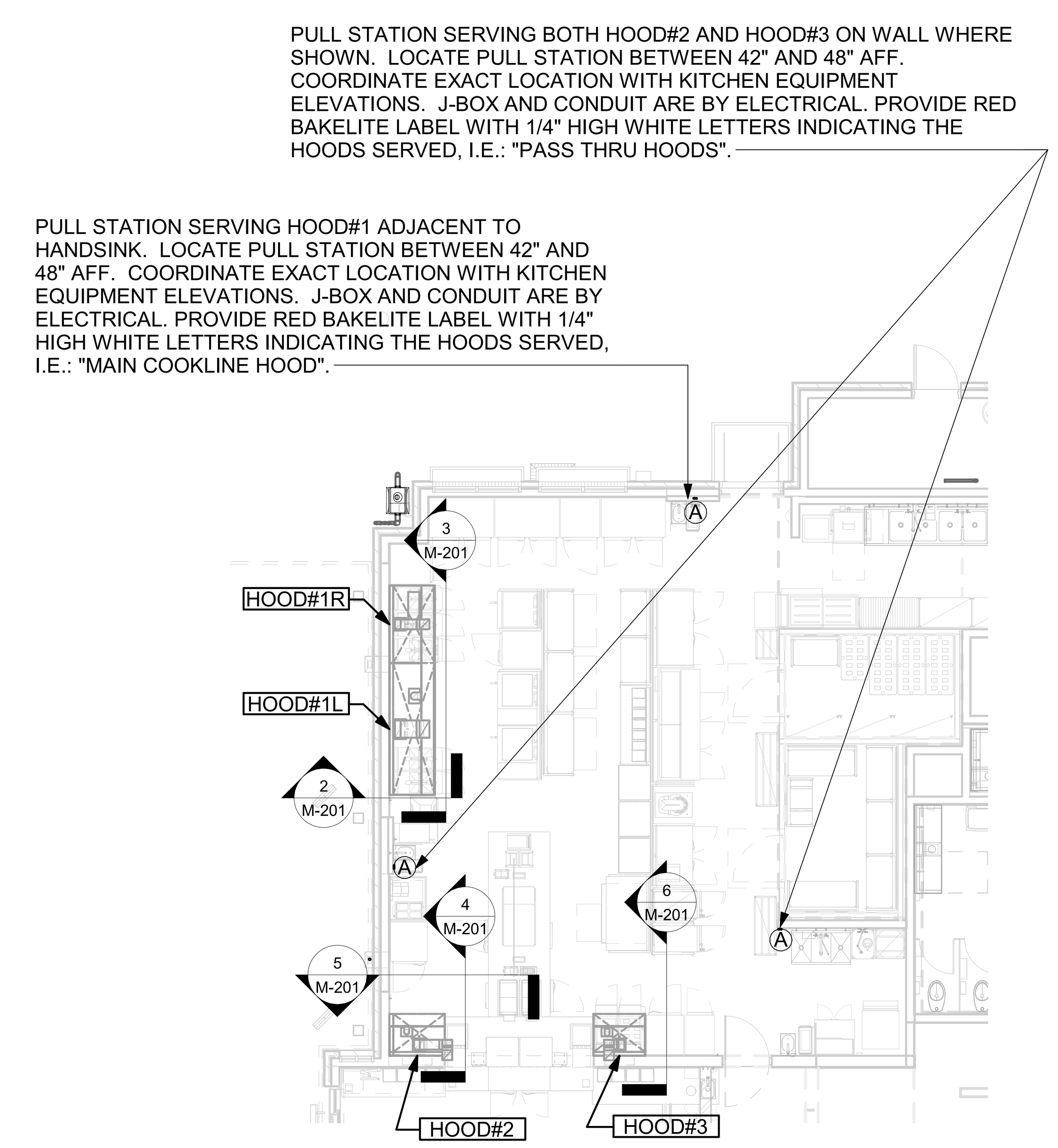
4 HOOD ELEVATION - HOOD#2 - SIDE
NOT TO SCALE



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



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



1 HOOD LAYOUT
NOT TO SCALE

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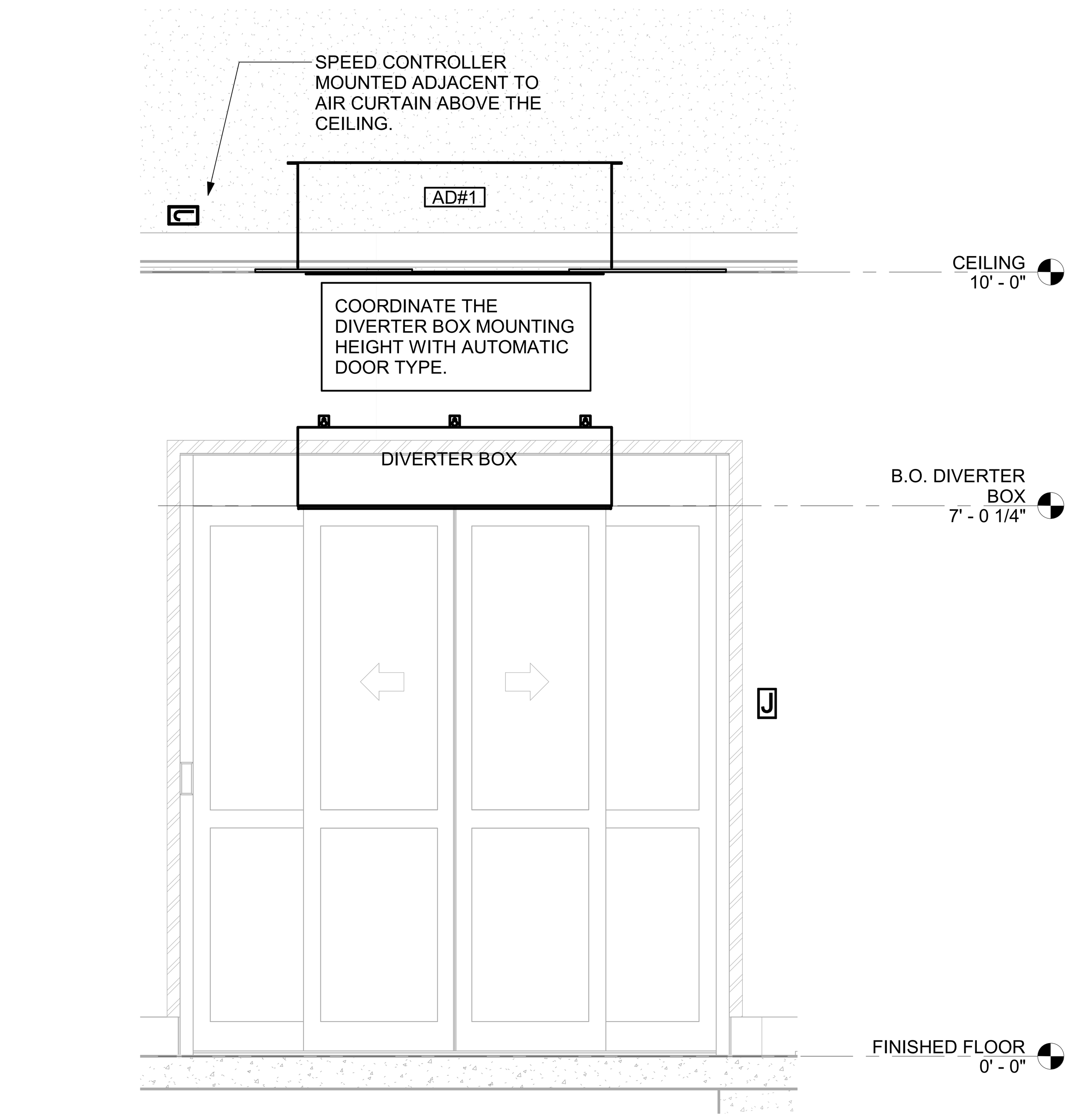
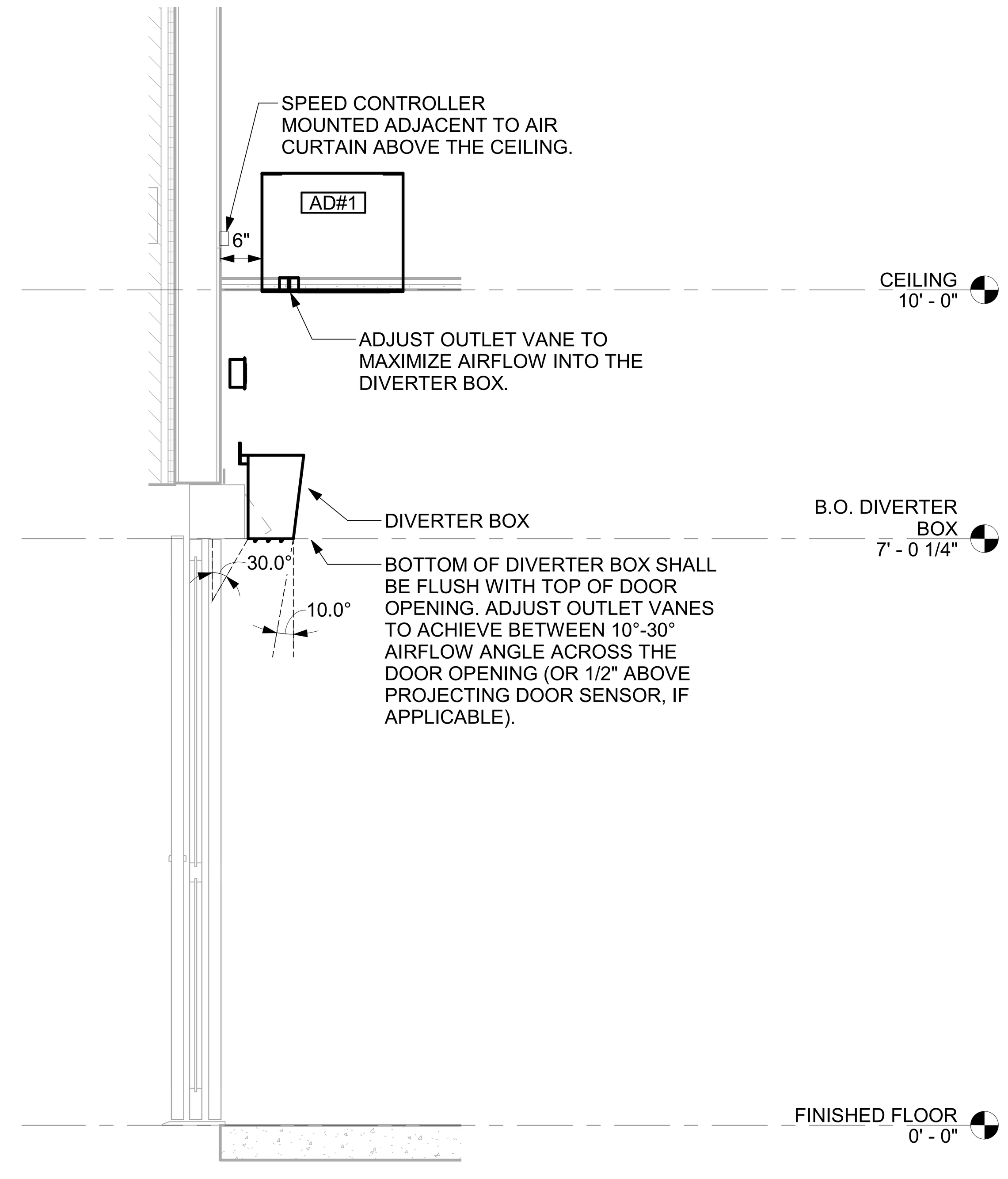
SHEET: EXHAUST HOOD ELEVATIONS

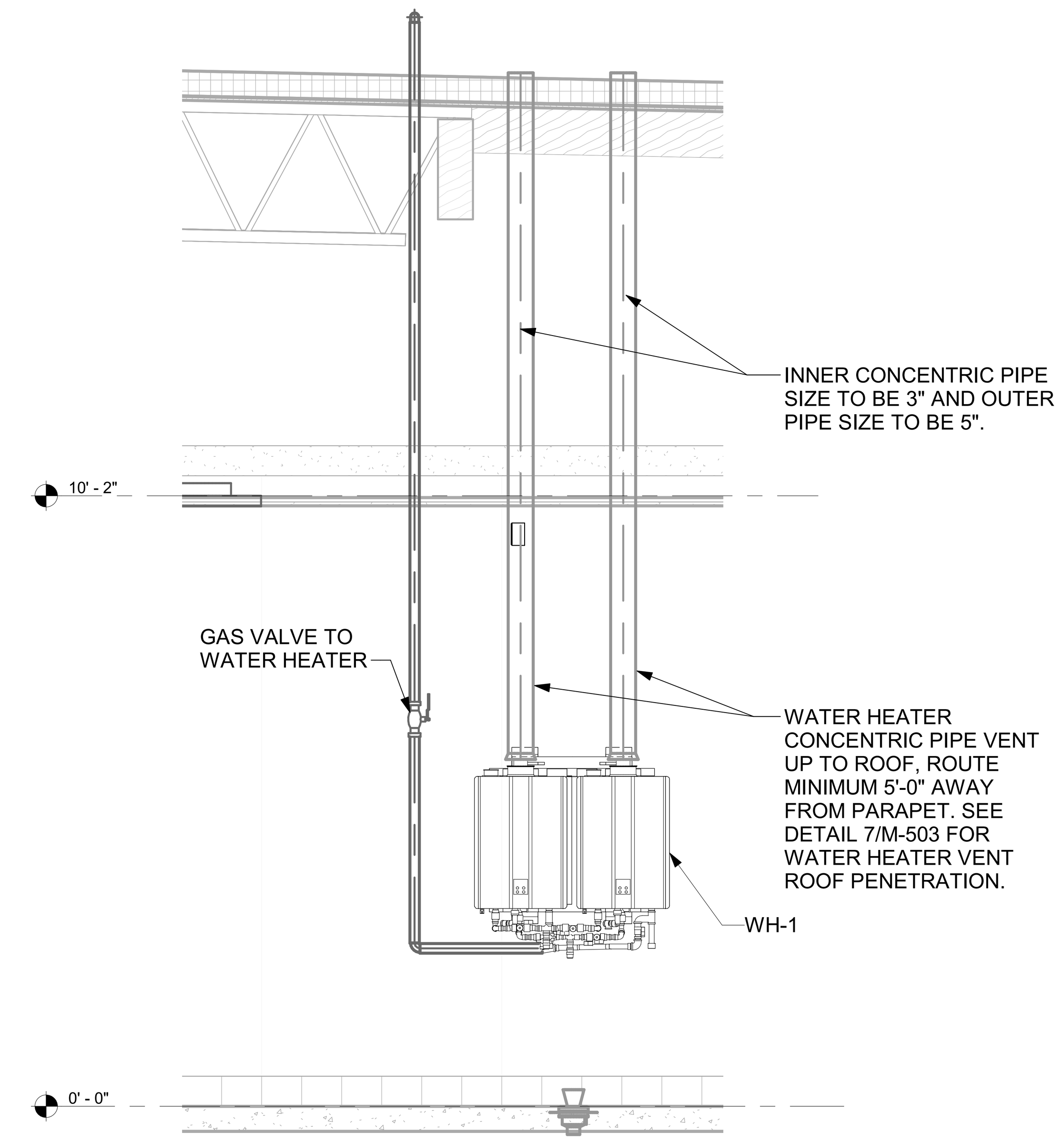
SHEET NUMBER: M-201



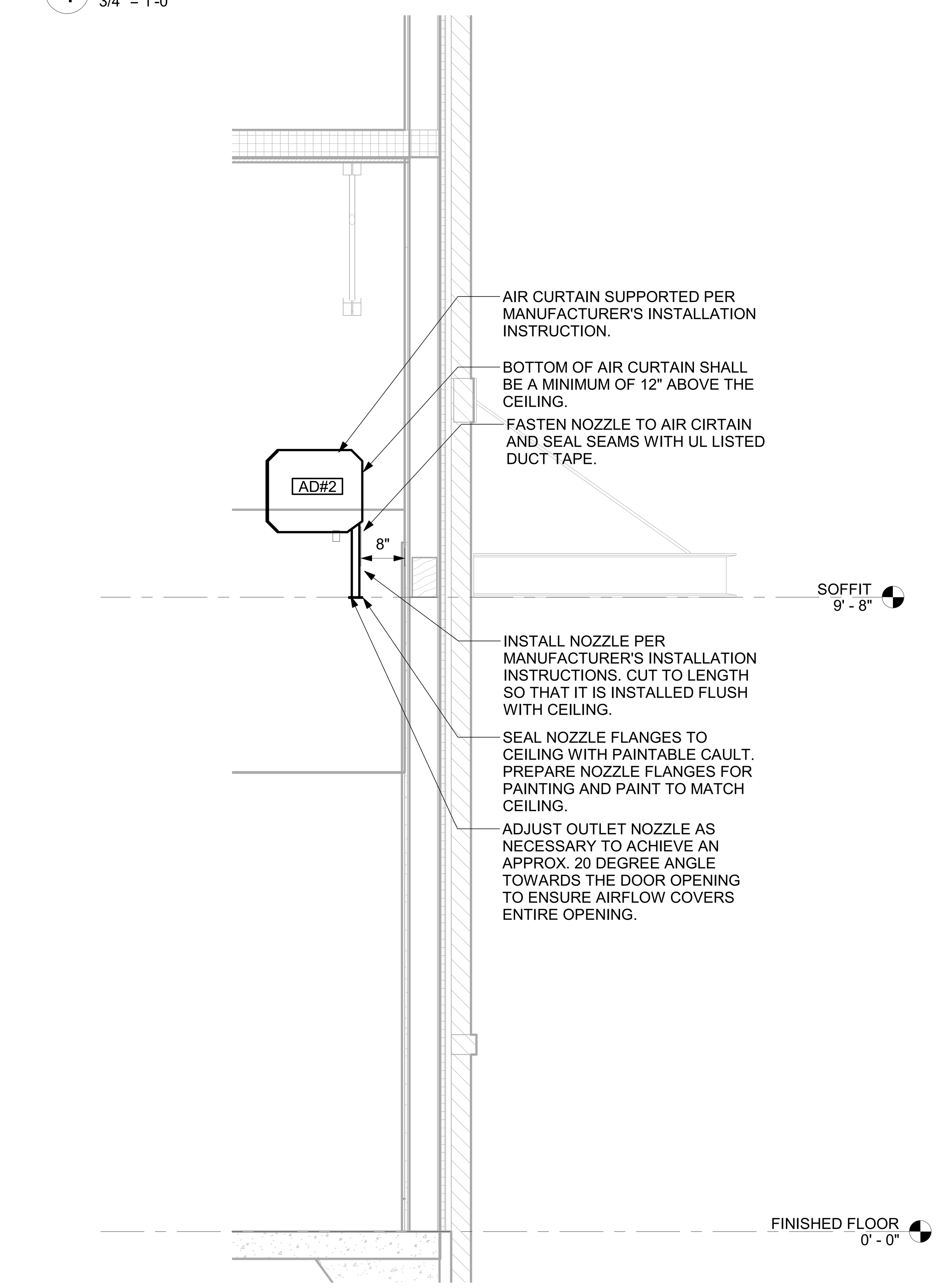
1 AD#1 FRONT VIEW
3/4" = 1'-0"



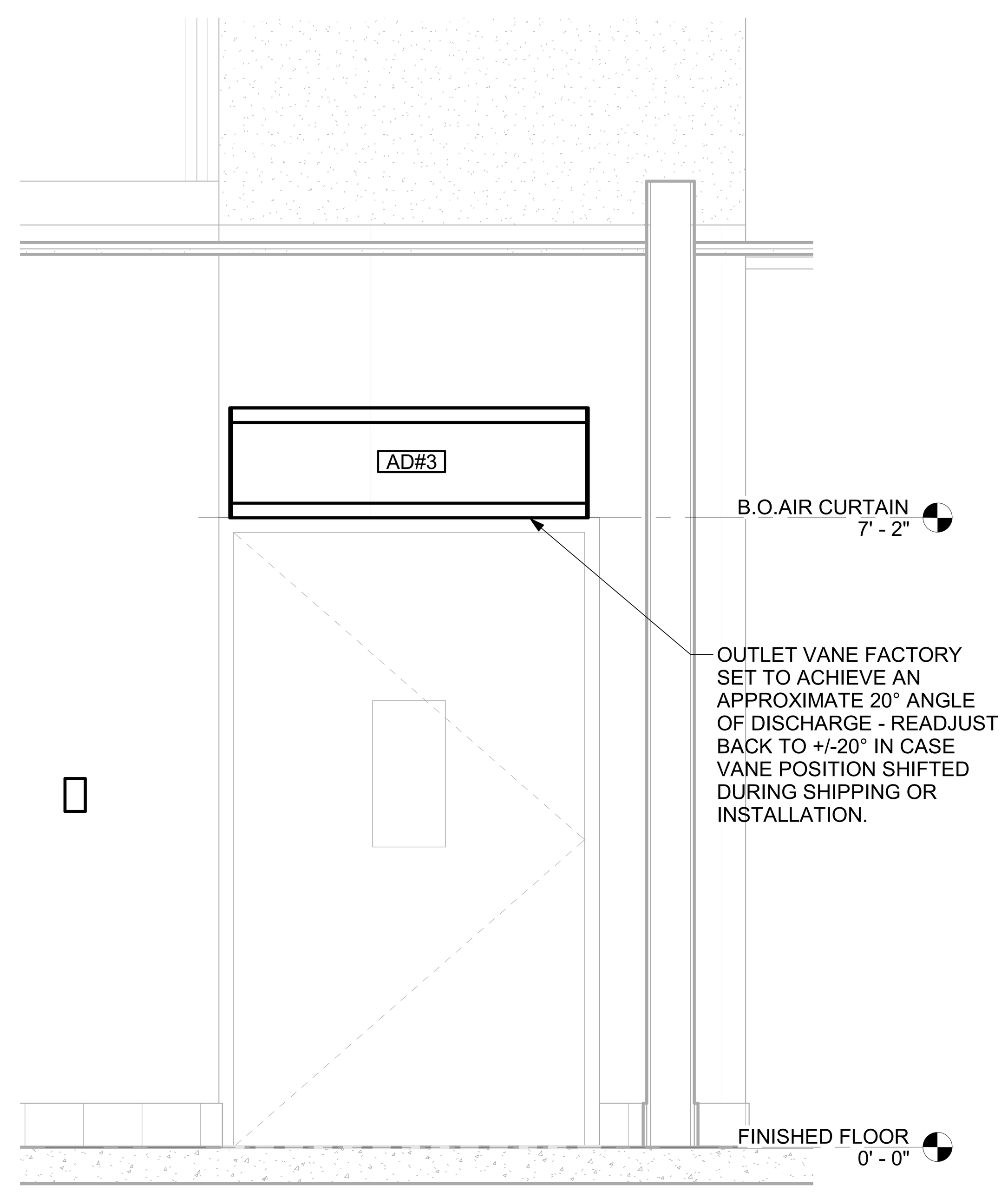
2 AD#1 SIDE VIEW
3/4" = 1'-0"



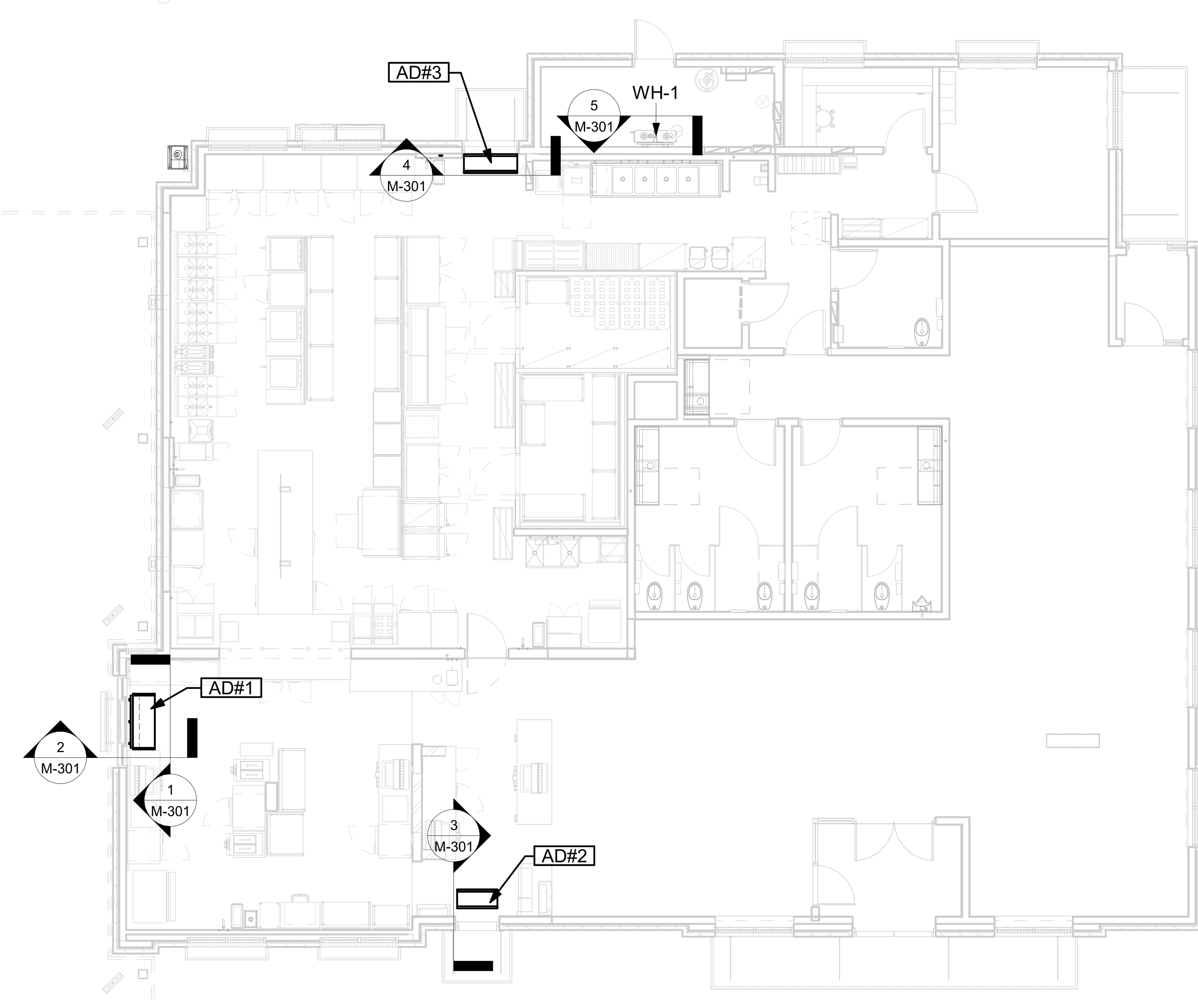
5 WATER HEATER GAS PIPING AND VENTING
NOT TO SCALE



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



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



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

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

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

12/30/24

CHICK-FIL-A
St. Ann FSU
10897 & 10909 Saint Charles Rock Rd
Saint Ann, MO 63074

ISSUE FOR CONSTRUCTION

FSR#05489

BUILDING TYPE / SIZE: P14 SE BN
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ISSUED FOR CONSTRUCTION

REVISION SCHEDULE

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DATE 12/30/2024
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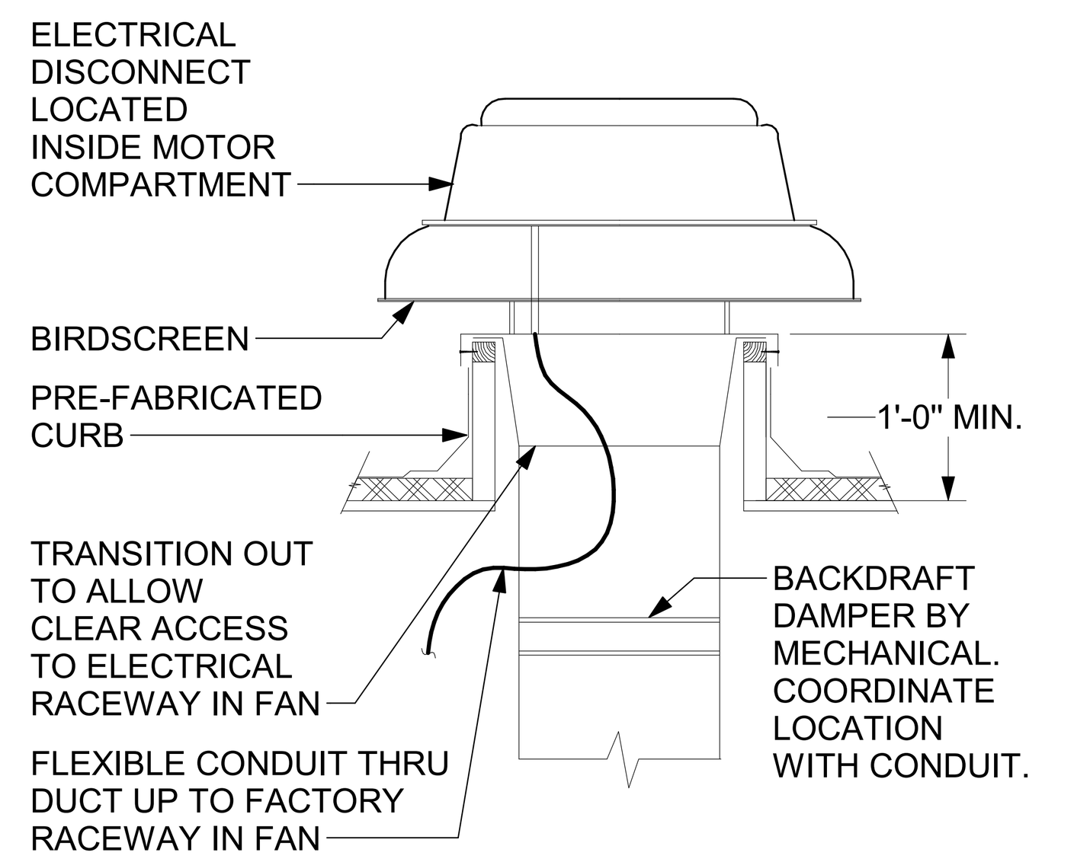
SHEET
SECTIONS

SHEET NUMBER
M-301

Autodesk Docs://MO_05489_St Ann (MO) FSU_2023.8_FSR05489 St Ann (MO) FSU K&A_MEC.rvt
12/24/2024 10:58:50 AM
30-SE-05489-M-301-SECTIONS

SECURE FAN TO CURB WITH SHEET METAL SCREWS (#10 x 1-1/2") 6" O.C. ALL AROUND

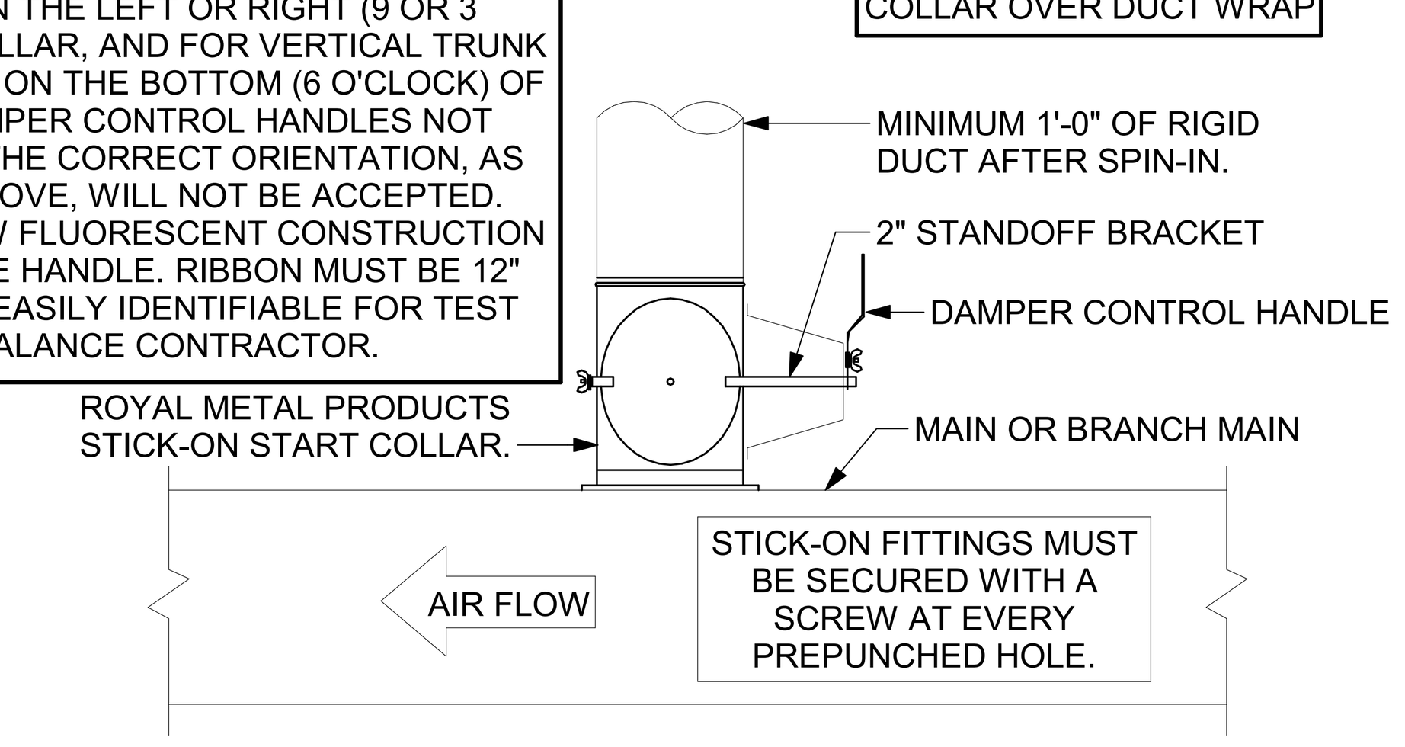


3 RESTROOM EXHAUST FAN
NOT TO SCALE

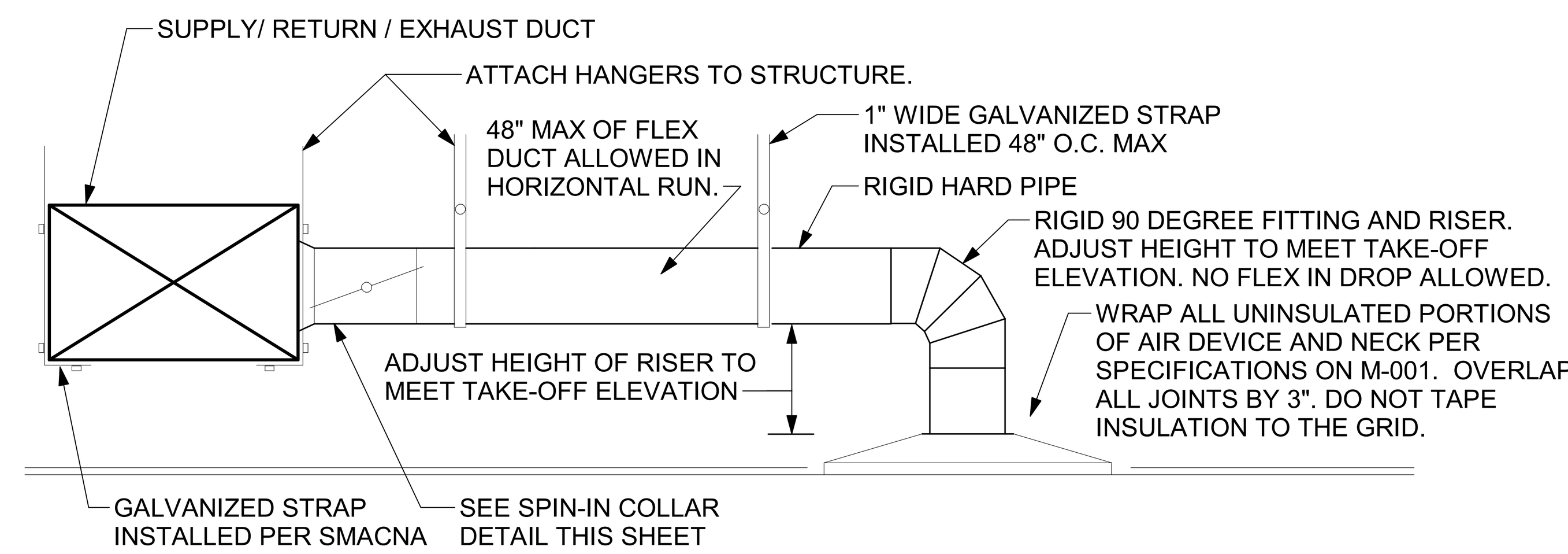
CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH TOM BARROW COMPANY FOR THE ROYAL METAL PRODUCTS START COLLARS FOR BOTH WITH AND WITHOUT A MANUAL BALANCING DAMPER. THE MECHANICAL CONTRACTOR IS REQUIRED TO PURCHASE THE ROYAL METAL PRODUCTS START COLLARS DIRECTLY FROM TOM BARROW COMPANY. CONTACT MR. SCOTT GEORGE 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



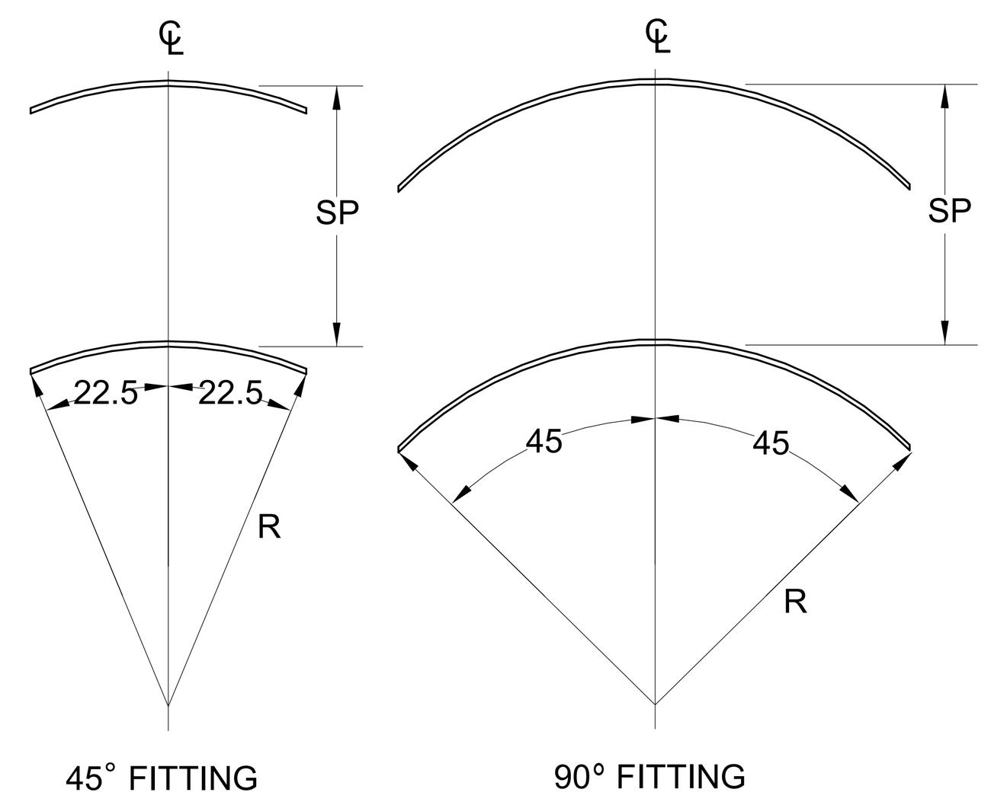
2 START COLLAR
NOT TO SCALE



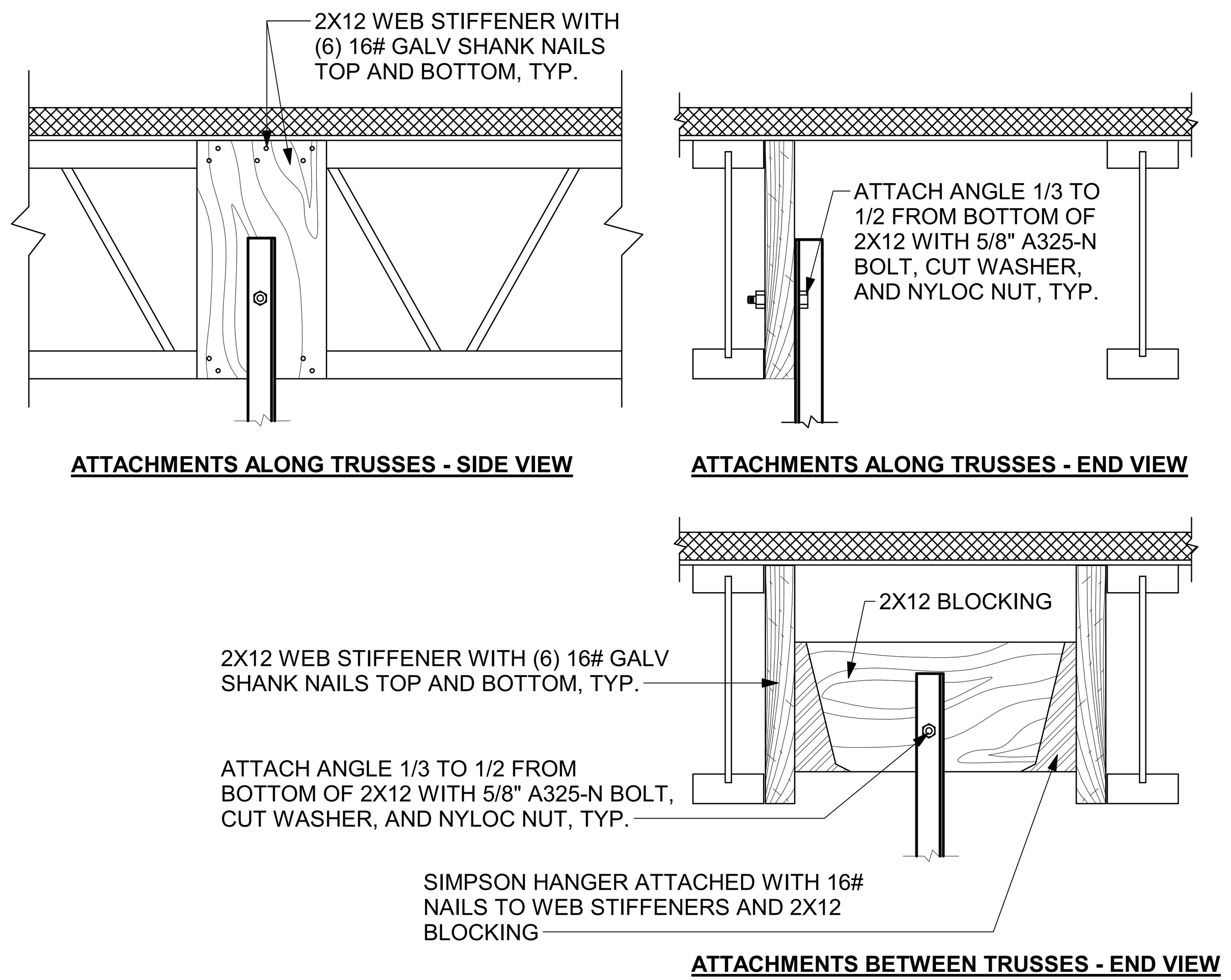
1 SAG/RAG/GRILLE TAKE-OFF
NOT TO SCALE

TURNING VANE SCHEDULE		
R	SP	GA
2"	1.5"	24

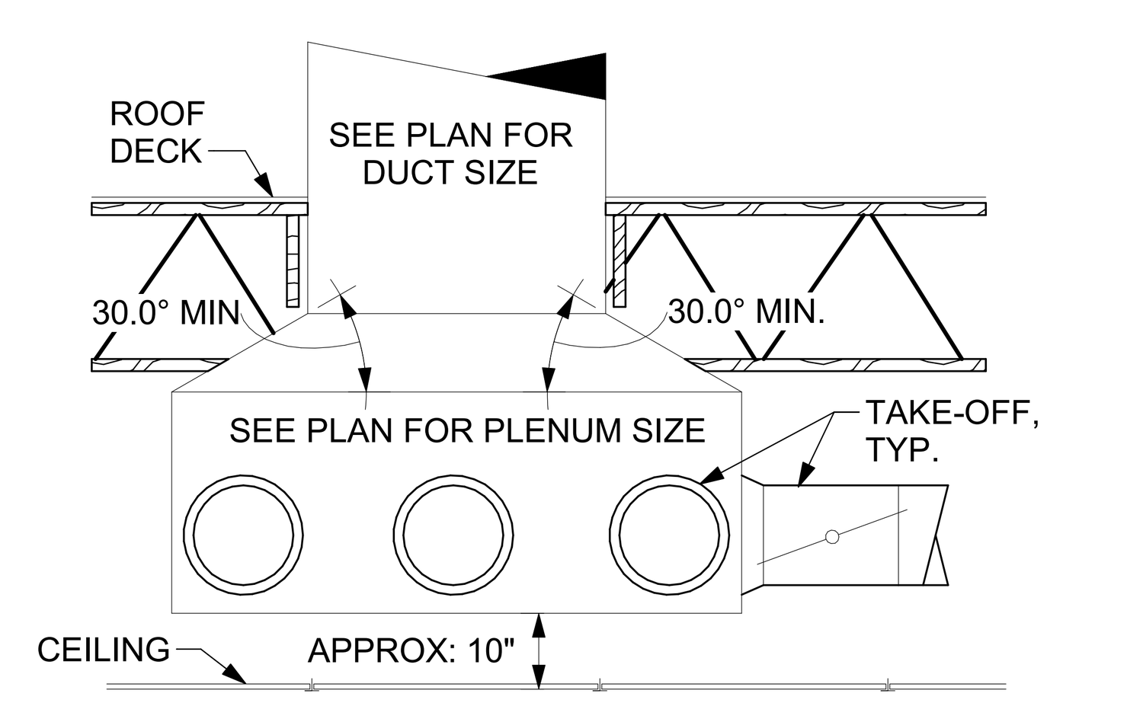
1. NO TRAILING EDGE.
2. SINGLE THICKNESS CONSTRUCTION.



4 TURNING VANES
NOT TO SCALE



8 DUCT ATTACHMENT
NOT TO SCALE

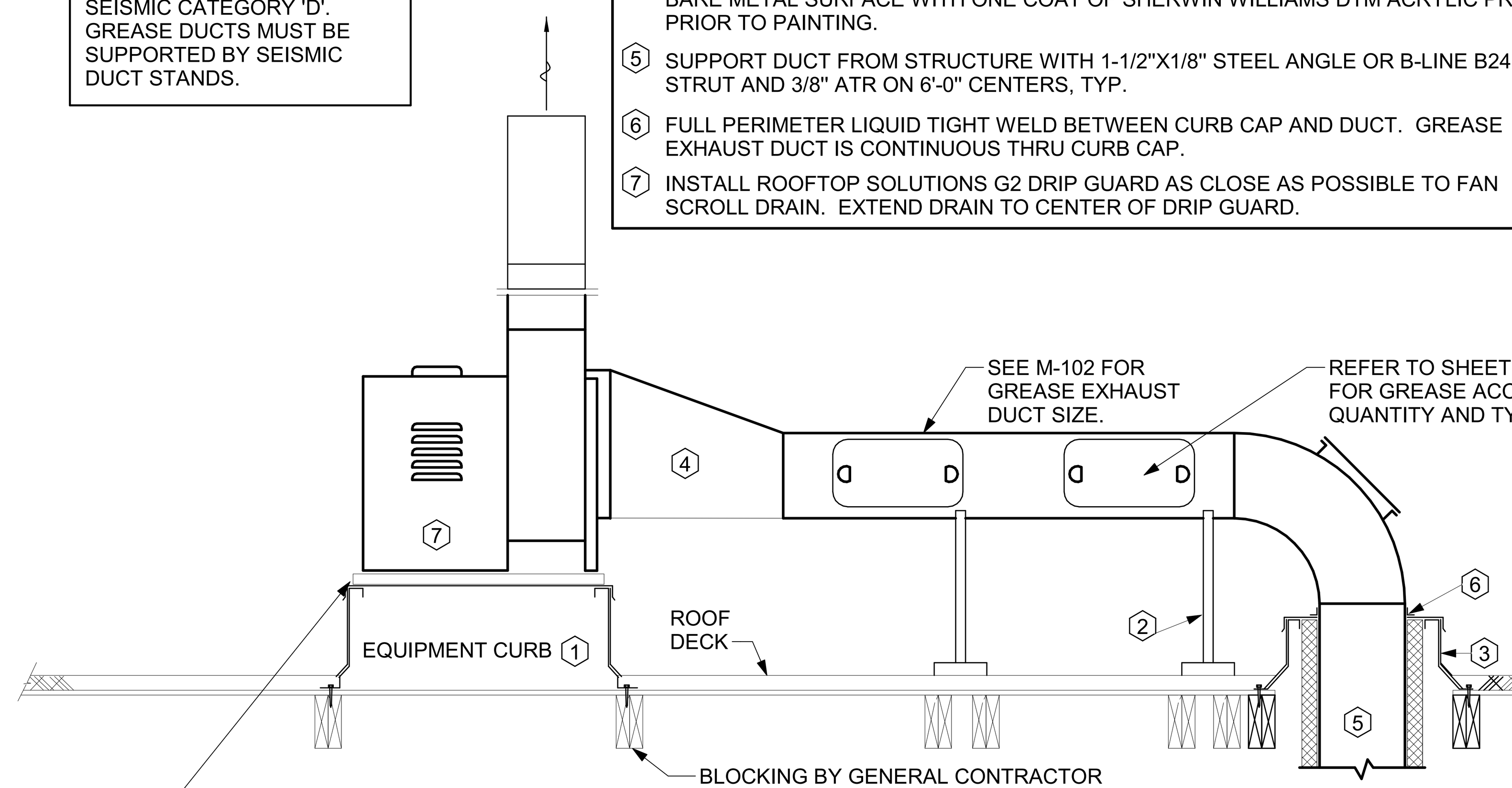


6 RETURN DROP GEOMETRY
NOT TO SCALE

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.

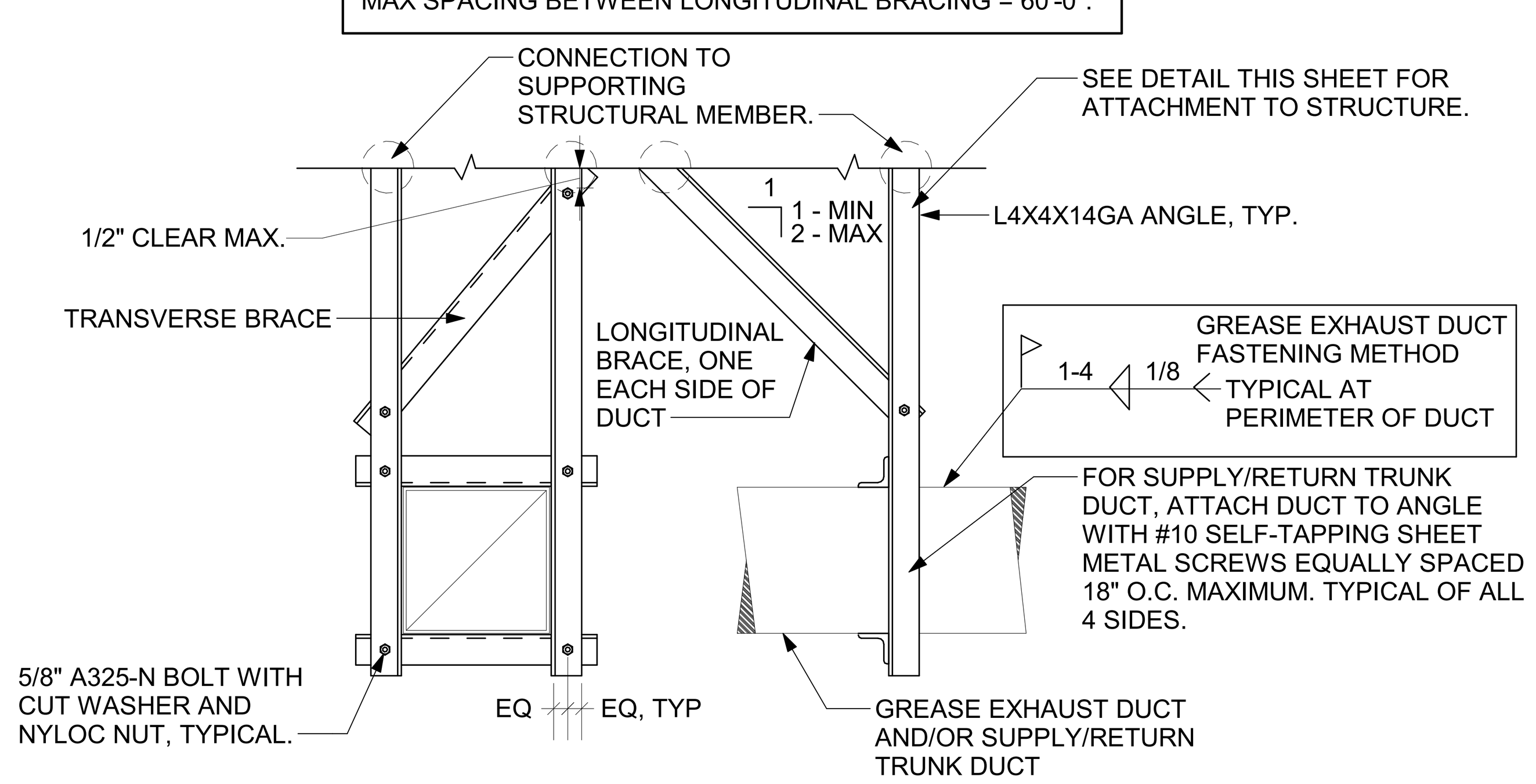
THIS PROJECT IS LOCATED IN SEISMIC CATEGORY 'D'. GREASE DUCTS MUST BE SUPPORTED BY SEISMIC DUCT STANDS.



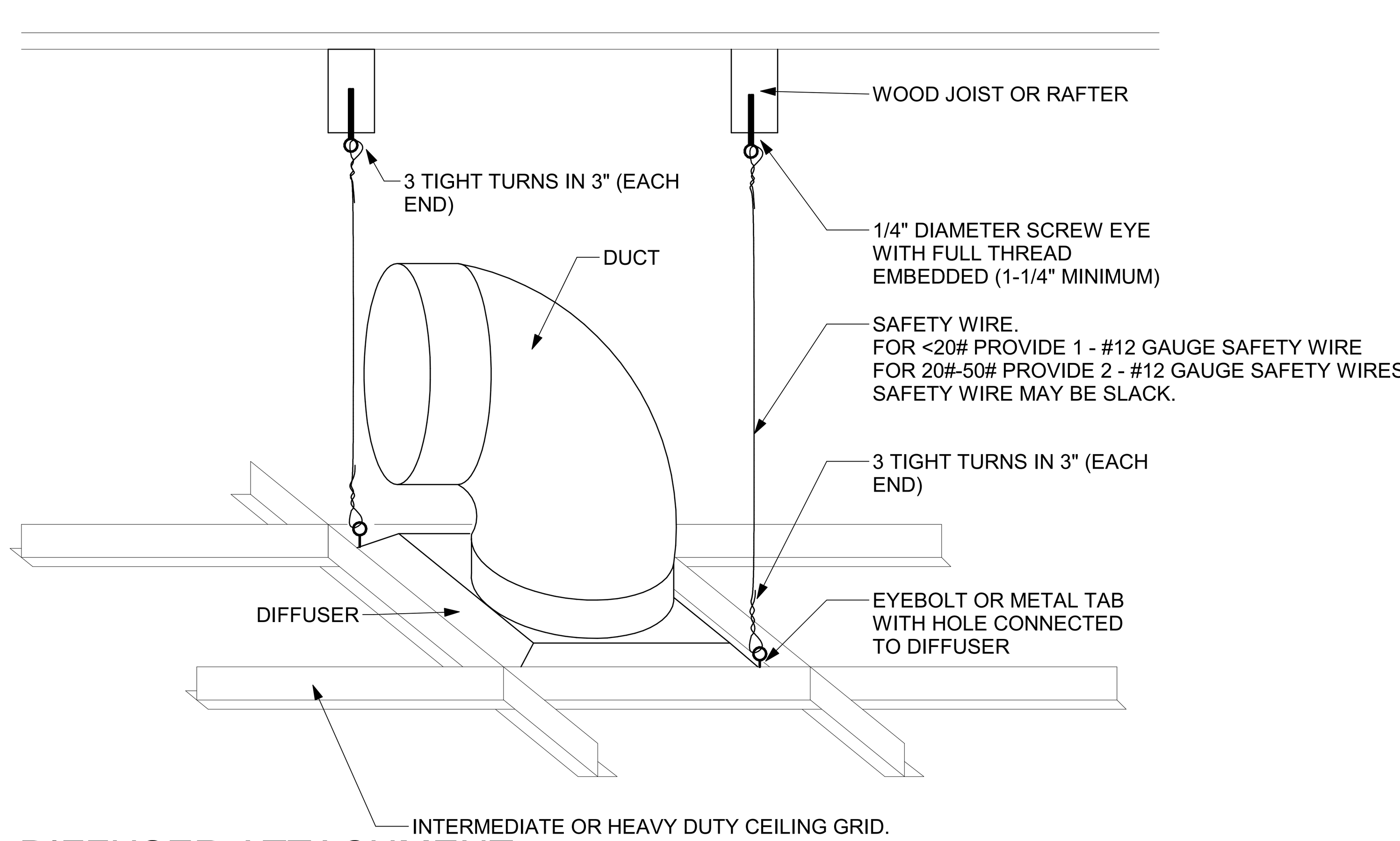
THE FAN IS TO BE SEALED TO THE CURB USING A 400 DEGREE SILICONE CAULK. PRIOR TO APPLYING CAULK PRE-DRILL (2) 3/16" HOLES ON QUARTERS ALONG EACH SIDE AND (1) IN THE CENTER OF EACH END OF THE FAN COUNTER FLASHING. THE PROPER WAY TO CAULK IS TO CUT THE THREADED BUTTON THAT SEALS THE TUBE. DO NOT USE A CAULK 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, PREDRILL 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

DUCT RESTRAINTS ARE REQUIRED FOR AC#1, AC#2 AND AC#3 TRUNK DUCT RUNS.
EACH STRAIGHT RUN OF DUCT MUST HAVE A MINIMUM OF ONE TRANSVERSE RESTRAINT ON EACH END OF THE DUCT AND A SINGLE LONGITUDINAL RESTRAINT.
MAX SPACING BETWEEN TRANSVERSE BRACING = 30'-0".
MAX SPACING BETWEEN LONGITUDINAL BRACING = 60'-0".



9 RECTANGULAR DUCT RESTRAINT
NOT TO SCALE



7 DIFFUSER ATTACHMENT
NOT TO SCALE

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STATE OF MISSOURI — KURZYNSKE — E-2000152891 — PROFESSIONAL ENGINEER
12/30/24

CHICK-FIL-A
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Saint Ann, MO 63074

ISSUE FOR CONSTRUCTION

FSR#05489
BUILDING TYPE / SIZE: P14 SE BN
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REVISION SCHEDULE

NO.	DATE	DESCRIPTION
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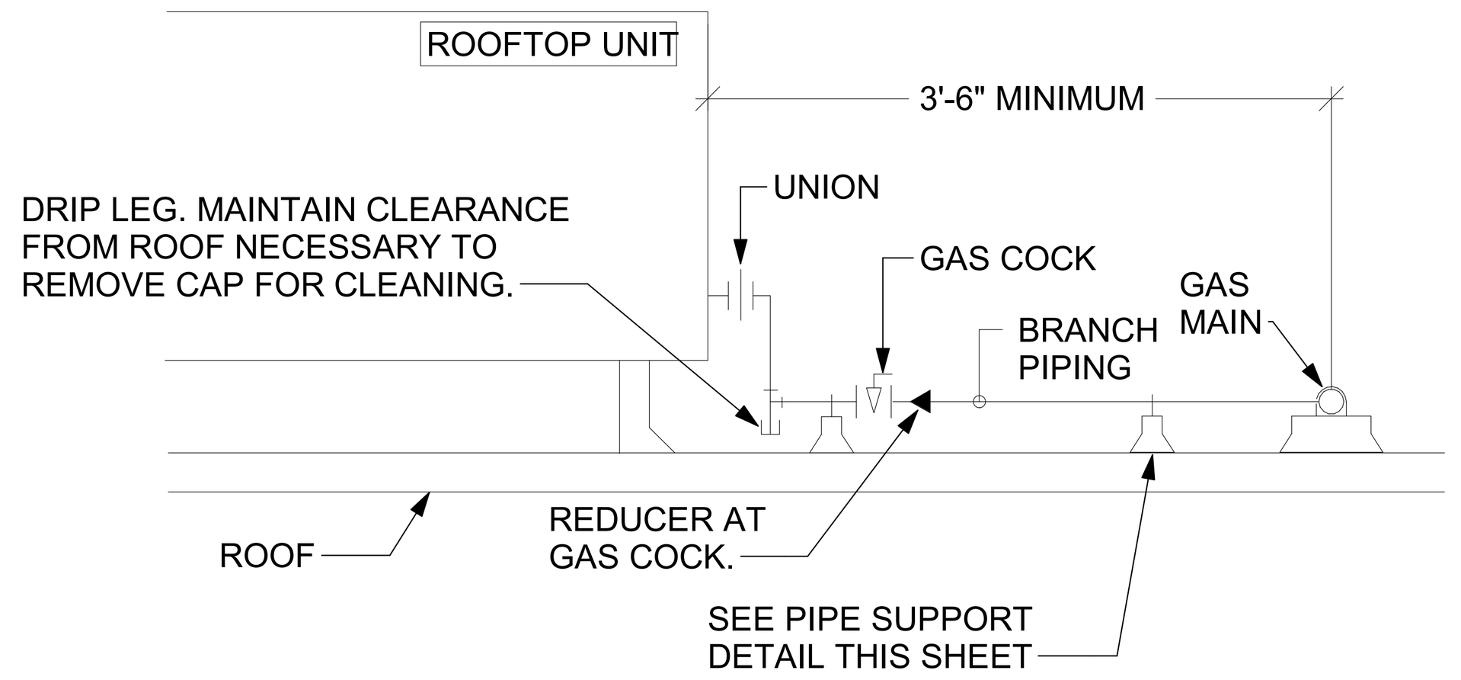
3	12/30/2024	ISSUE FOR CONSTRUCTION

CONSULTANT PROJECT # 24106.CD.S
DATE 12/30/2024
DRAWN BY BLM

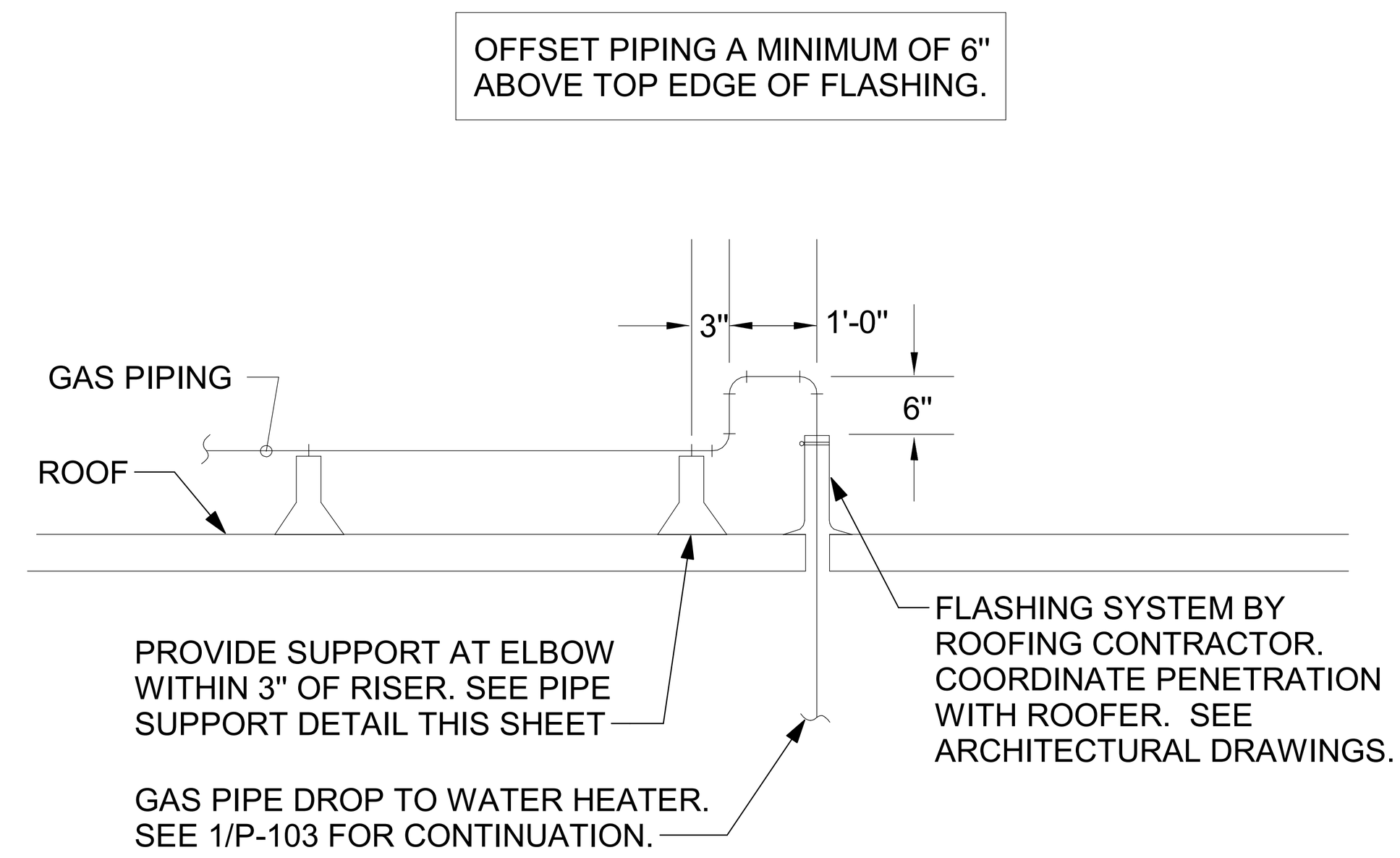
SHEET
DETAILS

SHEET NUMBER
M-501

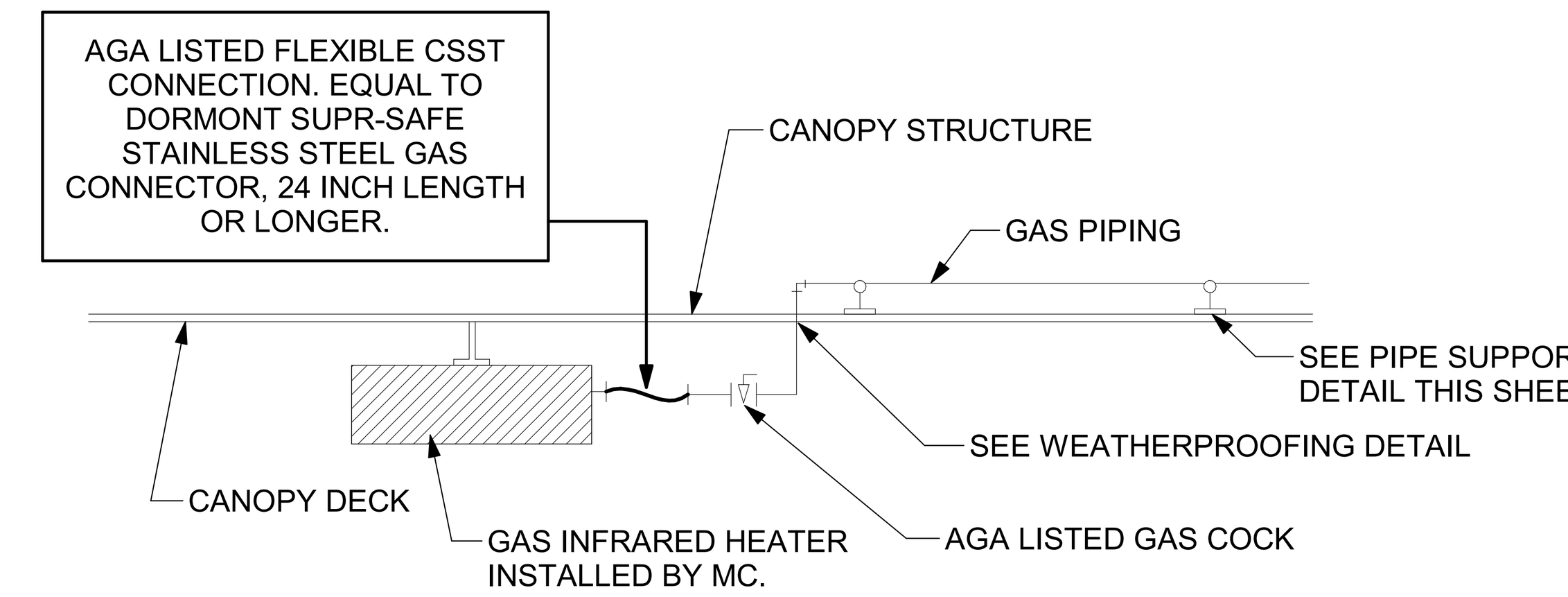
NOTES:
1. INSTALL GAS PIPING SUCH THAT HVAC EQUIPMENT ACCESS PANELS AND/OR DOORS ARE IN NO WAY OBSTRUCTED BY PIPING, VALVES, OR SUPPORTS.
2. TO AVOID CONFLICT WITH AC UNIT ACCESS DOORS, INSTALL GAS PIPING NO CLOSER THAN 3'-6" FROM AC UNIT. (EXCEPT FOR BRANCH LINE CONNECTED TO AC UNIT.)
3. ROUTE BRANCH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



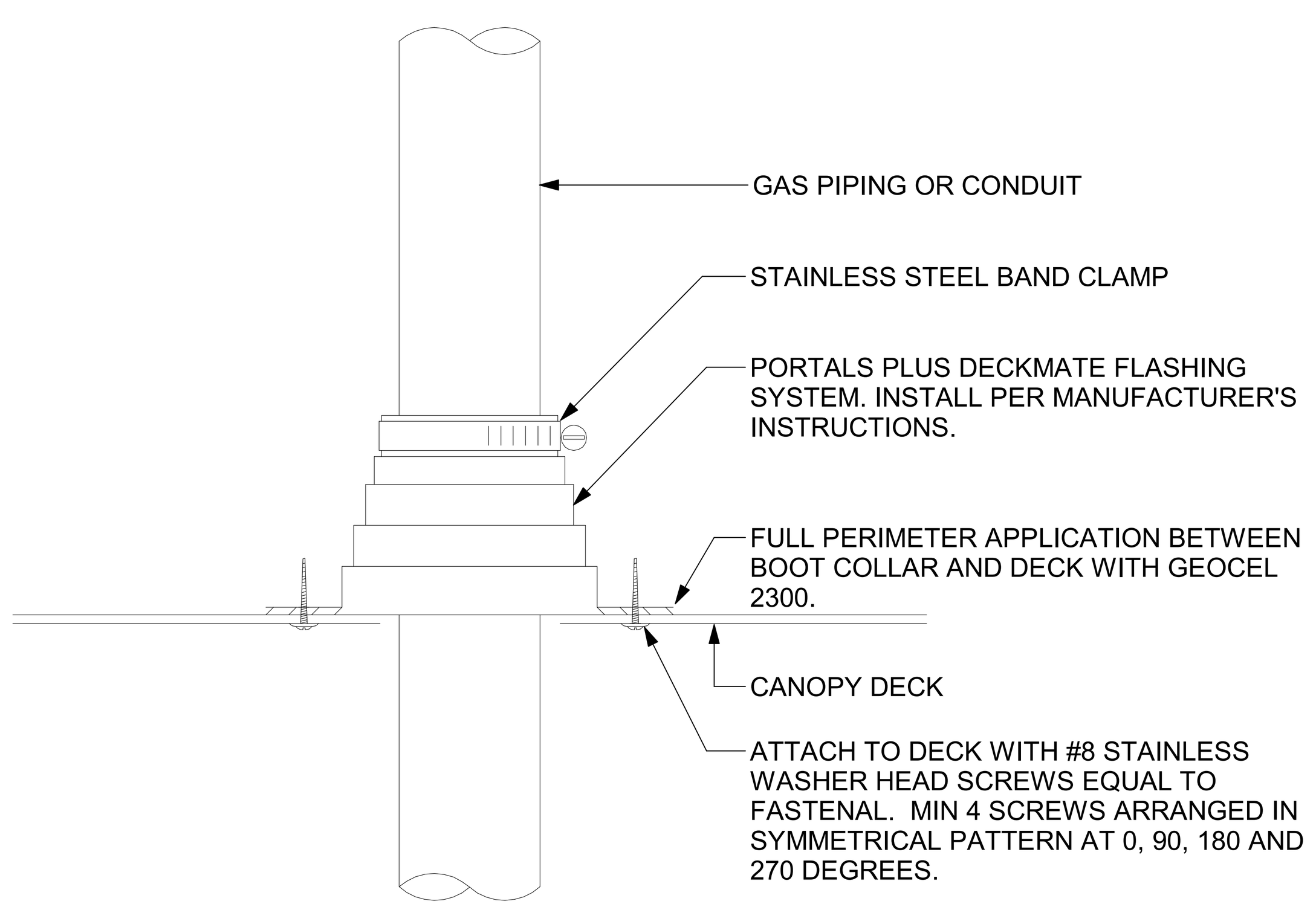
3 GAS PIPING AT RTU
NOT TO SCALE



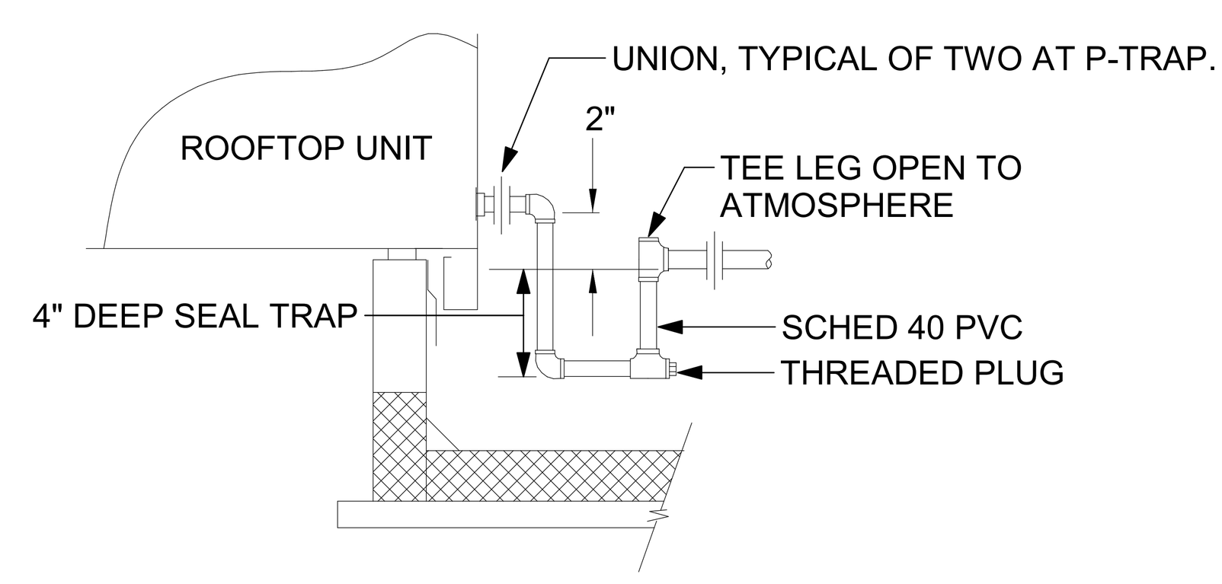
2 GAS PIPE DROP TO WATER HEATER
NOT TO SCALE



1 GAS CONNECTION AT APPLIANCE
NOT TO SCALE

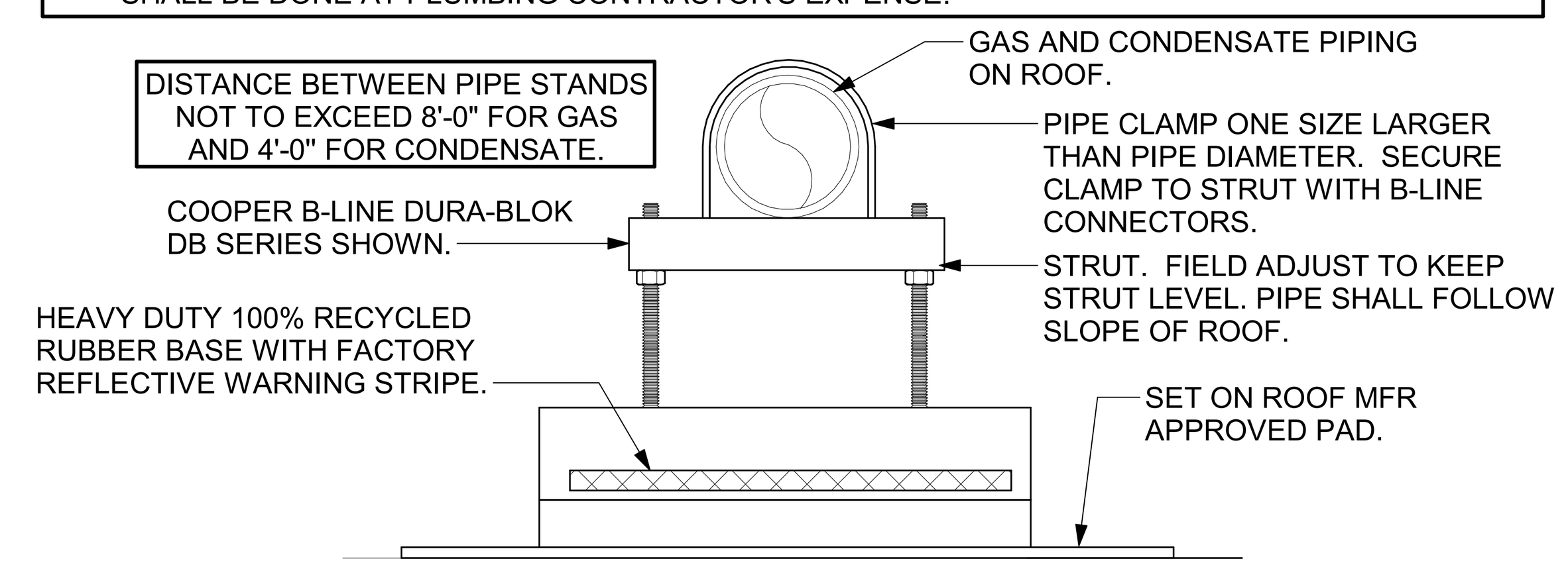


6 WEATHERPROOFING AT CANOPY PENETRATION
NOT TO SCALE



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

1. USE ADHESIVE SCREEN ANCHOR SIZED CORRECTLY FOR THE BROMIC HEATER MOUNTING BRACKET.
2. DETERMINE WHERE TO DRILL THE HOLES.
3. DRILL THE RIGHT-SIZED HOLE FOR THE ANCHORS. USE THE APPROPRIATE ANSI-RATED MASONRY DRILL BIT FOR THE APPLICATION.
4. DRILLED HOLES MUST BE CLEANED BEFORE YOU CAN INSERT THE ANCHOR. USE CLEAN, DRY COMPRESSED AIR TO BLOW OUT DUST AND DEBRIS. THE TYPE OF ANCHOR OR APPLICATION ALSO MAY REQUIRE YOU TO USE A BRUSH.
5. INSERT THE ANCHOR PER THE DIAGRAM BELOW.
6. ALLOW ENOUGH TIME FOR THE ADHESIVE TO HARDEN AND ADHERE TO THE BRICK. THIS MAY TAKE SEVERAL HOURS.
7. SET THE EQUIPMENT AND TIGHTEN THE ANCHORS. TIGHTEN THE ANCHOR BOLT TO THE PROPER TORQUE SETTING AS SHOWN IN THE ANCHOR MANUFACTURER'S INSTRUCTIONS

TAKEN FROM FEMA SEISMIC DESIGN HANDBOOK - PG 117-124.

DO NOT TOUCH THE ANCHOR WHILE THE ADHESIVE IS CURING.

Figure 119: Brick/block wall insert.

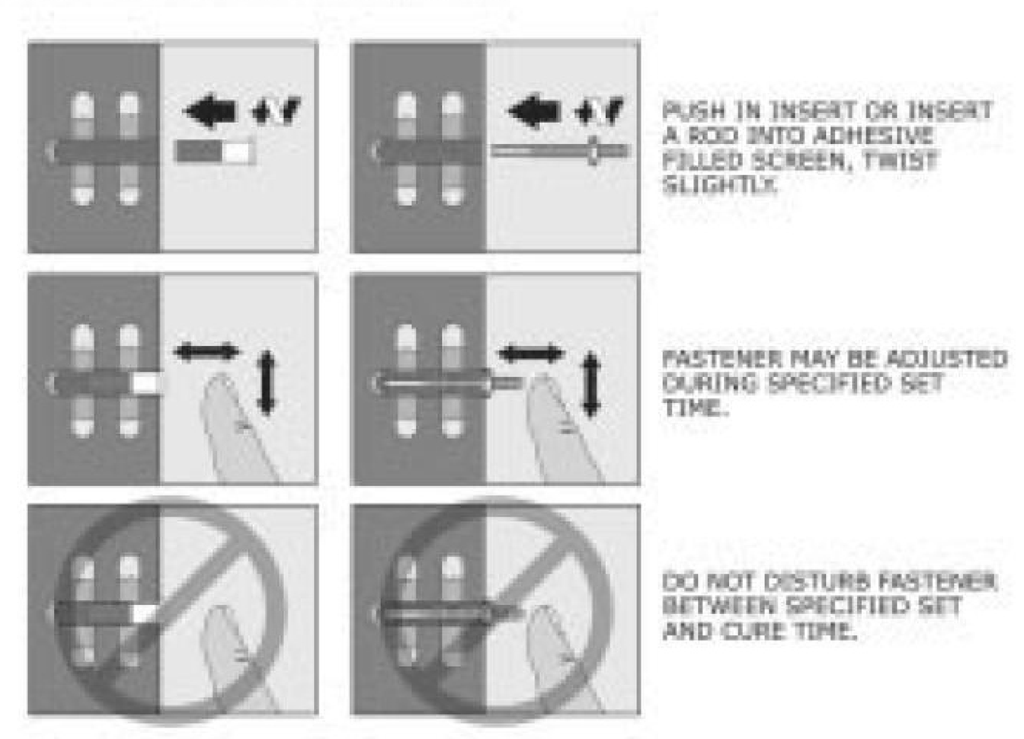
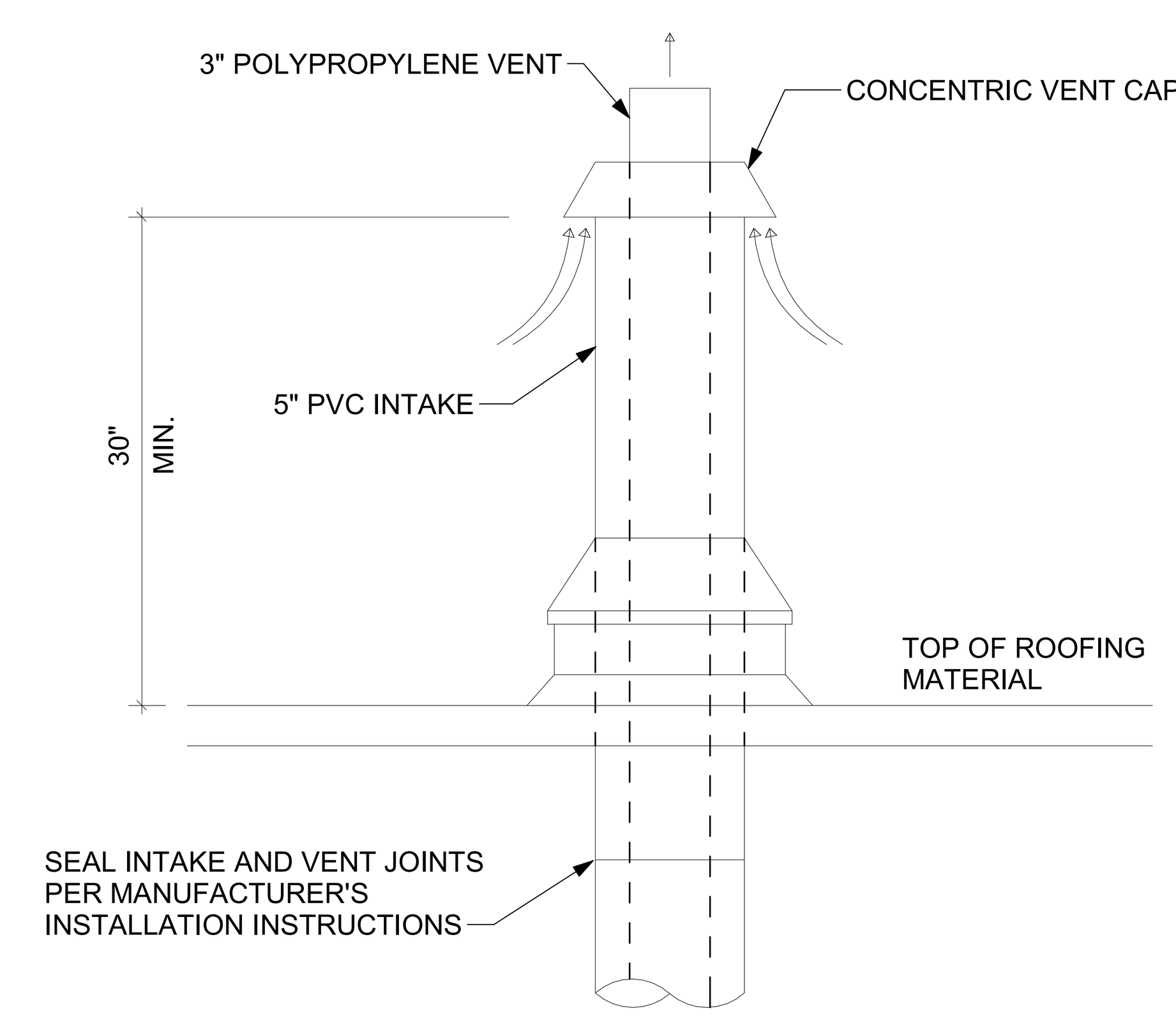


Figure 120: Brick wall adhesive anchor.

8 MASONRY ANCHOR - EIH#1
NOT TO SCALE



7 WATER HEAT VENT ROOF PENETRATION
NOT TO SCALE

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SHEET
DETAILS

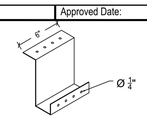
SHEET NUMBER
M-502

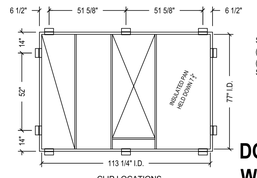
Drawing Date: 1-9-17	REV:	Approved By:	Approved Date:

(1.) ON LONG SIDES, ATTACH HOLD DOWN CLIPS TO ROOF CURB OR ADAPTER USING
4 - #14 SELF TAPPING SCREWS PER EACH BRACKET,(2) 6 1/2" OFF CORNERS
AND (1) APPROXIMATELY CENTERED.

ON SHORT SIDES ATTACH (2) CLIPS 14" OFF OF CORNERS

(2.) AFTER UNIT HAS BEEN POSITIONED ON TOP OF ROOF CURB OR ADAPTER ATTACH HOLD
DOWN CLIPS TO UNIT BASE RAIL USINGS 4 - #14 SELF TAPPING SCREWS PER EACH BRACKET.

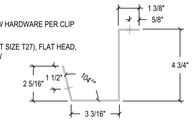




CLIP LOCATIONS

(10) CLIPS PER SET

SHIP WITH THE BELOW HARDWARE PER CLIP
(4) #14 X 1 1/2" TEK
(4) #14 X 2 1/2" TORX (BIT SIZE T27), FLAT HEAD,
SELF TAPPING SCREW



DO NOT ATTACH TO WOOD NAILER. SCREWS MUST PENETRATE THE METAL CURB CROWN

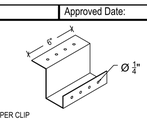
CURBS PLUS, INC. 8767 Alabama Hwy Ringgold, GA 30736 Phone:(706) 858-1188 / Fax: (706) 866-2339 website: www.curbs-plus.com	**HOLD DOWN CLIPS**	STORE NUMBER.: QTY.: 2 SET(S) GA.:12 GA. METAL TYPE: GALVANIZED TAG: AC#1, AC#3

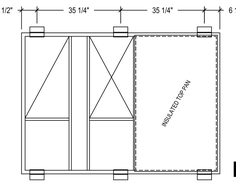
Note: Design subject to change without notice. FILENAME: (TR-13) (YSJ UNITS) **©2003 Curbs Plus, Inc.**

Drawing Date: 1-9-17	REV:	Approved By:	Approved Date:

(1.) ON LONG SIDES, ATTACH HOLD DOWN CLIPS TO ROOF CURB OR ADAPTER USING 4 - #14 SELF
TAPPING SCREWS PER EACH BRACKET, (2) 6 1/2" OFF CORNERS AND (1) APPROXIMATELY CENTERED.

(2.) AFTER UNIT HAS BEEN POSITIONED ON TOP OF ROOF CURB OR ADAPTER ATTACH HOLD DOWN
CLIPS TO UNIT BASE RAIL USINGS 4 - #14 SELF TAPPING SCREWS PER EACH BRACKET.

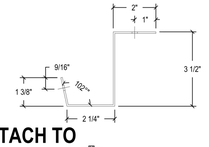




CLIP LOCATIONS

(6) CLIPS PER SET

SHIP WITH THE BELOW HARDWARE PER CLIP
(4) #14 X 1 1/2" TEK
(4) #14 X 2 1/2" TORX , FLAT HEAD, SELF TAPPING SCREW



DO NOT ATTACH TO WOOD NAILER. SCREWS MUST PENETRATE THE METAL CURB CROWN

CURBS PLUS, INC. 8767 Alabama Hwy Ringgold, GA 30736 Phone:(706) 858-1188 / Fax: (706) 866-2339 website: www.curbs-plus.com	**HOLD DOWN CLIPS**	STORE NUMBER.: QTY.: 1 SET(S) GA.:12 GA. METAL TYPE: GALVANIZED TAG: AC#2

Note: Design subject to change without notice. FILENAME: (TR-295) TRANE THC, YHC 092-120 , WSC 120E (BAYCURB044A) **©2003 Curbs Plus, Inc.**

Drawing Date: 1-9-17	REV:	Approved By:	Approved Date:

(1.) ON LONG SIDES, ATTACH HOLD DOWN CLIPS TO ROOF CURB OR ADAPTER USING 4 - #14 SELF
TAPPING SCREWS PER EACH BRACKET, (2) 6 1/2" OFF CORNERS AND (1) APPROXIMATELY CENTERED.

(2.) AFTER UNIT HAS BEEN POSITIONED ON TOP OF ROOF CURB OR ADAPTER ATTACH HOLD DOWN
CLIPS TO UNIT BASE RAIL USINGS 4 - #14 SELF TAPPING SCREWS PER EACH BRACKET.

CLIP LOCATIONS

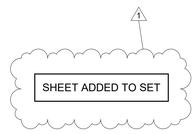
(6) CLIPS PER SET

SHIP WITH THE BELOW HARDWARE PER CLIP
(4) #14 X 1 1/2" TEK
(4) #14 X 2 1/2" TORX , FLAT HEAD, SELF TAPPING SCREW

DO NOT ATTACH TO WOOD NAILER. SCREWS MUST PENETRATE THE METAL CURB CROWN

CURBS PLUS, INC. 8767 Alabama Hwy Ringgold, GA 30736 Phone:(706) 858-1188 / Fax: (706) 866-2339 website: www.curbs-plus.com	**HOLD DOWN CLIPS**	STORE NUMBER.: QTY.: 1 SET(S) GA.:12 GA. METAL TYPE: GALVANIZED TAG: AC#4

Note: Design subject to change without notice. FILENAME: (TR-16) TRANE TSC,THC, YSC, YHC, WSC 072-120A **©2003 Curbs Plus, Inc.**



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ISSUE FOR CONSTRUCTION

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SHEET
CURB CLIPS

SHEET NUMBER
M-503

ROOFTOP UNIT SCHEDULE - TRANE

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#1T	TRANE	YSJ300A3S	9.8	13	2731.00 lb	8,125	1,765	3	0.80	271.1	202.4	400	324	208	3	125	150	1,3,4,5,6,8,9,10,11,12,13,14,15,16
AC#2T	TRANE	YSJ150A3S	10.8	14	1559.00 lb	4,375	1,075	4.6	0.80	150.9	114.9	250	202.5	208	3	73	100	1,3,4,5,6,8,9,10,11,12,13,14,15,16
AC#3T	TRANE	YSJ180A3S	10.8	14	2471.00 lb	5,250	1,275	3	0.80	184.3	140.4	400	324	208	3	83	110	1,3,4,5,6,8,9,10,11,12,13,14,15,16
AC#4T	TRANE	YHC067E3R	13	17	999.00 lb	1,750	425	1	0.80	58.1	44.2	130	104	208	3	33	45	2,3,4,5,6,7,8,9,10,11,12,13,14,16

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

REMARKS
1. DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EXHAUST.
2. DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC EXHAUST.
3. FACTORY 14" HIGH, FULLY WELDED SEISMIC ROOF CURB WITH INTEGRAL CURB CLIPS. (SEISMIC DESIGN CATEGORY D)
4. SEE DETAIL 2/M-701 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. FACTORY INSTALLED CONDENSATE PAN DRAIN OVERFLOW SWITCH.
12. HOT GAS DEHUMIDIFICATION OPTION WITH WALL MOUNTED HUMIDITY SENSOR.
13. FACTORY INSTALLED BELT TENSIONER.
14. FACTORY CONFIGURED PHASE LOSS PROTECTION.
15. PROVIDE FACTORY HIGH FAULT (65K) SCCR WITH FACTORY CIRCUIT BREAKER.
16. FACTORY FRESH AIR TEMPERING KIT.

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

	HEATIING INPUT												
MARK	INPUT (kW)	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.

MECHANICAL EQUIPMENT COMPONENTS EARTHQUAKE LOAD RESISTANCE

OCCUPANCY GROUP (II)

SEISMIC DESIGN CATEGORY (D)

LISTING OF EQUIPMENT AND SYSTEM COMPONENTS	ANCHORAGE TO FLOORS, ROOFS, ETC.		SWAY BRACING		LOCATION OF PROFESSIONALLY SEALED ANCHORAGE AND SWAY BRACING DETAILS. ON CONST DRAWINGS	SUBSEQUENT SUBMITTAL		COMMENTS
	Not Provided For Project	Provided For Project	Not Provided For Project	Provided For Project	Drawing No. or Spec Section	Shop Drawings	Seperate Permit & Plans	
FIRE PROTECTION, DETECTION & ALARM EQUIPMENT SYSTEM COMPONENTS	X		X					1
HAZARDOUS EQUIPMENT & SYSTEM COMPONENTS:								
• GREASE EXHAUST DUCT		X		X	DETAIL 8 & 9 / M-501			2
• GREASE EXHAUST FAN		X	X		DETAIL B3 / S-800, DETAIL 5 / M-501			2
• GAS PIPING	X		X		DETAIL 1/ M-102			7
• KITCHEN HOODS		X	X		DETAIL A1 / S-800			10
• GAS-FIRED INFRARED HEATERS		X	X		DETAIL L13/ CANOPY DRAWINGS SHEET E3 OF 4			11
OTHER EQUIPMENT & SYSTEM COMPONENTS NEEDED FOR CONTINUED OPERATION OF OCCUPANCY CATEGORY IV FACILITIES OR WHOSE FAILURE COULD IMPAIR THEIR CONTINUED OPERATION	X		X					1
OTHER GENERAL EQUIPMENT & SYSTEMS COMPONENTS								
• AIR TERMINAL DEVICES		X		X	DETAIL 7/ M-501			3
• RR EXHAUST FAN	X		X					4
• ROOFTOP UNITS		X	X		DETAIL A2 & B2/ S-800, SHEET M-503			5
• REFRIG. COND. UNITS	X		X		DETAIL A3 / S-800			4
• A/C DUCT		X		X	DETAIL 8 & 9/ M-501			8
• AIR CURTAINS (WALL)		X	X					9
• AIR CURTAINS (CEILING)		X	X		DETAIL C1/ S-800			12
• ELECTRIC INFRARED HEATER		X	X		DETAIL 8/ M-502			
• RECIRCULATING FAN		X	X		DETAIL C1/ S-800			12

1. NOT APPLICABLE FOR THIS PROJECT OR NOT UNDER THE PURVIEW OF THE MECHANICAL ENGINEER OF RECORD.
2. I.P. = 1.5 FOR GREASE EXHAUST SYSTEMS.
3. AIR TERMINAL DEVICES ARE SECURED TO THE GRID.
4. TABLE 4.4, GENERAL EXEMPTION #1, IP=1.0. UNIT WEIGHT LESS THAN 400 LBS. FLEXIBLE CONNECTORS PROVIDED WHERE APPLICABLE.
5. ROOFTOP UNIT FULLY WELDED SEISMIC RATED CURBS WITH HOLD DOWN CLIPS PROVIDED. SEE "GAS FIRED ROOFTOP UNIT SCHEDULE" REMARK #3, SHEET M-601.
6. NOT USED.
7. TABLE 4.4 EXEMPTION #5. GAS PIPING IS EXTERIOR, LESS THAN 2PSI, AND PROVIDED WITH A SEISMIC SHUTOFF VALVE. REFER TO SHEET M-102.
8. TABLE 4.4 EXEMPTION #3. BRANCH DUCTS LESS THAN 6 SQ FT WITH FLEXIBLE CONNECTORS PROVIDED. SEE DETAIL 1 SHEET M-501.
9. AIR CURTAIN WEIGH 105# OR LESS, ANCHORED TO WALL STRUCTURE WITH (4) 3/8" LAG BOLTS. KEYNOTE #4 SHEET M-101.
10. HOODS ARE TO BE POSITIVELY ATTACHED TO THE WALL STRUCTURE BEHIND THE HOOD VIA BOLTS THRU FACTORY PROVIDED WALL BRACKETS WHICH ARE WELDED TO THE TOP AND BOTTOM OF THE HOODS. REFER TO SHEET MH-1.1, MH-1.2, MH-1.3 FOR WALL BRACKETS WELDED TO HOODS.
11. GAS-FIRED INFRARED HEATER (GIH) WEIGH 49# EACH, ARE POSITIVELY ATTACHED TO THE CANOPY STRUCTURE AT (4) FOUR BOLT CONNECTIONS ON THE TOP OF THE HEATER, AND ARE PROVIDED WITH A FLEXIBLE GAS CONNECTION PER SHEET M-502 DETAIL 1.
12. CEILING MOUNTED EQUIPMENT WEIGH 200# OR LESS AND ARE HUNG FROM STRUCTURE USING THREADED ROD. SWAY BRACING PER DETAIL A1/ S-800.

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
EF#4	75	0.3	900	0.02	EMPLOYEE RESTROOM	120	1	0.2	20	SP-A90	GREENHECK	1,23,24
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 1,400 RPM. [sic]
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.
23. FAN SHALL BE CONTROLLED WITH THE ROOM LIGHTING. ALL WIRING IS BY THE ELECTRICAL CONTRACTOR.
24. DIRECT DRIVE CEILING FAN. PROVIDE DISCONNECT SWITCH. INTEGRAL BACKDRAFT DAMPER, AND MANUFACTURER'S FAN SPEED CONTROLLER.

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	10	0.75	31.4	40	208	3	SERVING	ETA-1-36E	POWERED AIRE	2,3,4,6
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	1,7,9
B	VARITHERM PLAQUE DIFFUSER	OFFICE	8"	24"x24"	LAY-IN	1,7,8,9
C	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY	17"x17"	19"x19"	BEVELLED	1,3,5,6,9
D	PRICE MODEL APDC ALUMINUM SUPPLY AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE CURVED AIR PATTERN CONTROLLERS.	DINING	VARIES	16"x16"	SURFACE	1,3,5,6,9
F	PRICE MODEL 80 EGGCRATE RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND ROUND NECK.	MFA	VARIES	24"x24"	LAY-IN	1,7,9
FF	PRICE MODEL 80FF STEEL FILTER RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND 2" FILTER FRAME.	MFA	18"x18"	24"x24"	LAY-IN	1,7,9
J	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	RESTROOMS	10"x10"	15"x15"	BEVELLED	1,2,3,5,6,9
K	PRICE MODEL APDDR ALUMINUM PERFORATED FACE RETURN AIR GRILLE.	RESTROOMS/ ENTRY	14"x14"	16"x16"	SURFACE	1,2,5,6,9

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.
9. PROVIDE WITH FACTORY EARTHQUAKE TABS.

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12/30/24

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FSR#05489

BUILDING TYPE / SIZE: P14 SE BN
RELEASE: 24.05
PRINTED FOR
ISSUED FOR CONSTRUCTION

REVISION SCHEDULE

NO.	DATE	DESCRIPTION
	08/30/2024	ISSUE FOR PERMIT
1	10/09/2024	MECHANICAL COMMENTS
3	12/30/2024	ISSUE FOR CONSTRUCTION

ISSUE FOR CONSTRUCTION

CONSULTANT PROJECT # 24106.CD.S
DATE 12/30/2024
DRAWN BY BLM

SHEET
EQUIPMENT SCHEDULES - TRANE

SHEET NUMBER
M-601T

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	4,375	0.04	1,075	-	-	-	-	-	-	AC#2	-
	Total Area	**453**						**Total Vbz**	**134**			**Total Supply Airflow**	**4,375**		**1,075**	**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	Employee Restroom	62	-	-	-	-	-	-	-	0.8	-	40	-	10	-	-	Intermittent	75	75	75	AC#4	EF#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**	**92**			**Total Supply Airflow**	**1,750**		**425**	**Actual Outdoor Airflow**							
								Diversity (D)	**1.00**				**Maximum Zp**	**0.10**										
								Uncorrected Outdoor Air Intake (Vou)	**92**			**System Ventilation Efficiency (Ev)**		**1.00**										
								Required Outdoor Air Intake (CFM)				**92**												

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Saint Ann, MO 63074

FSR#05489

BUILDING TYPE / SIZE: P14 SE BN
RELEASE: 24.05
PRINTED FOR
ISSUED FOR CONSTRUCTION

REVISION SCHEDULE

NO.	DATE	DESCRIPTION
	08/30/2024	ISSUE FOR PERMIT
3	12/30/2024	ISSUE FOR CONSTRUCTION

ISSUE FOR CONSTRUCTION

CONSULTANT PROJECT # 24106.CD.S
DATE 12/30/2024
DRAWN BY BLM

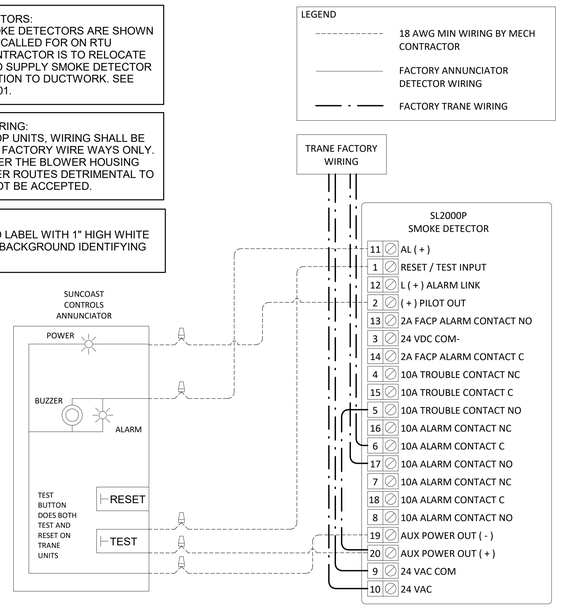
SHEET
VENTILATION SCHEDULES

SHEET NUMBER
M-602

SUPPLY SIDE DETECTORS:
IF SUPPLY SIDE SMOKE DETECTORS ARE SHOWN ON DWG M-101, AND CALLED FOR ON RTU SCHEDULE, THE CONTRACTOR IS TO RELOCATE FACTORY INSTALLED SUPPLY SMOKE DETECTOR FROM BLOWER SECTION TO DUCTWORK. SEE NOTES ON DWG M-101.

FIELD INSTALLED WIRING:
WITHIN THE ROOFTOP UNITS, WIRING SHALL BE ROUTED BY WAY OF FACTORY WIRE WAYS ONLY. WIRING ROUTED OVER THE BLOWER HOUSING OR BY WAY OF OTHER ROUTES DETRIMENTAL TO WIRING LIFE WILL NOT BE ACCEPTED.

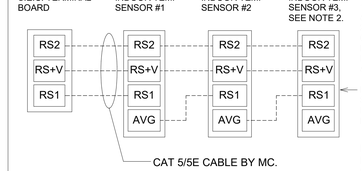
LABELING:
PROVIDE ENGRAVED LABEL WITH 1" HIGH WHITE LETTERS ON BLACK BACKGROUND IDENTIFYING UNIT SERVED.



1 SMOKE DETECTOR AND ANNUNCIATOR WIRING DIAGRAM - TRANE
NOT TO SCALE

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.

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.

RS+V - GREEN W/ WHITE STRIPE
RS2 - BROWN W/ WHITE STRIPE
RS1 - GREEN
AVG - BROWN

KEYED NOTES:
8 LOW VOLTAGE WIRING TO RTU TO BE ROUTED TO UNIT THRU FACTORY WIREWAY.
9 NOT USED.
10 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 OR CONDUIT. FIELD CALIBRATE EACH SENSOR. SEAL CABLE PENETRATION AT ALL WALL LOCATIONS.

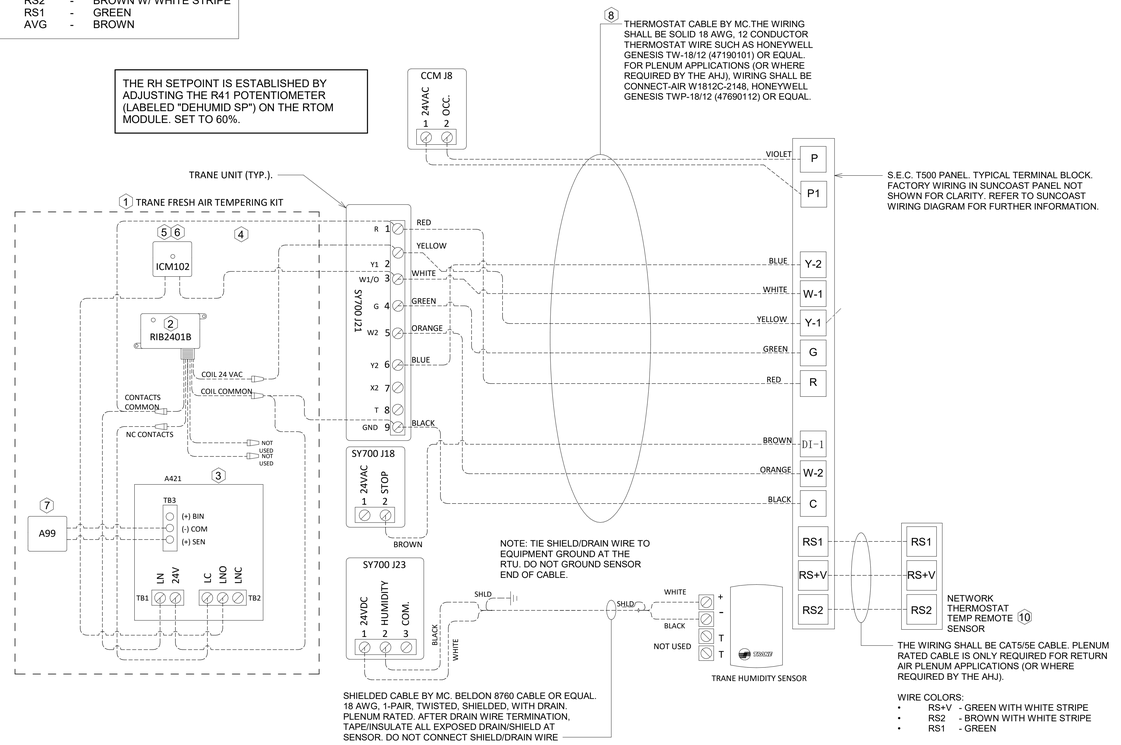
NOTES:
1. MECHANICAL CONTRACTOR SHALL MAKE PLASTIC LAMINATE OF THIS DETAIL AND INSTALL PERMANENTLY ON INSIDE DOOR OF ROOFTOP UNIT CONTROL COMPARTMENT.
2. SEE DETAILS THIS SHEET FOR SMOKE DETECTOR AND ANNUNCIATOR WIRING.
3. SET ALL THERMOSTATS FOR AUTO CHANGEOVER.
4. PROVIDE PLAIC ENGRAVLABEL AT ALL NEW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

LEGEND

S.E.C.	SUNCOAST ENVIRONMENTAL CONTROLS (SUPPLIER OF TEMP/FAN CONTROL PANEL) LOCATED IN THE 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 N 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.

FRESH AIR TEMPERING KEYED NOTES:
1 INSTALL FRESH AIR TEMPERING KIT AS RECOMMENDED BY TRANE.
2 RIB2401B SPDT RELAY PROVIDED BY TRANE AND INSTALLED BY CONTRACTOR IN CONTROL CABINET OF TRANE UNIT.
3 JCI A421 TEMPERATURE CONTROLLER PROVIDED BY TRANE AND INSTALLED BY CONTRACTOR. DIN-MOUNTED IN THE RTU CONTROL CABINET. SET TO 58F. LOCATE TRANE PROVIDED JCI A99 SENSOR IN THE SUPPLY DUCT DOWNSTREAM OF FIRST ELBOW. SECURE WIRING TO DUCT WITH TE6001-1 SENSOR DUCT MOUNTING PLATE PROVIDED BY TRANE; DO NOT RUN WIRING INSIDE DUCTWORK.
4 18 AWG MIN. LOW VOLTAGE WIRING BY MC.
5 ICM102 TIME DELAY RELAY FURNISHED BY TRANE AND INSTALLED BY CONTRACTOR IN CONTROL CABINET OF TRANE UNIT.
6 SET TIME DELAY RELAY (ICM102) TO 2 MINUTES.
7 PROVIDE JCI TE6001-1 TEMPERATURE ELEMENT HOLDER FOR SUPPLY AIR TEMPERATURE SENSOR (A99).

THE RH SETPOINT IS ESTABLISHED BY ADJUSTING THE R41 POTENTIOMETER (LABELED "DEHUMID SP") ON THE RTOM MODULE. SET TO 60%.



2 ROOFTOP UNIT CONTROL WIRING - TRANE
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

STATE OF MISSOURI
MARK T. KURZYNSKE
NUMBER E-20001
REGISTERED PROFESSIONAL ENGINEER
12/30/24

CHICK-FIL-A
St. Ann FSU

10897 & 10909 Saint Charles Rock Rd
Saint Ann, MO 63074

FSR#05489

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SHEET
CONTROL WIRING DIAGRAMS - TRANE

SHEET NUMBER
M-701T

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

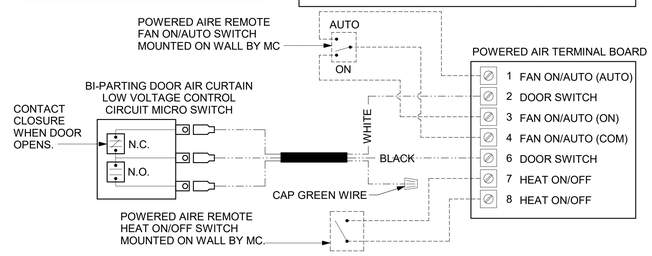
Kurzynske
& Associates
2705 Lebanon Pike - Suite One
Nashville, Tennessee 37214
Telephone: (615) 255-5203

MARK T. KURZYNSKE
E-2000153901
REGISTERED PROFESSIONAL ENGINEER
STATE OF MISSOURI

12/30/24

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

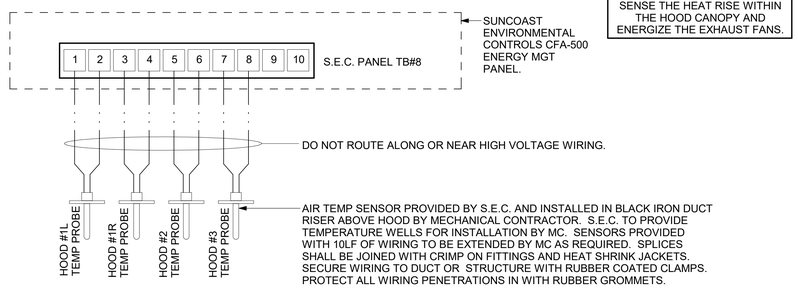
LEGEND	
S.E.C.	SUNCOAST ENVIRONMENTAL CONTROLS CFA-500 ENERGY MGT PANEL
M.C.	MECHANICAL CONTRACTOR
— · · —	18 AWG MIN UNSHIELDED LOW VOLTAGE WIRING BY MC, U.N.O.

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

CHICK-FIL-A
St. Ann FSU

10897 & 10909 Saint Charles Rock Rd
Saint Ann, MO 63074

FSR#05489

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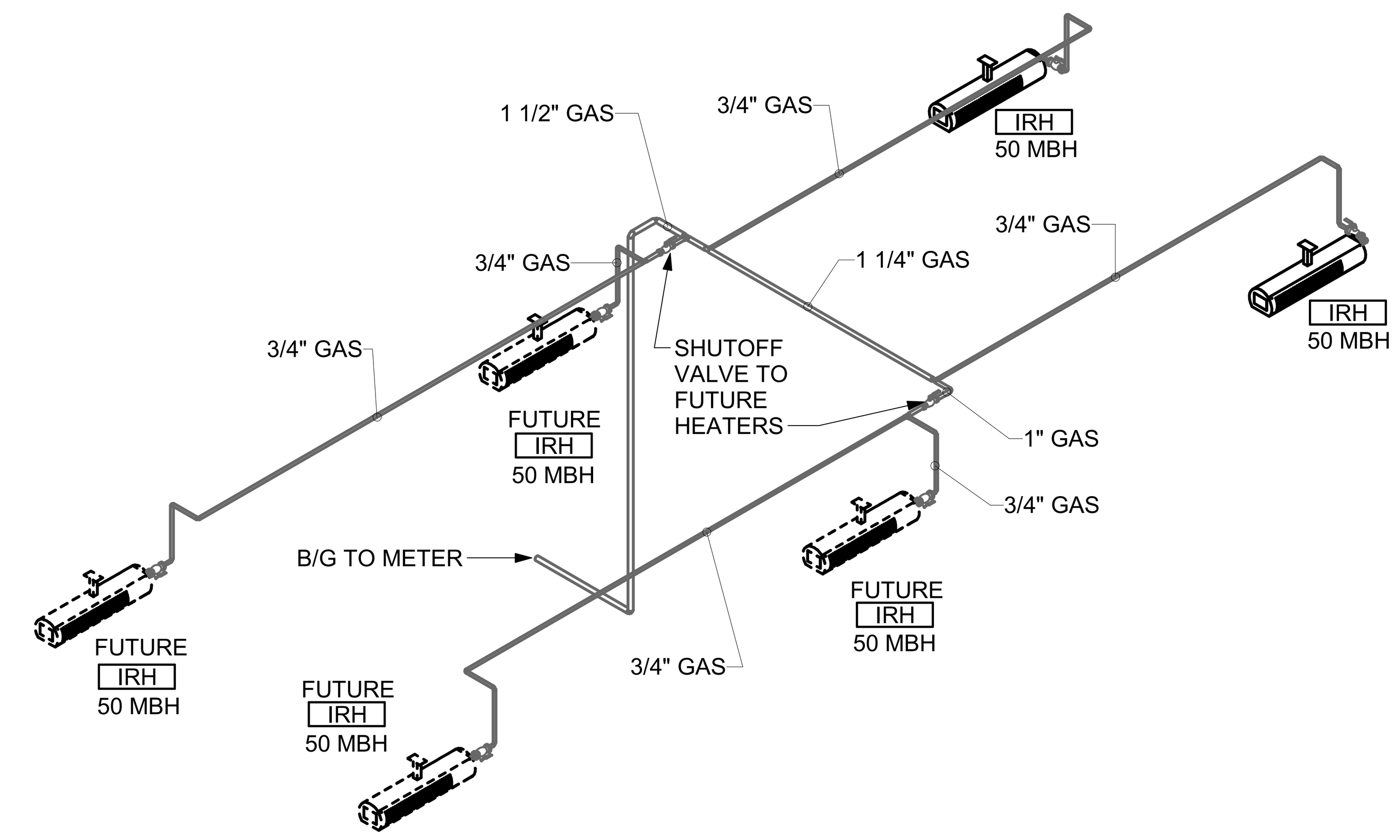
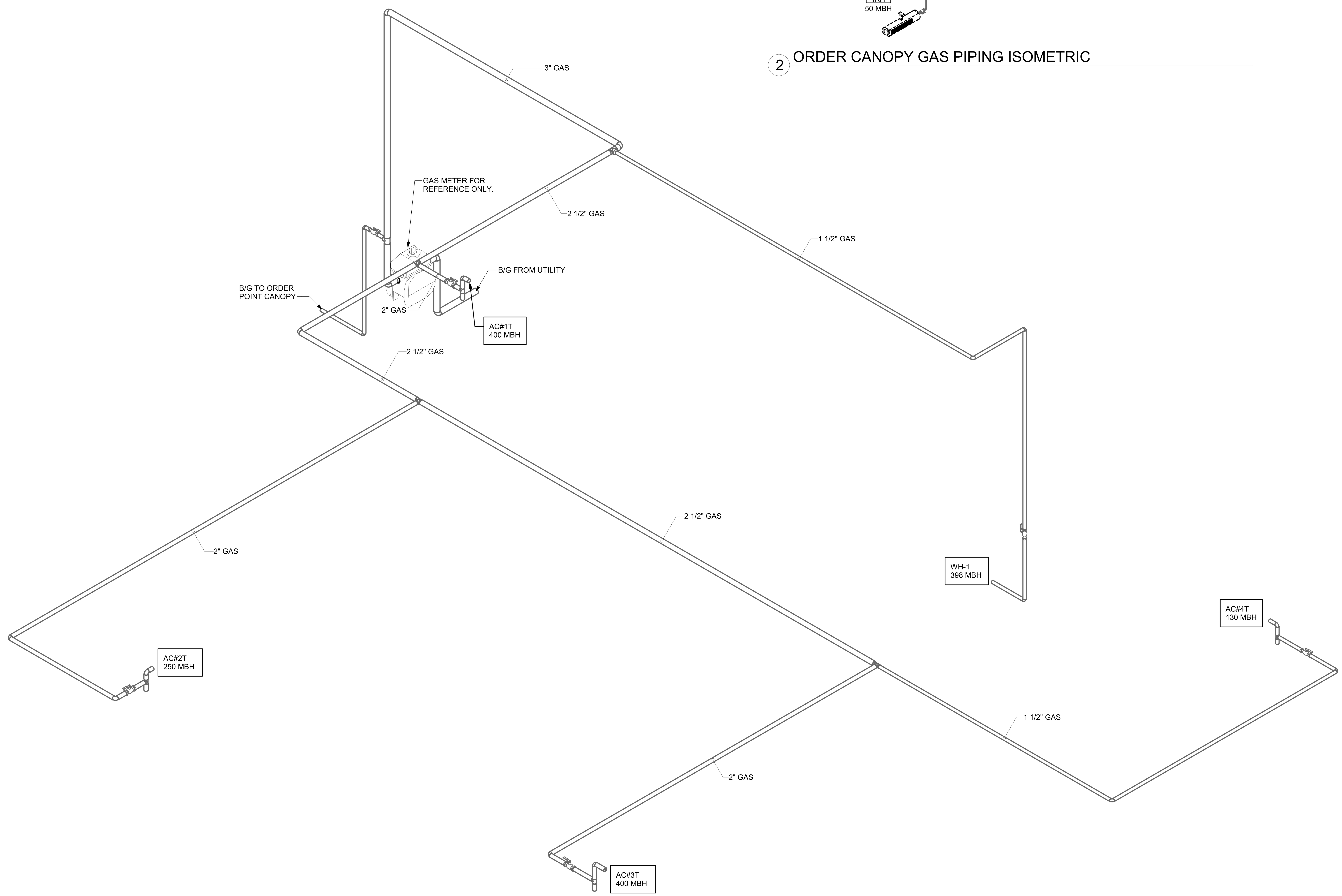
SHEET
CONTROL WIRING DIAGRAMS

SHEET NUMBER
M-702



2 ORDER CANOPY GAS PIPING ISOMETRIC



1 GAS PIPING ISOMETRIC - TRANE

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

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

STATE OF MISSOURI
MARK T. KURZYNSKE
E-2000152081
REGISTERED PROFESSIONAL ENGINEER
12/30/24

CHICK-FIL-A
St. Ann FSU

10897 & 10909 Saint Charles Rock Rd
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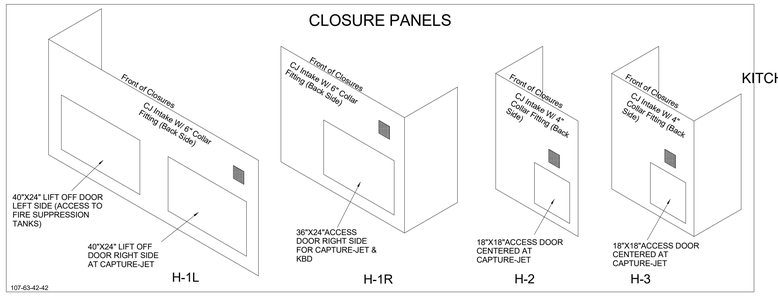
SHEET
GAS AND CONDENSATE ISOMETRIC - TRANE

SHEET NUMBER
M-901T

		EXHAUST COLLAR			EXHAUST AIR INFORMATION			CAPTURE AIR INFORMATION		S.S. KSA FILTERS			CEILING CLOSURES						
HOOD MODEL	HOOD NUMBER	QTY	LENGTH	WIDTH	CFM	TAB	SP	CFM	SP	FULL	HALF	LED LIGHTS	QTY	CLOSURE HEIGHT	CEILING HEIGHT	HOOD WEIGHT	KBD DAMPER	K FACTOR (CFM = K FACTOR * √DP)	MATERIAL
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

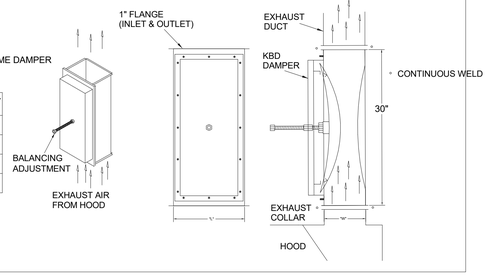


MODEL:KBD CALIBRATED

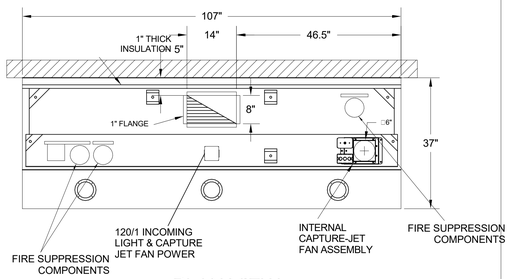
KITCHEN BALANCING DAMPER EXHAUST VOLUME DAMPER

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

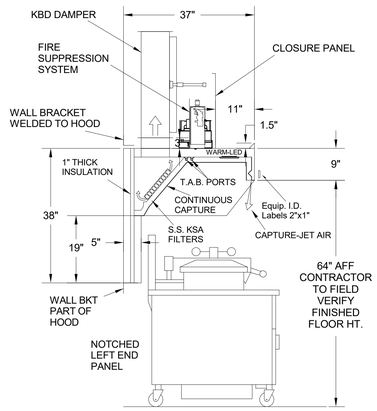
MATERIAL: FRAME - 16GA CONT. GALV.
ADJUSTABLE PANEL 18GA S.S.



H-1L



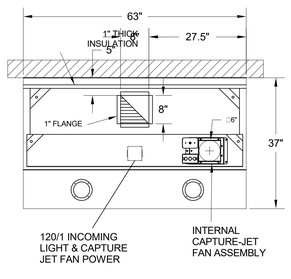
PLAN VIEW



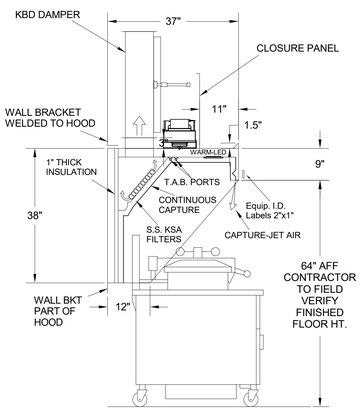
H-1L SECTION VIEW

- 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



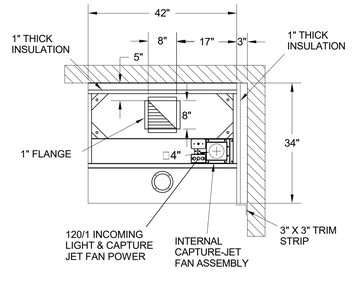
PLAN VIEW



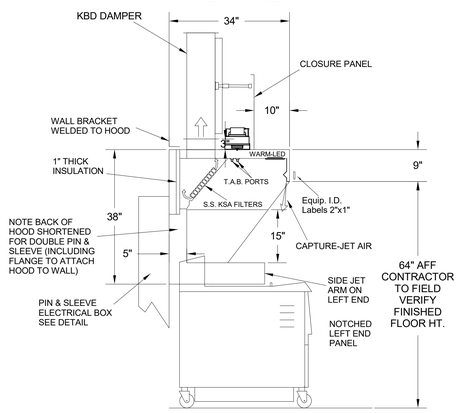
H-1R SECTION VIEW

- 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



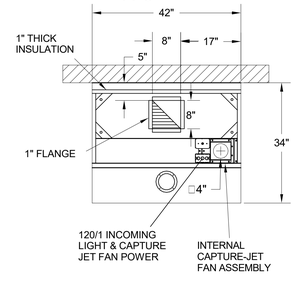
PLAN VIEW



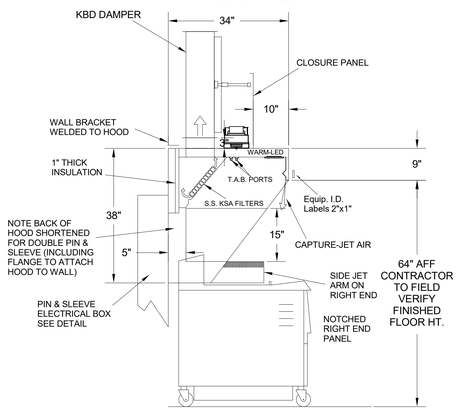
H-2 SECTION VIEW

- 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



PLAN VIEW



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

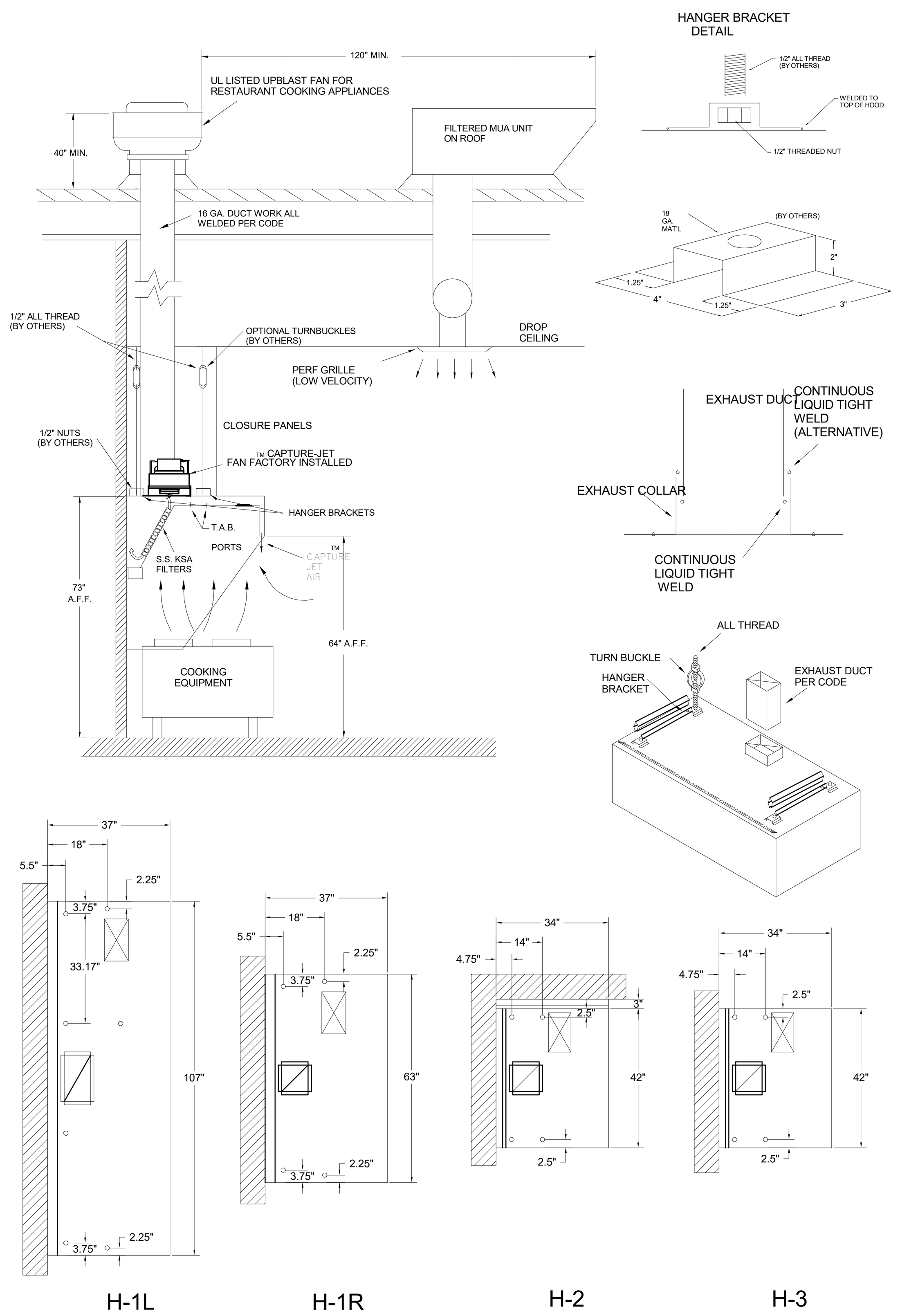
REV.	DATE	BY	REVISION DESCRIPTION
1			
2			
3			
4			
5			
6			
7			

PROJECT: **CHICK-FIL-A**
LOCATION: St. Ann FSU
DRAWN BY:
SCALE: N.T.S
Halton Dwg:
DATE: 12/30/2024
SN# 05489

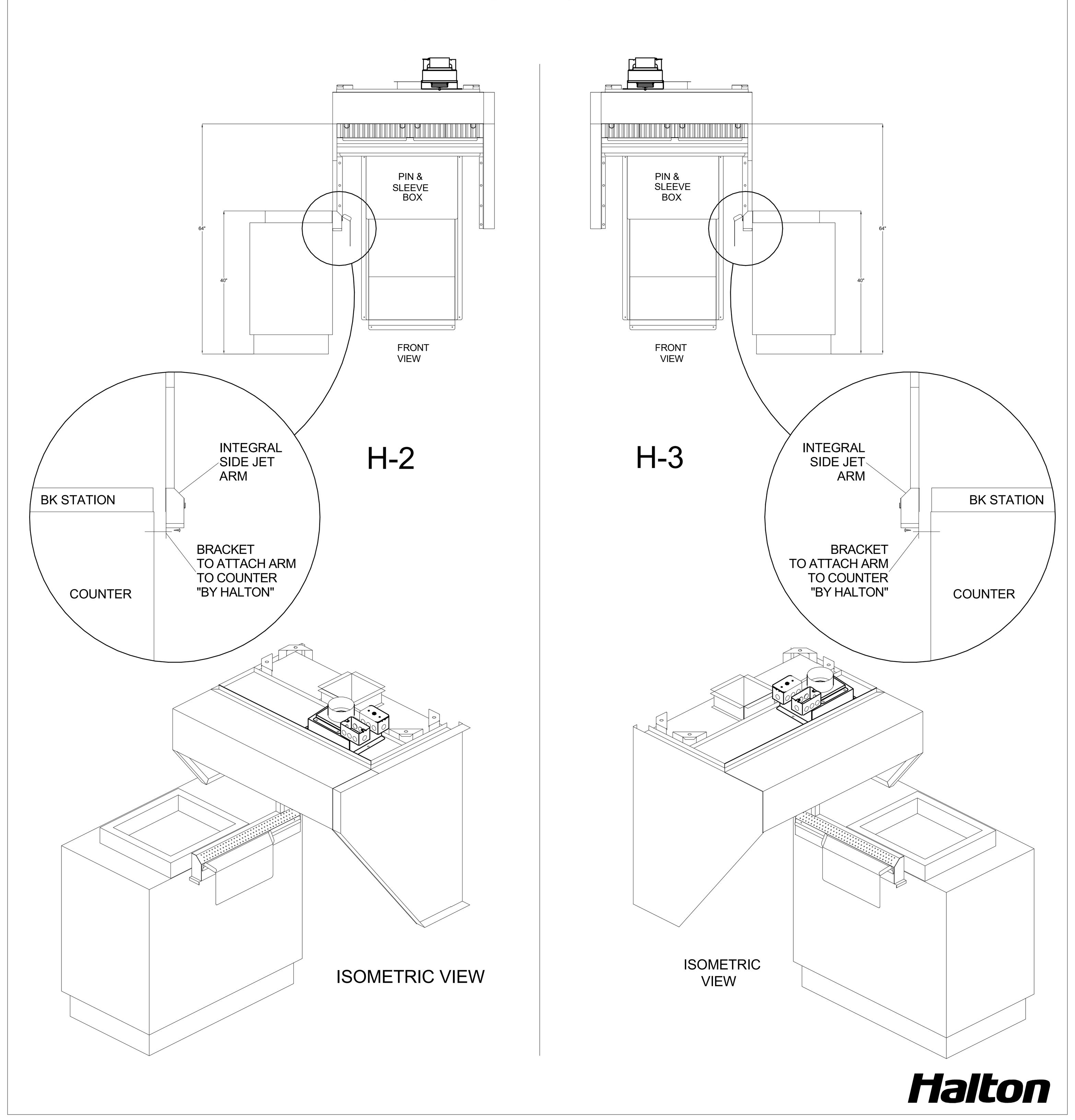
halton
CARE FOR INDOOR AIR

Sheet
MH-1.1

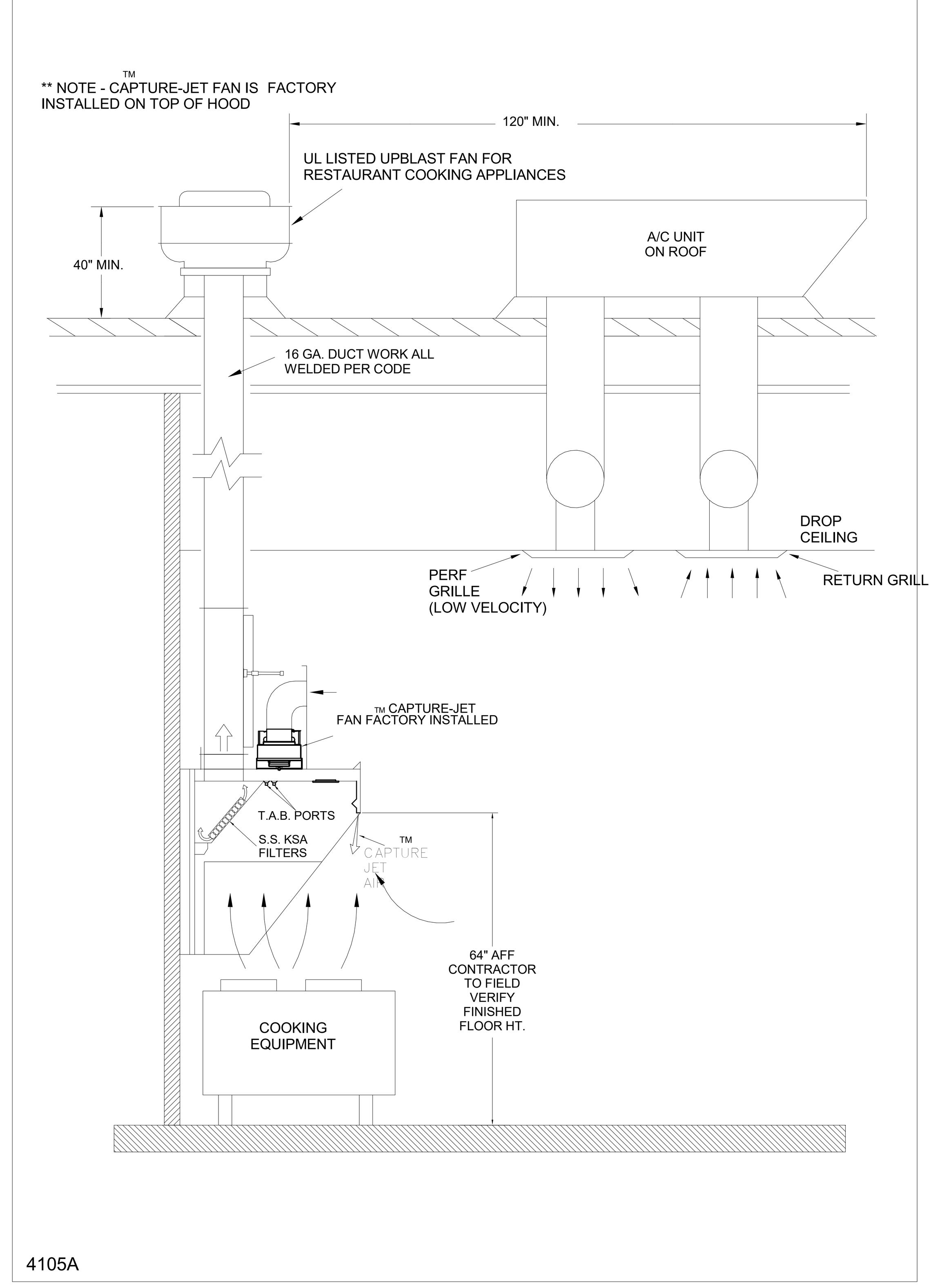
HANGER BRACKET DETAIL



INTEGRAL SIDE JET ARM



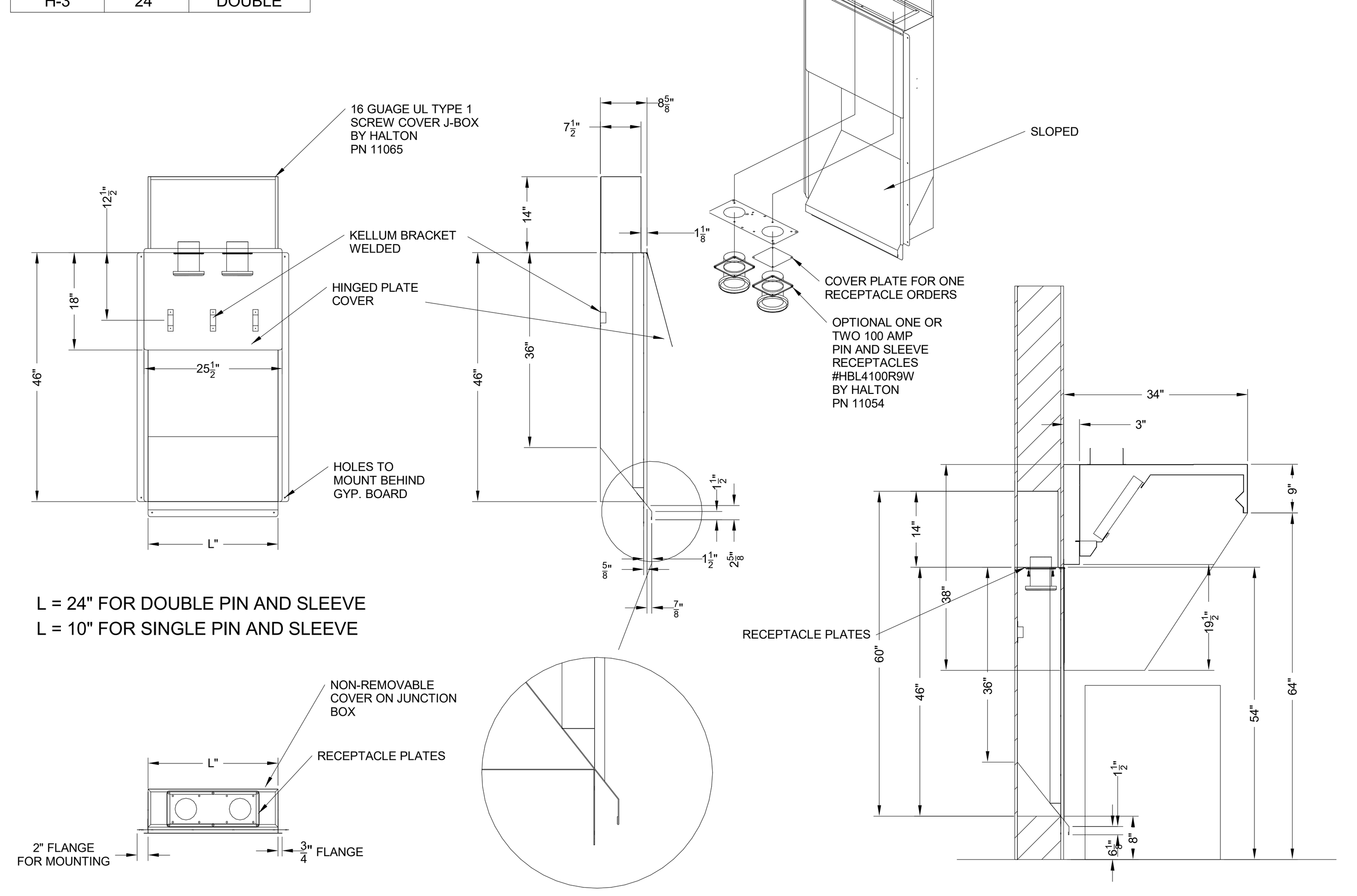
TYPICAL INSTALLATION



PIN & SLEEVE BOX DETAIL

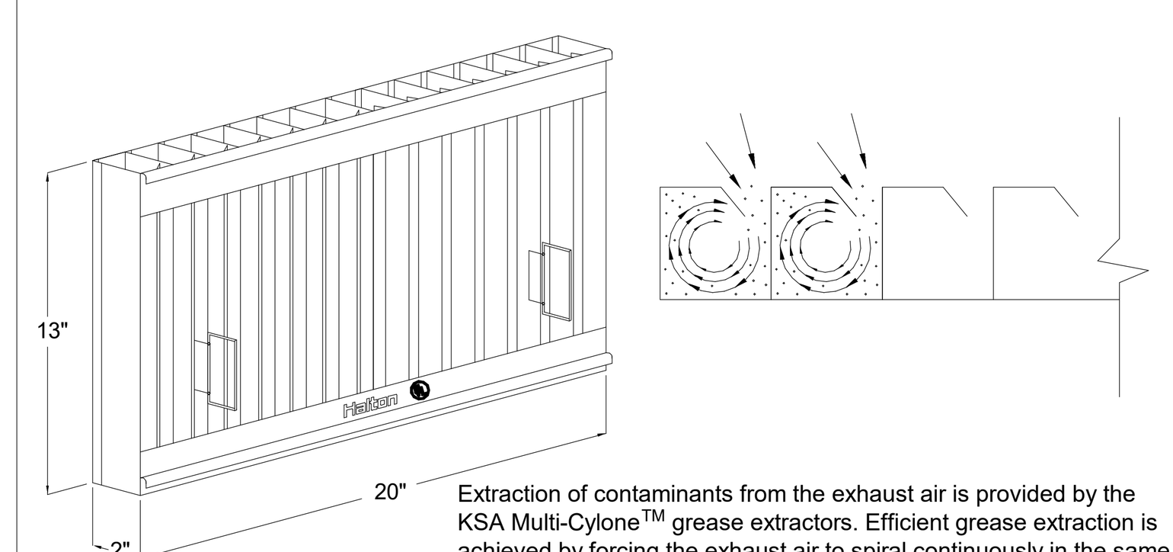
HOOD #	PIN & SLEEVE LENGTH	RECEPTACLE
H-2	24"	DOUBLE
H-3	24"	DOUBLE

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

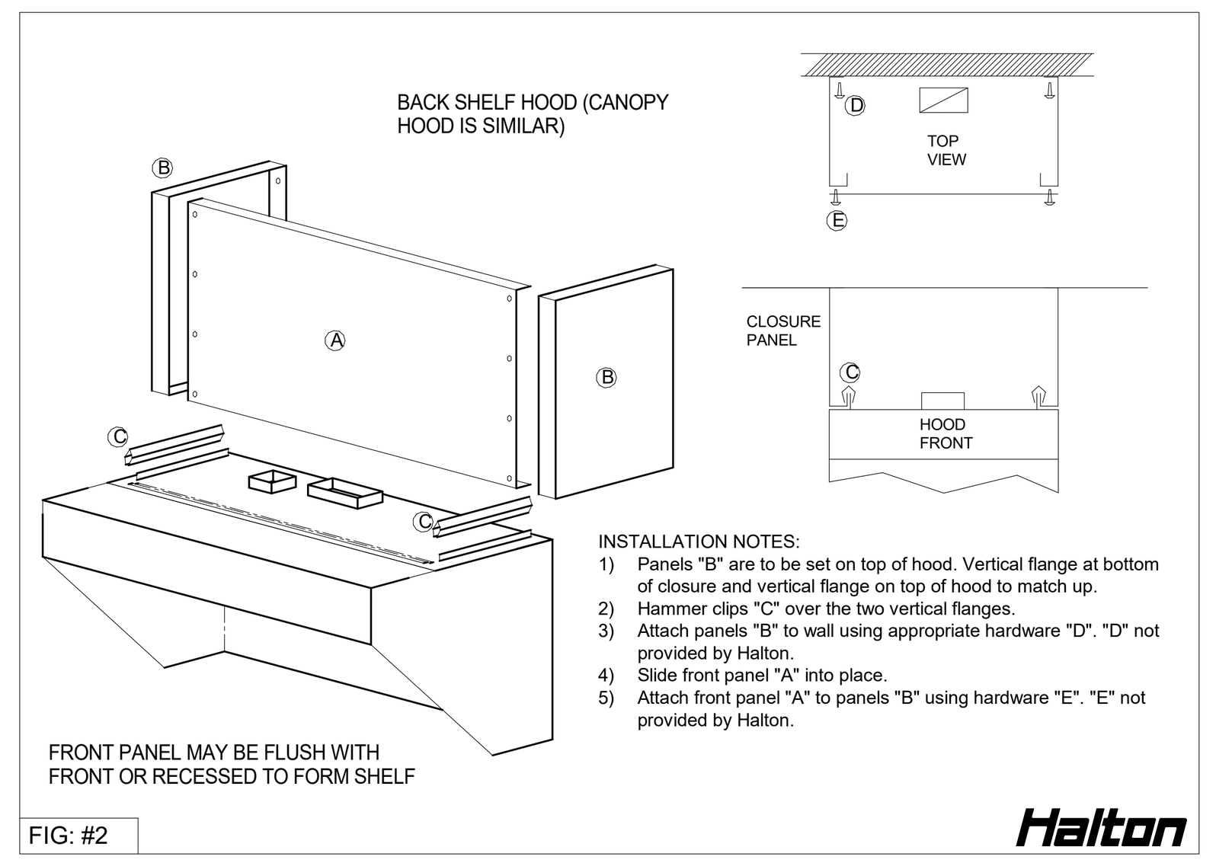


FOR REFERENCE ONLY

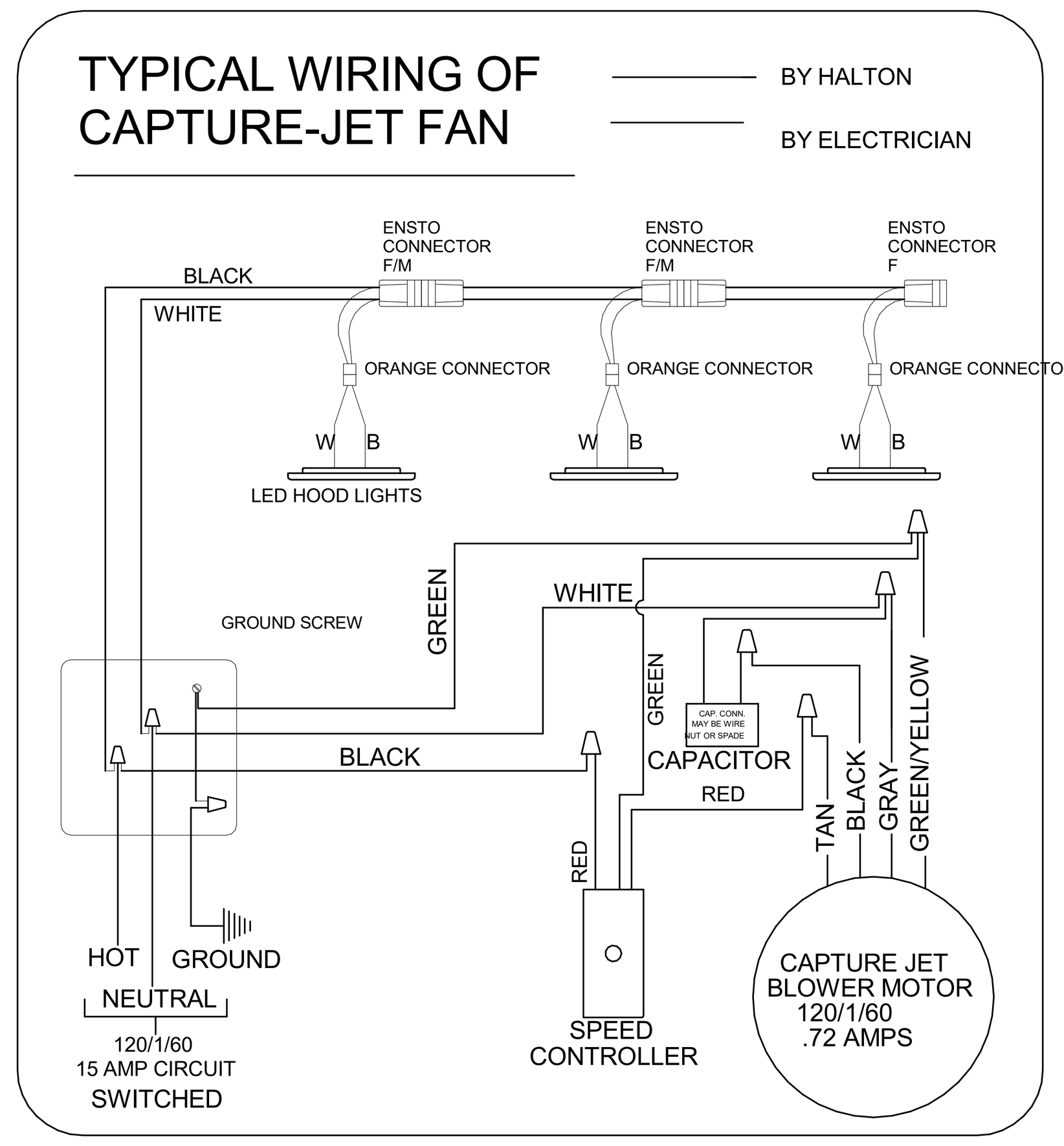
KSA Grease Extractor

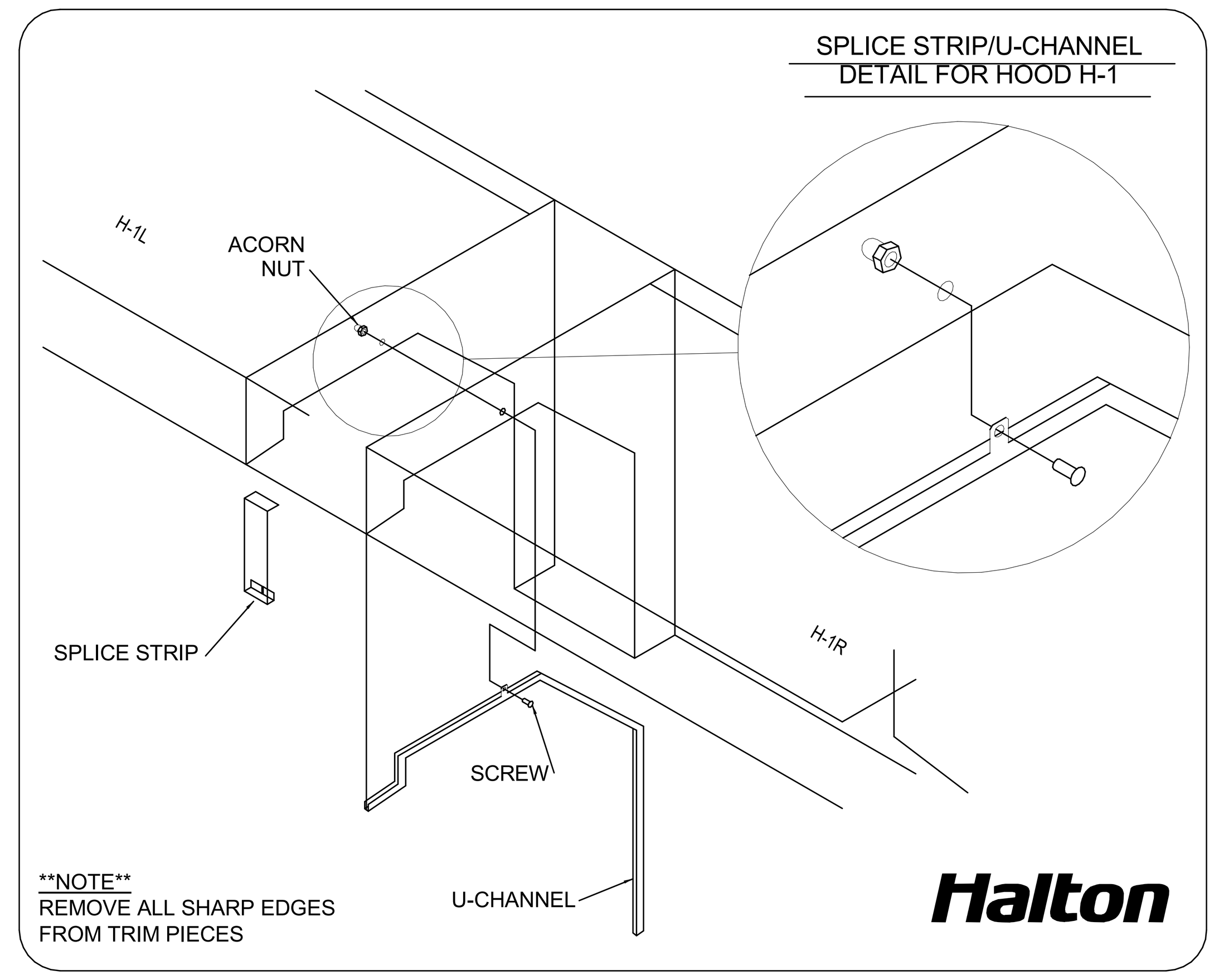


Extraction of contaminants from the exhaust air is provided by the KSA Multi-Cyclone™ grease extractors. Efficient grease extraction is achieved by forcing the exhaust air to spiral continuously in the same direction in the multiple chambers of the extractor, thus separating the grease particles from 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





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

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

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 INTERTEK 3012225
CONFORMS TO UL STD UL STD 710 CERTIFIED TO ULC STD S646

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					

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

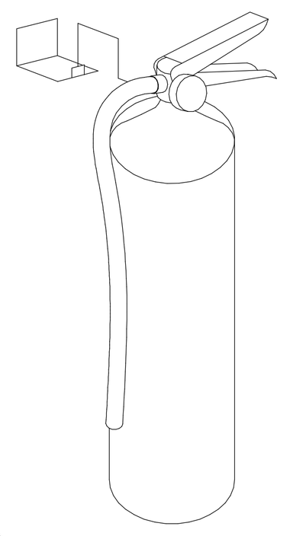
SN#: 05489

PROJECT: **CHICK-FIL-A**
LOCATION: St. Ann FSU
DRAWN BY:
DATE: 12/30/2024
SCALE: NTS
Halton Dwg:

Halton CARE FOR INDOOR AIR

Sheet MH-1.2

FIRE EXTINGUISHER



ANSUL

13051 5 LBS ABC MODEL AA05 QTY____

13052 10 LBS ABC MODEL AA10S QTY____

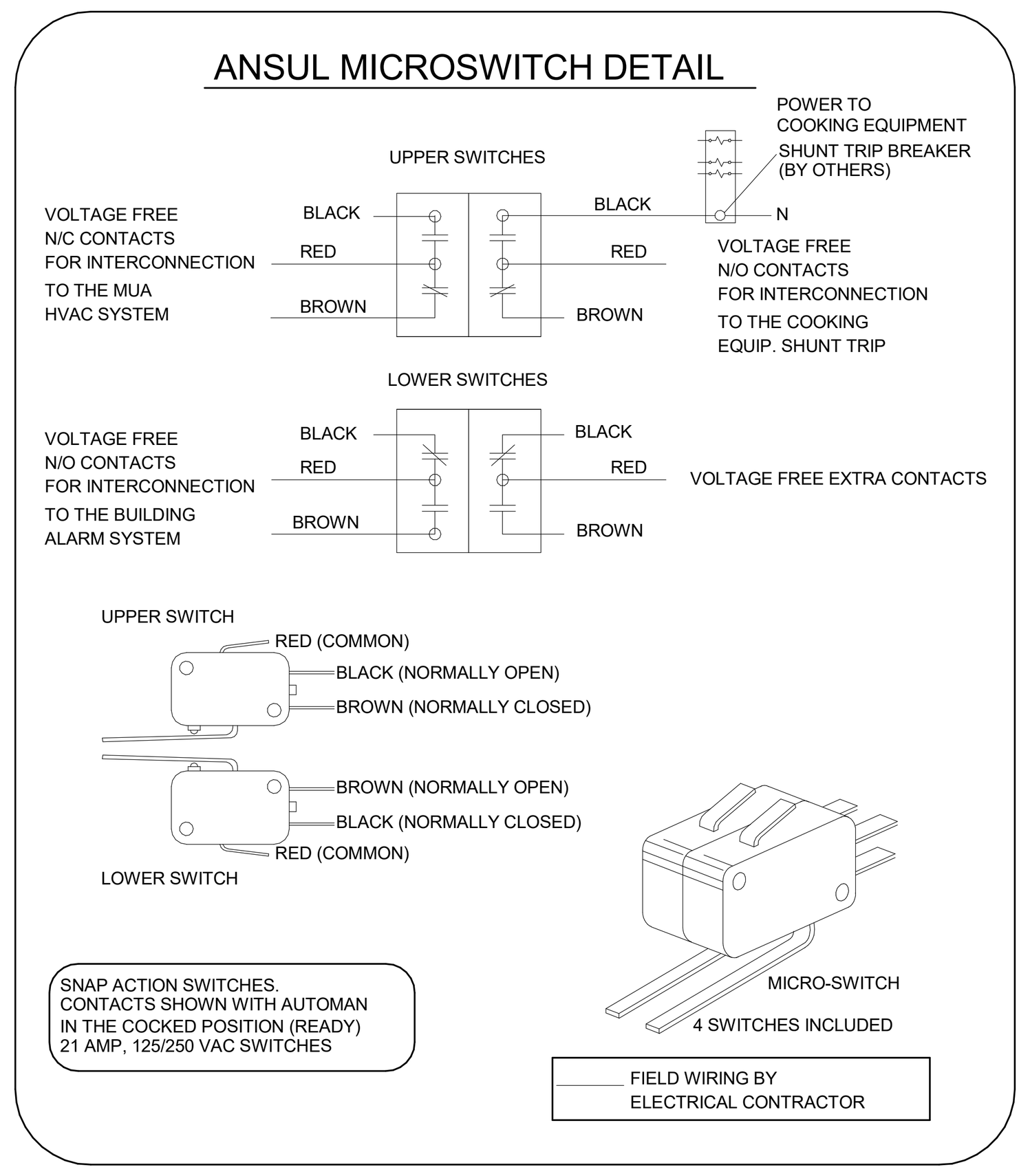
13053 6 LTR CLASS K-GUARD K01-3 QTY____

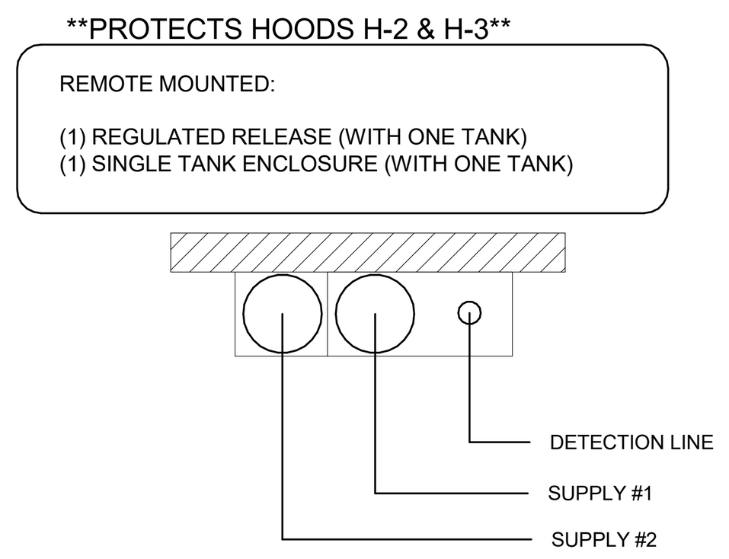
SUPPLIED BY HALTON

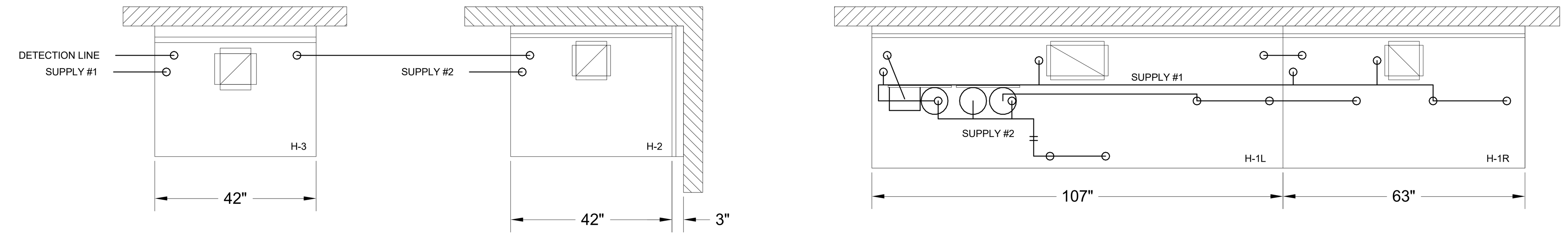
NOTE:

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

ANSUL





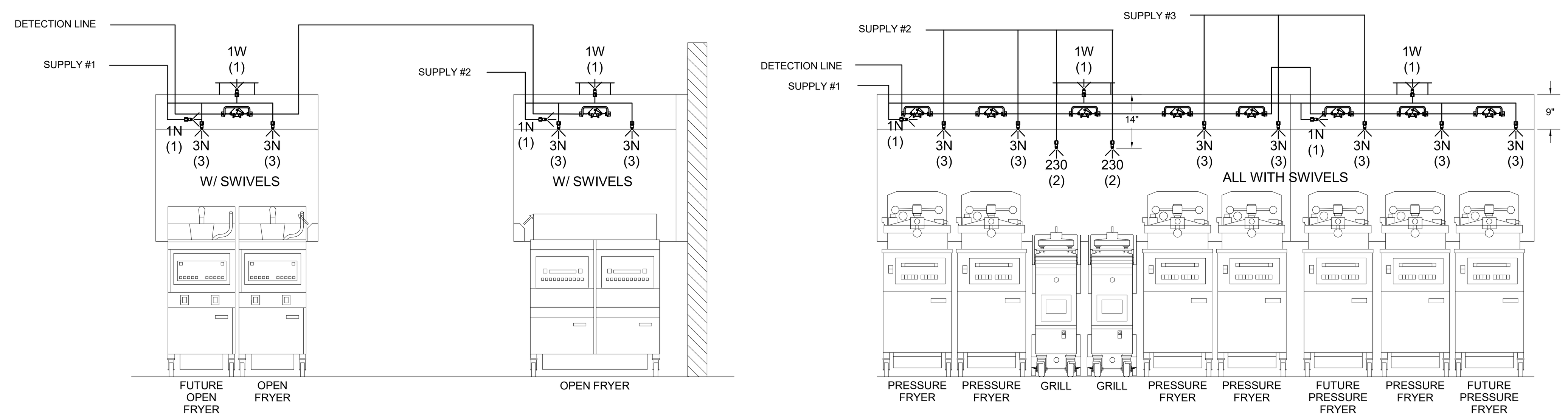


ANSUL R-102 FIRE SYSTEM
A) 6 GALLON SYSTEM (2 TANKS)
(REMOTE MOUNTED) (FOR HOOD H-2 & H-3)
B) 3/8" BLACK IRON PIPING WITH 3/8" S.S. APPLIANCE DROPS

(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

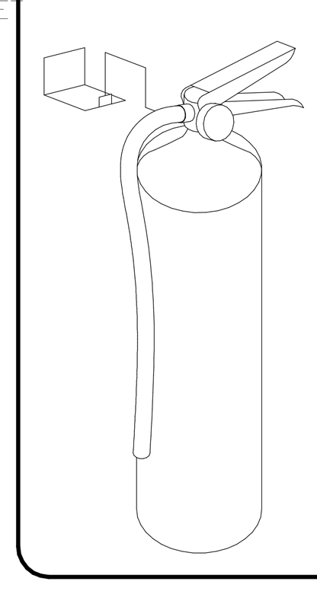
FOR REFERENCE ONLY

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

FIRE EXTINGUISHER



AMEREX

11238 5 LBS ABC MODEL B402 QTY____

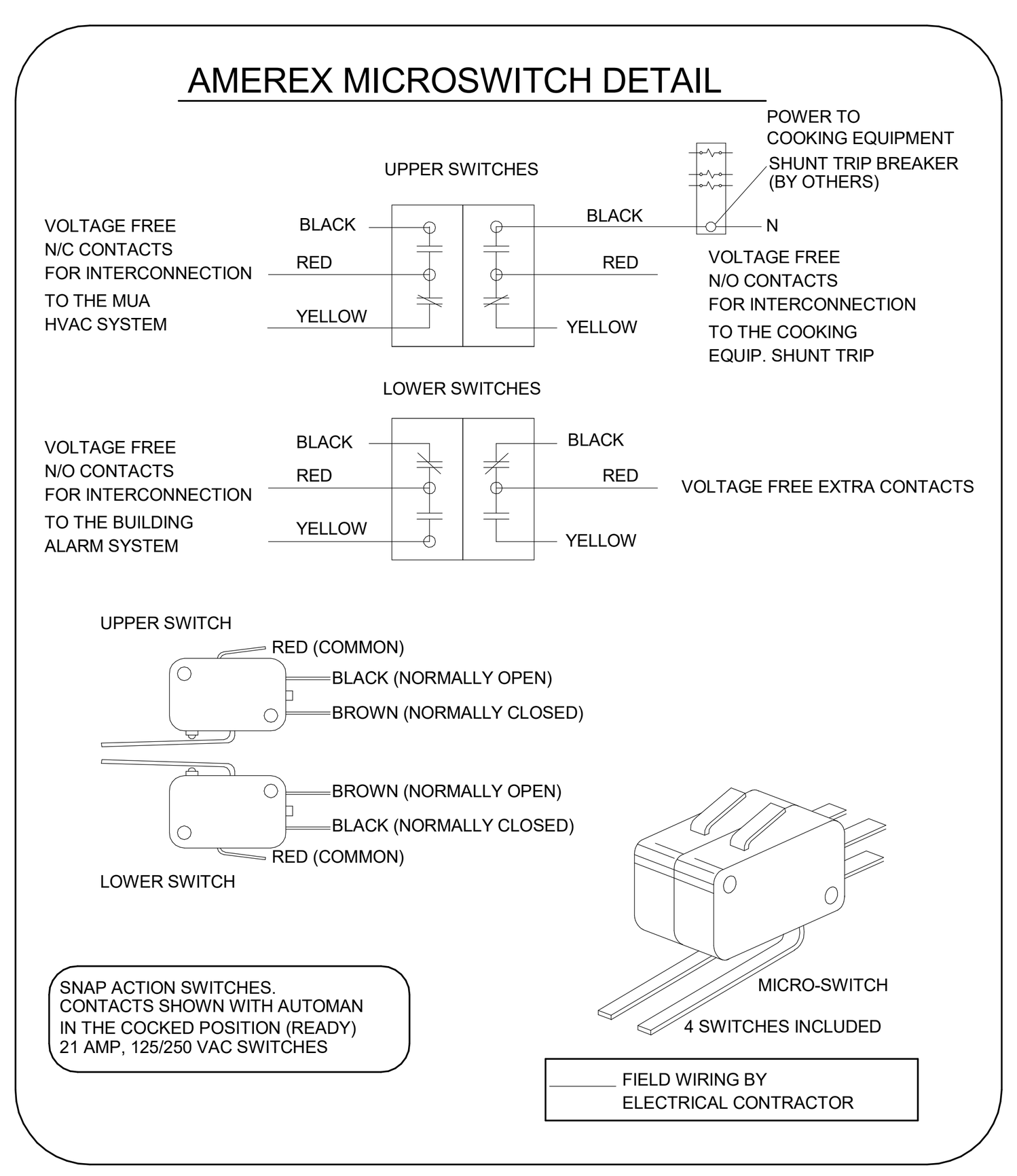
11239 10 LBS ABC MODEL B456 QTY____

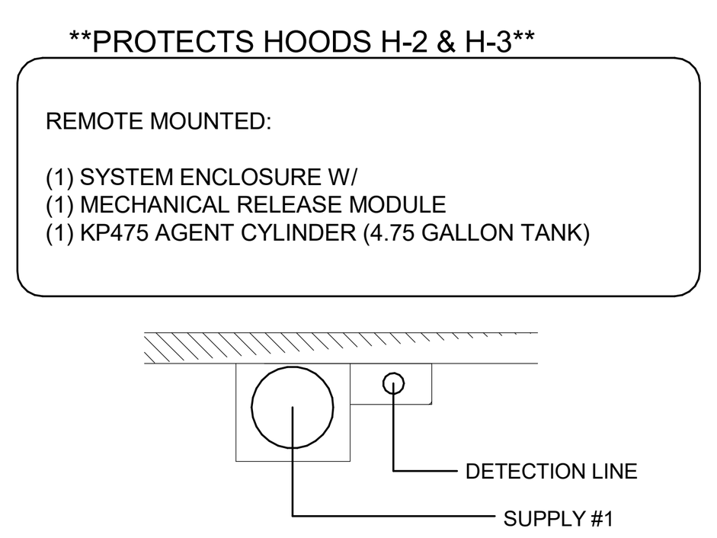
11240 6 LTR CLASS K MODEL C-260 QTY____

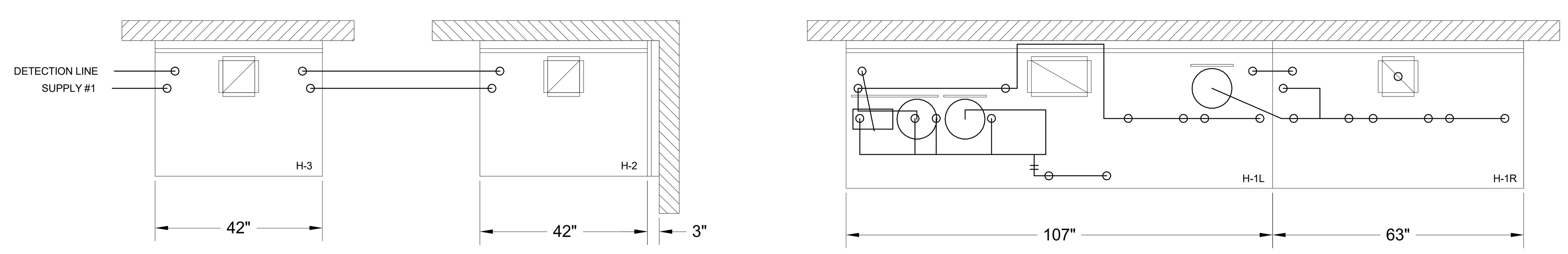
SUPPLIED BY HALTON

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

AMEREX







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

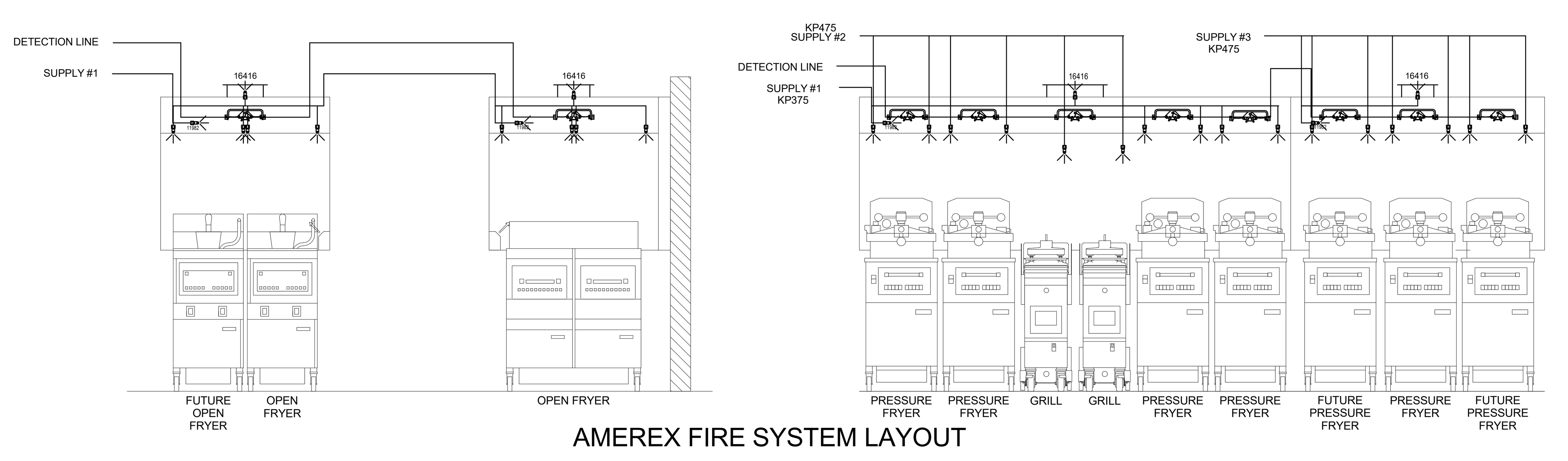
(1) SYSTEM ENCLOSURE
(1) MECHANICAL RELEASE MODULE
(2) EXTRA MICRO SWITCH ASSEMBLIES (MOUNTED IN MECHANICAL REL. MODULE)
(1) KP475 AGENT CYLINDERS (4.75 GALLON TANK)

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

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
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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

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

APPROVED BY ____ DATE ____

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101 INDUSTRIAL DRIVE
SCOTTSVILLE, KY 42164
1-270-237-5600

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

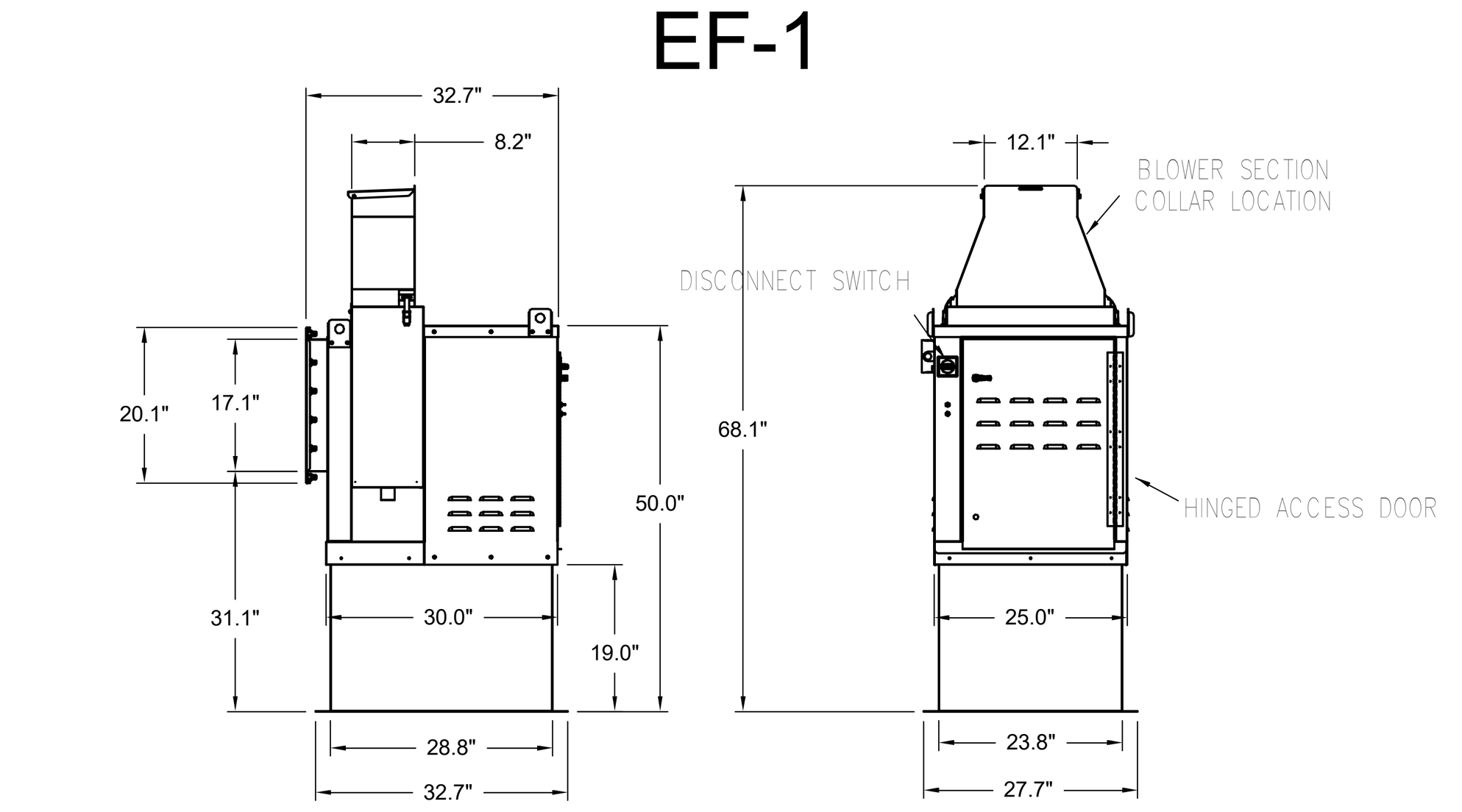
PROJECT: **CHICK-FIL-A**
LOCATION: St. Ann FSU
SN#: 05489
DRAWN BY:
DATE: 12/30/2024
SCALE: NTS
Halton Dwg:

Halton CARE FOR INDOOR AIR

Sheet MH-1.3

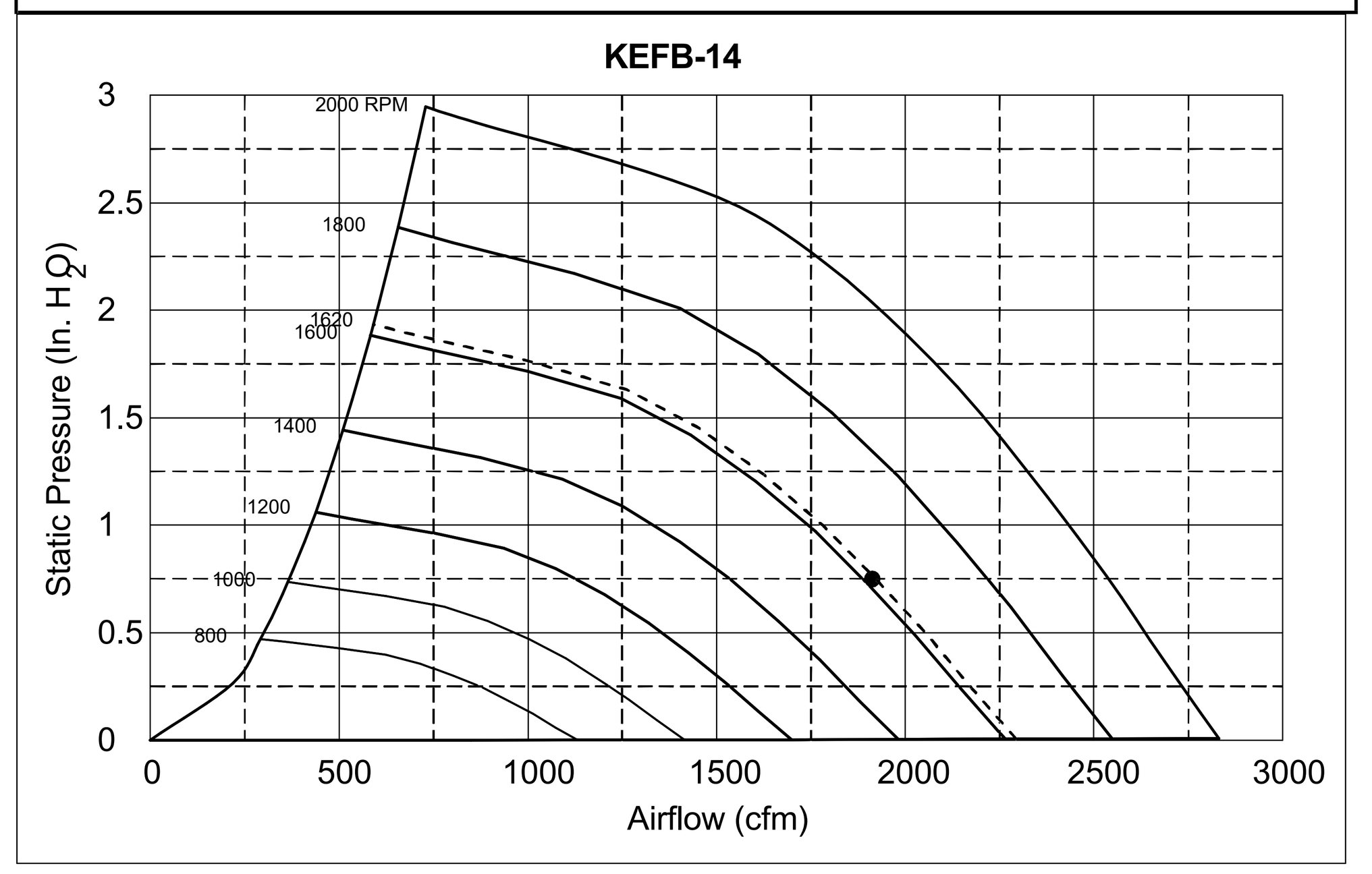
FOR REFERENCE ONLY

EF-1

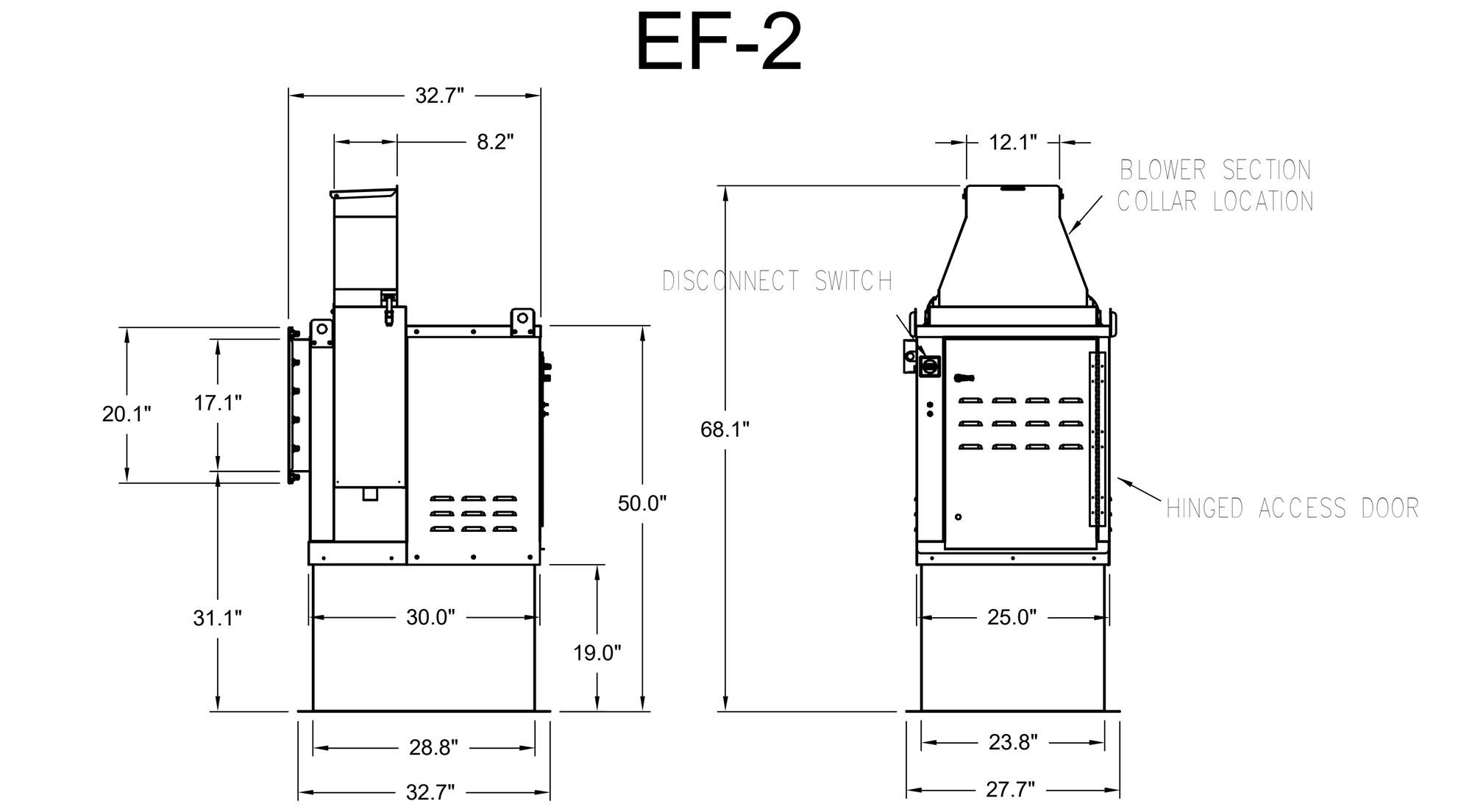


Halton KEFB Exhaust Fan

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

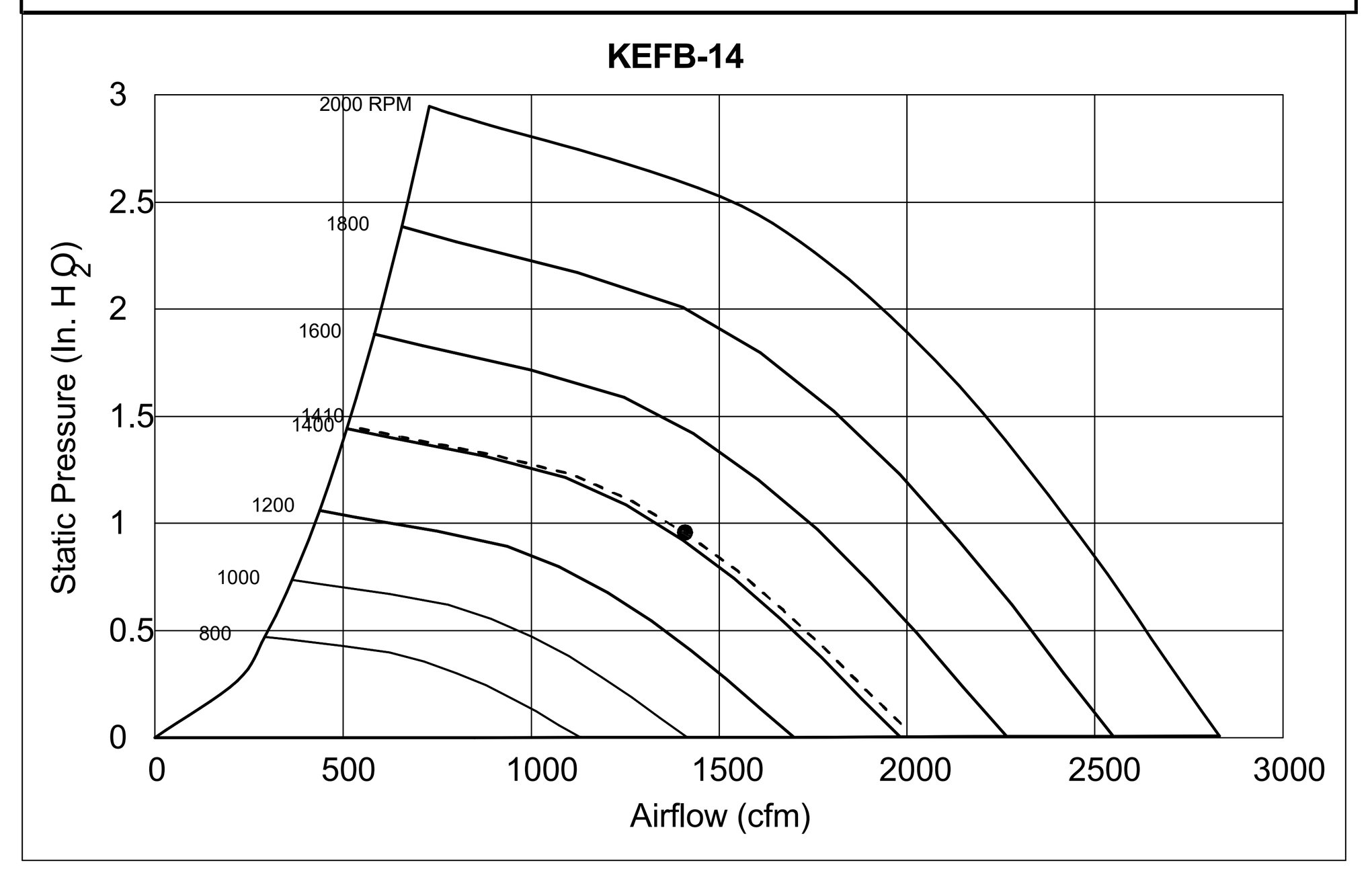


EF-2



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

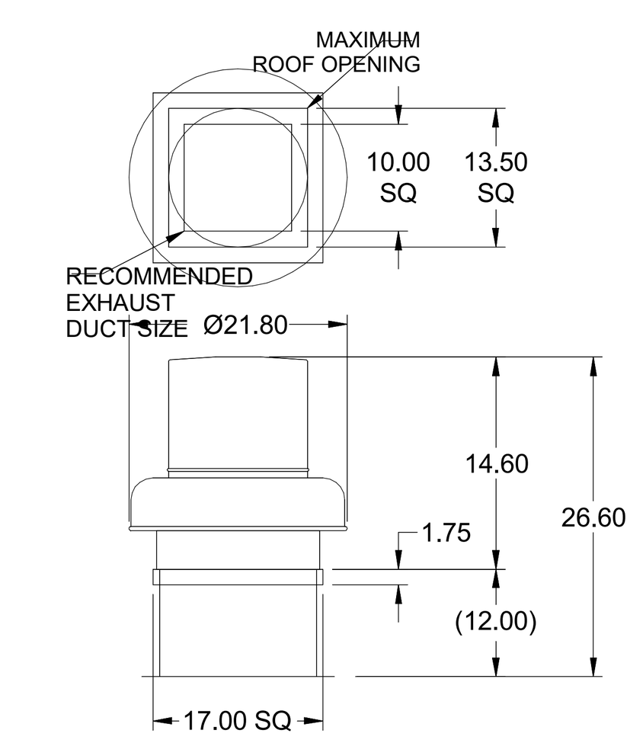
Model: XRED-095-VG

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

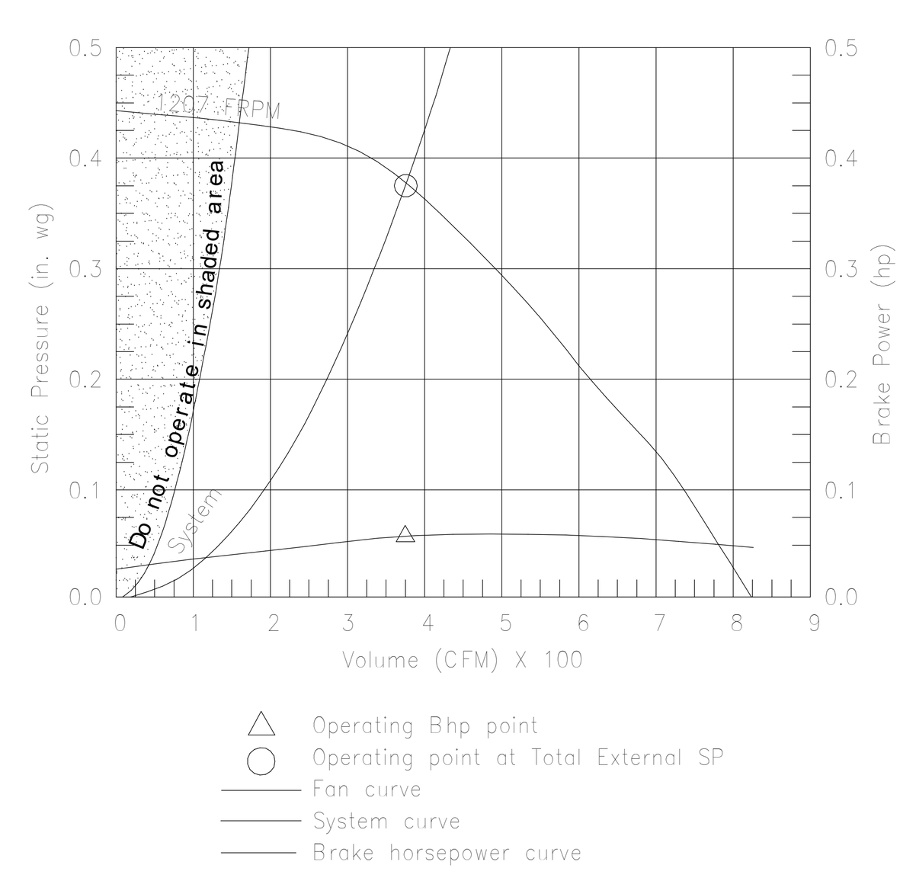
Performance	
Requested Volume (CFM)	375
Actual Volume (CFM)	375
Total External SP (in. wg)	0.375
Fan RPM	1207
Operating Power (hp)	0.05
Elevation (ft)	23
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Tip Speed (ft/min)	3,437
Static Eff. (%)	41

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.



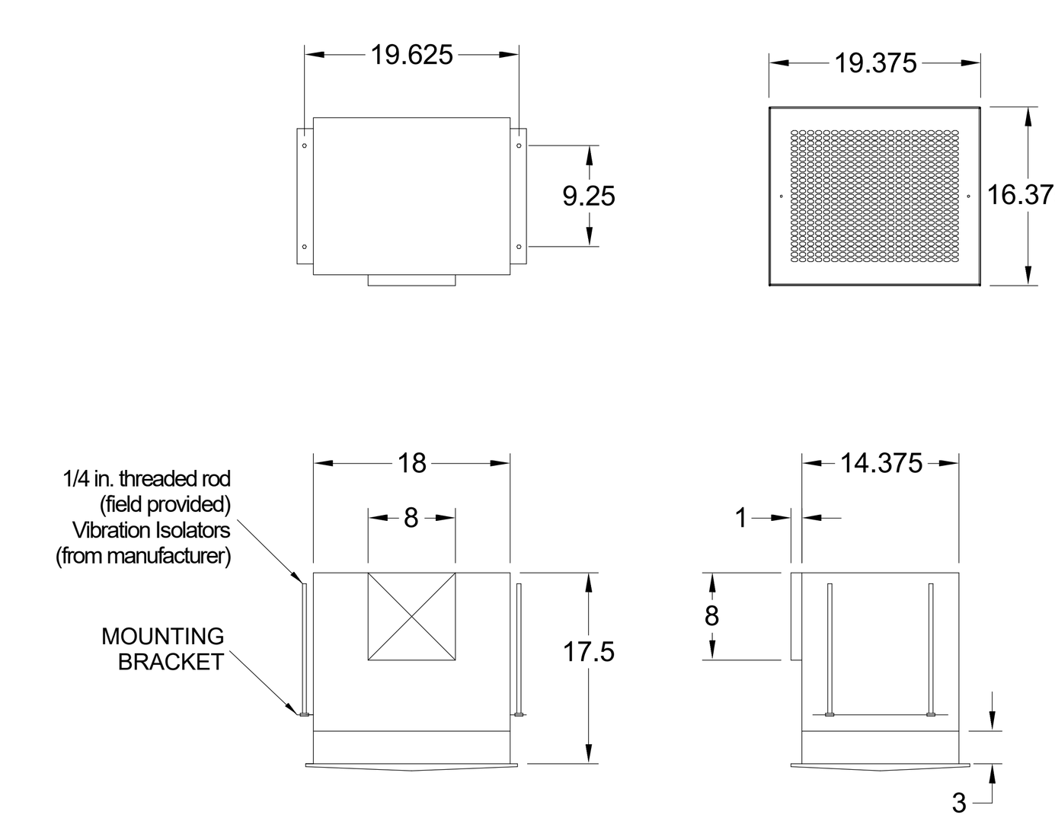
RF-1

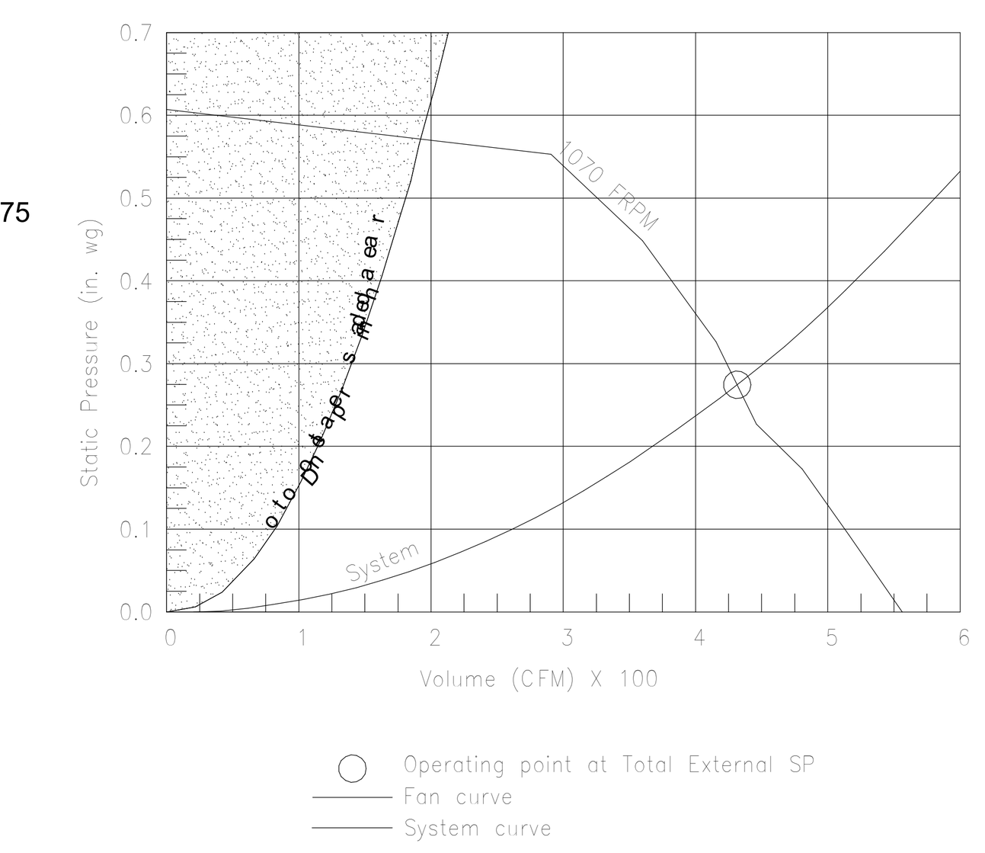
Model: SP-A510-VG

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

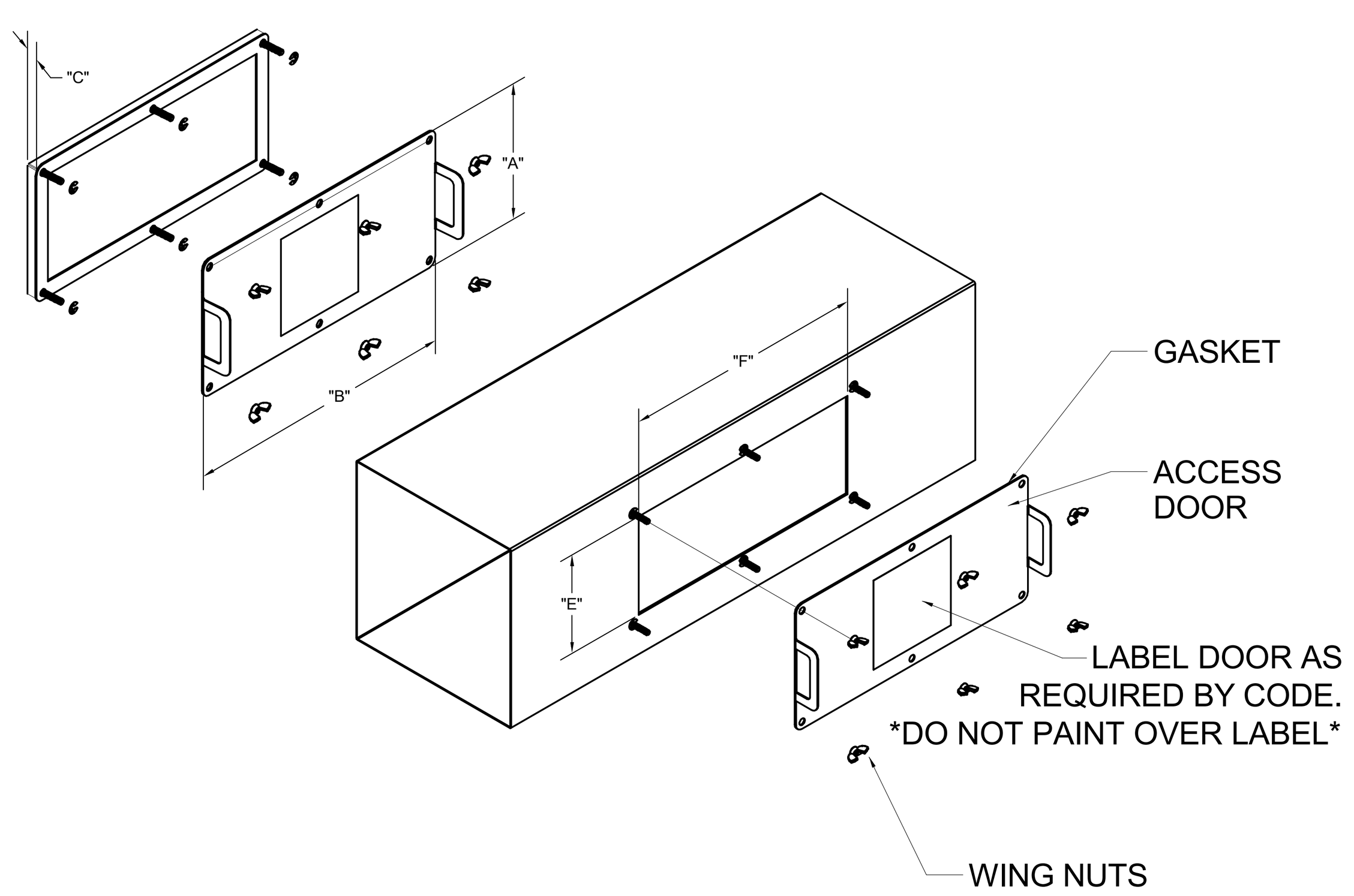




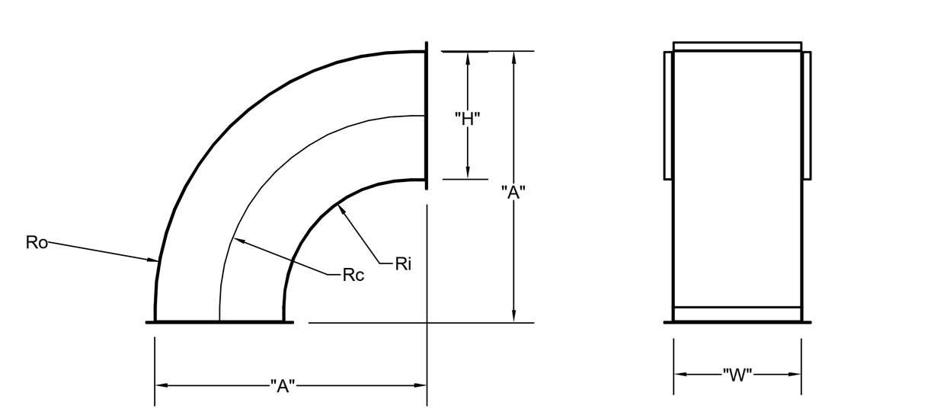
GREASE ACCESS DOOR SCHEDULE

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

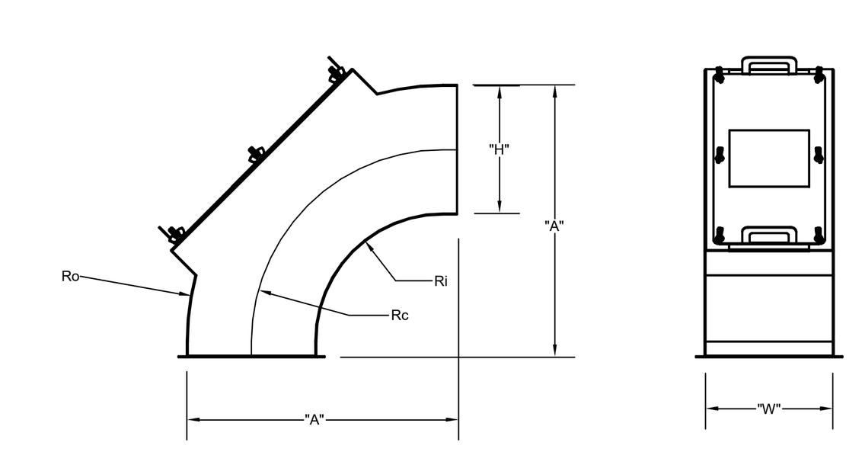
ACCESS DOORS SHALL BE U.L. 1978 LISTED OR FIELD FABRICATED, REQUIRE NO TOOLS FOR REMOVAL AND MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE IMC. ACCESS DOOR SHALL BE SECURED WITH THUMB SCREWS. ACCESS DOOR SHALL BE SEALED WITH A MINIMUM 1500 DEREE GASKET MATERIAL



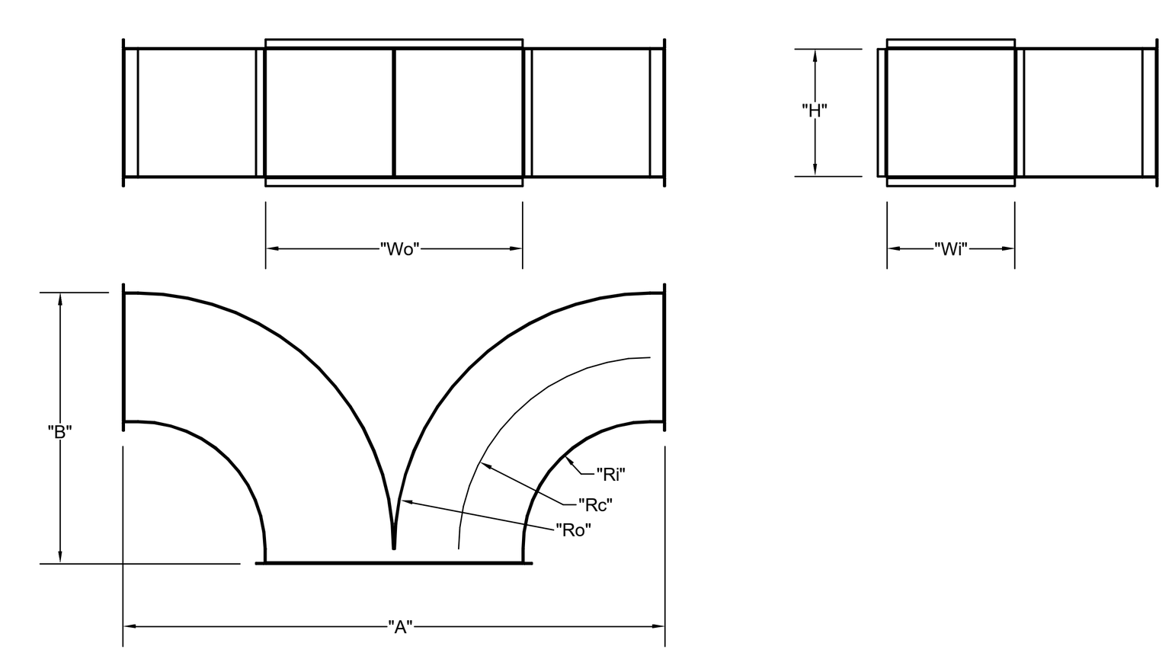
INSTALL PER MANUFACTURER'S INSTRUCTIONS



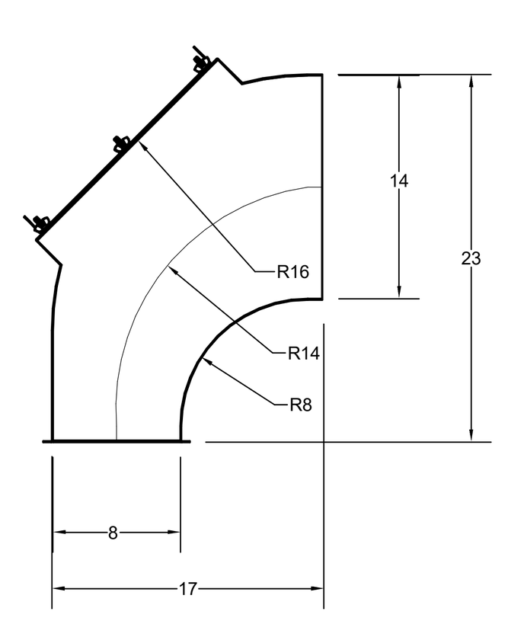
	"H"	"W"	"A"	Ro	Rc	Ri
EF-2	8	8	17	16	12	8
EF-2	8	10	17	16	12	8

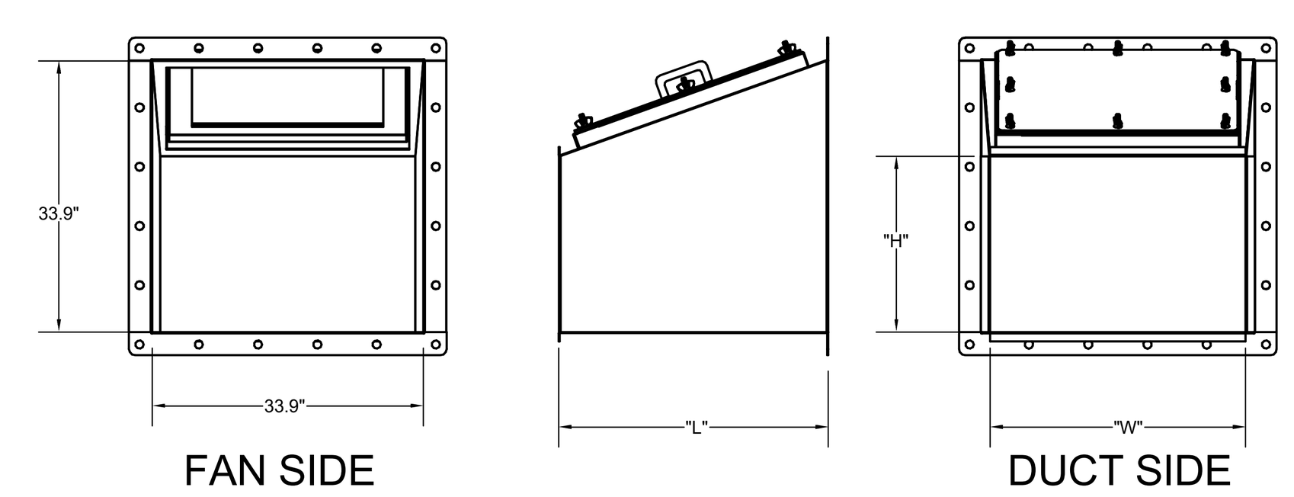


"H"	"W"	"A"	Ro	Rc	Ri
14	8	29	28	21	14
8	8	17	16	12	8

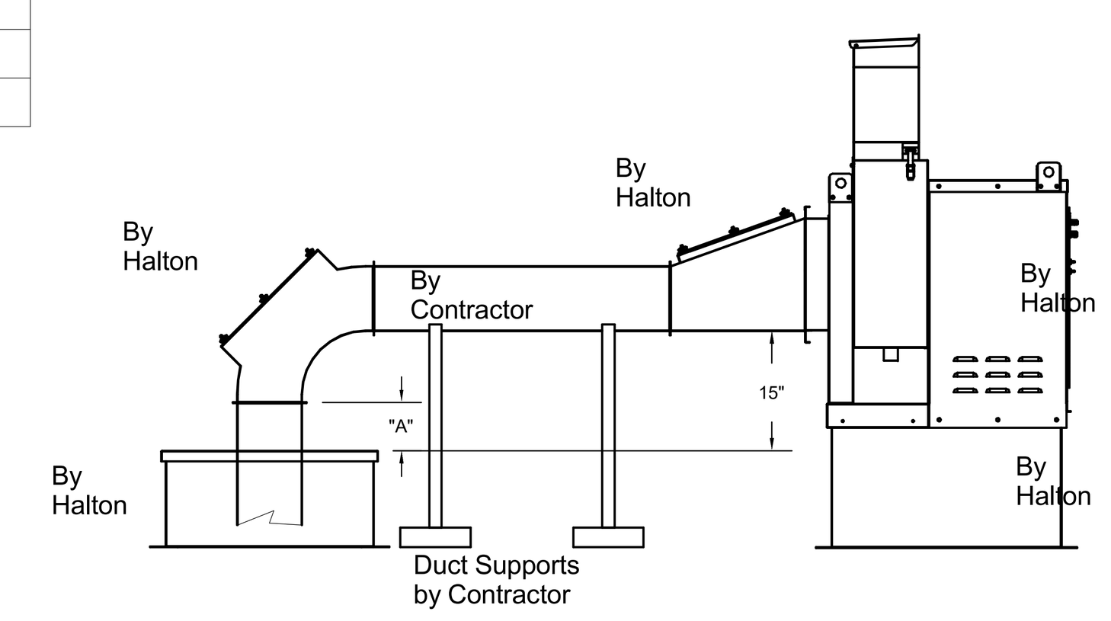


	"Wi"	"H"	Wo	Ro	Rc	Ri	"A"	"B"
EF-1	8	14	16	16	12	8	34	17
EF-2	8	10	16	16	12	8	34	17





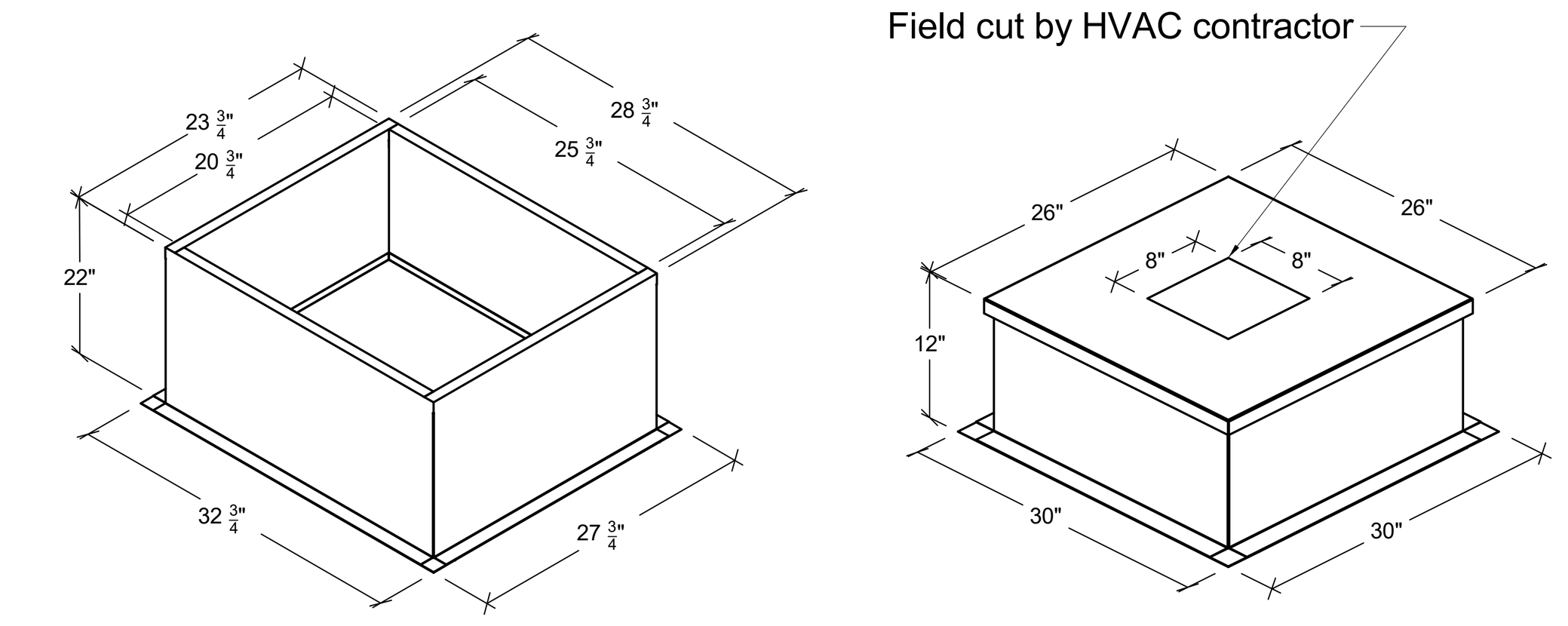
TRANSITION	"H"	"W"	"L"
EF-1 (5)	14	16	25
EF-2 (6)	10	16	17



"A" DISTANCE AVAILABLE FOR DUCT SLOPE

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

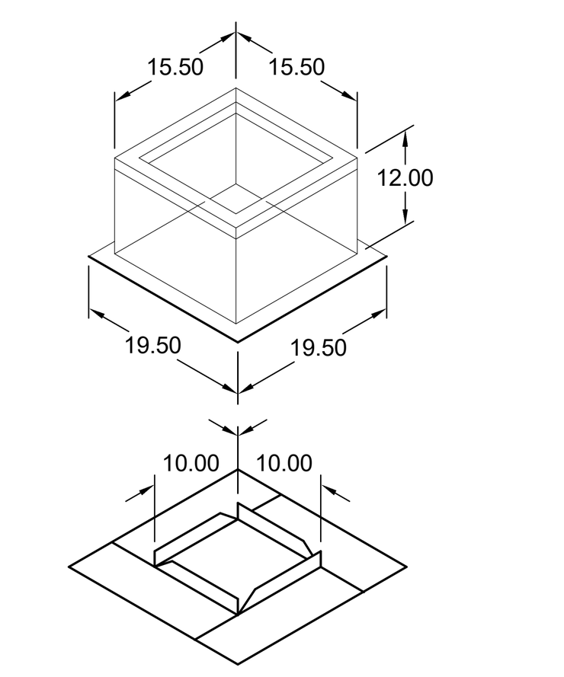
Halton Kitchen Exhaust Fan Curb
Insulated Duct Curb



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

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2. THE LOCATION AND TYPE OF COOKING EQUIPMENT.

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☐ REVISE AND RESUBMIT

APPROVED FOR FABRICATION

☐ WITH NO CHANGES ☐ WITH CHANGES AS NOTED

APPROVED BY ___ DATE ___

COMPLIES WITH LATEST NFPA-96

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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: St. Ann FSU SN#: 05489

DRAWN BY: DATE: 12/30/2024

SCALE: NTS

Halton Dwg:

Halton CARE FOR INDOOR AIR

Sheet MH-1.4

FOR REFERENCE ONLY

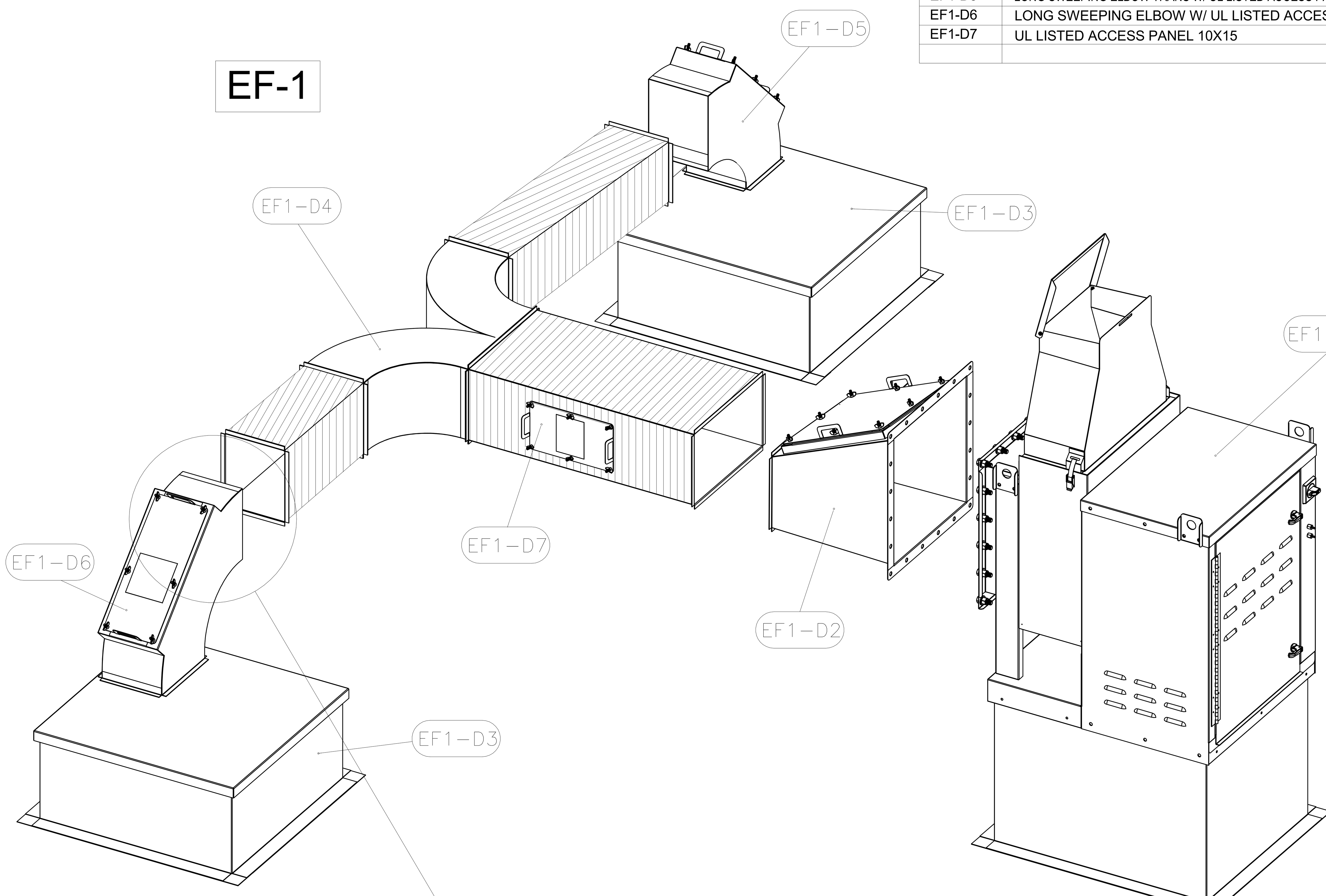
ITEM	DESCRIPTION	QTY
	EXHAUST FAN #1 (EF-1)	
EF1-D1	KEFB EXHAUST FAN W/ ROOF CURB	1
EF1-D2	FAN TRANSITION W/ UL LISTED ACCESS PANEL 14X16	1
EF1-D3	DUCT ROOF CURB W/ CAP 26X26X12	2
EF1-D4	LONG SWEEPING WYE 14X8	1
EF1-D5	LONG SWEEPING ELBOW TRANS W/ UL LISTED ACCESS PANEL 8X8 TO 8X14	1
EF1-D6	LONG SWEEPING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

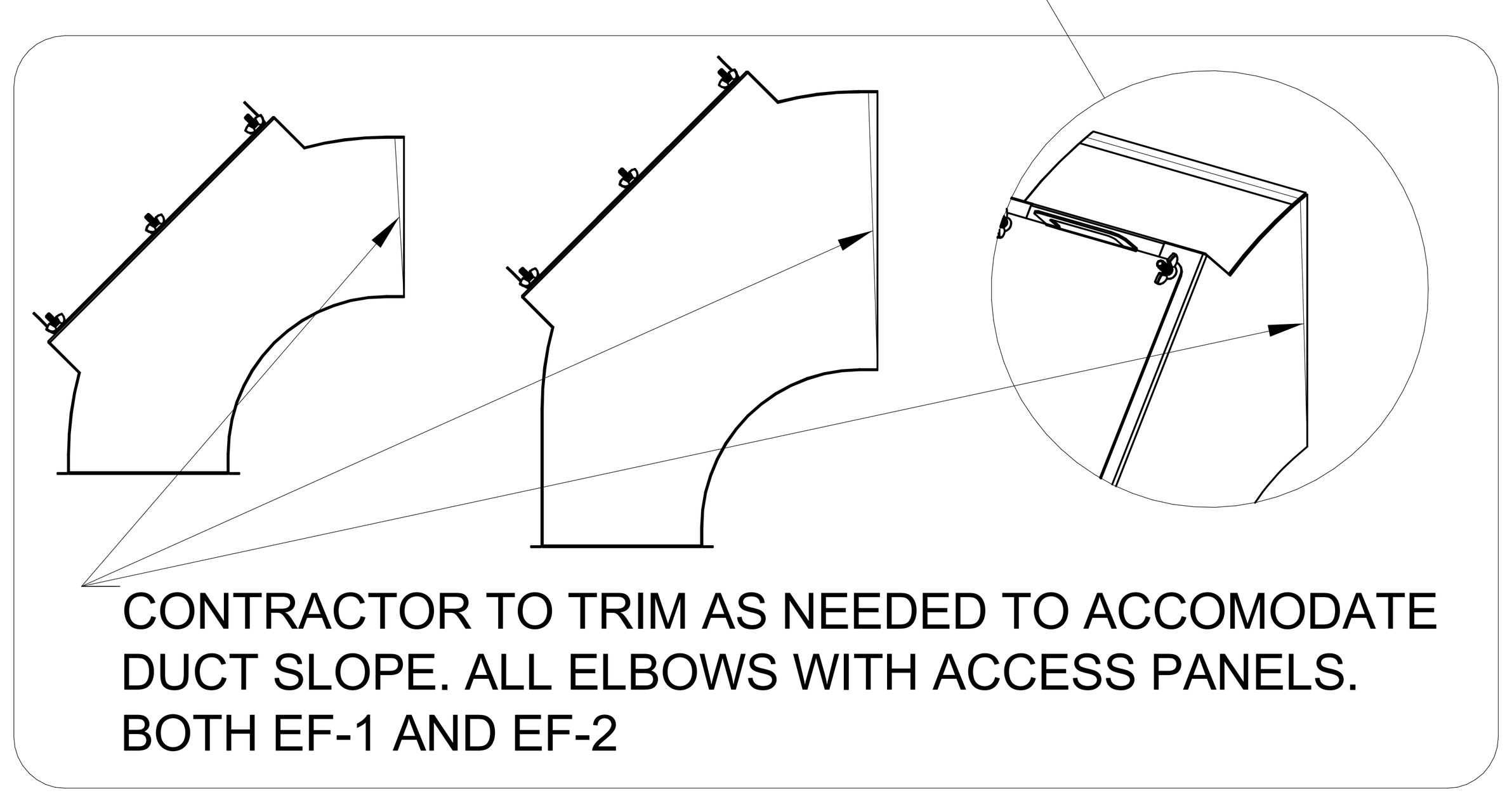
ITEM	DESCRIPTION	QTY
	EXHAUST FAN #2 (EF-2)	
EF2-D1	KEFB EXHAUST FAN W/ ROOF CURB	1
EF2-D2	FAN TRANSITION W/ UL LISTED ACCESS PANEL 10X16	1
EF2-D3	DUCT ROOF CURB W/ CAP 26X26X12	2
EF2-D4	LONG SWEEPING WYE 8X10	1
EF2-D5	LONG SWEEPING ELBOW W/ UL LISTED ACCESS PANEL 8X8	2
EF2-D6	UL LISTED ACCESS PANEL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

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

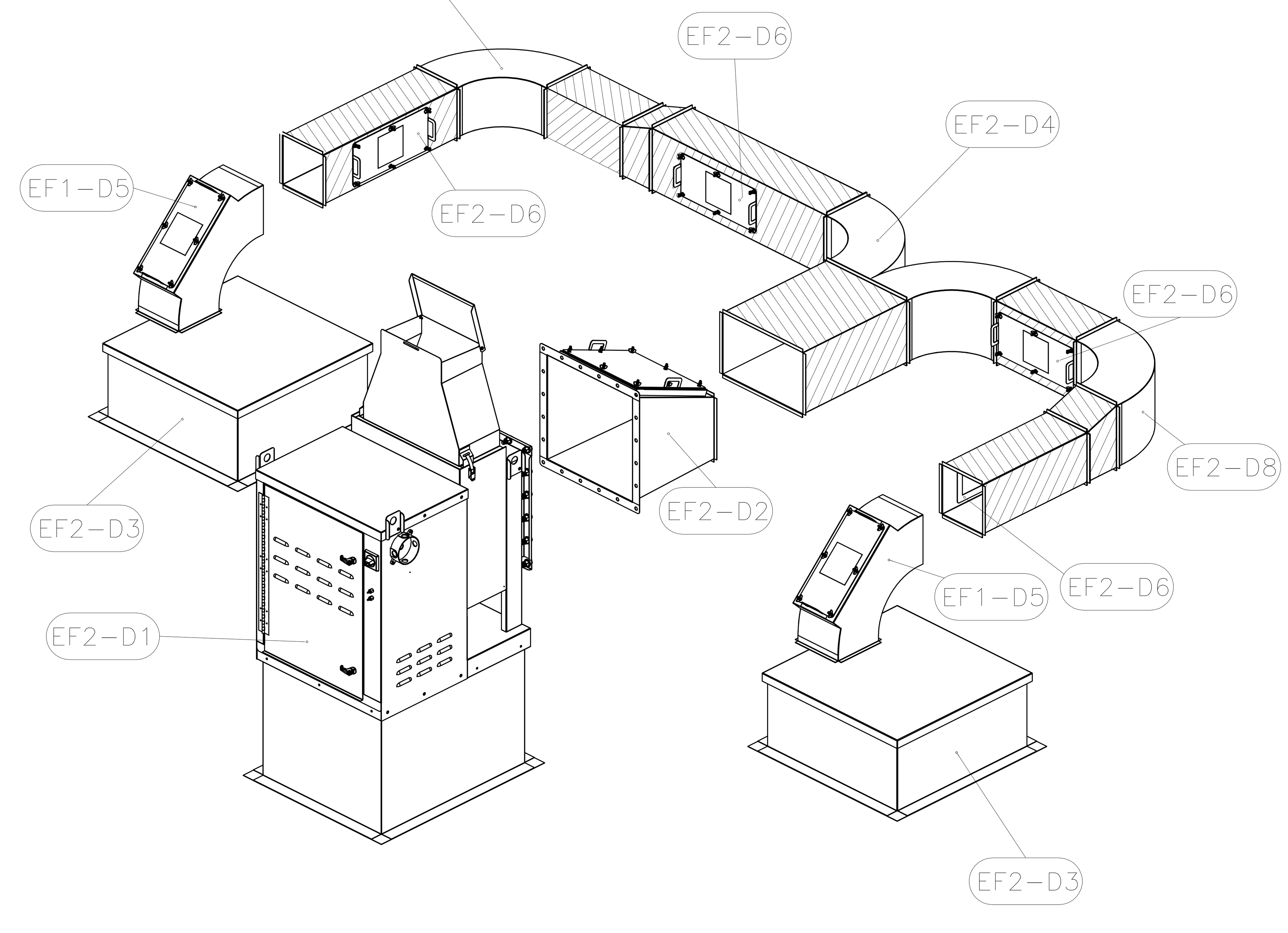
-ALL OTHER DUCTS AND FITTINGS BY HVAC CONTRACTOR. DUCT SECTIONS PROVIDED BY HVAC CONTRACTOR ARE SHOWN IN ORDER TO DEPICT TOTAL SYSTEM DESIGN. DUCT SECTIONS SHOWN WITH UL LISTED ACCESS PANELS, THAT ARE NOT HALTON PROVIDED LONG SWEEPING ELBOWS OR FAN TRANSITIONS, ARE PROVIDED BY HVAC CONTRACTOR. THE UL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

EF-1





EF-2



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

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

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