

**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 RAIRS ARE NOT INTENDED TO AND SHALL NOT SUPPORT THE WEIGHT OF THE DUCT.
- F. ALL DUCT WRAP SHALL BE MINIMUM 2" THICK, 3/4 PCF AND 6 R-VALUE INSTALLED WITH EITHER A VAPOR BARRIER WITH MAXIMUM PERMEANCE 0.05 OR A MINIMUM 2 MIL ALUMINUM REINFORCED FOIL/KRAFT FACING.
- G. ALL DUCT DROPS FROM THE ROOFTOP UNITS SHALL BE EXTERNALLY INSULATED.
- H. SUPPLY AND RETURN AIR DUCTWORK SERVING ALL AREAS SHALL BE EXTERNALLY INSULATED.
- I. ALL AIR CONVEYANCE COMPONENTS SUCH AS, BUT NOT LIMITED TO DUCT, DUCT PLENUMS, GRILLES/DIFFUSERS, BACK PANS, AND BOOTS SHALL BE INSULATED. INSULATION TYPE IS COVERED ELSEWHERE IN THIS SPECIFICATION.
- J. RESTROOM RECTANGULAR EXHAUST AIR DUCTWORK SHALL BE LINED WITH 1" THICK, 1-1/2 PCF INSULATION. RESTROOM ROUND EXHAUST DUCT SHALL BE EXTERNALLY INSULATED PER SECTION 2.02F.
- K. DUCT DROPS SHALL BE ISOLATED FROM UNIT VIBRATION WITH THE USE OF NFPA AND U.L. APPROVED FLEXIBLE CONNECTORS INSTALLED AT THE TOP OF BOTH SUPPLY AND RETURN DROPS.
- L. INSULATED FLEXIBLE DUCT MAY BE UTILIZED FOR RUNOUTS TO GRILLES AND DIFFUSERS ONLY IN THE HORIZONTAL POSITION AND IN MAXIMUM LENGTHS OF 4'-0", NO EXCEPTIONS.
- M. CONSTRUCTION OF FLEXIBLE DUCTWORK SHALL INCLUDE SPIRAL METAL HELIX BONDED TO A POLYESTER CORE, FIBERGLASS INSULATION WITH POLYETHYLENE OR MYLAR VAPOR BARRIER. ALL COMPONENTS SHALL HAVE APPROPRIATE U.L. APPROVAL AND SHALL BE EQUIVALENT TO THERMAFLEX MKE. FLEX DUCT SHALL HAVE A MINIMUM R-VALUE OF 6.
- N. FLEXIBLE DUCT SHALL BE INSTALLED PER THE "ADC FLEXIBLE DUCT PERFORMANCE AND INSTALLATION STANDARDS, 4TH ED" USING FOIL TAPE AND DRAWBAND ON THE INNER CORE AND TAPE OR DRAWBAND ON THE OUTER JACKET.
- O. DUCT TAPE SHALL BE EQUAL TO FASSON 181-B FX, 2-1/2" WIDE.
- P. SINGLE THICKNESS TURNING VANES SHALL BE INSTALLED AT ALL 90 DEGREE ELBOWS WHERE THE CENTERLINE RADIUS (R) IS LESS THAN THE WIDTH OF THE DUCT AND ANY ONE DIMENSION IS GREATER THAN 12".
- Q. EXTERNAL INSULATION ON BOTTOM OF DUCTS 24" OR WIDER SHALL BE SUPPORTED WITH STICK PINS ON 18" CENTERS. STICK PIN WASHERS SHALL BE COVERED WITH DUCT TAPE OR MASTIC.

**2.03 CONTROLS**

- A. SYSTEMS SHALL BE COMPLETE WITH CONNECTIONS TO CFA-500 TEMPERATURE CONTROL PANEL AS MANUFACTURED BY SUNCOAST ENVIRONMENTAL CONTROLS (S.E.C.) (PH: 877-544-6679). THE PANEL IS PROVIDED AND MOUNTED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING TERMINATIONS ARE BY THE MECHANICAL CONTRACTOR WHERE PERMITTED BY AHJ.
- B. THE SMOKE DETECTORS SHALL BE FACTORY INSTALLED AND WIRED BY THE ROOFTOP UNIT MANUFACTURER.
- C. A FACTORY INSTALLED SMOKE DETECTOR IN THE RETURN AIR SECTION OF EACH AIR CONDITIONING UNIT SHALL STOP THE INDOOR FAN AND CLOSE THE OUTSIDE AIR DAMPER IN THE EVENT OF EXCESSIVE TEMPERATURE OR SMOKE. SMOKE DETECTOR SHALL BE LOCATED PRIOR TO ANY EXHAUST FROM THE BUILDING OR MIXING WITH FRESH AIR MAKE-UP. UPON DETECTION, THE SYSTEM SHALL NOT RESTART UNTIL THE DEVICE IS MANUALLY RESET. DEVICES SHALL BE LOCATED WHERE THEY CAN BE EASILY ACCESSED AND WHERE CLEAR OF FILTERS.
- D. CHICK-FIL-A HAS A NATIONAL ACCOUNT WITH SUNCOAST ENVIRONMENTAL CONTROLS FOR THE SMOKE DETECTOR TEST/RESET ANNUCIATOR 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 ANNUCIATORS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. INSTALLATION BY MECHANICAL SHALL INCLUDE MOUNTING OF THE ANNUCIATORS 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 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 GAS TIGHT 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 THAN 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 FYREWAP. INSULATION ON ACCESS DOORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS. UNIFRAX FYREWAP 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.
10. 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.

**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.

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

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



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3/23/24

**CHICK-FIL-A**  
LINCOLN HIGHWAY FSR  
1440 E. LINCOLN HIGHWAY  
LANGHORNE, PA 19047

**FSR#05629**

BUILDING TYPE / SIZE: P14 LE BN  
RELEASE: 23.11  
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NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 23192.EH.S  
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SHEET GENERAL NOTES, LEGENDS, SYMBOLS, AND ABBREVIATIONS

SHEET NUMBER **M-001**

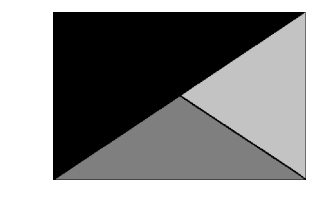
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**Chick-fil-A**

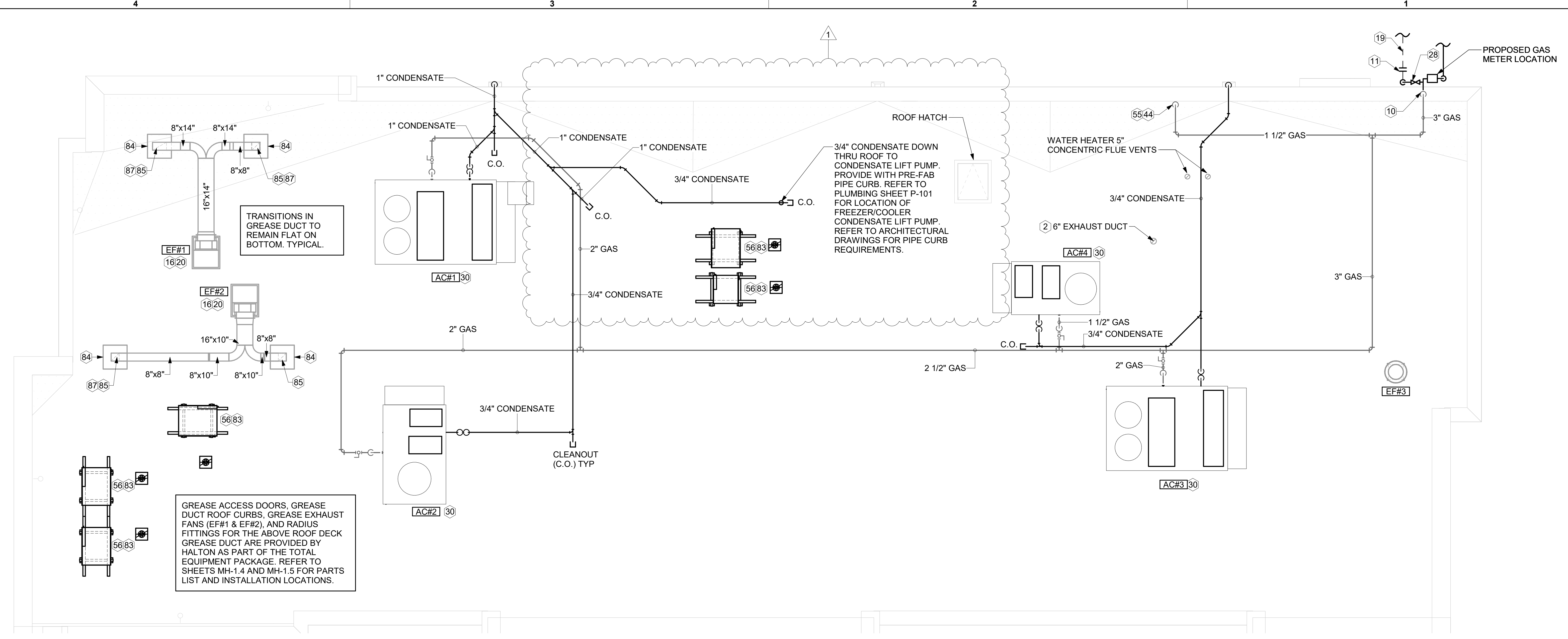
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3/23/24



**1 EQUIPMENT ROOF PLAN - TRANE**  
1/4" = 1'-0"

**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. MINIMUM TERMINATION 40" ABOVE ROOF SURFACE. 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 1-1/4" GAS DOWN THRU ROOF TO WATER HEATER. SEE DETAIL 2M-502 FOR MORE INFORMATION ON CONSTRUCTION AND PENETRATION.
- 55 SEE ARCHITECTURAL DETAILS FOR ROOFTOP PIPE PENETRATIONS.
- 56 GC SHALL PROVIDE EQUIPMENT STANDS AS MANUFACTURED 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-101 FOR CONTINUATION.
- 87 DUCT PENETRATIONS ON ROOF MUST BE AT LEAST 18" FROM ADJACENT PARAPETS.

3. GAS LOAD SCHEDULE	
EQUIPMENT	GAS LOAD
AC#1	400,000 BTUS
AC#2	250,000 BTUS
AC#3	400,000 BTUS
AC#4	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
<b>TOTAL FUTURE CONNECTED LOAD</b>	<b>1,878,000 BTUS</b>
REMARKS:	1. EQUIVALENT TO 1,878.0 CFH 2. 7" W.C. DELIVERY PRESSURE 3. DEVELOPED LENGTH: 200 FT. (METER TO AC#2) 4. GAS PIPING SIZED FOR FUTURE LOAD

Autodesk Docs://PA\_05629\_Lincoln Highway\_2023.12\_FSR05629\_Lincoln Highway\_MEC.rvt  
9/23/2024 9:00:10 AM  
30-LE-05629A-M-102-EQUIPMENT ROOF PLAN - TRANE

**CHICK-FIL-A**  
**LINCOLN HIGHWAY FSR**  
1440 E. LINCOLN HIGHWAY  
LANGHORNE, PA 19047

**FSR#05629**  
BUILDING TYPE / SIZE: P14 LE BN  
RELEASE: 23.11  
PRINTED FOR:  
CONSTRUCTION  
**REVISION SCHEDULE**

NO.	DATE	DESCRIPTION
1	3-22-24	DRAIN REVISIONS

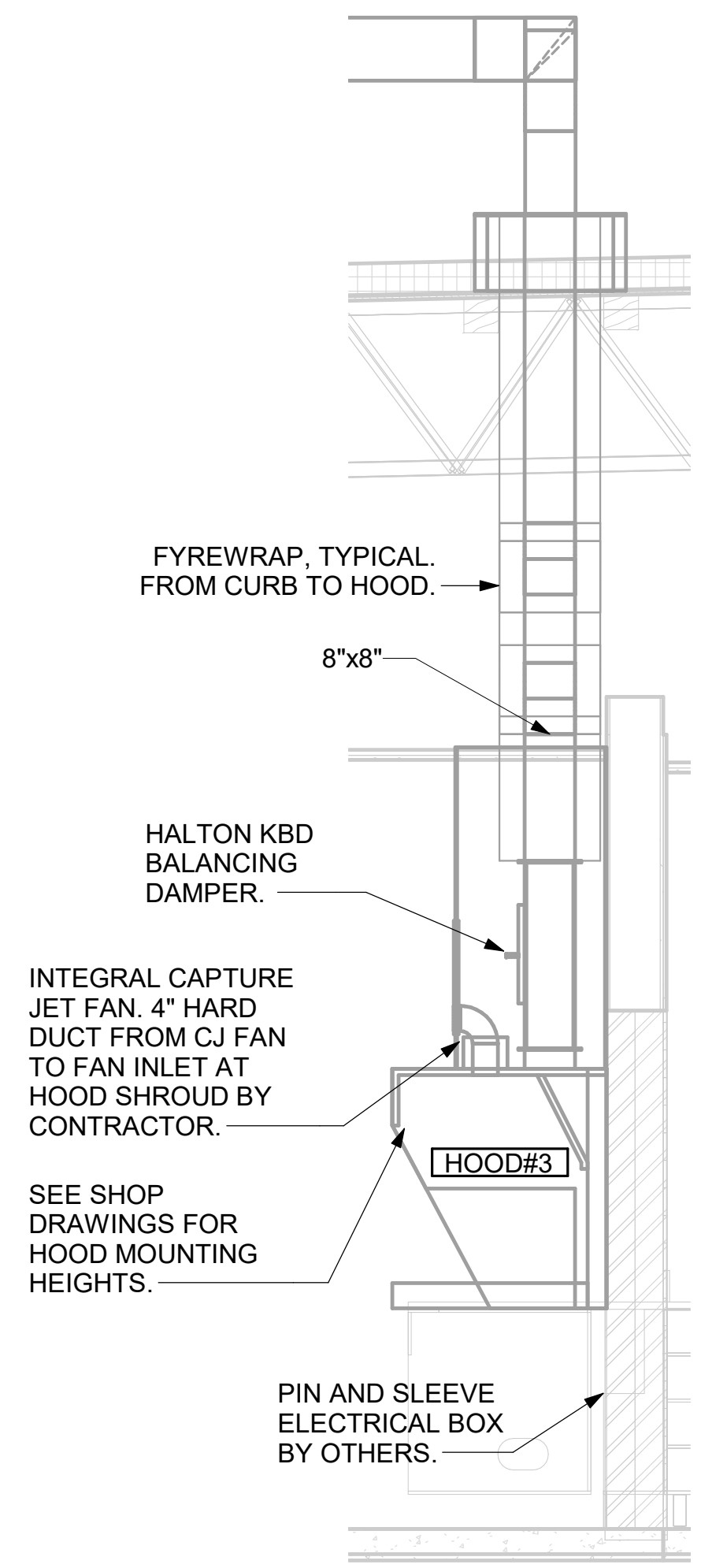
CONSULTANT PROJECT # 23192.EH.S  
DATE 02/08/2024  
DRAWN BY BLM

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SHEET  
EQUIPMENT ROOF PLAN - TRANE

SHEET NUMBER  
**M-102**

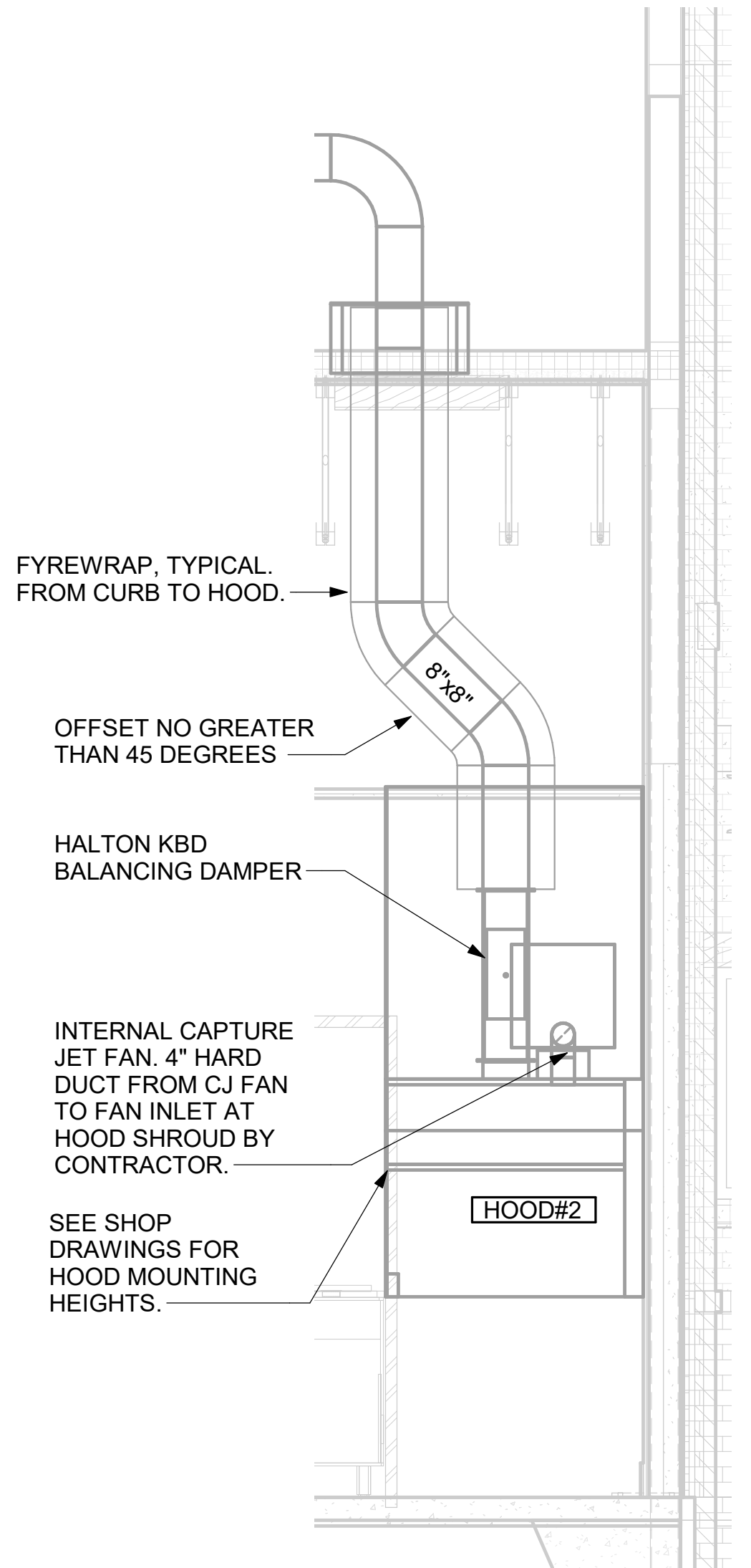


CRITICAL:  
MOUNT RIGHT SIDE OF HOOD#3 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.



6 HOOD ELEVATION - HOOD#3  
NOT TO SCALE

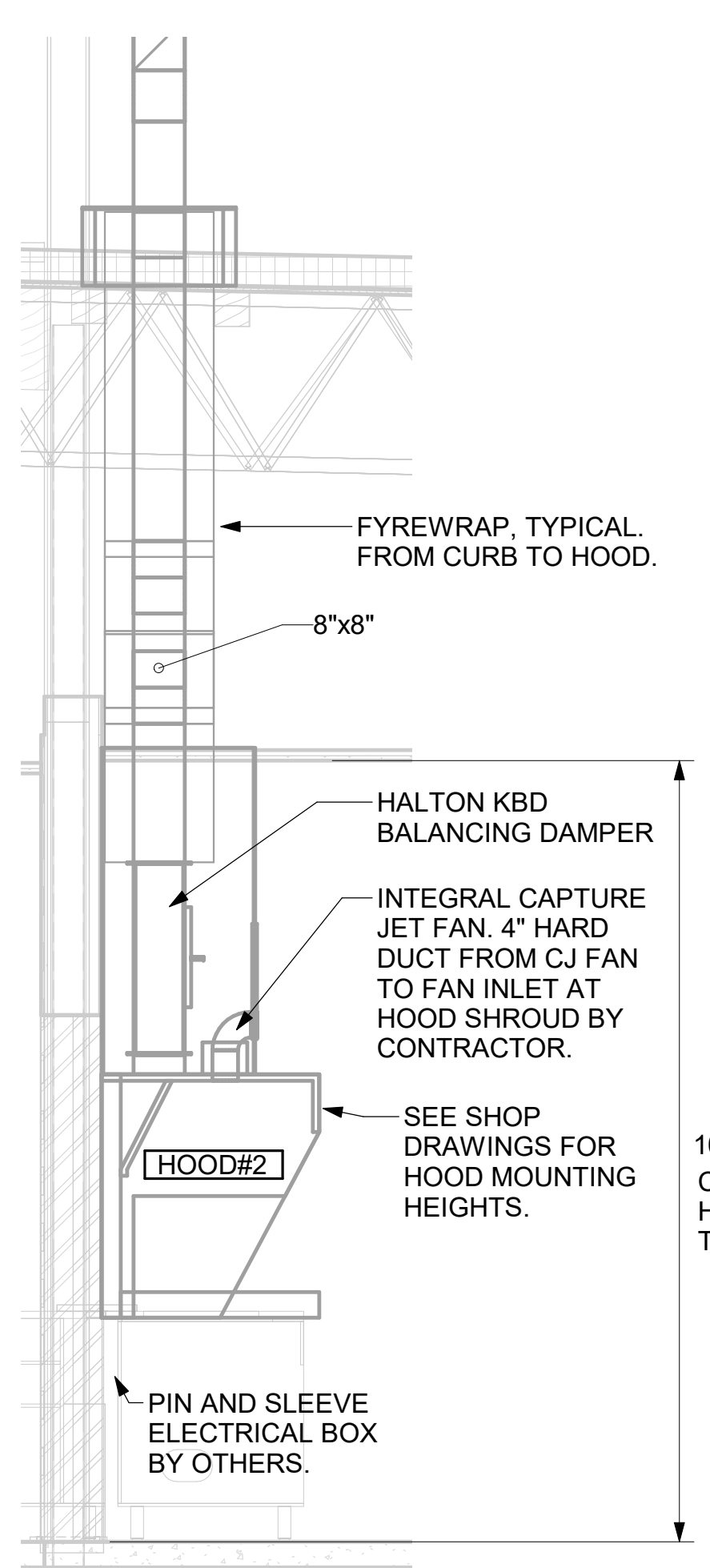
CRITICAL:  
MOUNT LEFT SIDE OF HOOD#2 FLUSH WITH FINISHED EDGE OF PASS THRU OPENING.



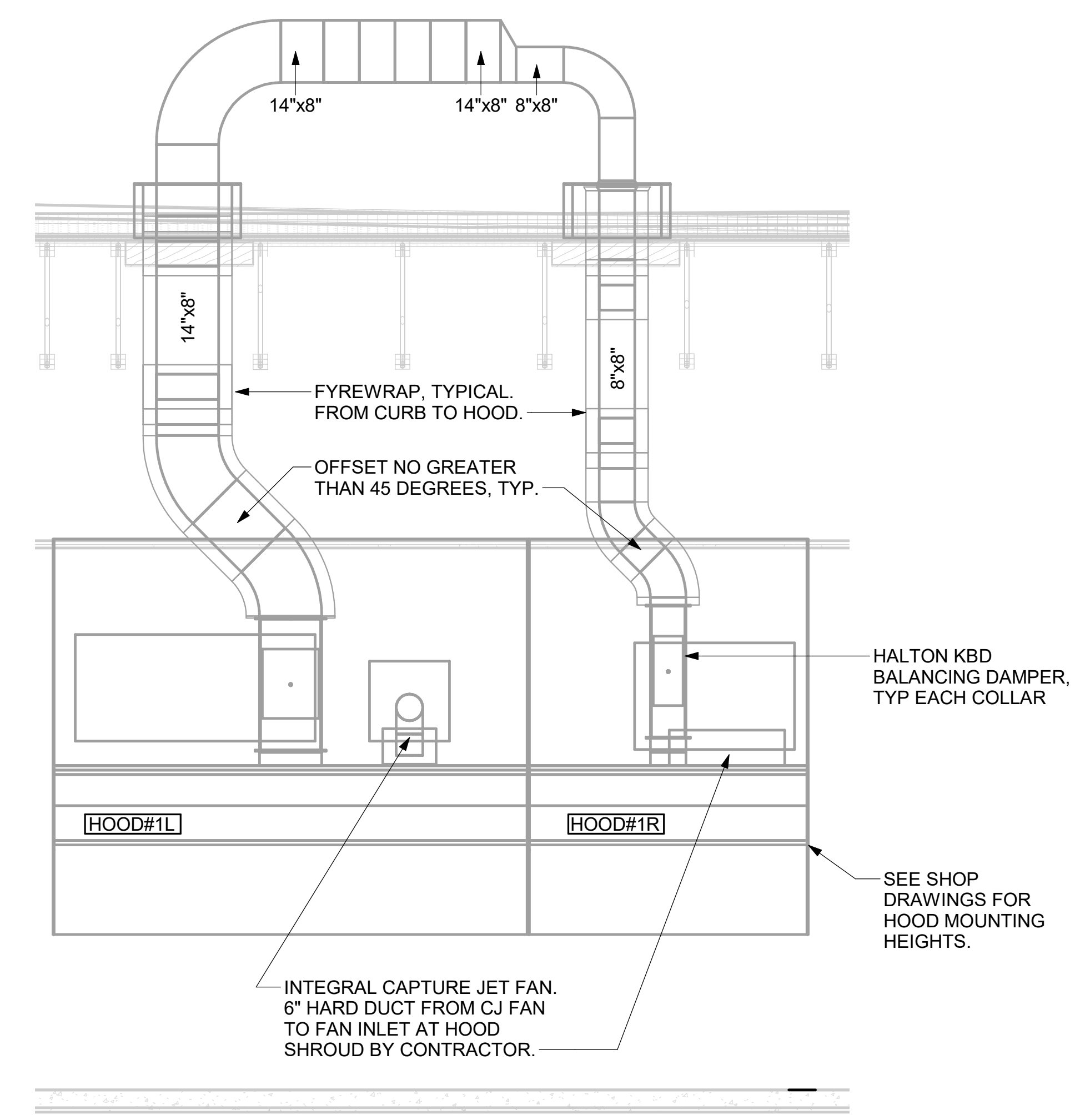
5 HOOD ELEVATION - HOOD#2 - FRONT  
NOT TO SCALE

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.

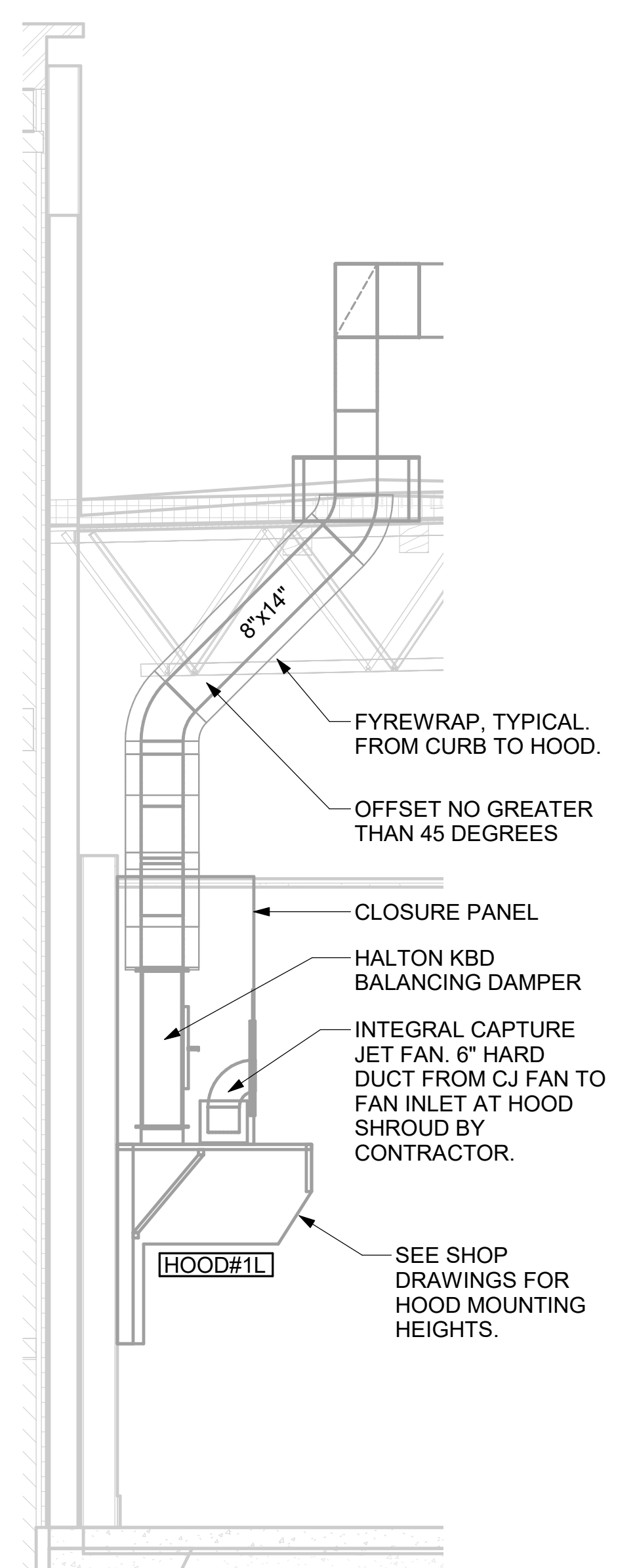
CLEANOUT DOOR NOTE:  
DUCT WRAP SHALL BE APPLIED TO THE CLEANOUT DOOR PER THE WRAP MFR'S INSTALLATION INSTRUCTIONS, NO EXCEPTIONS. ALSO, THE CLEANOUT DOOR MUST BE REMOVABLE WITHOUT TOOLS AND MUST BE CLEARLY AND PERMANENTLY LABELED.



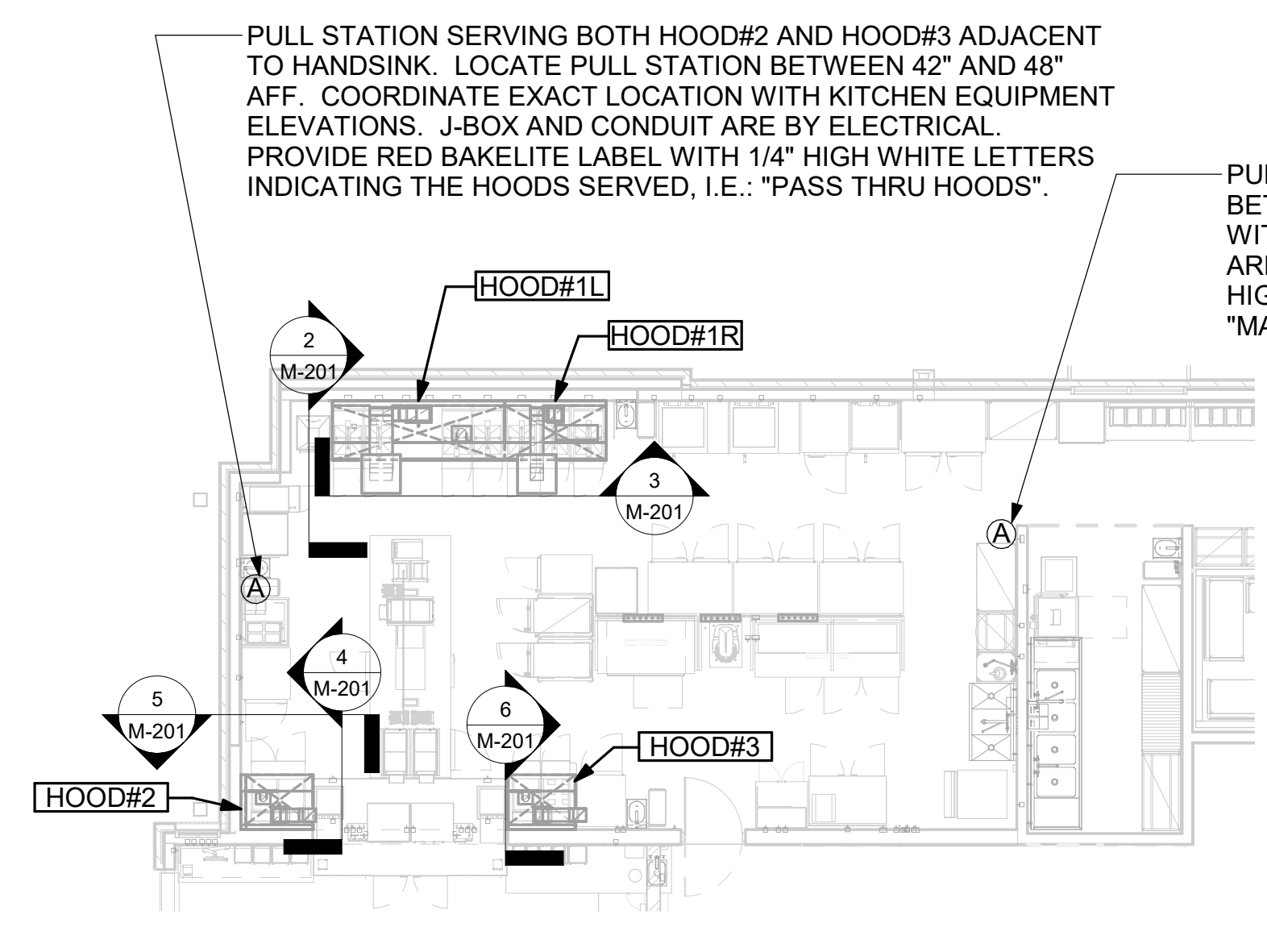
4 HOOD ELEVATION - HOOD#2 - SIDE  
NOT TO SCALE



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



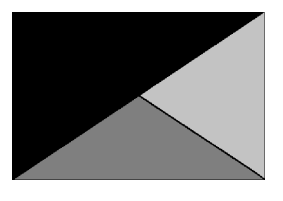
2 HOOD ELEVATION - HOOD#1 - SIDE  
NOT TO SCALE



1 HOOD LAYOUT  
1/8" = 1'-0"



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30349-2998



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3/23/24

CHICK-FIL-A  
LINCOLN HIGHWAY FSR  
1440 E. LINCOLN HIGHWAY  
LANGHORNE, PA 19047

FSR#05629

BUILDING TYPE / SIZE: P14 LE BN  
RELEASE: 23.11  
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REVISION SCHEDULE

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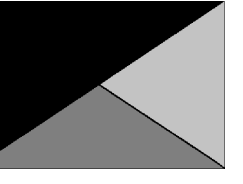
SHEET EXHAUST HOOD ELEVATIONS

SHEET NUMBER M-201



Chick-fil-A

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9/23/24

**CHICK-FIL-A**  
LINCOLN HIGHWAY FSR  
1440 E. LINCOLN HIGHWAY  
LANGHORNE, PA 19047

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NO.	DATE	DESCRIPTION
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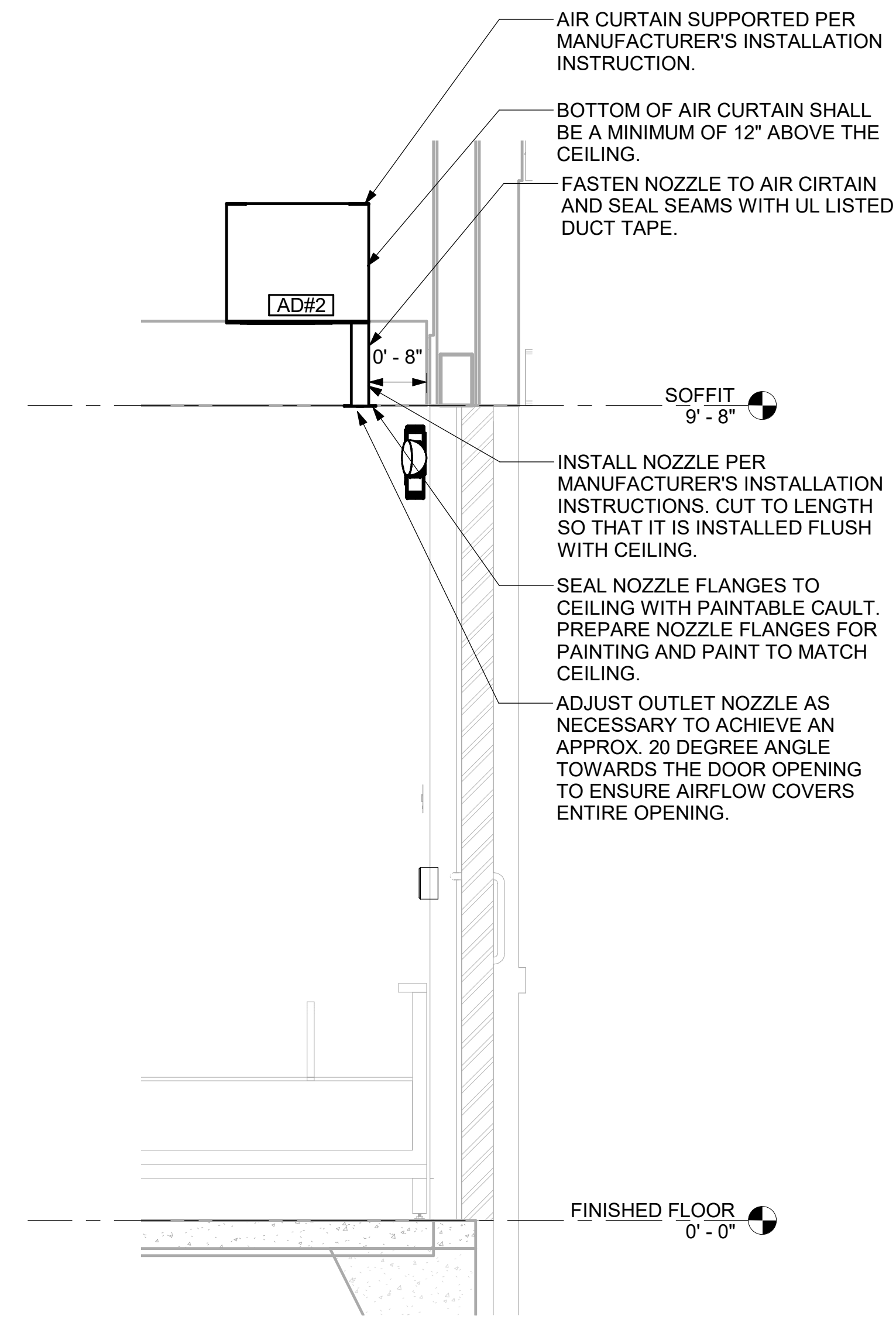
CONSULTANT PROJECT # 23192.EH.S  
DATE 02/08/2024  
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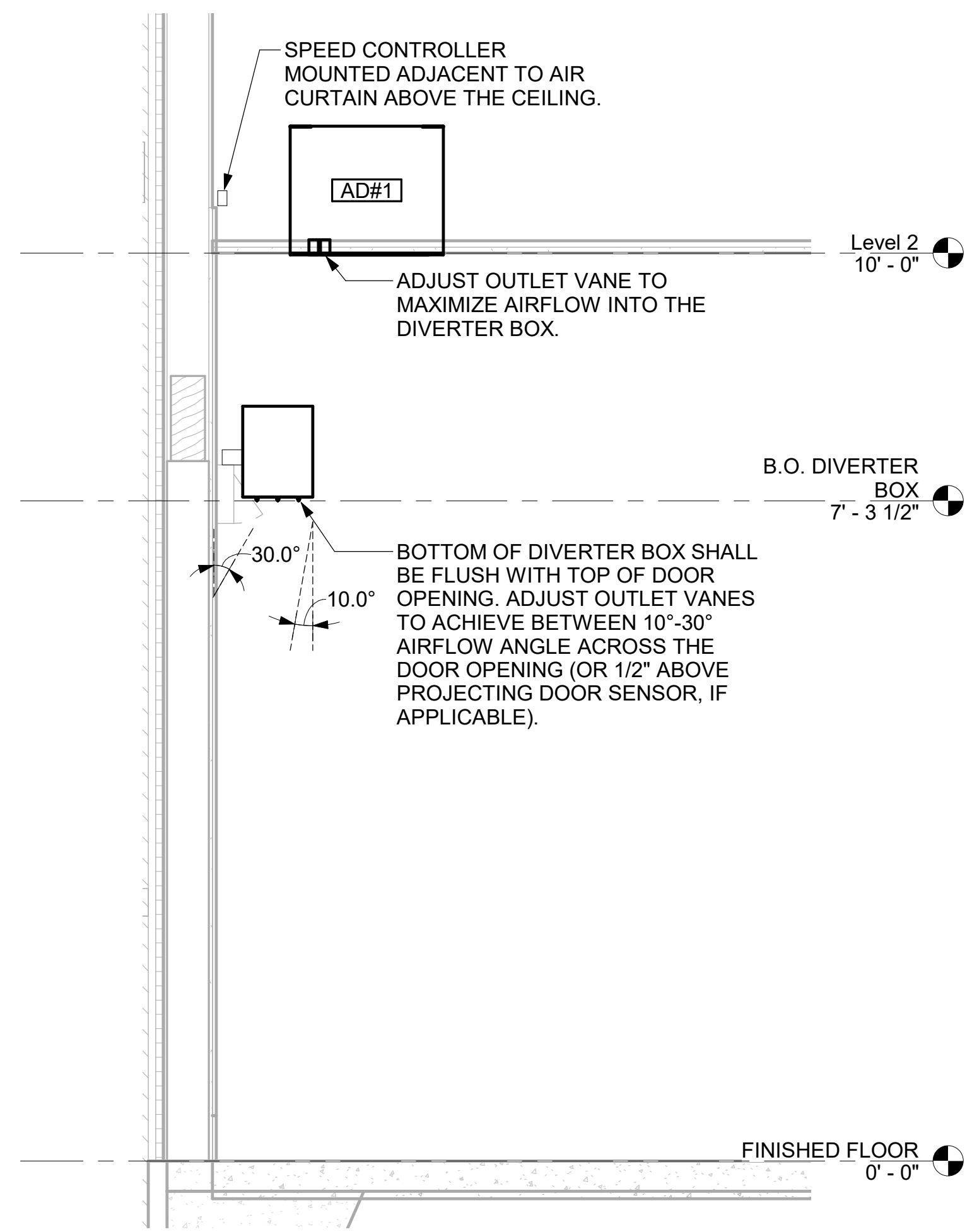
SHEET SECTIONS

SHEET NUMBER

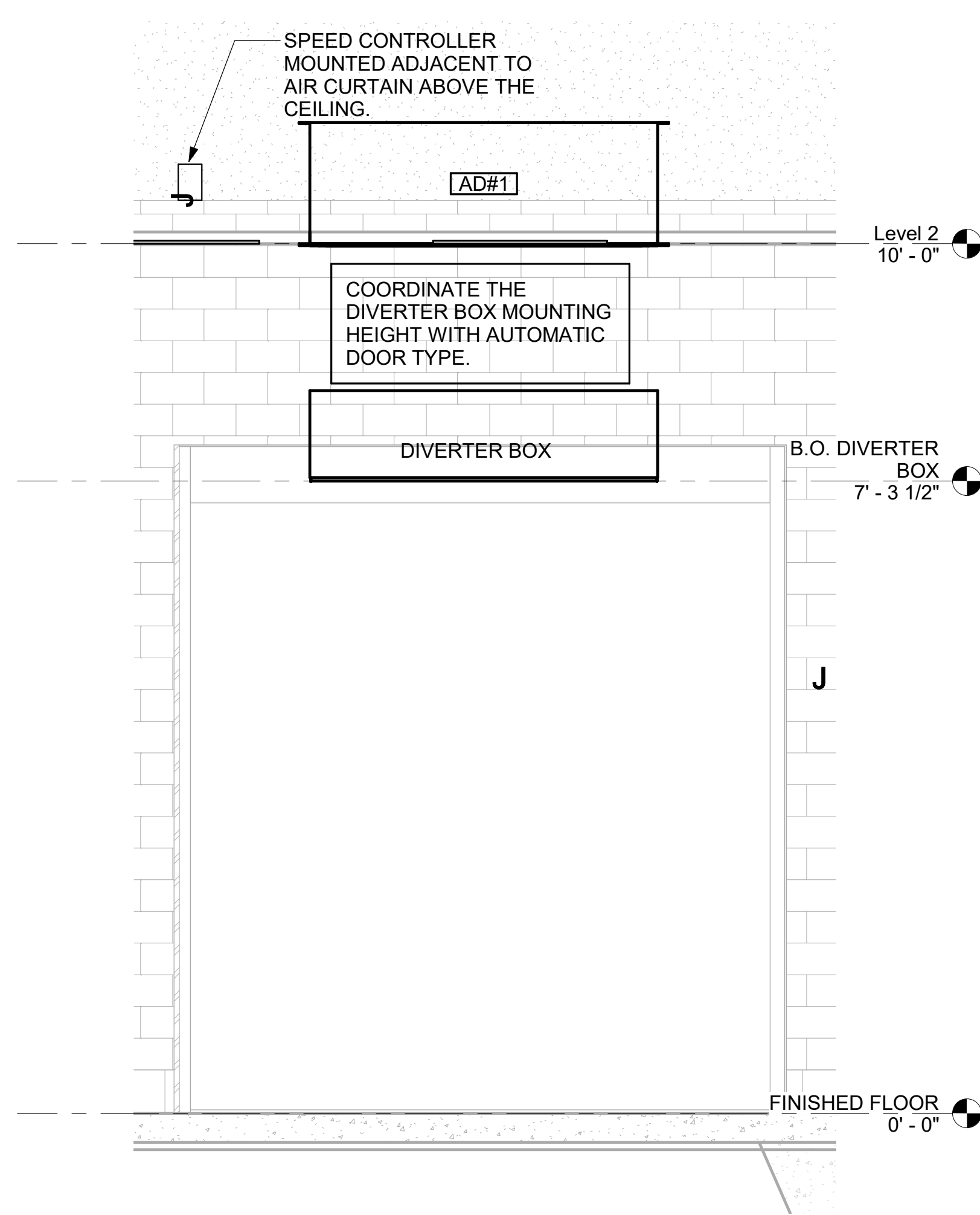
**M-301**



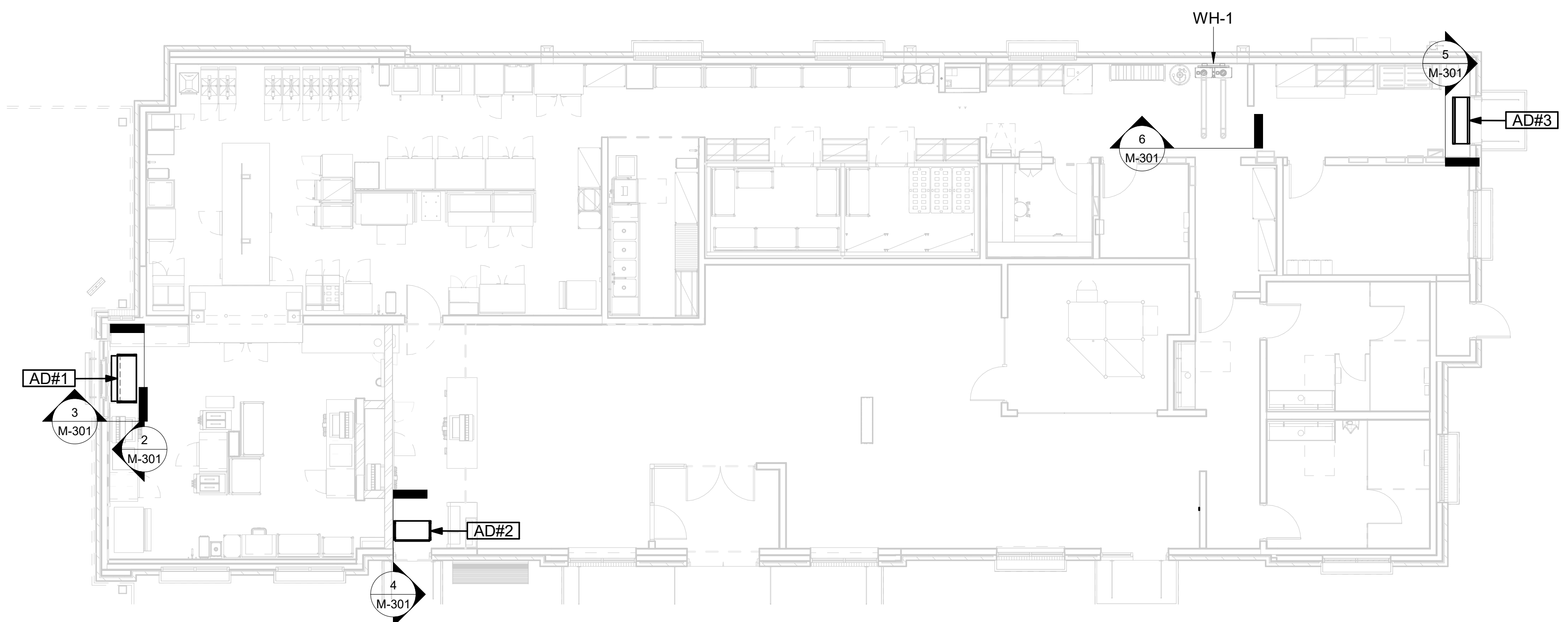
4 AD#2 SIDE VIEW  
3/4" = 1'-0"



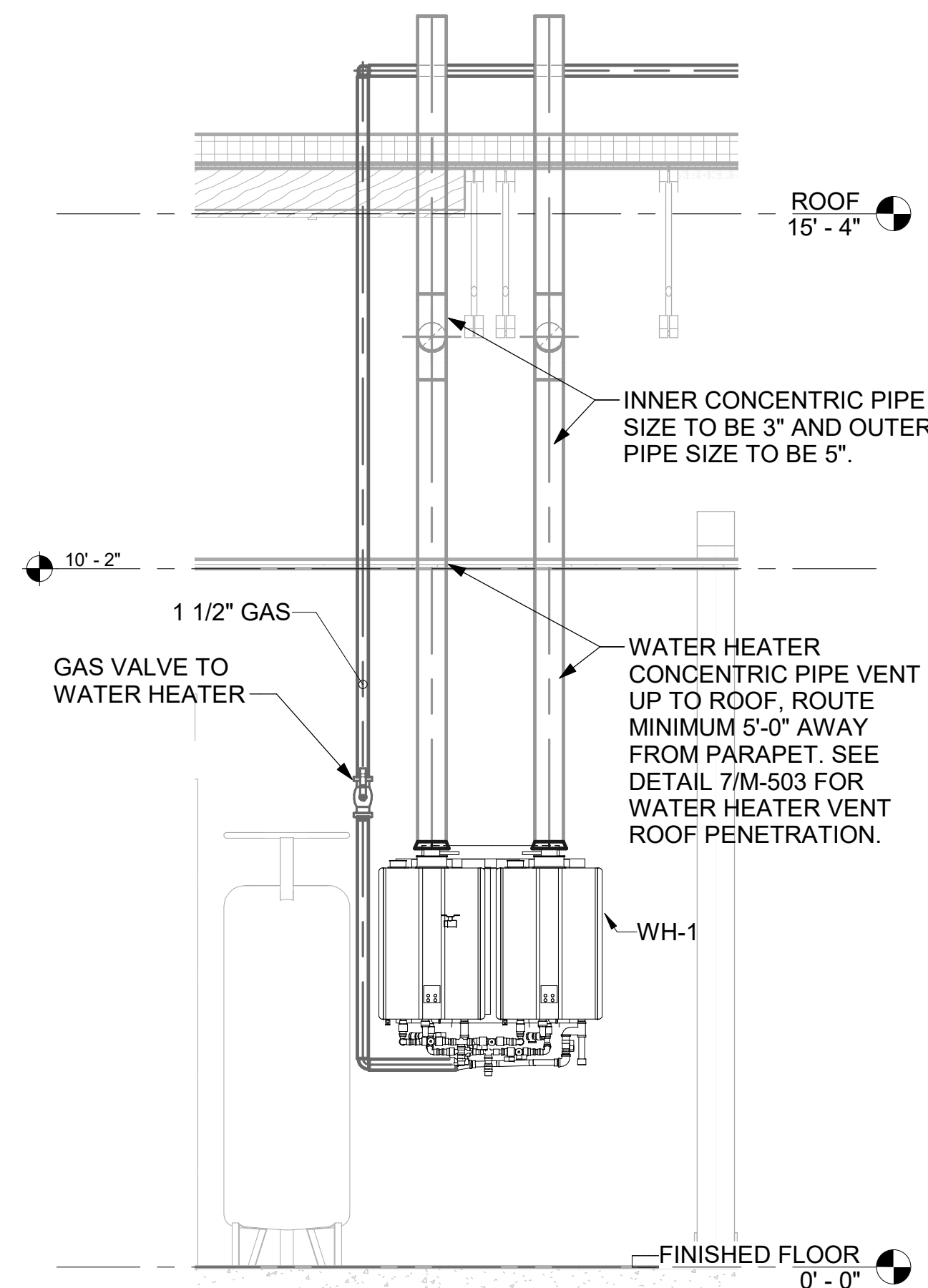
3 AD#1 SIDE VIEW  
3/4" = 1'-0"



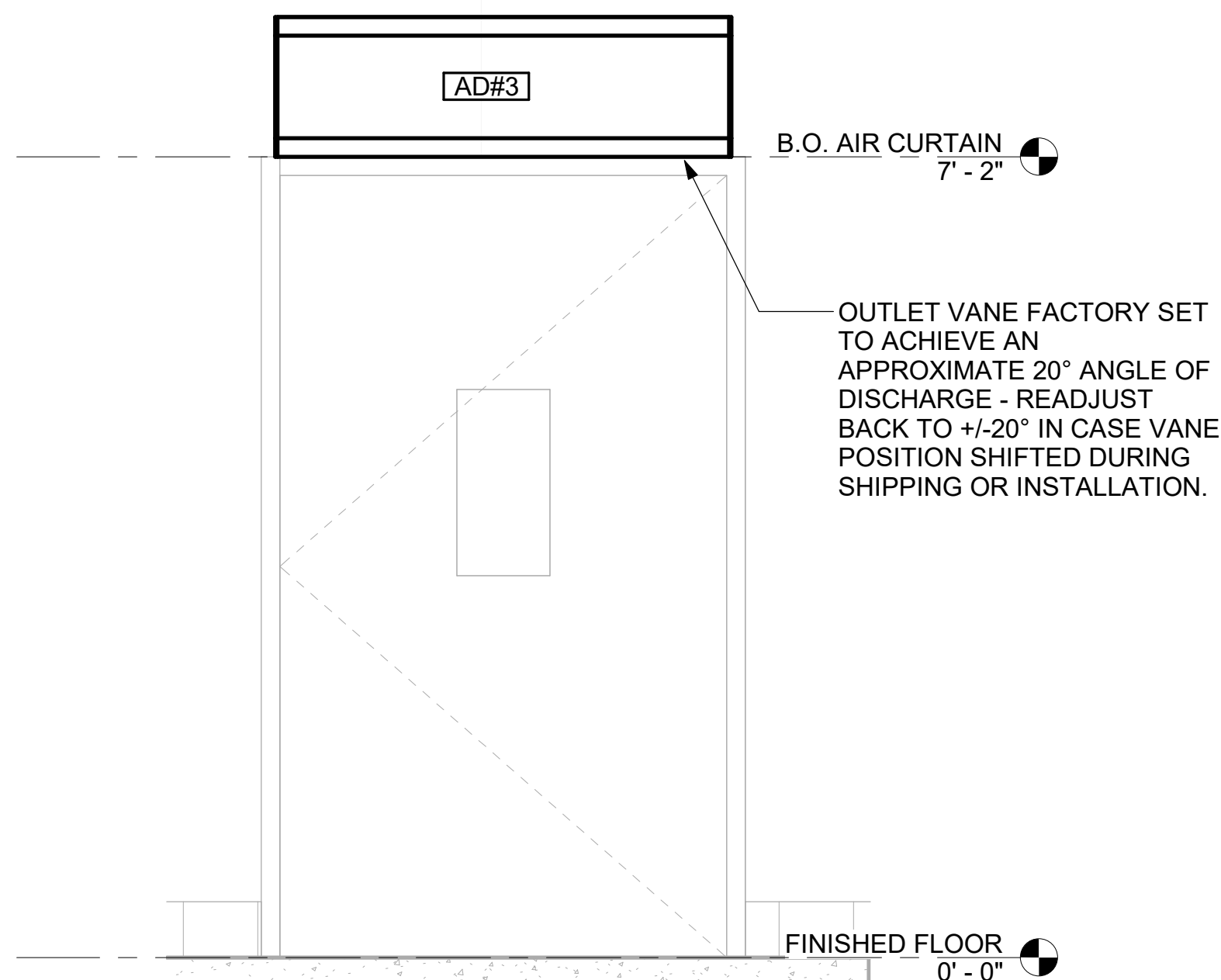
2 AD#1 FRONT VIEW  
3/4" = 1'-0"



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



6 WATER HEATER GAS PIPING AND VENTING  
NOT TO SCALE



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





ROOFTOP UNIT SCHEDULE - TRANE

MARK	TOTAL COOLING MBH	SENSIBLE COOLING MBH	HEATING INPUT MBH	HEATING OUTPUT MBH	SUPPLY (CFM)	OA (CFM)	# OF FANS	ESP (in-wg)	EER	IEER / SEER	VOLTAGE (V)	PHASE	MCA (A)	MOCP (A)	MODEL	MANUFACTURER	REMARKS	
AC#1	278.3	210	400	324	8,125	1,750	3	2	0.8	9.8	13	208	3	125	150	YSJ300A3S	TRANE	1,3,4,5,6,8,9,10,11,12,13,14,15,16
AC#2	150.9	114.9	250	202.5	4,375	1,075	4.6	1	0.8	10.8	14	208	3	73	100	YSJ150A3S	TRANE	1,3,4,5,6,8,9,10,11,12,13,14,15,16
AC#3	184.3	140.4	400	324	5,250	1,275	3	2	0.8	10.8	14	208	3	83	110	YSJ180A3S	TRANE	1,3,4,5,6,8,9,10,11,12,13,14,15,16
AC#4	58.1	44.2	130	104	1,750	425	1	1	0.8	13	17.2	208	3	33	45	YHC067E3R	TRANE	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

- DIFFERENTIAL ENTHALPY ECONOMIZER WITH POWER EXHAUST.
- DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC EXHAUST.
- 14" HIGH ROOF CURB.
- SEE DETAIL 2/M-701 FOR SETTING OF CONTROL PARAMETERS BY MC.
- FACTORY INSTALLED 115V GFI SERVICE OUTLET. SEPERATE 115V CIRCUIT PROVIDED BY ELECTRICAL CONTRACTOR.
- FACTORY INSTALLED RETURN AIR SMOKE DETECTOR.
- FACTORY INSTALLED NON-FUSED DISCONNECT.
- 2" MERV 8 THROW AWAY FILTERS
- HINGED PANELS FOR ACCESS TO FILTER(S), FAN BLOWER & MOTOR, COMPRESSOR(S) ACCESS AND CONTROLS.
- FACTORY INSTALLED COIL HAIL GUARD.
- FACTORY INSTALLED CONDENSATE PAN DRAIN OVERFLOW SWITCH.
- HOT GAS DEHUMIDIFICATION OPTION WITH WALL MOUNTED HUMIDITY SENSOR.
- FACTORY INSTALLED BELT TENSIONER.
- FACTORY CONFIGURED PHASE LOSS PROTECTION.
- FACTORY HIGH FAULT (65K) SCRR WITH FACTORY CIRCUIT BREAKER.
- 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

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

HEATER SCHEDULE

MARK	HEATING INPUT		FRAME LENGTH	FRAME WIDTH	FRAME DEPTH	MOUNTING TYPE	VOLTAGE (V)	PHASE	FLA (A)	MOCP (A)	MODEL	MANUFACTURER	REMARKS
	ELECTRIC (KW)	GAS (MBH)											
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"	13.4"	13.4"	BRACKET	120	1	0.4	20	WB50	SPACE-RAY	1, 5, 6, 7

NOTES

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

REMARKS

- STAINLESS STEEL LENS WITH BLACK EMISSIVE COATING.
- PROVIDE ENGRAVED PLASTIC LABEL AT EACH UNIT WITH UNIT DESIGNATION IN 1" HIGH WHITE LETTERS ON A BLACK BACKGROUND.
- PROVIDE BLACK HEATER WITH HIGH TEMPERATURE COATING, AND MANUFACTURER MOUNTING BRACKETS.
- PROVIDE BROMIC WALL MOUNTED ELECTRIC HEATER MODEL: BH0420035 FOR 220-240V SITES.
- STEEL BURNER WITH CERAMIC BURNER TILES.
- 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.
- STAINLESS STEEL HEAT SHIELDS.

FAN SCHEDULE

MARK	FAN CFM	ESP (in-wg)	MOTOR RPM	HP	AREA SERVED	VOLTAGE (V)	PHASE	FLA (A)	MOCP (A)	MODEL	MFGR	REMARKS
CF#1	1,900	0.010	1,625	0.100	OUTDOOR CANOPY	120	1	1.1	20	U-18-TE-HD	TPI	20,21,24
EF#1	1,913	0.750	1,331	0.750	HOOD#1	120	1	0	25	KEFB-14-CFA	HALTON	1,2,3,4,5,6,7,8,9,10,11
EF#2	1,402	0.950	1,199	0.750	HOOD#2 & HOOD#3	115	1	0	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	0.000	900	0.020	EMPLOYEE RESTROOM	120	1	0.2	0	SP-A90	GREENHECK	1,22,23

NOTES

- NATIONAL ACCOUNT - NO SUBSTITUTIONS PERMITTED.

REMARKS

- FANS SUPPLIED BY HALTON.
- U.L. 705 LISTED AND LABELED FOR RESTAURANT APPLICATIONS.
- FACTORY INSTALLED PREWIRED DISCONNECT SWITCH.
- 19" HIGH ROOF CURB.
- INSTALL ROOFTOP SOLUTIONS G2 DRIP GUARD. MECHANICAL CONTRACTOR TO CONTACT ROOFTOP SOLUTIONS AT 800-913-7034.
- FACTORY WEATHER HOUSING W/ HINGED ACCESS DOOR.
- FACTORY DRAIN CONNECTION.
- FACTORY BOLTED ACCESS DOOR ON SCROLL.
- FACTORY INSTALLED BELT DRIVE WITH ADJUSTABLE MOTOR SHEAVE, SPARE BELT, AND BELT TENSIONER.
- FACTORY INSTALLED OUTLET WITH QUICK RELEASE, HINGED ACCESS, AND GRAVITY BACKDRAFT DAMPER.
- INTEGRAL THERMAL OVERLOAD.
- BIRDSCREEN.
- BACKDRAFT DAMPER IN DUCT BY MECHANICAL CONTRACTOR AS SHOWN ON 5/M-501.
- STARTER BY ELECTRICAL CONTRACTOR. INTERLOCK WITH LIGHTS BY ELECTRICAL CONTRACTOR.
- 12" HIGH CURB.
- FACTORY INSTALLED AND WIRED SPEED CONTROLLER.
- NOT USED.
- NOT USED.
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE WITH ON/OFF SWITCH.
- FAN SHALL BE CONTROLLED WITH THE ROOM LIGHTING. ALL WIRING IS BY THE ELECTRICAL CONTRACTOR.
- DIRECT DRIVE CEILING FAN. PROVIDE A DISCONNECT SWITCH, INTEGRAL BACKDRAFT DAMPER, AND MANUFACTURER'S FAN SPEED CONTROLLER.
- FAN SUPPLIED BY TOM BARROW OR POWERS OF ARKANSAS FOR SOUTHWEST REGION.

AIR DOOR SCHEDULE

MARK	CFM	VELOCITY (FFM)	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	1,197	2,443	10	0.75	31.4	40	208	3	SERVING	ETA-1-36E	POWERED AIRE	1,2,3,4,6
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

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

AIR DEVICE SCHEDULE

MARK	DESCRIPTION	LOCATION	NECK SIZE	FACE SIZE	FRAME TYPE	REMARKS
A	PRICE MODEL APDC ALUMINUM SUPPLY AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE CURVED AIR PATTERN CONTROLLERS.	DINING / KITCHEN	VARIES	24"x24"	LAY-IN	1,7
B	VARITHERM PLAQUE DIFFUSER	OFFICE	10"	24"x24"	LAY-IN	1,7,8
C	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	ENTRY	14"x14"	16"x16"	BEVELLED	1,3,5,6
D	PRICE MODEL APDC ALUMINUM SUPPLY AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE CURVED AIR PATTERN CONTROLLERS.	SERVING	VARIES	16"x16"	SURFACE	1,3,5,6
E	PRICE MODEL 22 DOUBLE DEFLECTION ALUMINUM SIDEWALL SUPPLY GRILLE. FRONT BLADE PARALLEL TO LONG SIDE.	PLAY AREA	16"x10"	18"x12"	SURFACE	1
F	PRICE MODEL 80 EGGCRATE RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND ROUND NECK.	DINING / KITCHEN / MFA	24"x24"	24"x24"	LAY-IN	1,7,8
FF	PRICE MODEL 80FF STEEL FILTER RETURN AIR GRILLE WITH REMOVABLE WHITE CORE, FACTORY FLAT BLACK BACKPAN AND ROUND NECK.	MFA	24"x24"	24"x24"	LAY-IN	1,7,8
J	PRICE MODEL SMCD STEEL SUPPLY AIR DIFFUSER FIELD ADJUSTABLE AIR PATTERN CONTROLLERS.	RESTROOMS	VARIES	10"x10"	BEVELLED	1,2,3,5,6
K	PRICE MODEL APDDR ALUMINUM PERFORATED FACE RETURN AIR GRILLE.	RESTROOMS / ENTRY	14"x14"	16"x16"	SURFACE	1,4,5,6
L	PRICE MODEL 21 ALUMINUM SIDEWALL RETURN GRILLE. FRONT BLADE PARALLEL TO LONG SIDE.	PLAY AREA	14"x14"	16"x16"	SURFACE	1

NOTES

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

REMARKS

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



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**CHICK-FIL-A**  
 LINCOLN HIGHWAY FSR  
 1440 E. LINCOLN HIGHWAY  
 LANGHORNE, PA 19047

**FSR#05629**

BUILDING TYPE / SIZE: P14 LE BN  
 RELEASE: 23.11

PRINTED FOR: CONSTRUCTION  
**REVISION SCHEDULE**

NO.	DATE	DESCRIPTION
3	9-16-24	DESIGN NOTES
4	1-7-25	DESIGN NOTES

CONSULTANT PROJECT #: 23192.EH.S  
 DATE: 02/08/2024  
 DRAWN BY: BLM

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SHEET: EQUIPMENT SCHEDULES - TRANE

SHEET NUMBER: **M-601**

VENTILATION SCHEDULE																							
General			Ventilation											Exhaust									
Room #	Room Name	Area A <sub>r</sub> ft <sup>2</sup>	People			Area					Primary			Actual		Area		Exhaust		Toilet		Served by	
			Occupant Density People/1,000 ft <sup>2</sup>	Occupants P <sub>r</sub>	Outdoor Airflow Rate CFM/Person R <sub>p</sub>	Outdoor Airflow CFM P <sub>r</sub> x R <sub>p</sub>	Outdoor Airflow Rate CFM/ft <sup>2</sup> R <sub>a</sub>	Outdoor Airflow CFM A <sub>r</sub> x R <sub>a</sub>	Breathing Zone Outdoor Airflow CFM V <sub>bz</sub>	Zone Air Distribution Effectiveness E <sub>z</sub>	Zone Outdoor Airflow CFM V <sub>oz</sub>	Primary Zone Airflow CFM V <sub>pz</sub>	Primary Outdoor Air Fraction Z <sub>p</sub>	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft <sup>2</sup>	Total Required Exhaust CFM	Exhaust Control/Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust	
1	Kitchen	880	20	18	7.5	135	0.12	106	241	0.8	301	7,325	0.04	1,578	0.70	616	-	-	-	-	-	AC#1 / ALT AC#1	EF-1 / EF-2
2	Kitchen (Dish Washing)	128	15	2	7.5	15	0.18	23	38	0.8	48	800	0.06	172	-	-	-	-	-	-	-	AC#1 / ALT AC#1	-
Total Area 1,008						Total V <sub>bz</sub> 279					Total Supply Airflow 8,125			1,750		Actual Outdoor Airflow							
						Diversity (D) 1.00					Maximum Z <sub>p</sub> 0.06												
						Uncorrected Outdoor Air Intake (V <sub>oa</sub> ) 279					System Ventilation Efficiency (E <sub>s</sub> ) 1.00												
						Required Outdoor Air Intake (CFM) 278																	

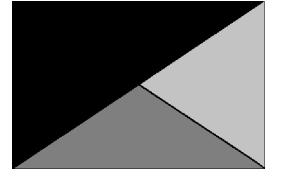
VENTILATION SCHEDULE																							
General			Ventilation											Exhaust									
Room #	Room Name	Area A <sub>r</sub> ft <sup>2</sup>	People			Area					Primary			Actual		Area		Exhaust		Toilet		Served by	
			Occupant Density People/1,000 ft <sup>2</sup>	Occupants P <sub>r</sub>	Outdoor Airflow Rate CFM/Person R <sub>p</sub>	Outdoor Airflow CFM P <sub>r</sub> x R <sub>p</sub>	Outdoor Airflow Rate CFM/ft <sup>2</sup> R <sub>a</sub>	Outdoor Airflow CFM A <sub>r</sub> x R <sub>a</sub>	Breathing Zone Outdoor Airflow CFM V <sub>bz</sub>	Zone Air Distribution Effectiveness E <sub>z</sub>	Zone Outdoor Airflow CFM V <sub>oz</sub>	Primary Zone Airflow CFM V <sub>pz</sub>	Primary Outdoor Air Fraction Z <sub>p</sub>	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft <sup>2</sup>	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	460	15	7	7.5	52.5	0.18	83	135	0.8	170	4,375	0.04	1,075	-	-	-	-	-	-	-	AC#2 / ALT AC#2	-
Total Area 460						Total V <sub>bz</sub> 135					Total Supply Airflow 4,375			1,075		Actual Outdoor Airflow							
						Diversity (D) 1.00					Maximum Z <sub>p</sub> 0.03												
						Uncorrected Outdoor Air Intake (V <sub>oa</sub> ) 135					System Ventilation Efficiency (E <sub>s</sub> ) 1.00												
						Required Outdoor Air Intake (CFM) 135																	

VENTILATION SCHEDULE																							
General			Ventilation											Exhaust									
Room #	Room Name	Area A <sub>r</sub> ft <sup>2</sup>	People			Area					Primary			Actual		Area		Exhaust		Toilet		Served by	
			Occupant Density People/1,000 ft <sup>2</sup>	Occupants P <sub>r</sub>	Outdoor Airflow Rate CFM/Person R <sub>p</sub>	Outdoor Airflow CFM P <sub>r</sub> x R <sub>p</sub>	Outdoor Airflow Rate CFM/ft <sup>2</sup> R <sub>a</sub>	Outdoor Airflow CFM A <sub>r</sub> x R <sub>a</sub>	Breathing Zone Outdoor Airflow CFM V <sub>bz</sub>	Zone Air Distribution Effectiveness E <sub>z</sub>	Zone Outdoor Airflow CFM V <sub>oz</sub>	Primary Zone Airflow CFM V <sub>pz</sub>	Primary Outdoor Air Fraction Z <sub>p</sub>	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft <sup>2</sup>	Total Required Exhaust CFM	Exhaust Control/Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust	
1	Dining	860	70	61	7.5	457.5	0.18	155	612	0.8	766	2,800	0.273	680	-	-	-	-	-	-	-	AC#3	-
2	Serving	630	15	10	7.5	75	0.18	113	188	0.8	236	1,300	0.18	316	-	-	-	-	-	-	-	AC#3	-
3	Men's RR	164	-	-	-	-	-	-	-	0.8	-	125	-	30	-	-	Continuous	50	100	150	AC#3	EF-3	
4	Women's RR	164	-	-	-	-	-	-	-	0.8	-	125	-	30	-	-	Continuous	50	100	150	AC#3	EF-3	
5	RR Vestibule	139	-	-	-	-	0.06	8	8	0.8	11	175	0.06	43	-	-	-	-	-	-	AC#3	-	
6	Entry Vestibule	75	-	-	-	-	0.06	5	5	0.8	6	400	0.01	97	-	-	-	-	-	-	AC#3	-	
7	Play Room	168	-	-	-	-	0.3	50	50	0.8	63	325	0.19	79	-	-	-	-	-	-	AC#3	-	
Total Area 2,200						Total V <sub>bz</sub> 864					Total Supply Airflow 5,250			1,275		Actual Outdoor Airflow							
						Diversity (D) 1.00					Maximum Z <sub>p</sub> 0.273												
						Uncorrected Outdoor Air Intake (V <sub>oa</sub> ) 864					System Ventilation Efficiency (E <sub>s</sub> ) 0.80												
						Required Outdoor Air Intake (CFM) 1,079																	

VENTILATION SCHEDULE																							
General			Ventilation											Exhaust									
Room #	Room Name	Area A <sub>r</sub> ft <sup>2</sup>	People			Area					Primary			Actual		Area		Exhaust		Toilet		Served by	
			Occupant Density People/1,000 ft <sup>2</sup>	Occupants P <sub>r</sub>	Outdoor Airflow Rate CFM/Person R <sub>p</sub>	Outdoor Airflow CFM P <sub>r</sub> x R <sub>p</sub>	Outdoor Airflow Rate CFM/ft <sup>2</sup> R <sub>a</sub>	Outdoor Airflow CFM A <sub>r</sub> x R <sub>a</sub>	Breathing Zone Outdoor Airflow CFM V <sub>bz</sub>	Zone Air Distribution Effectiveness E <sub>z</sub>	Zone Outdoor Airflow CFM V <sub>oz</sub>	Primary Zone Airflow CFM V <sub>pz</sub>	Primary Outdoor Air Fraction Z <sub>p</sub>	Actual Outdoor Airflow CFM	Required Exhaust Rate CFM/ft <sup>2</sup>	Total Required Exhaust CFM	Exhaust Control/Operation	Fixture Exhaust Rate CFM/Fixture	Required Fixture Exhaust CFM	Actual Exhaust CFM	Supply	Exhaust	
1	Team Member Room	173	50	9	5	45	0.06	10	55	0.8	70	550	0.13	134	-	-	-	-	-	-	-	AC#4	-
2	Service	157	-	-	-	-	0.12	19	19	0.8	24	200	0.12	49	-	-	-	-	-	-	-	AC#4	-
3	Beverage	166	-	-	-	-	0.12	20	20	0.8	25	200	0.12	49	-	-	-	-	-	-	-	AC#4	-
4	Utility	100	-	-	-	-	0.12	12	12	0.8	15	200	0.08	49	-	-	-	-	-	-	-	AC#4	-
5	Dry Storage	471	-	-	-	-	0.12	57	57	0.8	71	200	0.35	49	-	-	-	-	-	-	-	AC#4	-
6	Office	79	5	1	5	5	0.06	5	10	0.8	13	200	0.06	49	-	-	-	-	-	-	-	AC#4	-
7	Corridor	62	-	-	-	-	0.06	4	4	0.8	5	150	0.03	36	-	-	-	-	-	-	-	AC#4	-
8	Riser	19	-	-	-	-	0.12	2	2	0.8	3	50	0.06	12	-	-	-	-	-	-	-	AC#4	-
Total Area 1,227						Total V <sub>bz</sub> 178					Total Supply Airflow 1,750			425		Actual Outdoor Airflow							
						Diversity (D) 0.90					Maximum Z <sub>p</sub> 0.35												
						Uncorrected Outdoor Air Intake (V <sub>oa</sub> ) 166					System Ventilation Efficiency (E <sub>s</sub> ) 0.70												
						Required Outdoor Air Intake (CFM) 236																	



**Chick-fil-A**  
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3/23/24

**CHICK-FIL-A**  
LINCOLN HIGHWAY FSR  
1440 E. LINCOLN HIGHWAY  
LANGHORNE, PA 19047

**FSR#05629**

BUILDING TYPE / SIZE: P14 LE BN  
RELEASE: 23.11  
PRINTED FOR:  
CONSTRUCTION  
REVISION SCHEDULE

NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 23192.EH.S  
DATE 02/08/2024  
DRAWN BY BLM

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SHEET  
VENTILATION SCHEDULES

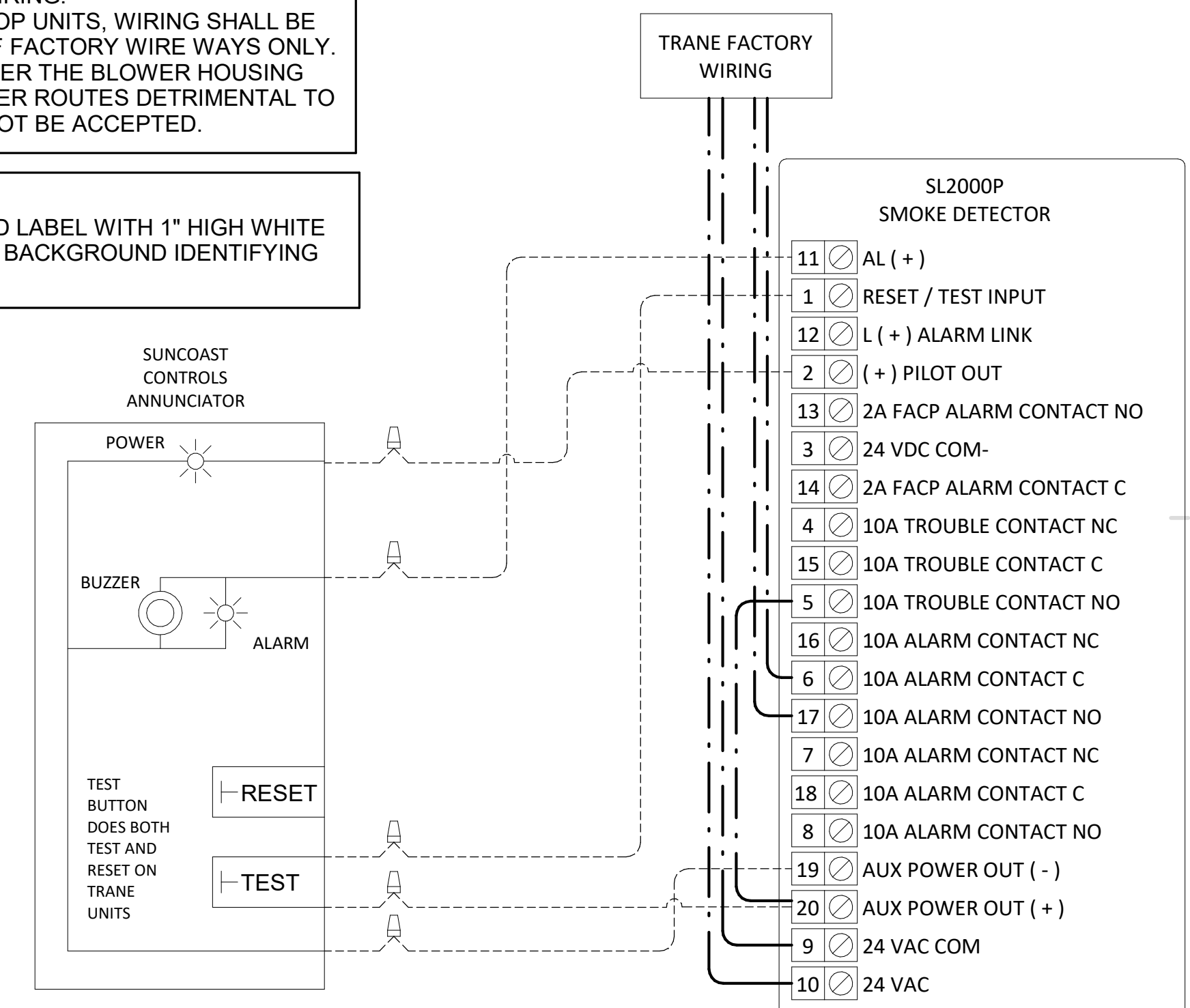
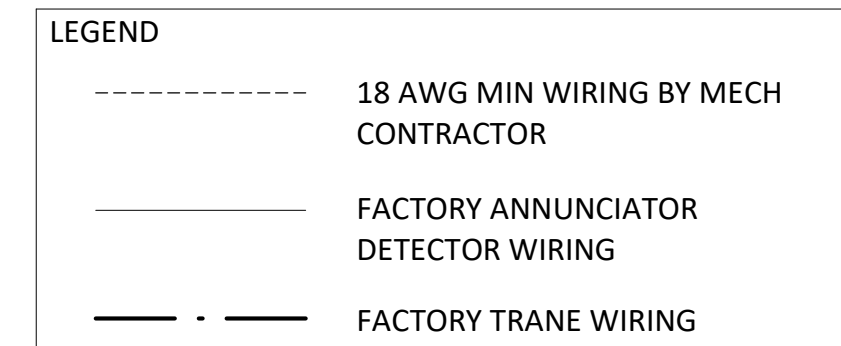
SHEET NUMBER  
**M-602**

PROVIDE A PROFESSIONALLY LAMINATED COPY OF THESE DETAILS TO BE INSTALLED INSIDE THE ROOFTOP UNIT CONTROL CABINET. 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.

**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.

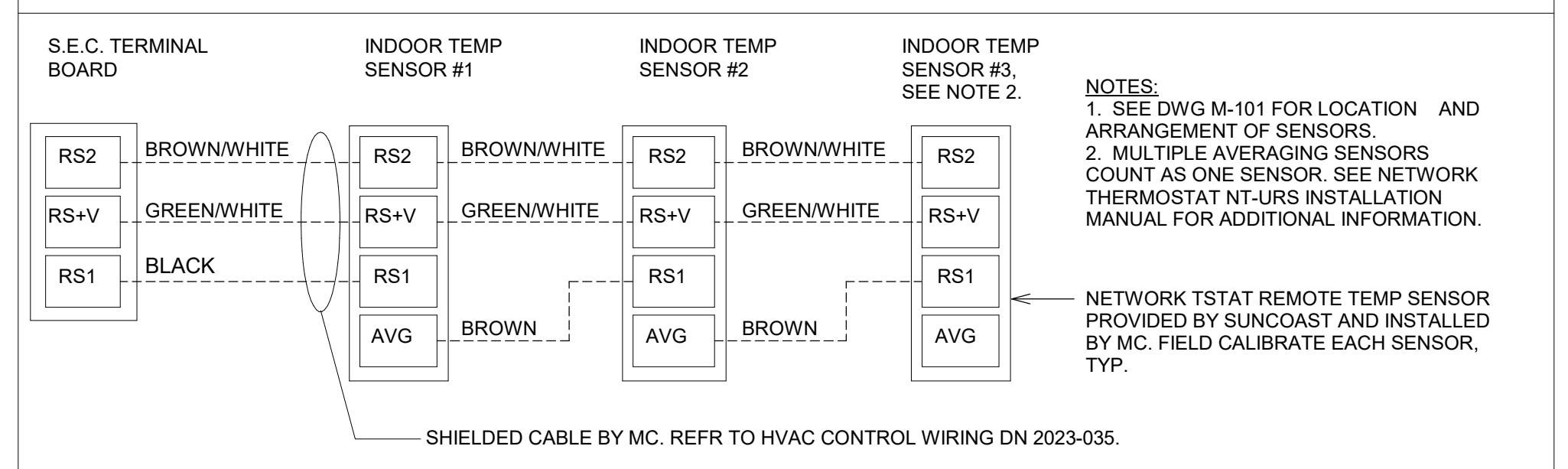
**FIELD INSTALLED WIRING:**  
WITHIN THE ROOFTOP UNITS, WIRING SHALL BE ROUTED BY WAY OF FACTORY WIREWAYS ONLY. WIRING ROUTED OVER THE BLOWER HOUSING OR BY WAY OF OTHER ROUTES DETRIMENTAL TO WIRING LIFE WILL NOT BE ACCEPTED.

**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

**AVERAGING SENSORS (WHERE SHOWN ON PLANS)**

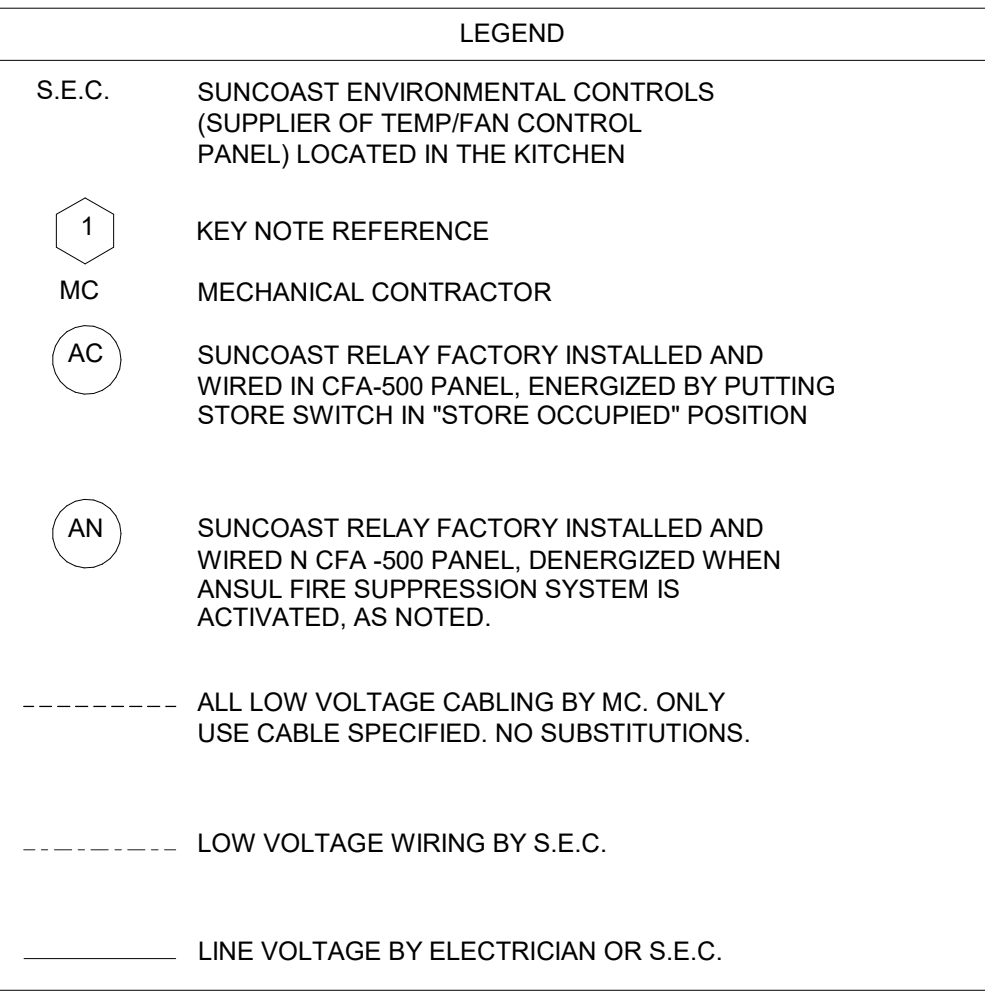


**KEYED NOTES:**

1. LOW VOLTAGE WIRING TO RTU TO BE ROUTED TO UNIT THROUGH FACTORY WIREWAY.
2. SHIELDED CABLE TO HUMIDITY SENSOR BY MC. BELDON 8780 CABLE OR EQUAL, 18 AWG, 1-PAIR, TWISTED, SHIELDED, WITH DRAIN, PLENUM RATED. AFTER DRAIN WIRE TERMINATION, TAPE INSULATE ALL EXPOSED DRAIN/SHIELD AT SENSOR. DO NOT CONNECT SHIELD/DRAIN WIRE.
3. NETWORK TSTAT REMOTE TEMP SENSOR PROVIDED BY SUNCOAST AND INSTALLED BY MC. SENSOR IS INTENDED TO BE SURFACE MOUNTED AND DOES NOT REQUIRE A SINGLE GANG BOX OR CONDUIT. FIELD CALIBRATE EACH SENSOR. SEAL CABLE PENETRATION AT ALL WALL LOCATIONS.
4. FACTORY WIRING IN SUNCOAST T-500 PANEL NOT SHOWN FOR CLARITY. SEE SUNCOAST WIRING DIAGRAM FOR ADDITIONAL INFORMATION.
5. SY700 INTERFACE TO SET RELATIVE HUMIDITY. SET TO 60%.
6. CAT 5/5E CABLE BY M.C. NO SUBSTITUTIONS. REFER TO HVAC CONTROL WIRING DN 2023-035.

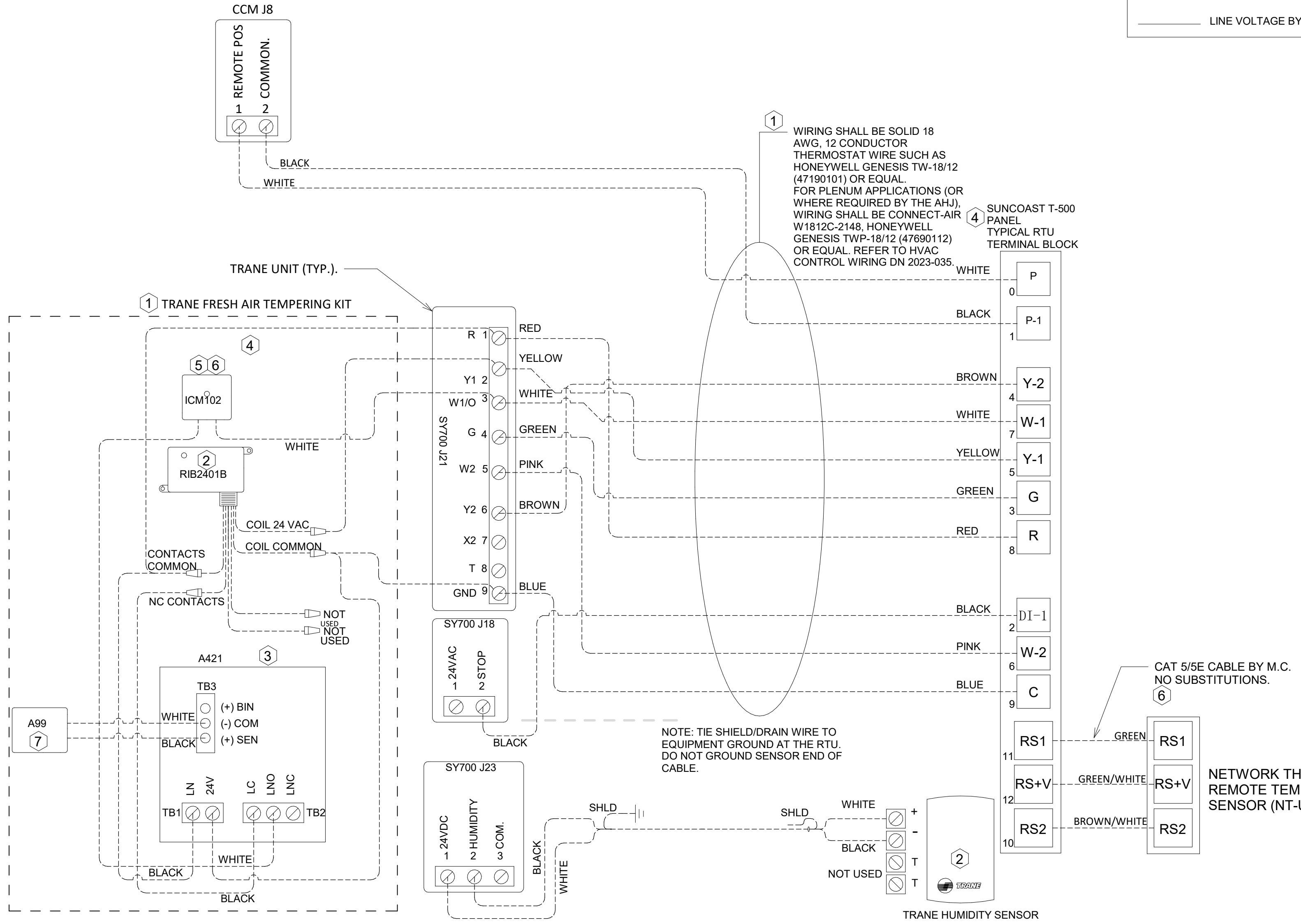
**NOTES:**

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 PLAC ENGRAV LABEL AT ALL NEW SENSORS WITH 1/4" HIGH WHITE LETTERING ON BLACK BACKGROUND, I.E. "A421 HUMIDITY SENSORS" OR "A421 TEMP SENSORS". PLACE LABELS ON WALL ADJACENT TO DEVICE. DO NOT APPLY.



**FRESH AIR TEMPERING KEYED NOTES:**

1. INSTALL FRESH AIR TEMPERING KIT AS RECOMMENDED BY TRANE.
2. RIB2401B SPDT RELAY FURNISHED BY TRANE AND INSTALLED BY CONTRACTOR IN CONTROL CABINET OF TRANE UNIT.
3. JCI A421 TEMPERATURE CONTROLLER FURNISHED 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 T6001-1 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 T6001-1 TEMPERATURE ELEMENT HOLDER FOR SUPPLY AIR TEMPERATURE SENSOR (A99).



2 ROOFTOP UNIT CONTROL WIRING - TRANE  
NOT TO SCALE



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**CHICK-FIL-A**  
LINCOLN HIGHWAY FSR  
1440 E. LINCOLN HIGHWAY  
LANGHORNE, PA 19047

**FSR#05629**  
BUILDING TYPE / SIZE: P14 LE BN  
RELEASE: 23.11  
PRINTED FOR CONSTRUCTION  
**REVISION SCHEDULE**

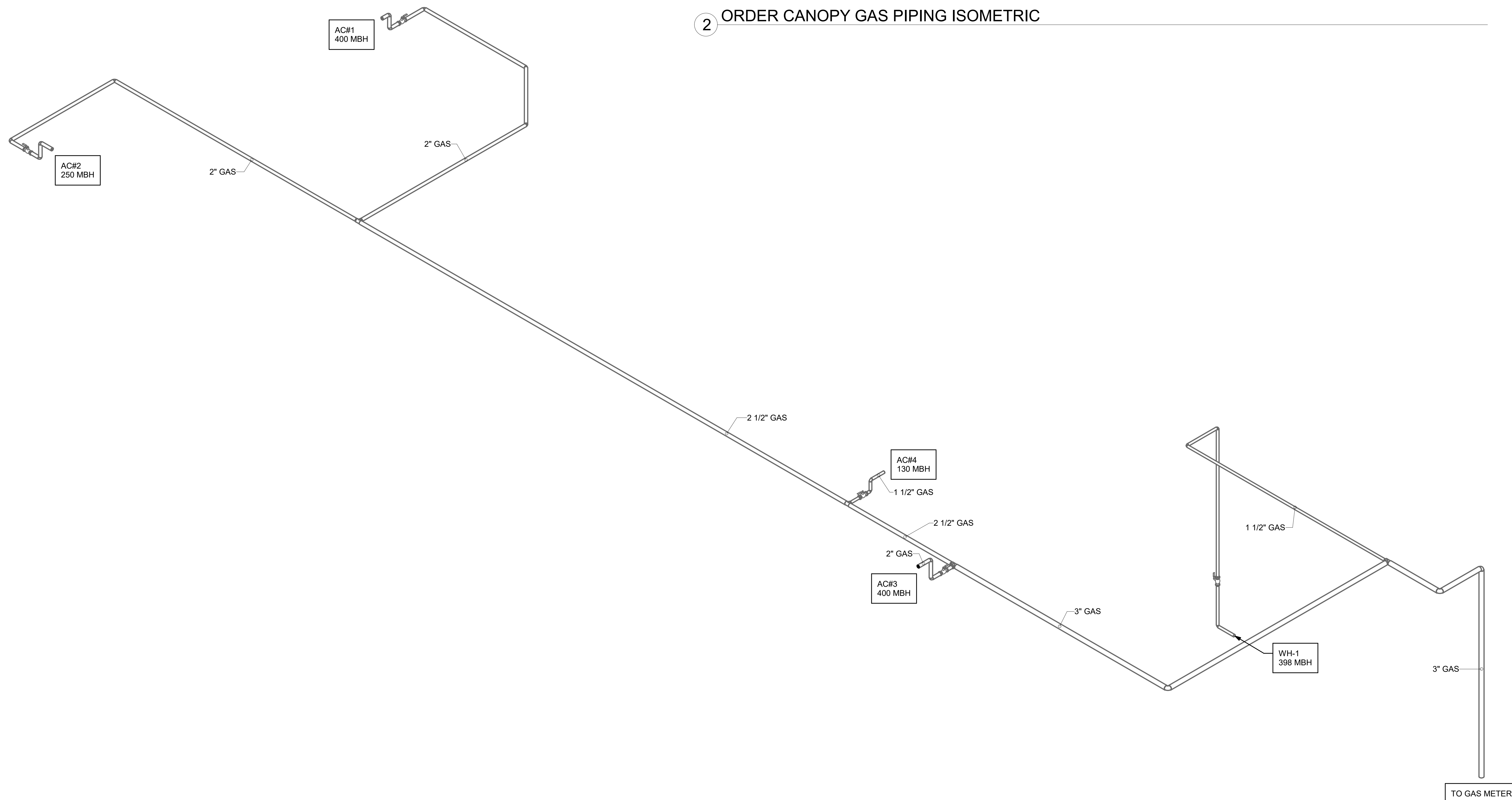
NO.	DATE	DESCRIPTION
3	9-16-24	DESIGN NOTES

CONSULTANT PROJECT # 23192.EH.S  
DATE 02/08/2024  
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**CONTROL WIRING DIAGRAMS - TRANE**  
SHEET NUMBER

**M-701**



Autodesk Docs://PA\_05629\_Lincoln Highway\_2023.12\_FSR05629\_Lincoln Highway\_MEC.rvt  
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 30-LE-05629-M-001-GAS PIPING ISOMETRIC - TRANE

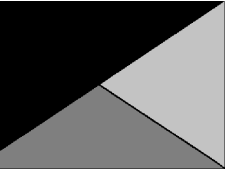


1 GAS PIPING ISOMETRIC - TRANE

2 ORDER CANOPY GAS PIPING ISOMETRIC



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 30349-2998



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9/23/24

**CHICK-FIL-A**  
**LINCOLN HIGHWAY FSR**  
 1440 E. LINCOLN HIGHWAY  
 LANGHORNE, PA 19047

**FSR#05629**

BUILDING TYPE / SIZE: P14 LE BN

RELEASE: 23.11

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CONSTRUCTION

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NO.	DATE	DESCRIPTION

CONSULTANT PROJECT # 23192.EH.S

DATE 02/08/2024

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SHEET

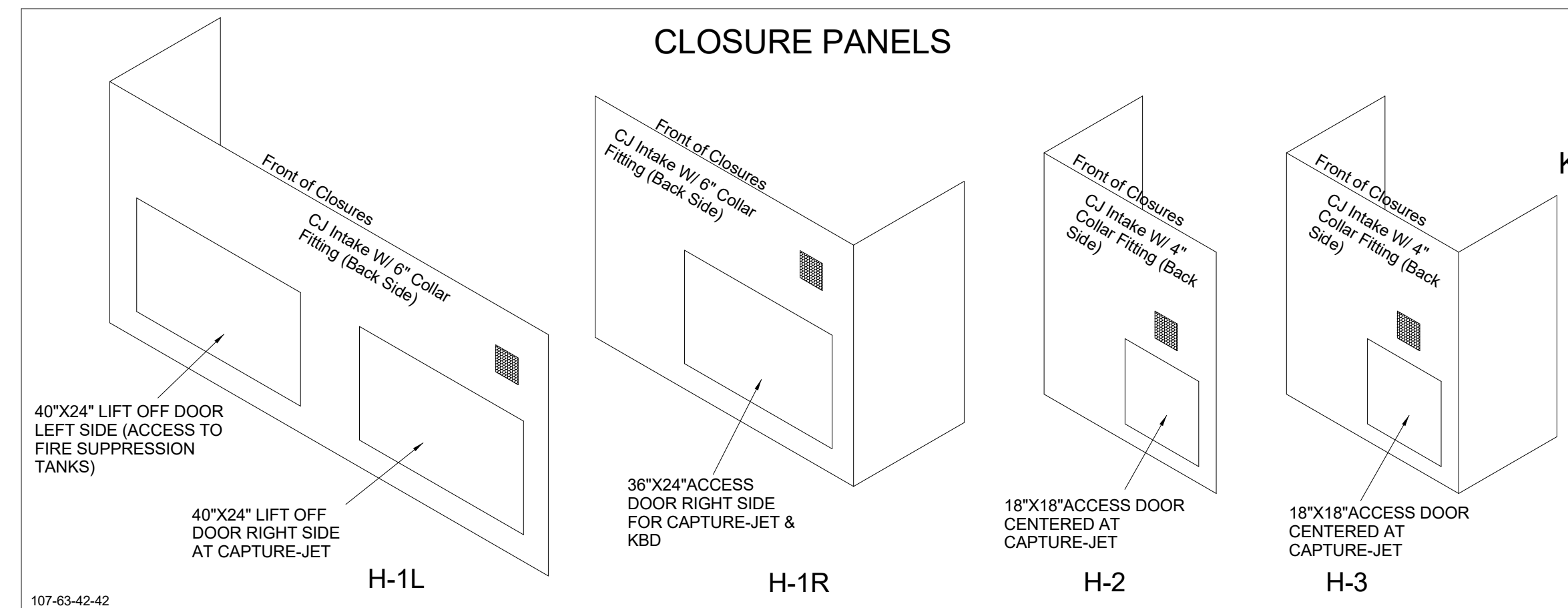
GAS PIPING ISOMETRIC - TRANE

SHEET NUMBER

**M-901**

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

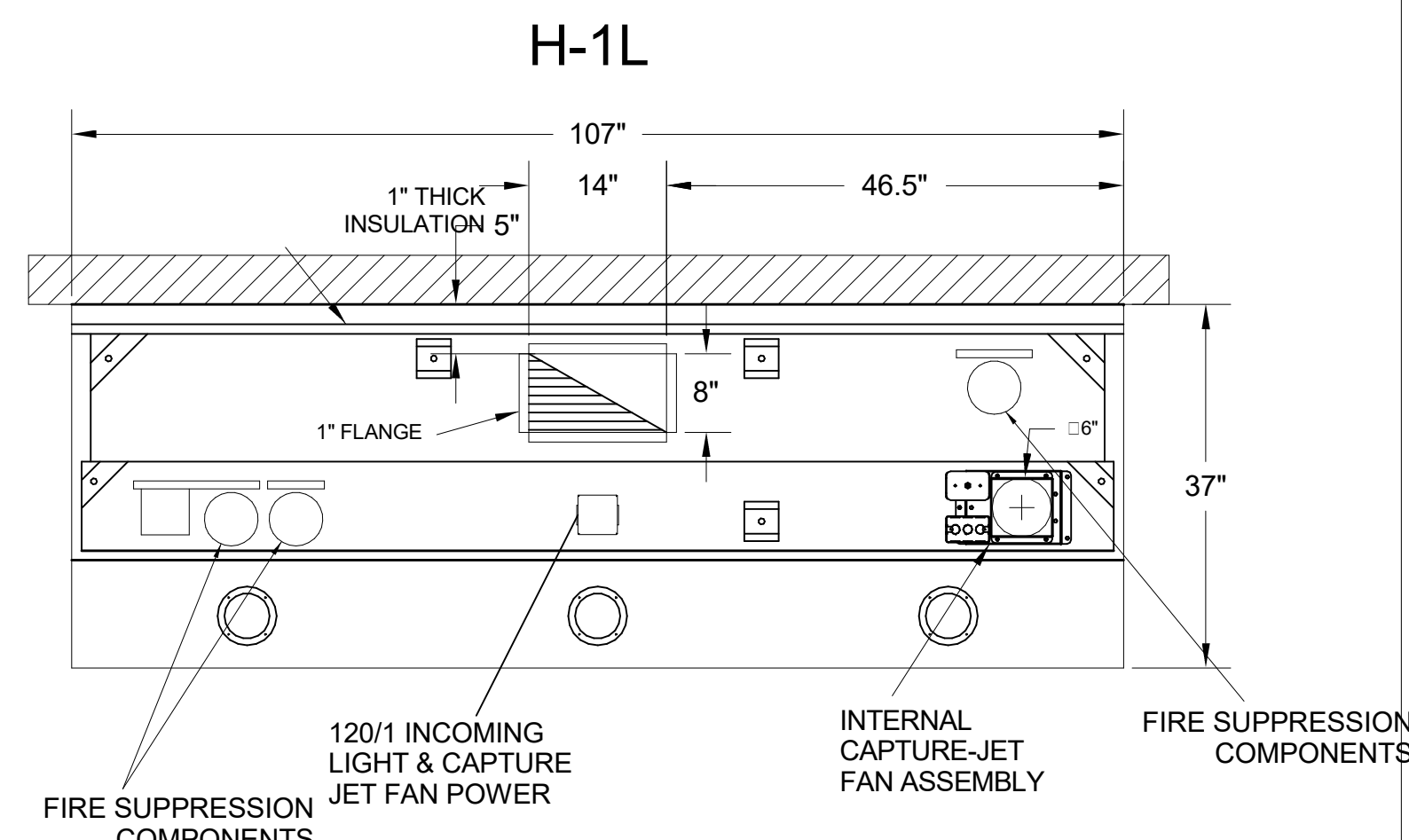
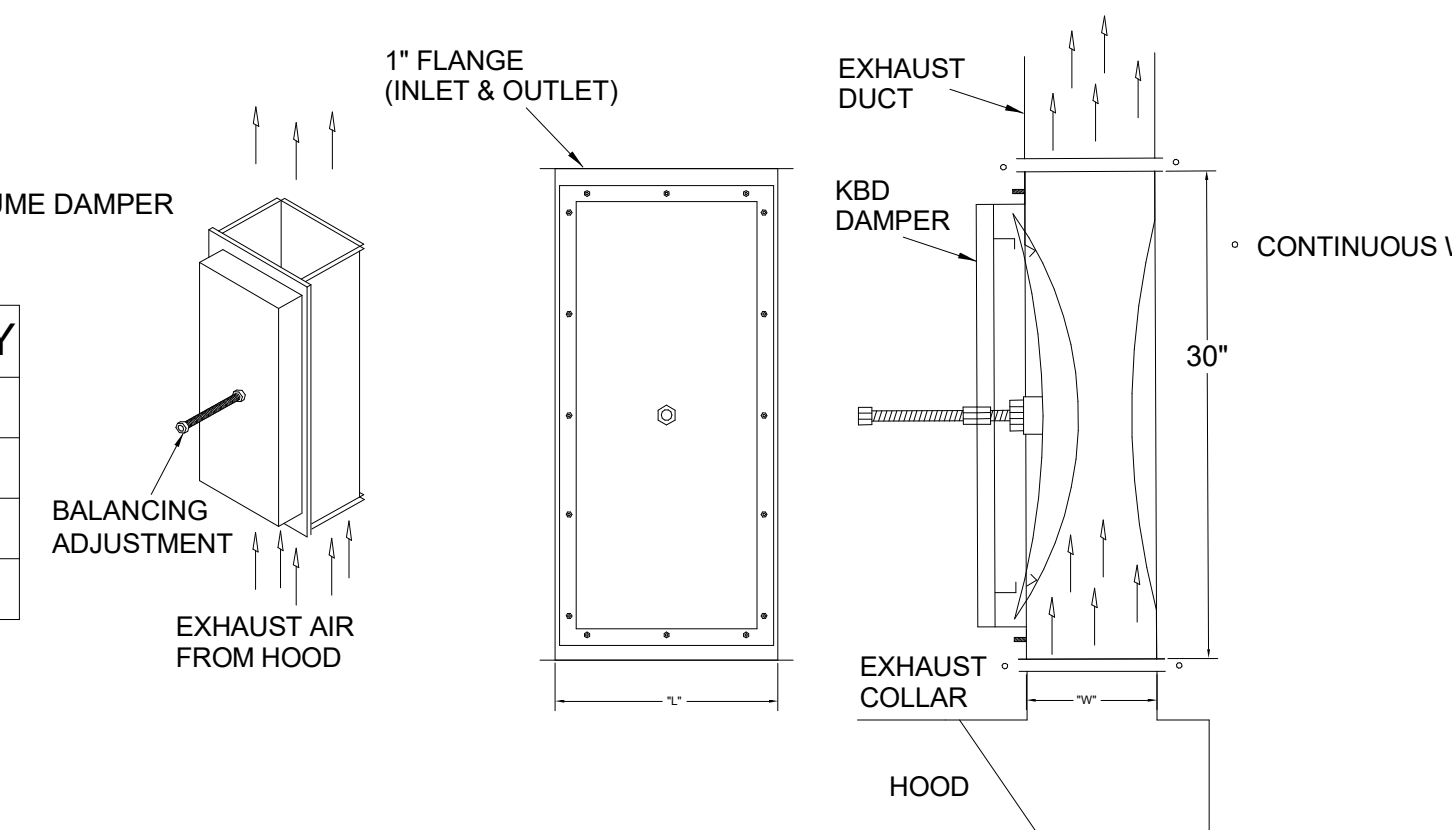
**FOR REFERENCE ONLY**



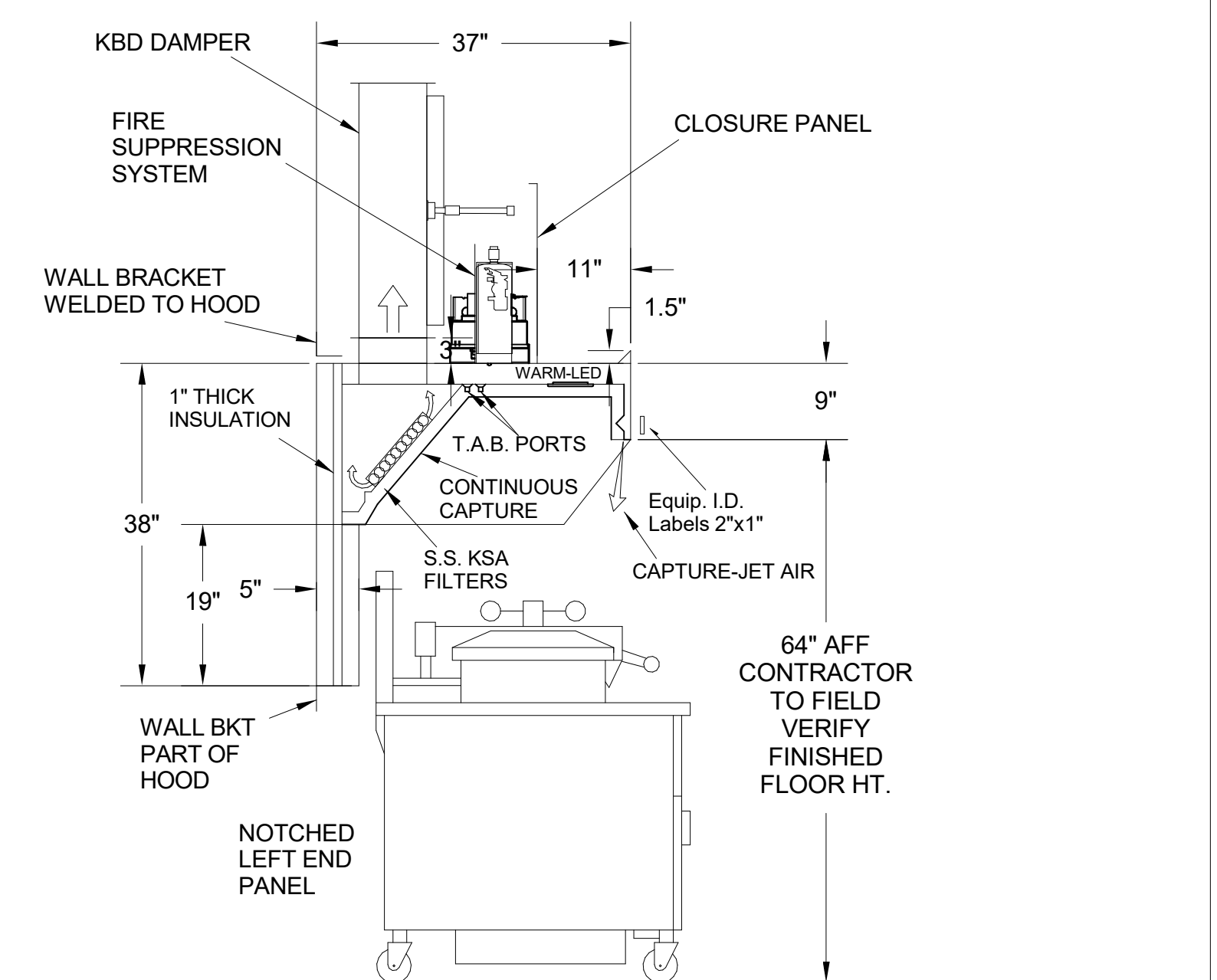
**MODEL:KBD CALIBRATED**  
KITCHEN BALANCING DAMPER EXHAUST VOLUME DAMPER

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.

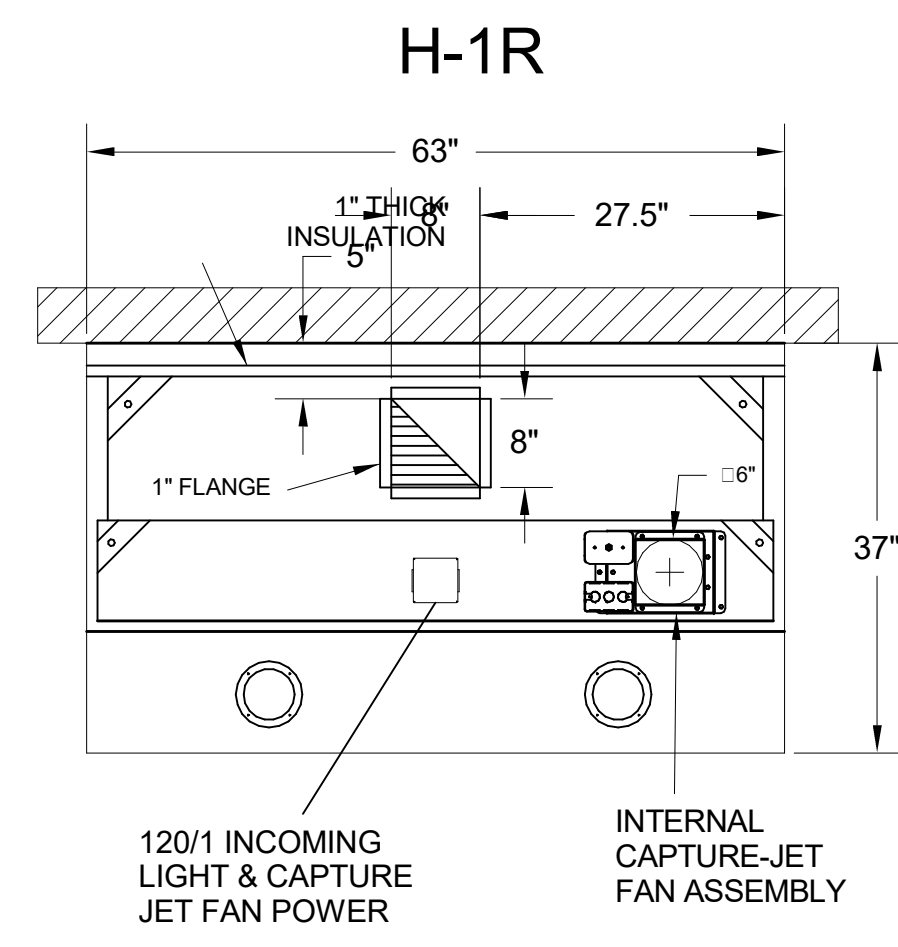
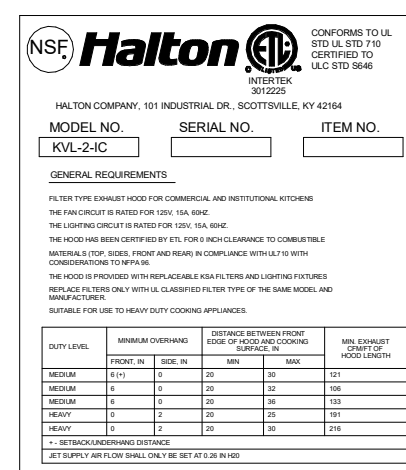


PLAN VIEW

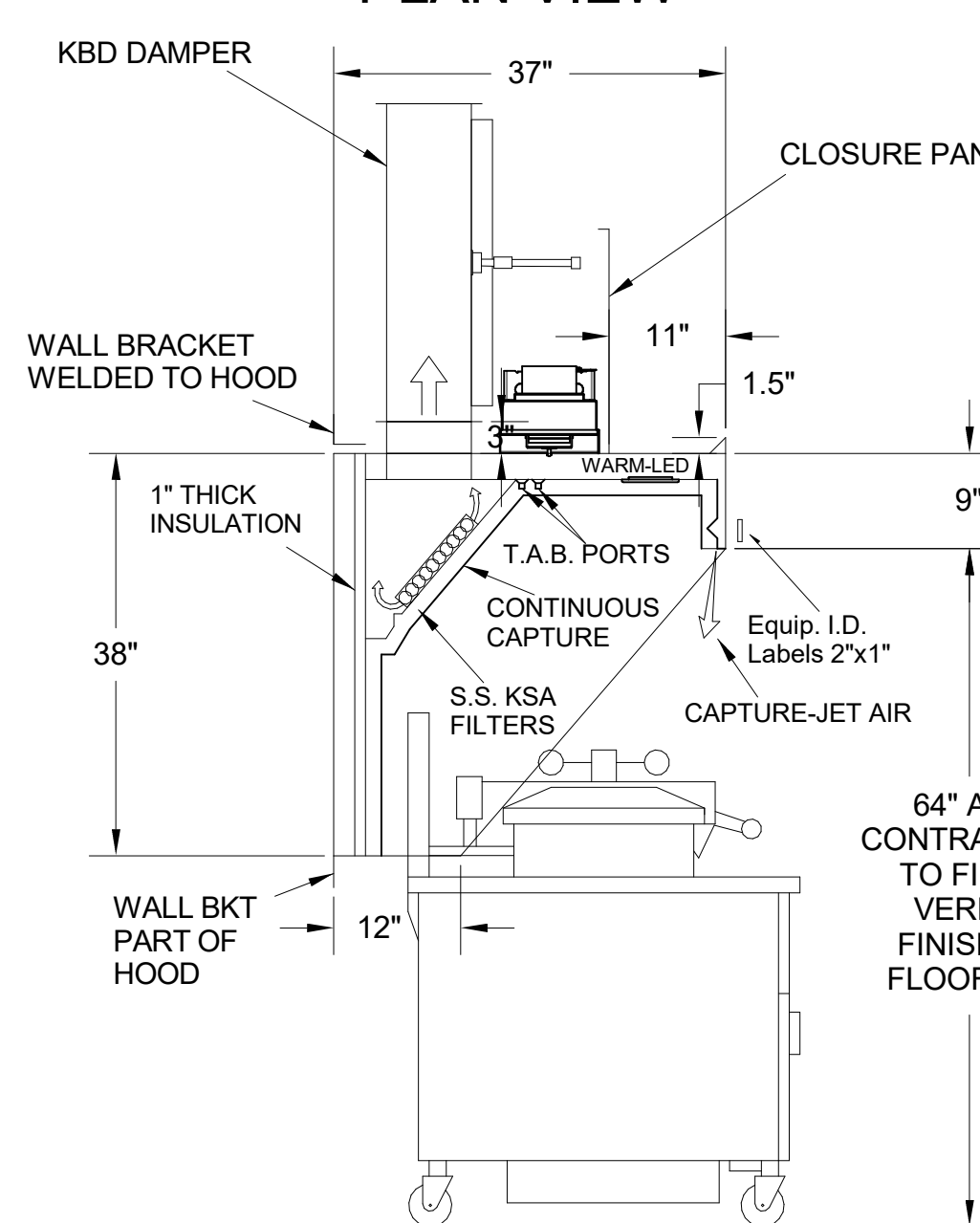


H-1L SECTION VIEW

- 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

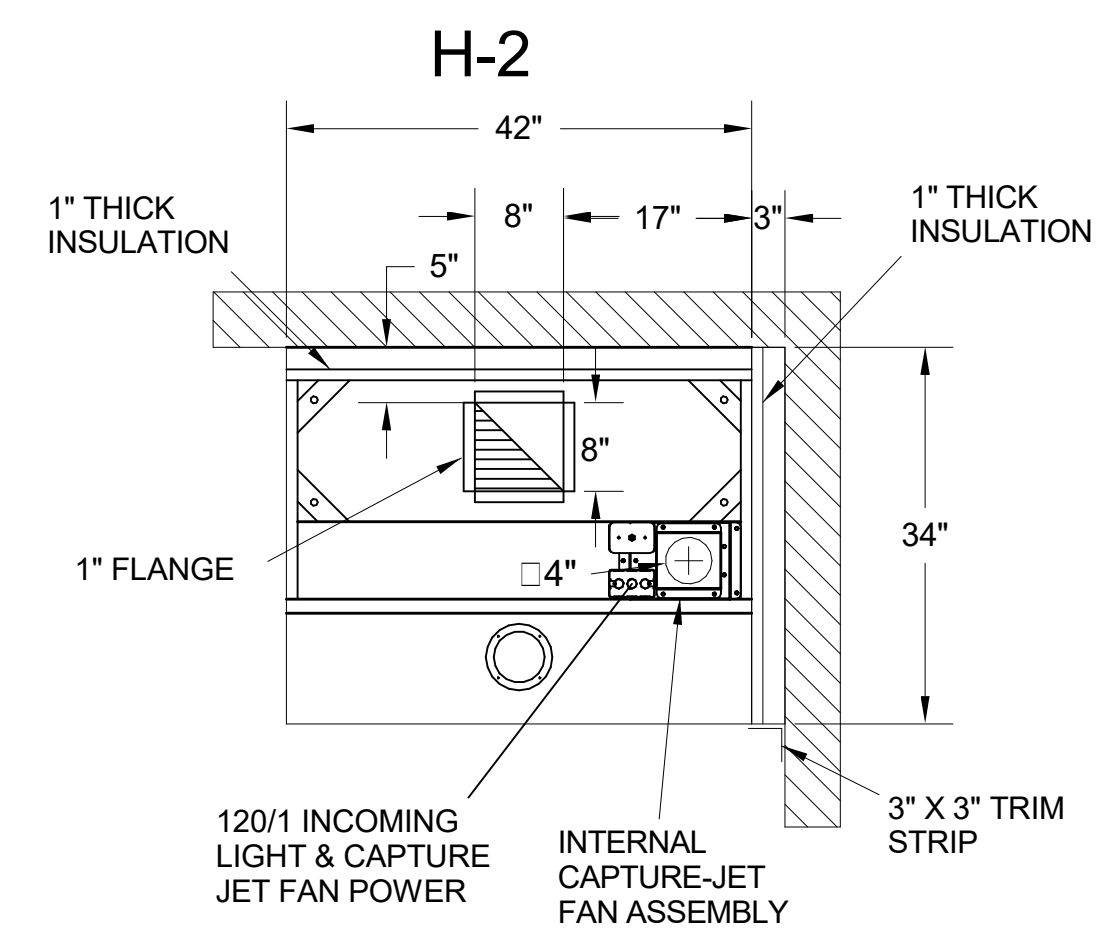
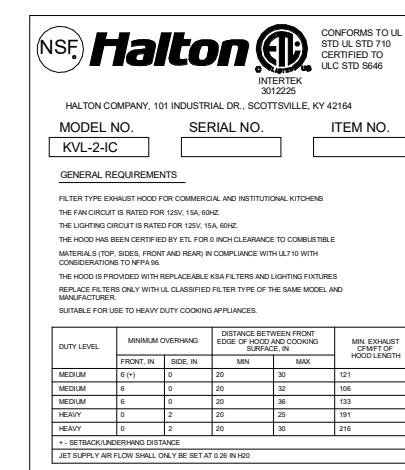


PLAN VIEW

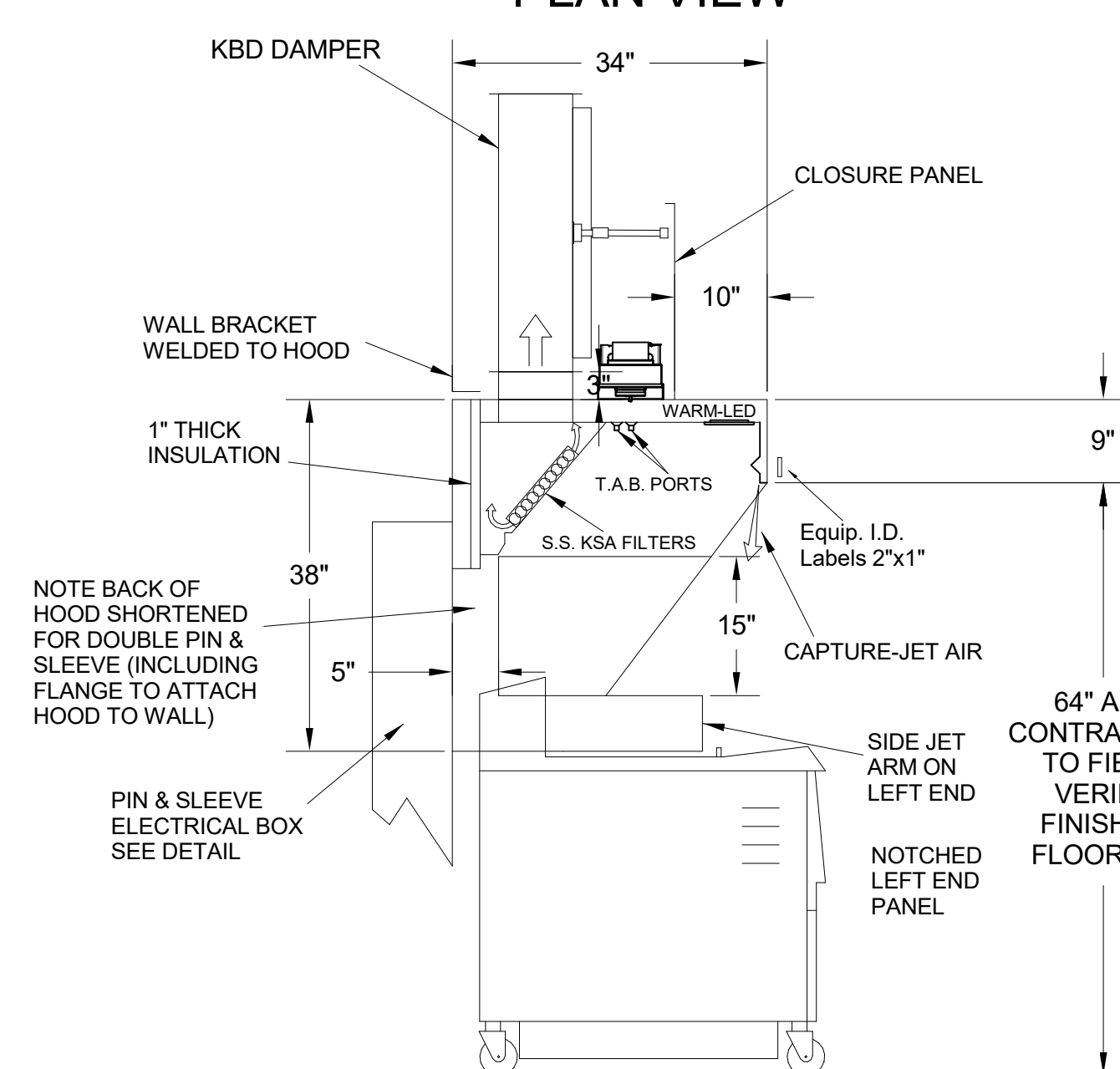


H-1R SECTION VIEW

- 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

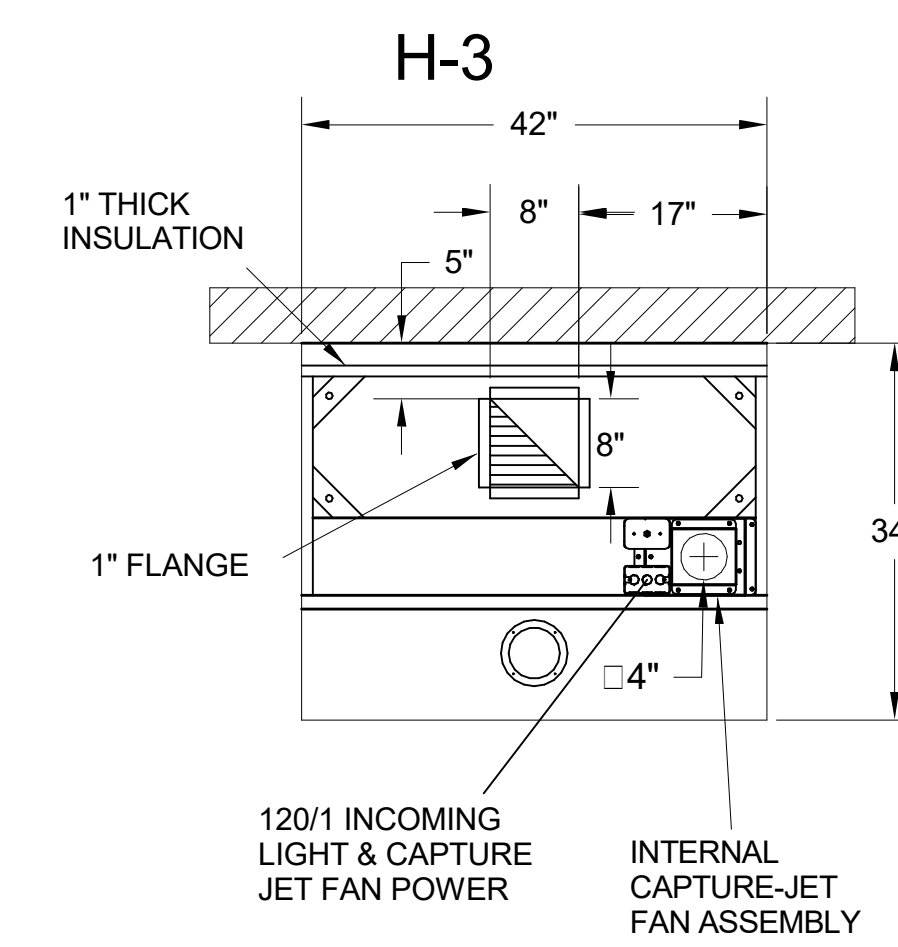


PLAN VIEW

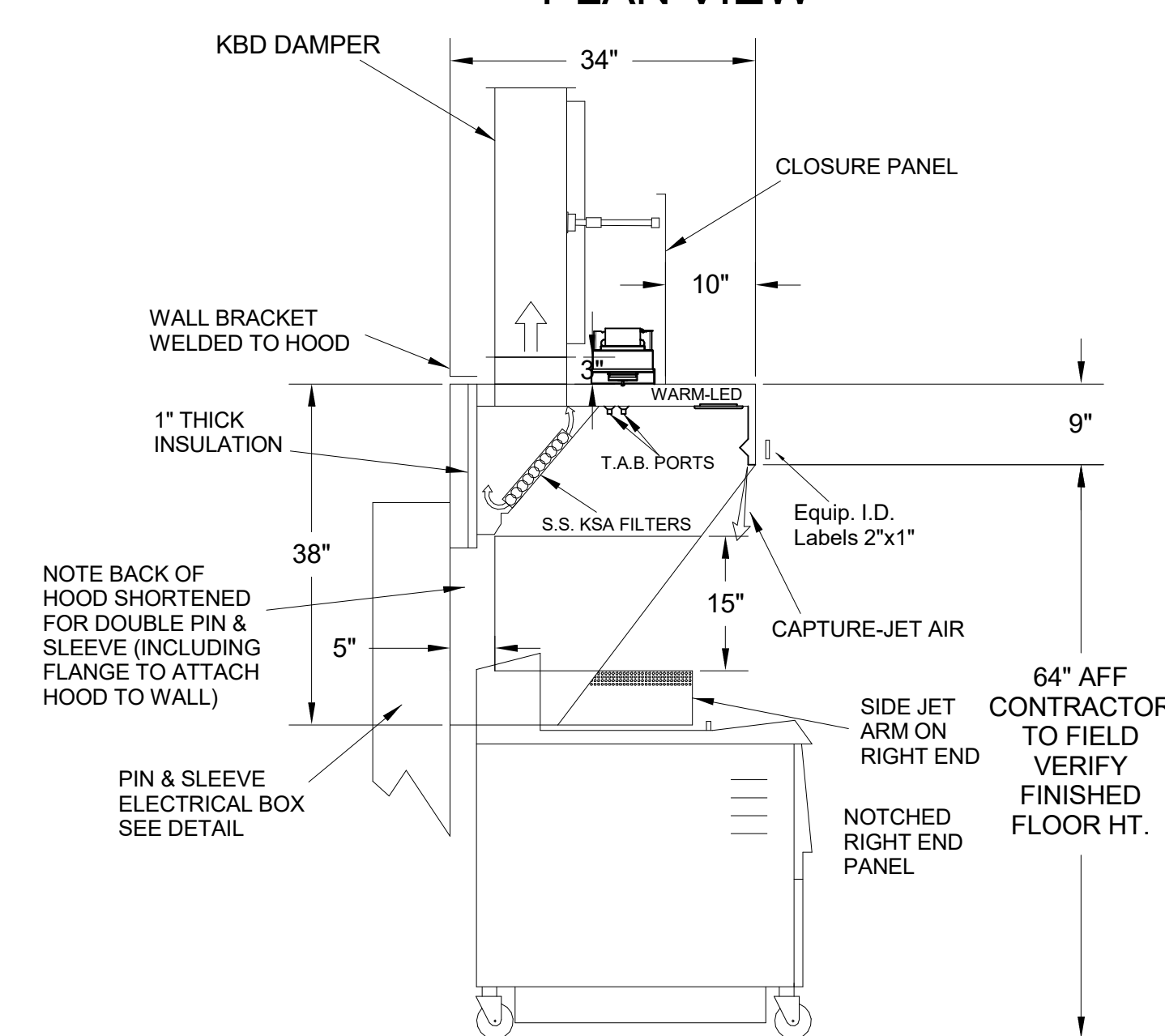


H-2 SECTION VIEW

- 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

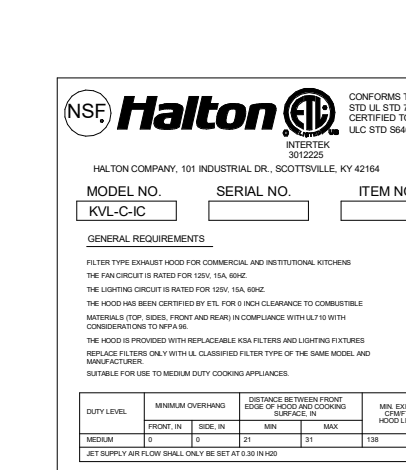


PLAN VIEW



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



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

DATE	BY	REVISION DESCRIPTION

PROJECT: **CHICK-FL-A**

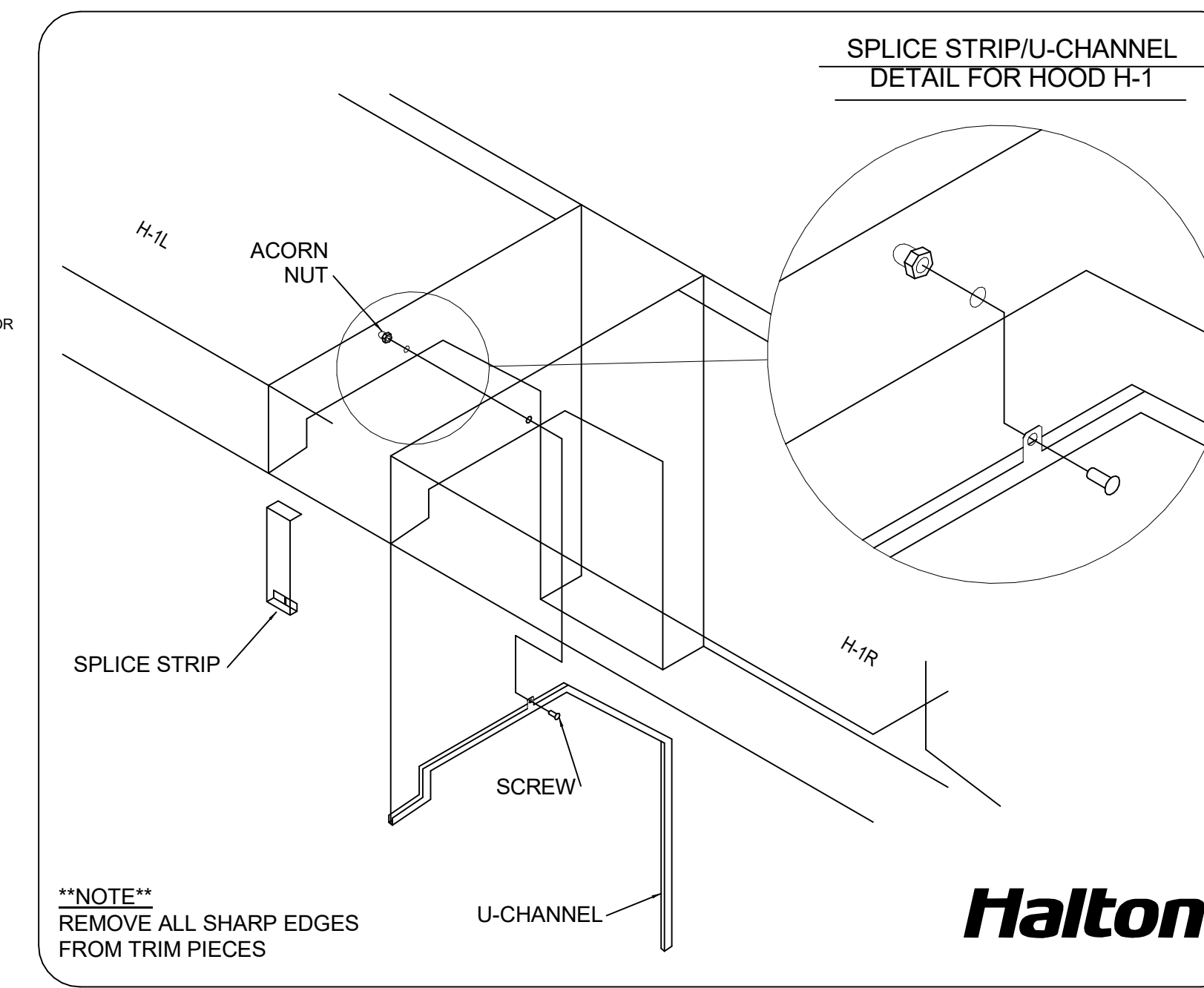
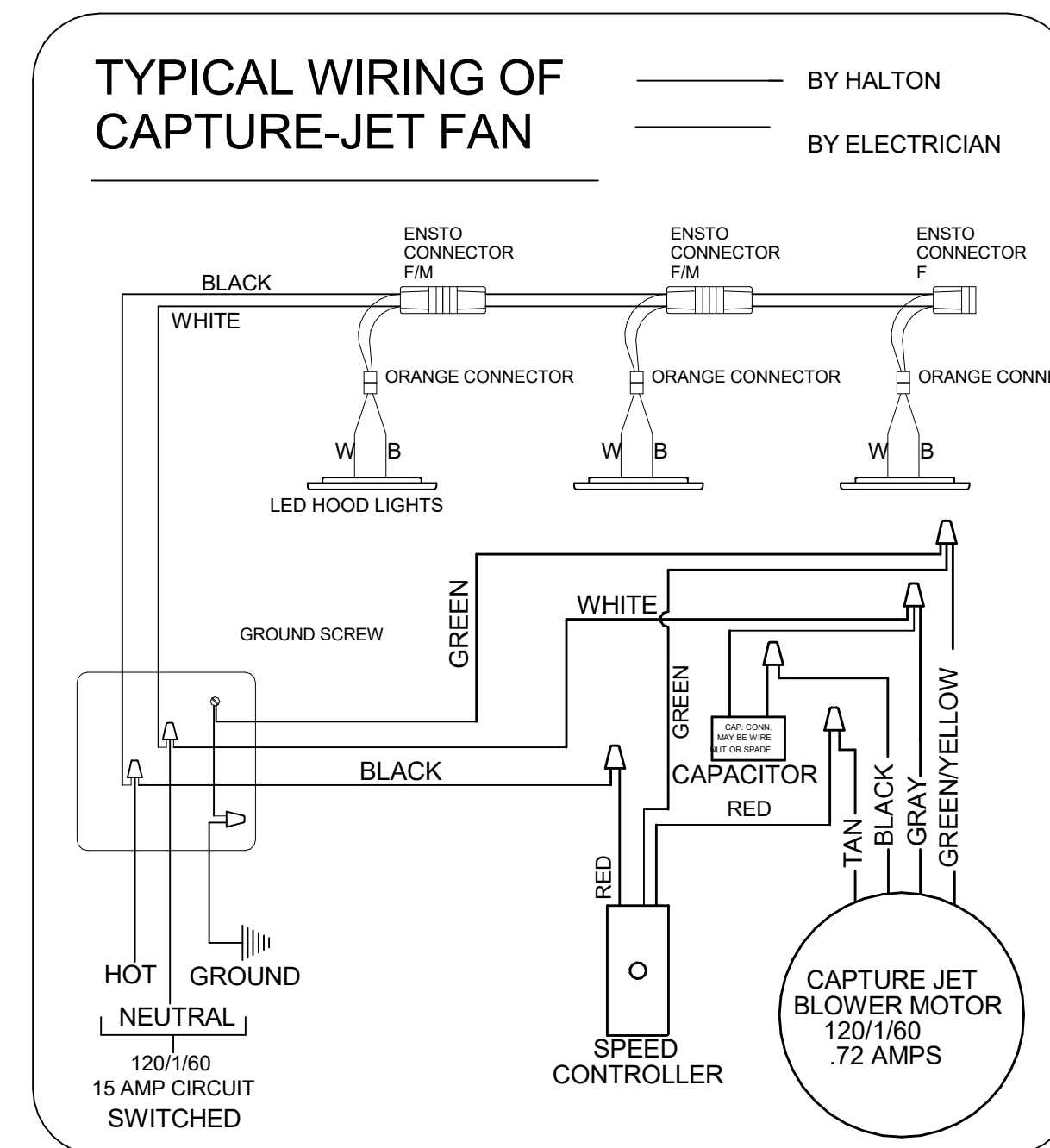
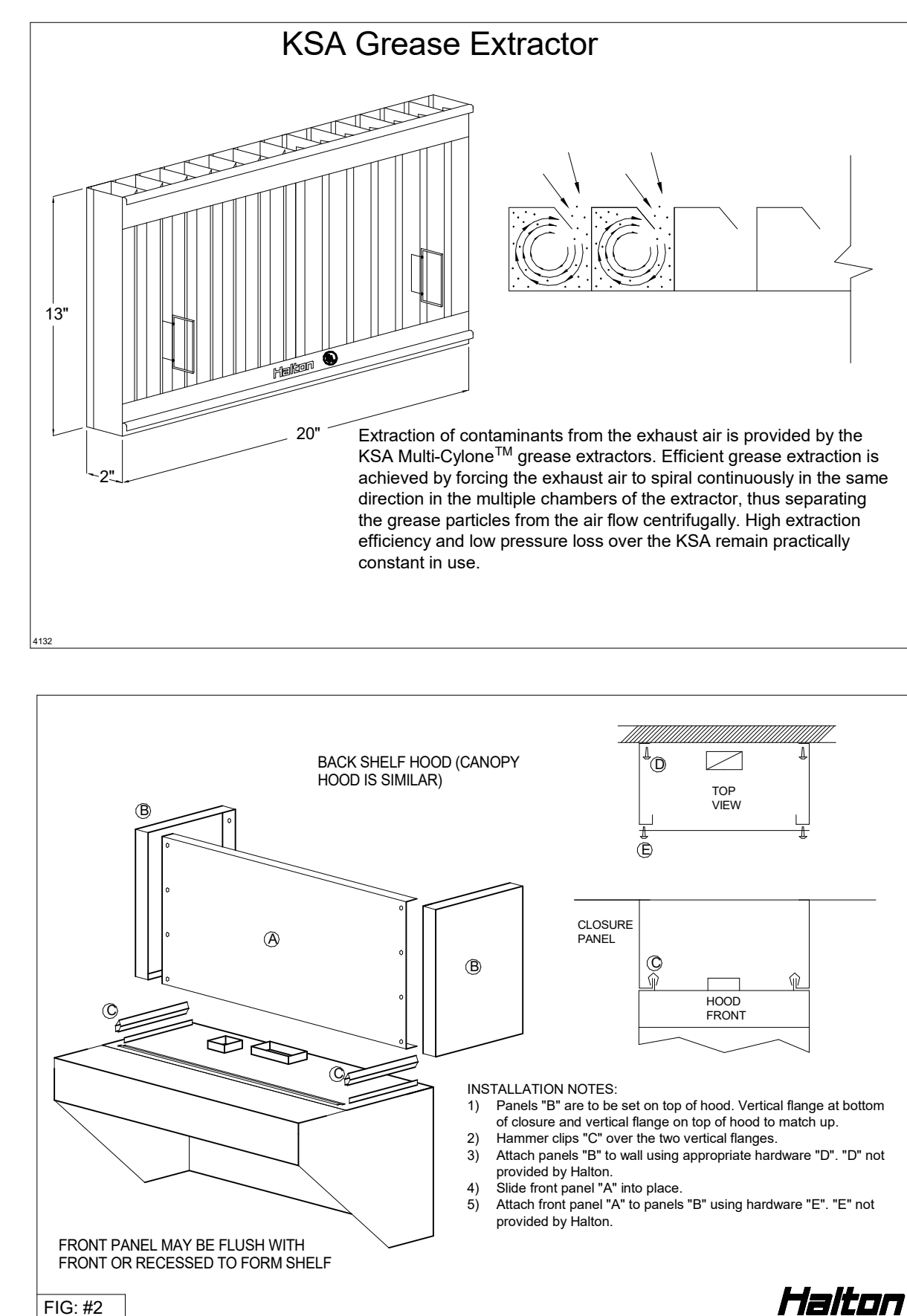
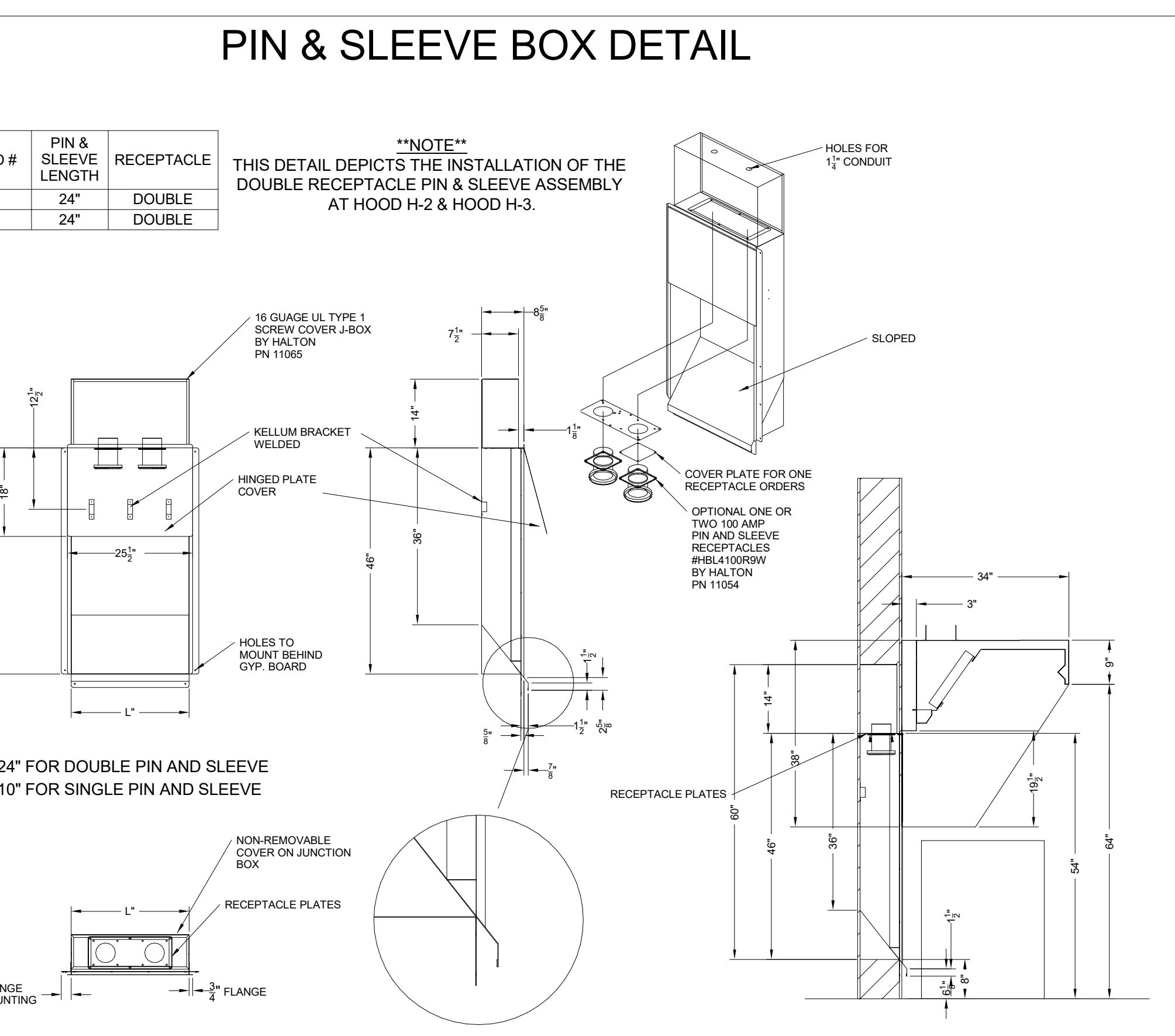
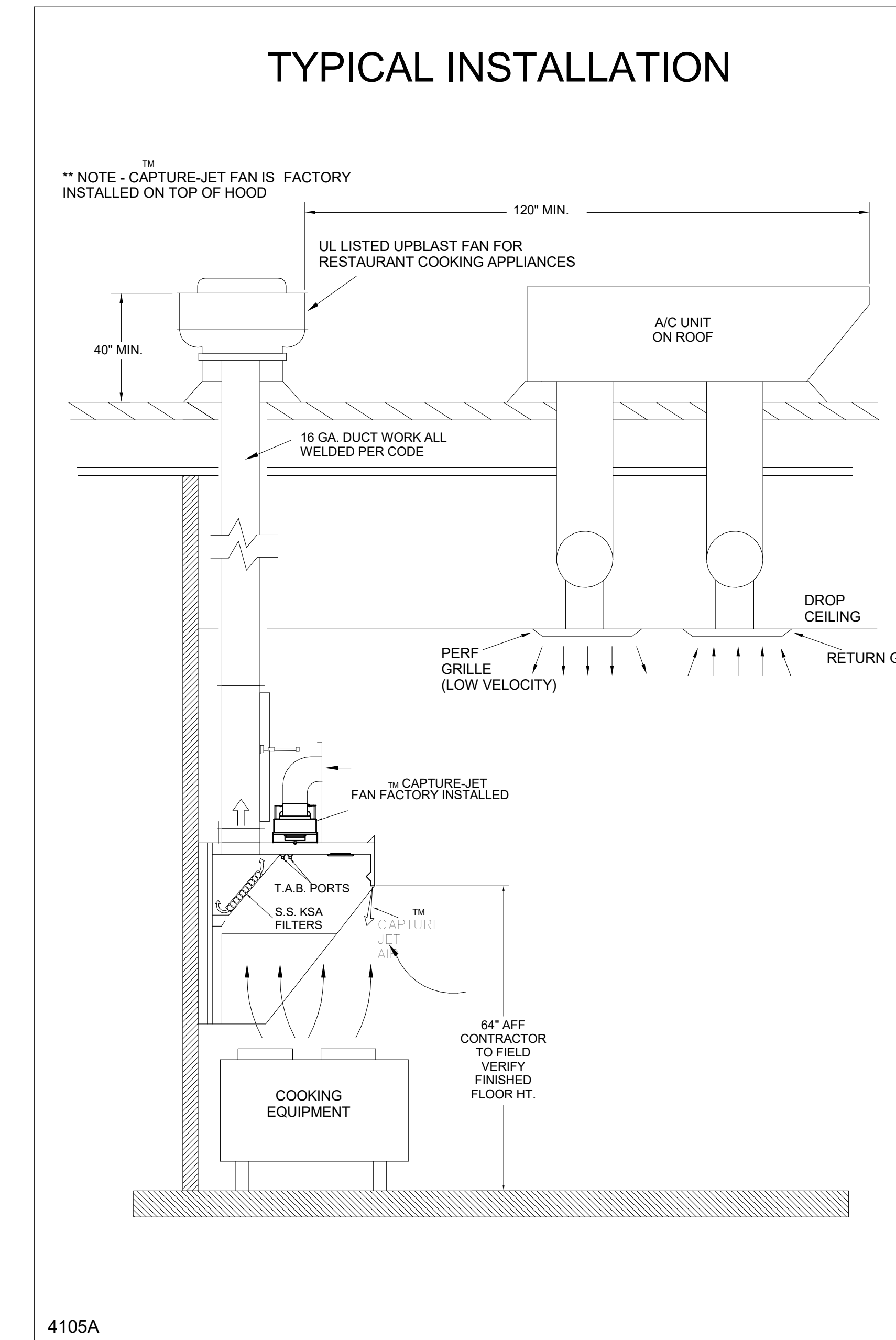
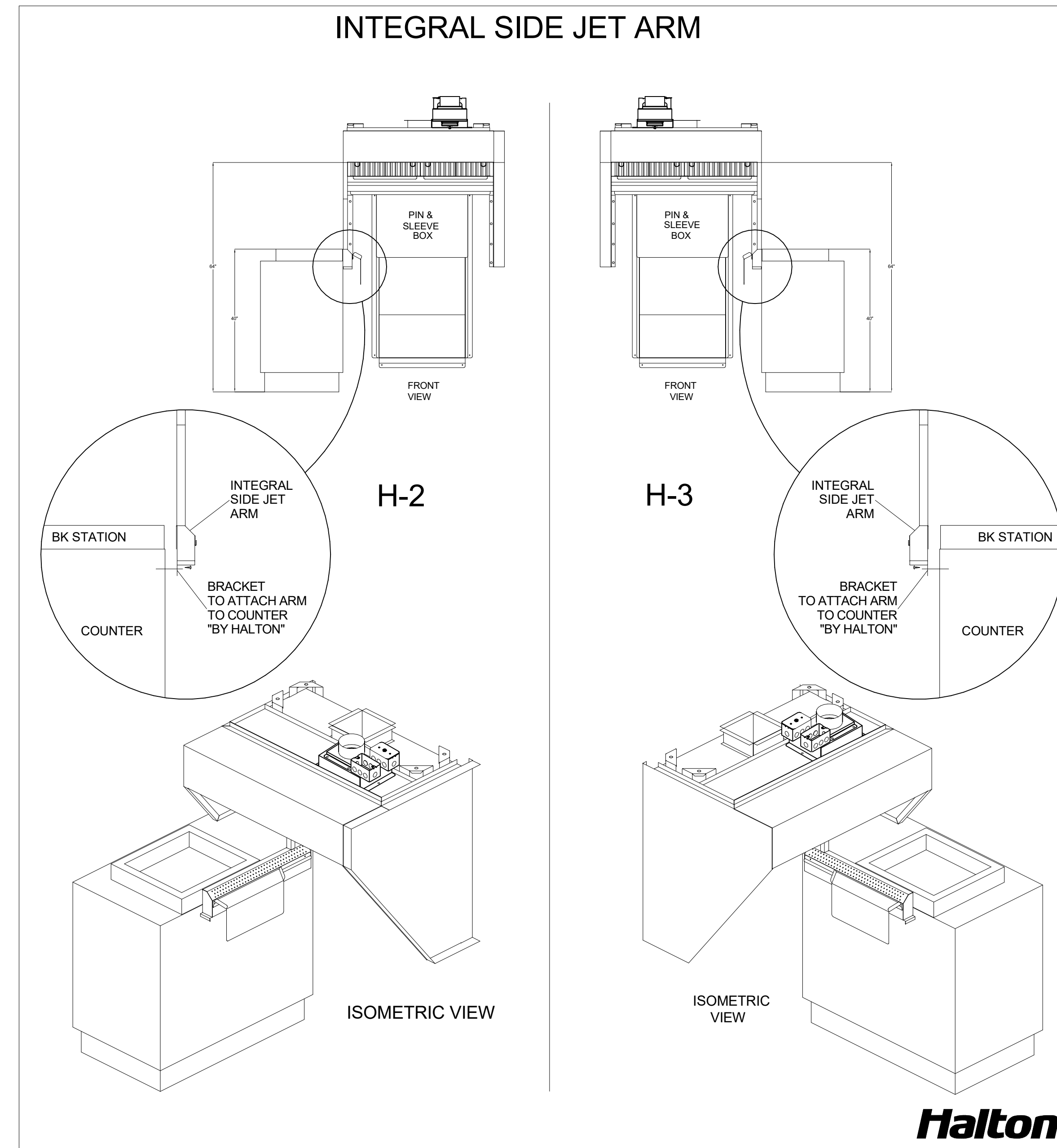
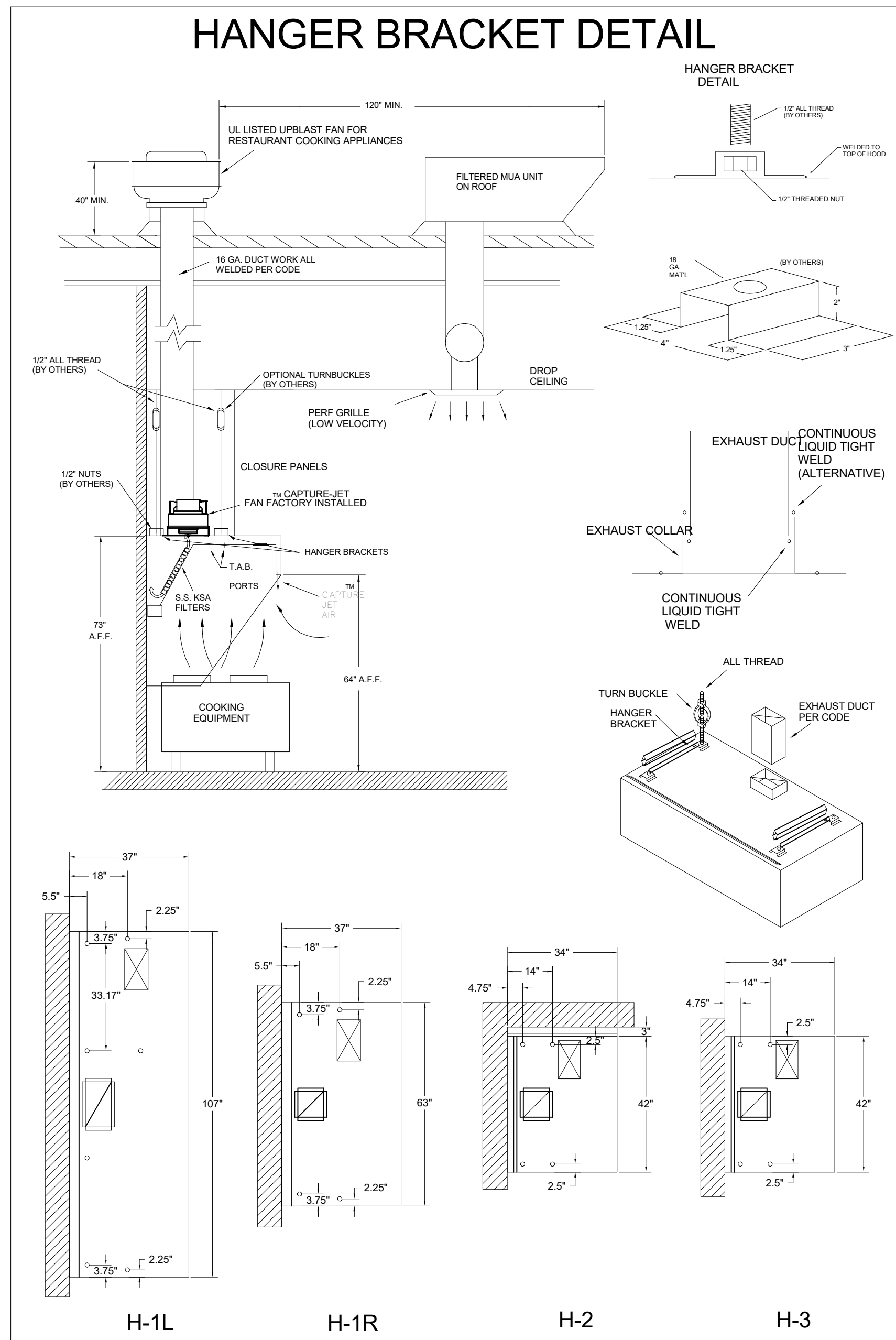
LOCATION: LINCOLN HIGHWAY FSR

DRAWN BY: DATE: 02/08/2024

SCALE: NTS

SN#: 05629

Halton logo and 'CARE FOR INDOOR AIR' slogan.



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

DUTY LEVEL	MINIMUM OVERHANG	FRONT IN	EDGE OF HOOD AND COOKING SURFACE IN	MIN	MAX	MIN EXHAUST CAPACITY OF HOOD LENGTH
MEDIUM	0	0	20	30	121	
MEDIUM	0	0	20	30	106	
MEDIUM	0	0	20	30	110	
HEAVY	0	2	20	30	191	
HEAVY	0	2	20	30	216	

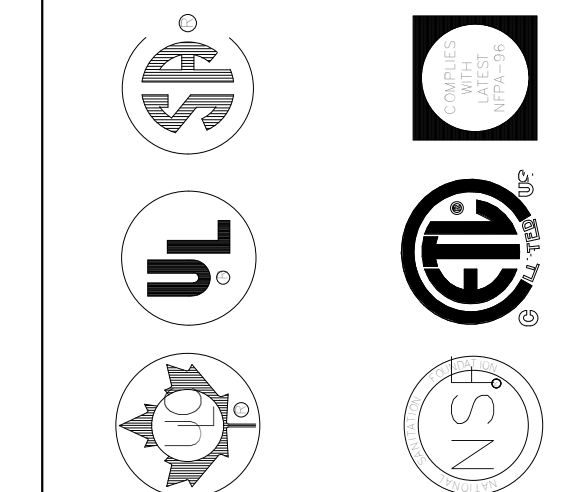
**GENERAL REQUIREMENTS**  
FILTER TYPE EXHAUST HOOD FOR COMMERCIAL AND INSTITUTIONAL KITCHENS  
THE FAN CIRCUIT IS RATED FOR 120V, 15A, 60HZ  
THE LIGHTING CIRCUIT IS RATED FOR 120V, 15A, 60HZ  
THE HOOD HAS BEEN CERTIFIED BY ETL FOR 6 INCH CLEARANCE TO COMBUSTIBLE MATERIALS (TOP, SIDES, FRONT AND REAR) IN COMPLIANCE WITH UL 710 WITH CONSIDERATIONS TO NFPA 96  
THE HOOD IS PROVIDED WITH REPLACEABLE KSA FILTERS AND LIGHTING FUTURES  
KSA FILTERS ONLY WITH UL CLASSIFIED FILTER TYPE OF THE SAME MODEL AND MANUFACTURER  
SUITABLE FOR USE TO HEAVY DUTY COOKING APPLIANCES

**NSF Halton** CONFORMS TO UL STD UL STD 710 CERTIFIED TO UL STD 8646

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

**GENERAL REQUIREMENTS**  
FILTER TYPE EXHAUST HOOD FOR COMMERCIAL AND INSTITUTIONAL KITCHENS  
THE FAN CIRCUIT IS RATED FOR 120V, 15A, 60HZ  
THE LIGHTING CIRCUIT IS RATED FOR 120V, 15A, 60HZ  
THE HOOD HAS BEEN CERTIFIED BY ETL FOR 6 INCH CLEARANCE TO COMBUSTIBLE MATERIALS (TOP, SIDES, FRONT AND REAR) IN COMPLIANCE WITH UL 710 WITH CONSIDERATIONS TO NFPA 96  
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SUITABLE FOR USE TO HEAVY DUTY COOKING APPLIANCES

**FOR REFERENCE ONLY**



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 HALTON CO. (USA)  
 101 INDUSTRIAL DRIVE  
 SCOTTSVILLE, KY 42264  
 1-905-624-0301  
 REVISION DESCRIPTION  
 1  
 2  
 3  
 4  
 5  
 6  
 7

**CHICK-FLA**

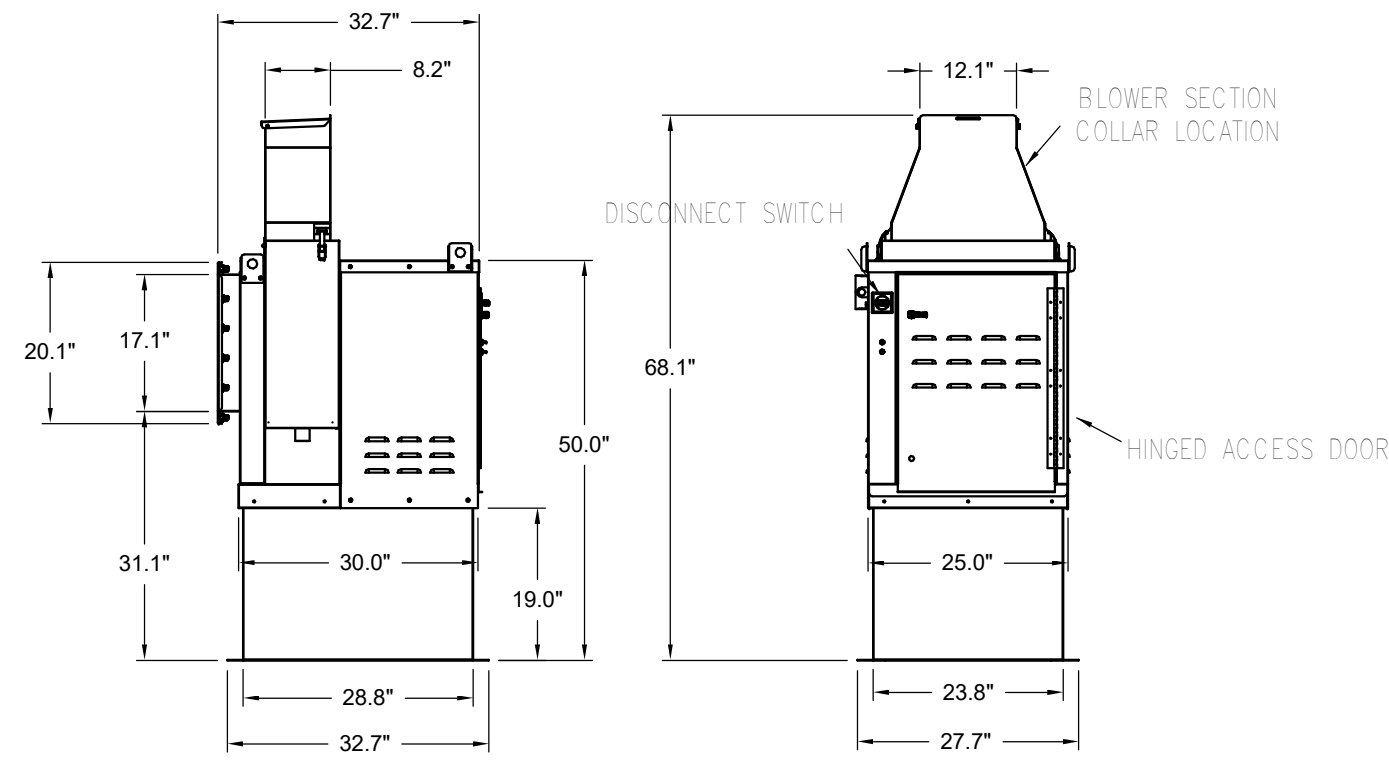
PROJECT: CHICK-FLA  
 LOCATION: LINCOLN HIGHWAY FSR  
 DRAWN BY: DATE: 02/08/2024  
 SCALE: NTS  
 Halton Dwg:

Sheet **MH-1.2**

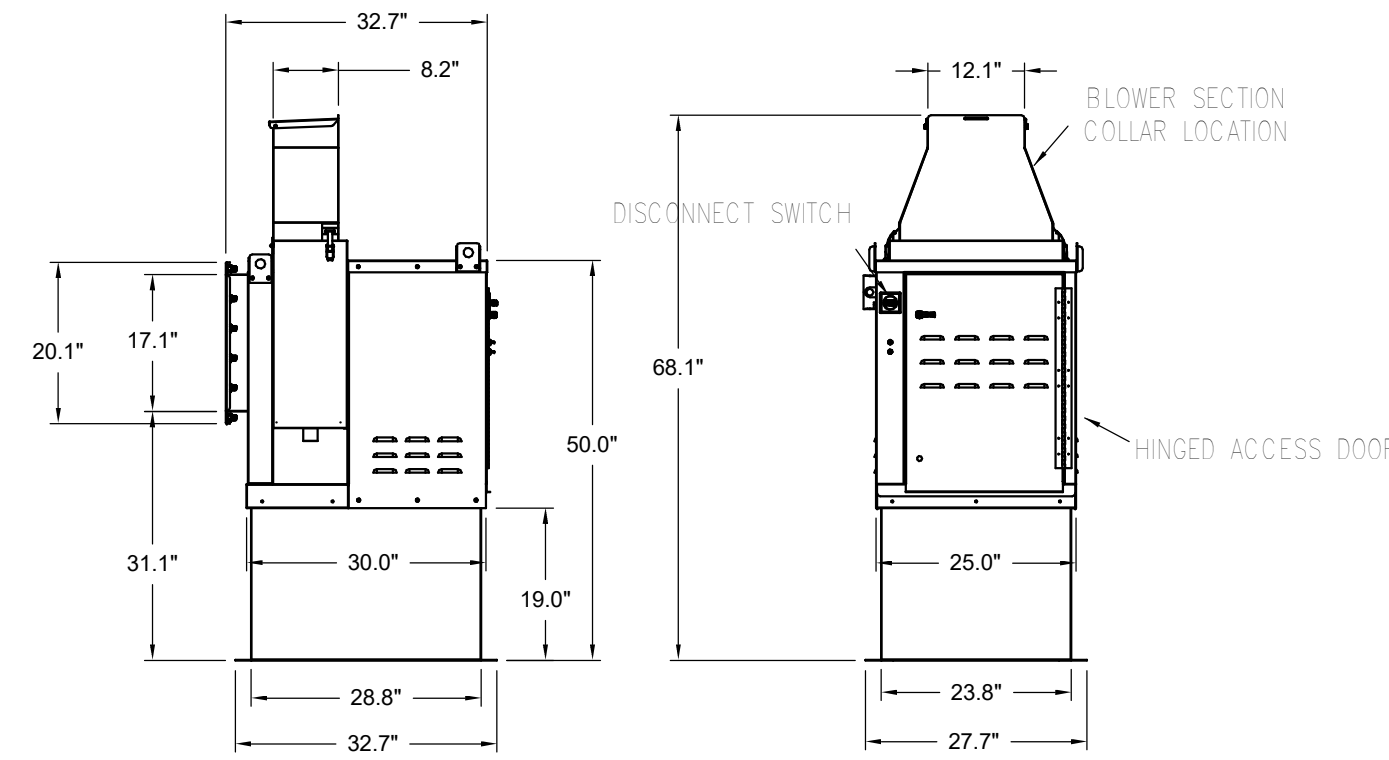


**FOR REFERENCE ONLY**

**EF-1**

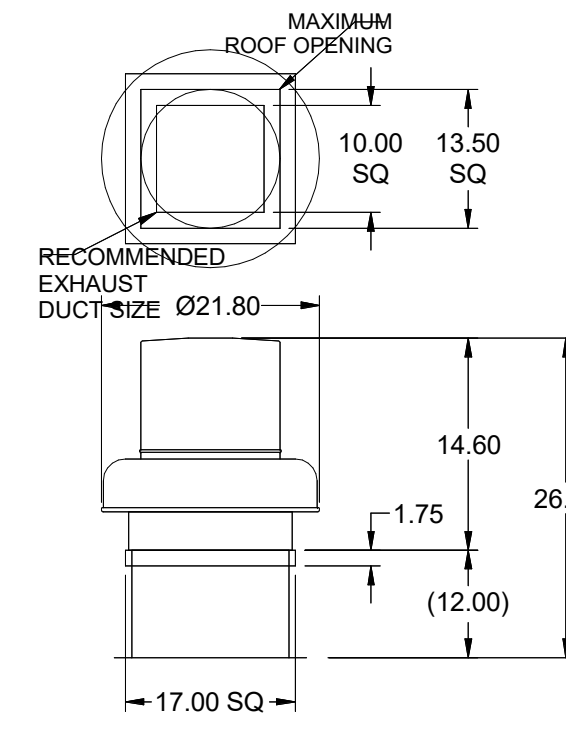


**EF-2**



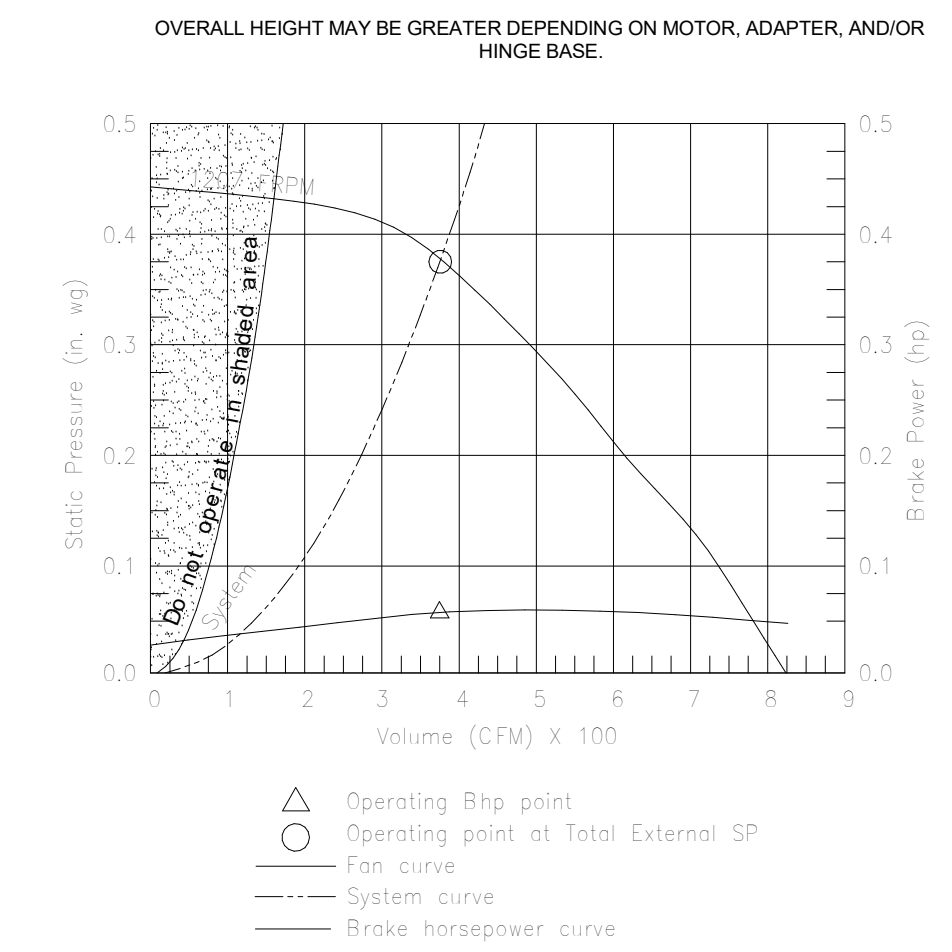
**Model: XRED-095-VG**  
Direct Drive Centrifugal Roof Exhaust Fan

Dimensional	
Quantity	1
Weight w/ Acc's (lb)	28
Weight w/ Acc's and Curb (lb)	35
Weight w/ Acc's and Curb (kg)	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/ft <sup>3</sup> )	0.075
Tip Speed (ft/min)	3,437
Static Eff. (%)	41
Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	323



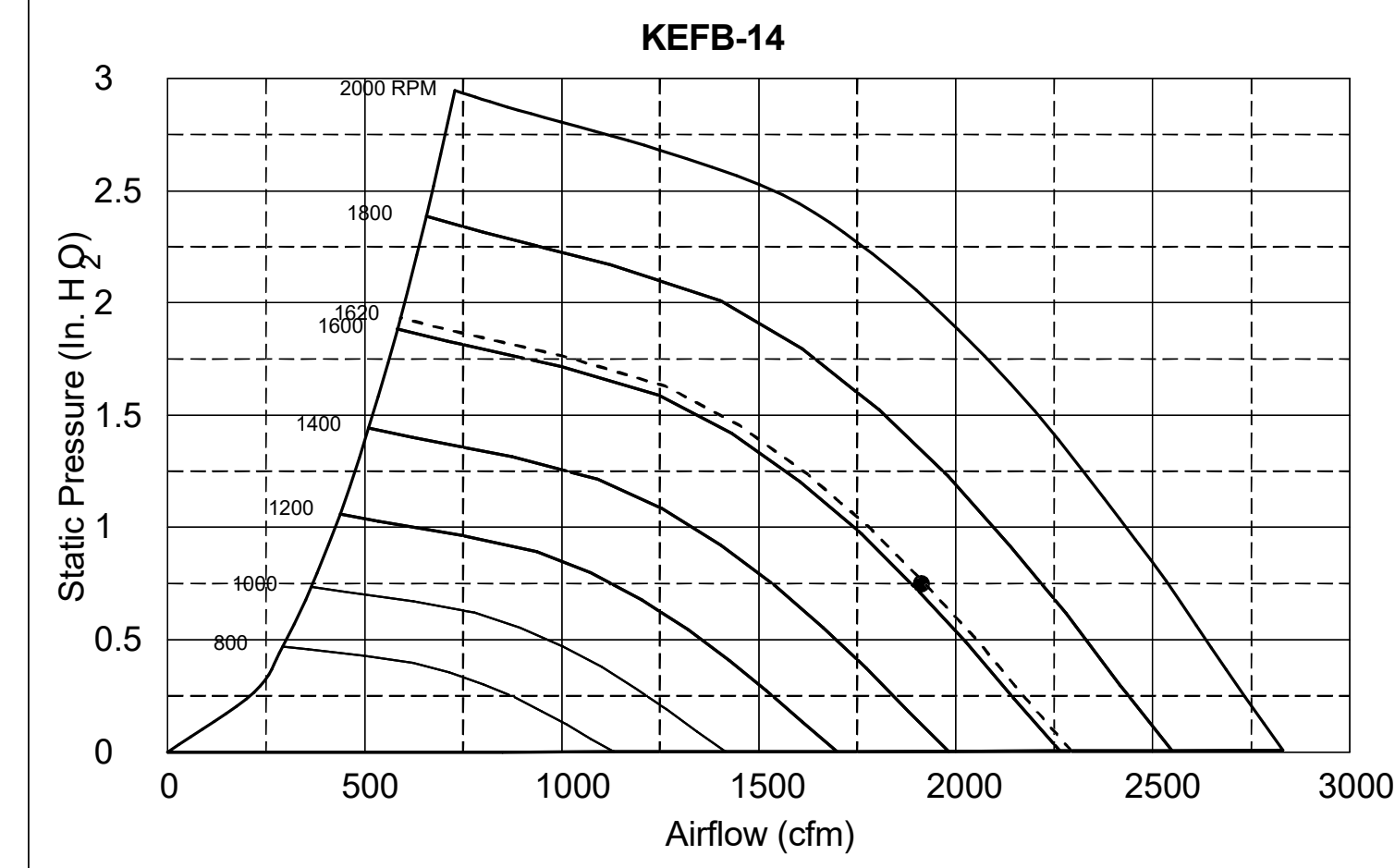
Motor	
Motor Mounted	Yes
Size (hp)	1/8 (or greater)
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1550
Efficiency Rating	Standard
Windings	1

**EF-3**



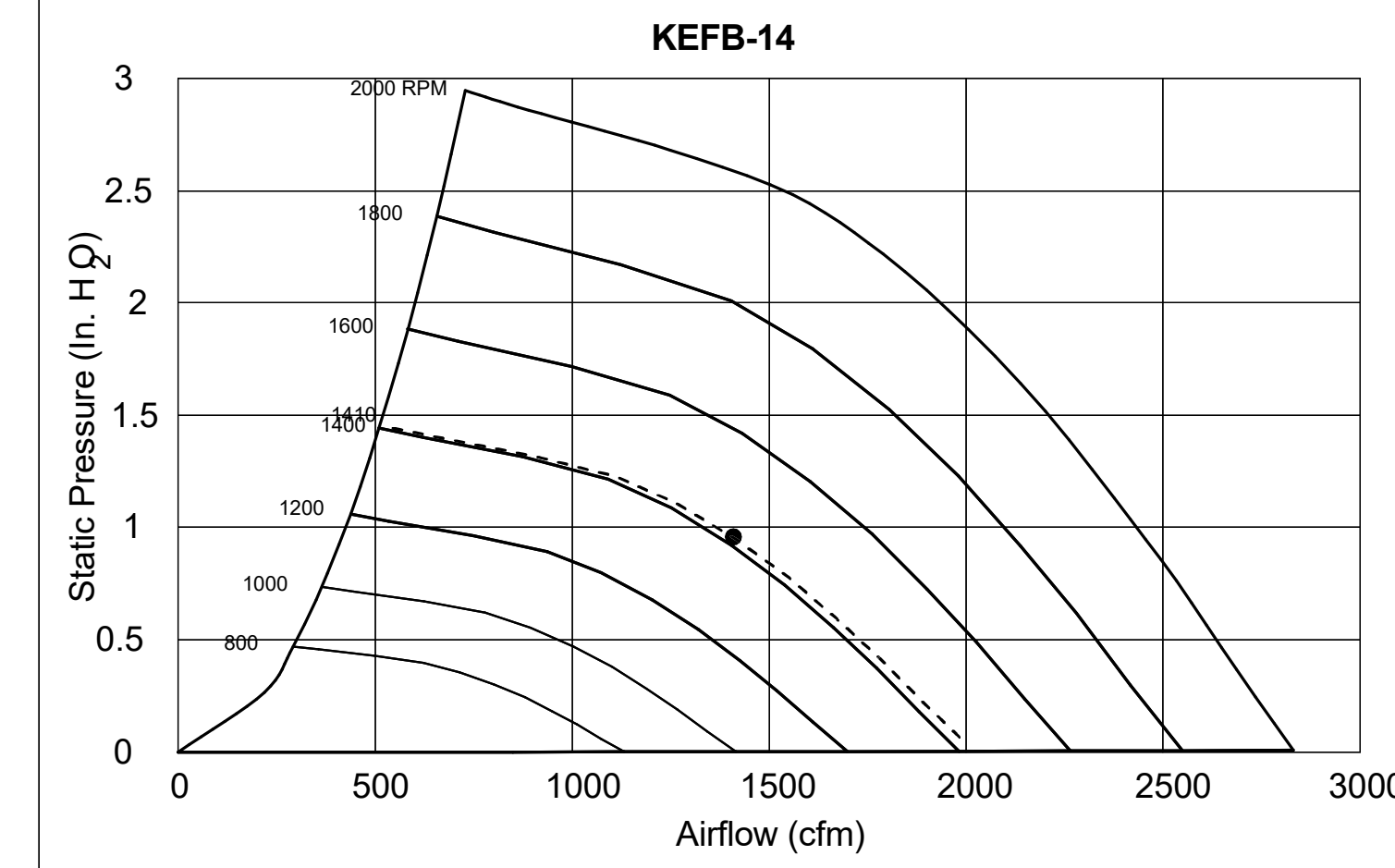
**Halton KEFB Exhaust Fan**

Job Name	Check-File-A	Location	EF-1	Item No	Qty	Volts/Ph/Amprs	115/1/60	Static Pressure, in WC	4
Model	KEFB-14	Fan RPM	1,747	Fan BHP	0.56	Motor HP	85.3	TAB Port, in WC	4
Airflow, cfm	1,913	Fan BHP	0.75						
Static Pressure, in WC									



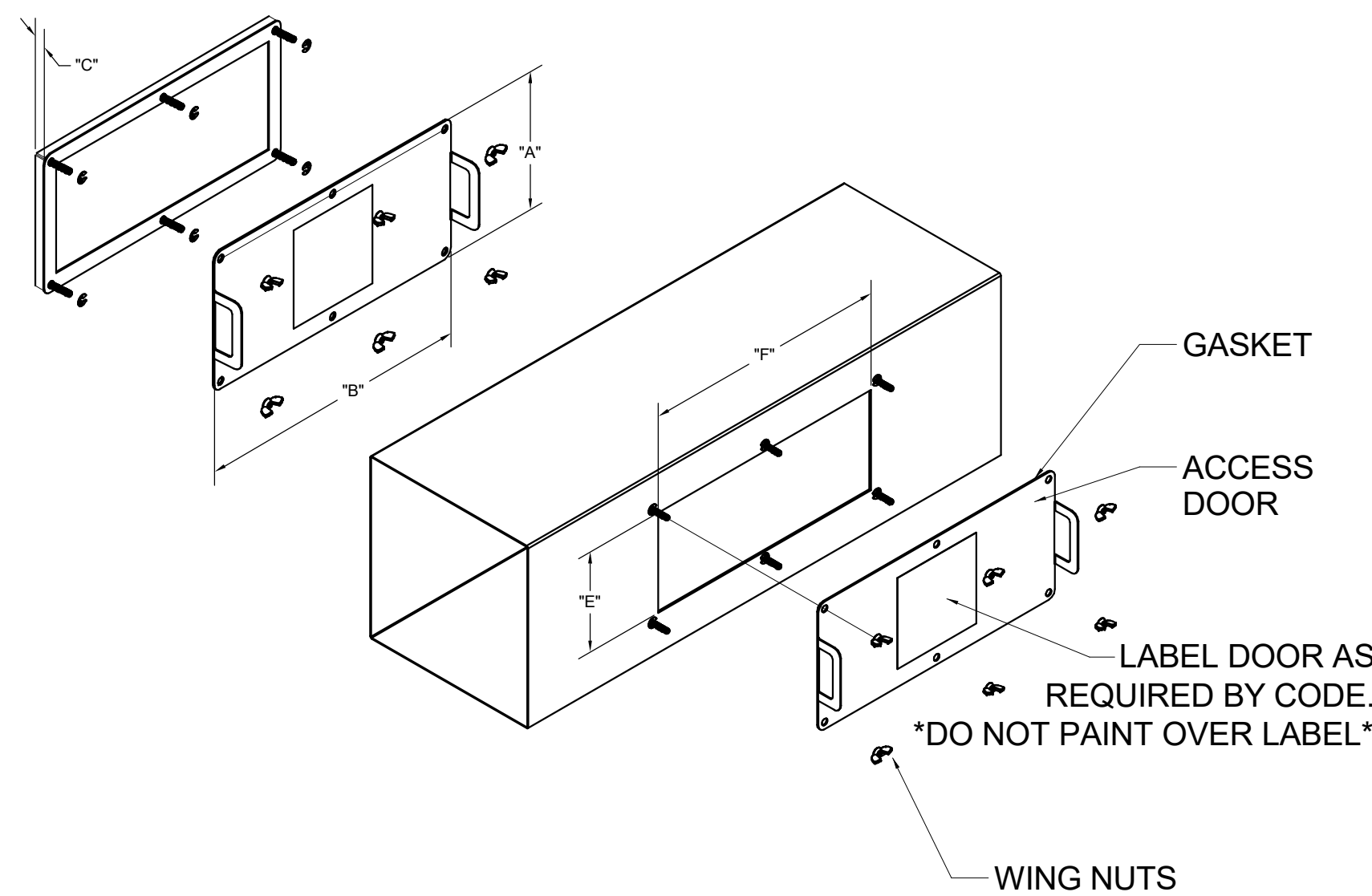
**Halton KEFB Exhaust Fan**

Job Name	Check-File-A	Location	EF-2	Item No	Qty	Volts/Ph/Amprs	115/1/60	Static Pressure, in WC	2.1
Model	KEFB-14	Fan RPM	1,522	Fan BHP	0.38	Motor HP	81.6	TAB Port, in WC	2.1
Airflow, cfm	1,402	Fan BHP	0.95						
Static Pressure, in WC									

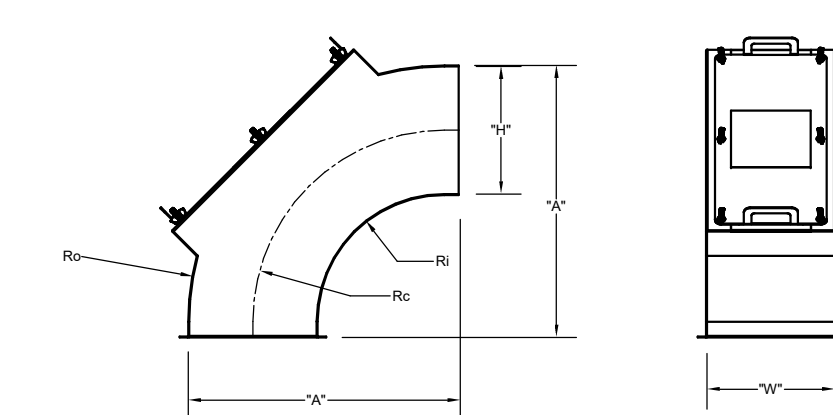
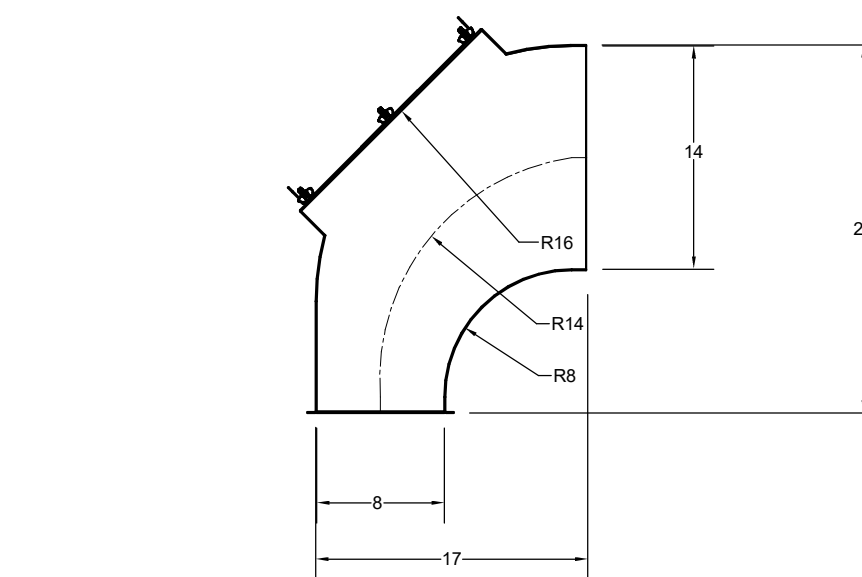


GREASE ACCESS DOOR					
MODEL	"A"ZE	"B"	"C"	"E"	"F"
KAP0715	7	15	FLAT	5.5	13.5
KAP1015	10	15	1/2	7	12

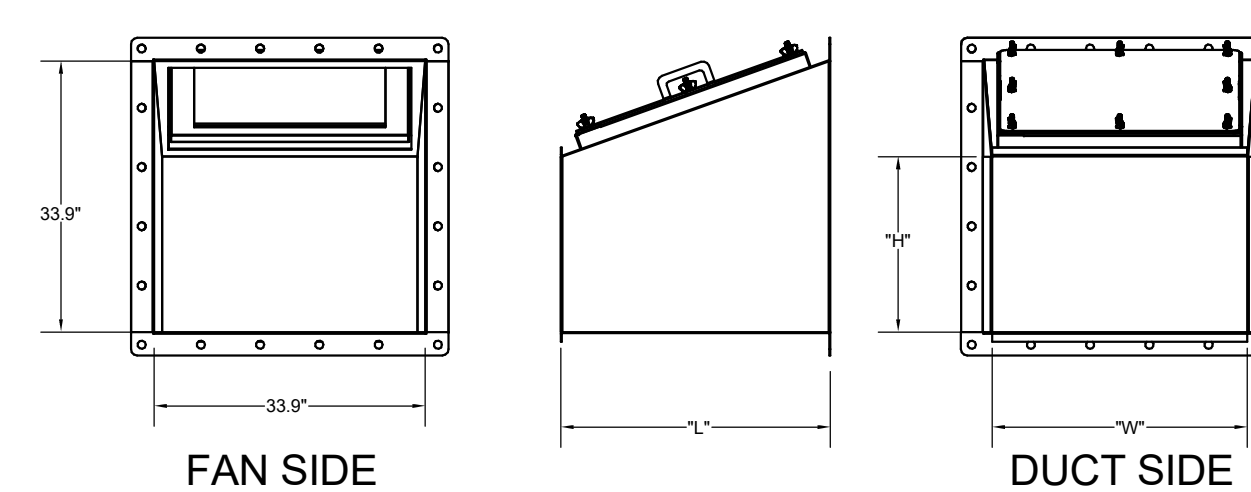
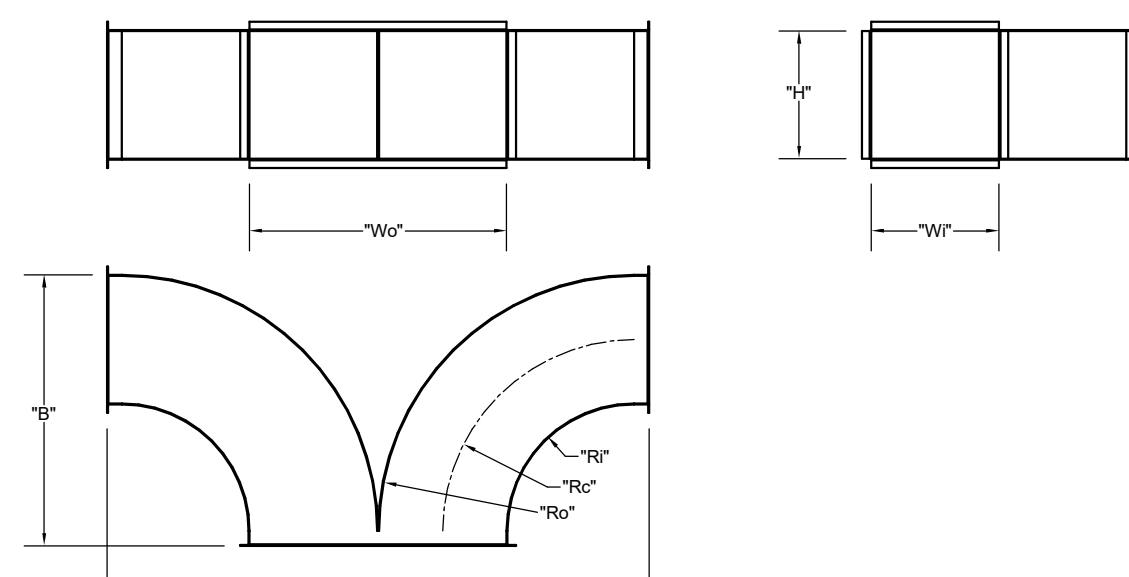
ACCESS DOORS SHALL BE U.L. 1978 LISTED OR FIELD FABRICATED, REQUIRE NO TOOLS FOR REMOVAL AND MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE IMC. ACCESS DOOR SHALL BE SECURED WITH THUMB SCREWS. ACCESS DOORS SHALL BE SEALED WITH A MINIMUM 1500 DEREZ GASKET MATERIAL.



INSTALL PER MANUFACTURER'S INSTRUCTIONS

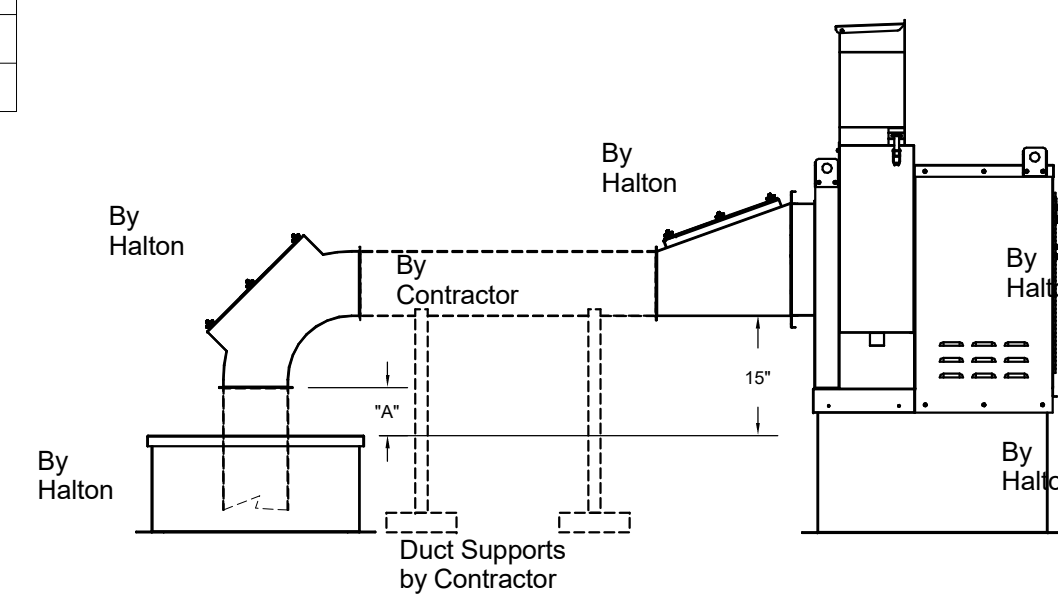


"H"	"W"	"A"	Ro	Rc	Ri
14	8	29	28	21	14
8	8	17	16	12	8



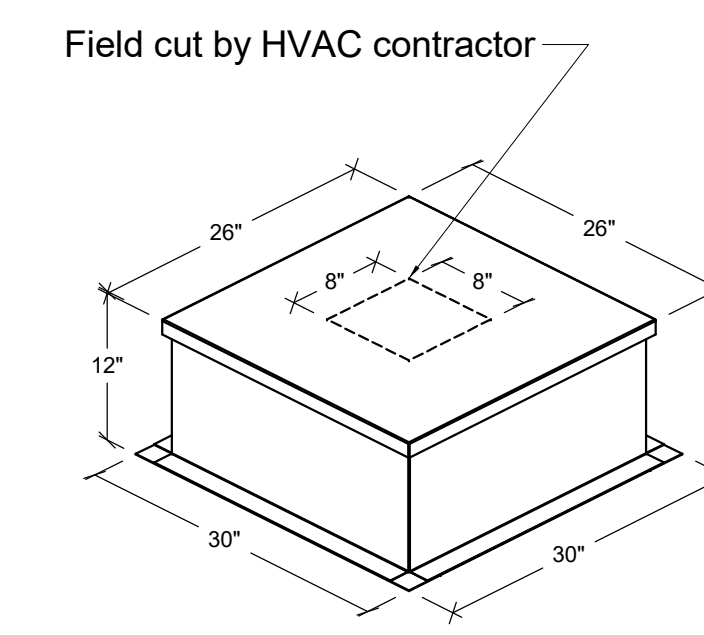
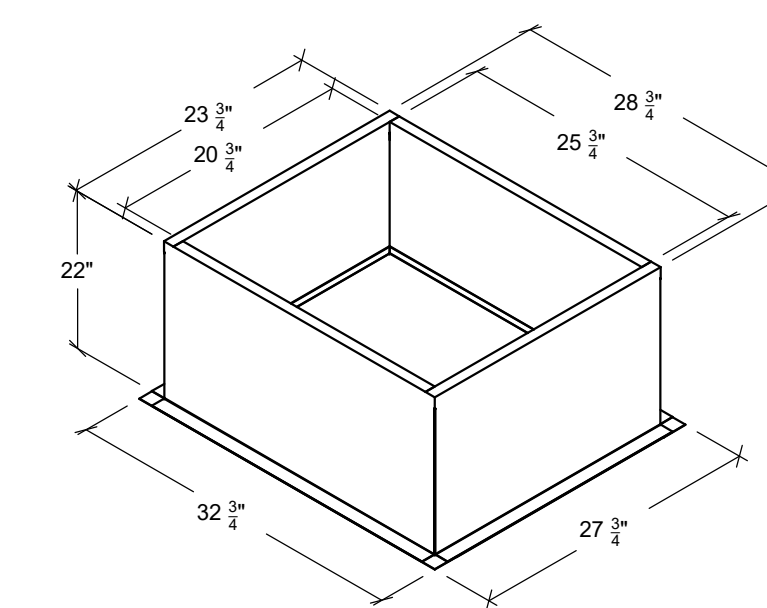
TRANSITION	"H"	"W"	"L"
EF-1 (5)	14	16	25
EF-2 (6)	10	16	17

	"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



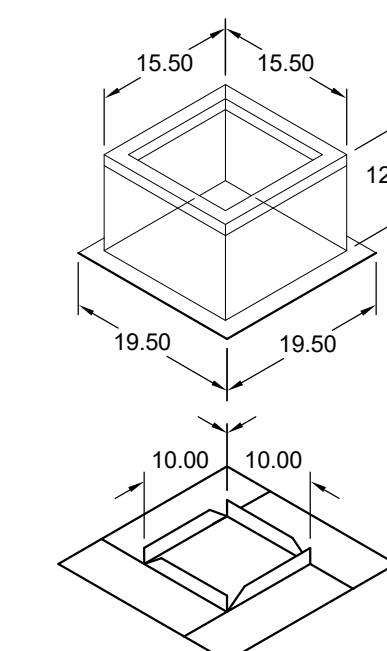
"A" DISTANCE AVAILABLE FOR DUCT SLOPE ELBOW	"A"
EF-1	14 X 8
EF-2	8 X 8

**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 aluminum 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 aluminum steel - Straight Sided without a cant - 2 in. mounting flange - Height is 22 in. - 16 ga. cap

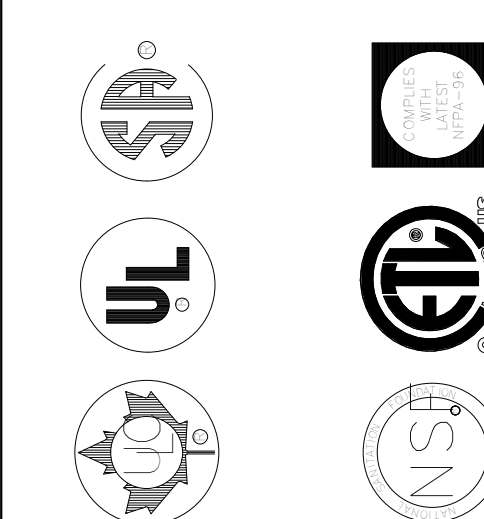


**Model: GPI**  
For Model: XRED-090-VG  
Curb & Damper Tray

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

General					
Tag	Qty	Model	Sizing Method	Underpinning (in.)	Weight (lb)
EF-3	1	GPI-17	Nominal	1.5	14

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.)	Hinge Base Width (in.)
12	17	17	15.5	15.5	12	12	19.5



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 HALTON CO. (USA)  
 101 INDUSTRIAL DRIVE  
 SCOTTSVILLE, KY 42764  
 1-270-237-5600  
 HALTON CO. (CANADA)  
 1021 BREVIK PLACE  
 MISSISSAUGA, ON L4W 3R7  
 1-905-624-0301  
 REVISION DESCRIPTION

PROJECT: **CHICK-FIL-A**  
 LOCATION: **LINCOLN HIGHWAY FSR**  
 DRAWN BY: **NTS**  
 SCALE: **1/8" = 1'-0"**  
 DATE: **02/08/2024**  
 SN# **05629**  
 Revision 1  
 Revision 2  
 Revision 3  
 Revision 4  
 Revision 5  
 Revision 6  
 Revision 7

