

HVAC ABBREVIATIONS	SUPPLIER/VENDOR ABBREVIATIONS
ACC	AIR COOLED CONDENSING UNIT (HVAC)
AFB	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
CD	CEILING DIFFUSER
CU	CONDENSING UNIT (COOLER)
EF	EXHAUST FAN
ER	EXHAUST REGISTER
(E)/EXT'G	EXISTING
HD	HOOD
MAU	MAKEUP AIR UNIT
OBD	BLADE DAMPER
RG	RETURN GRILL
RTU	ROOFTOP UNIT
SR	SUPPLY REGISTER
VSC	VARIABLE SPEED CONTROL
CO2AS	TENANT'S CO2 ALARM SUPPLIER
GC	GENERAL CONTRACTOR
HES	TENANT'S HVAC EQUIPMENT SUPPLIER
HS	TENANT'S HOOD SUPPLIER
KE5	TENANT'S KITCHEN EQUIPMENT SUPPLIER
TAB	TENANT'S TEST & BALANCE VENDOR
TCC	TENANT'S CABLING CONTRACTOR
TDC	TENANT'S DUCT CLEANER
TEMS	TENANT'S ENERGY MANAGEMENT SYSTEM SUPPLIER
TLS	TENANT'S LIGHT/LAMP SUPPLIER
TMB	TENANT'S MENU BOARD SUPPLIER
TMS	TENANT'S MILLWORK SUPPLIER
TP	TENANT'S PHONE SUPPLIER
TRS	TENANT'S RAILING SUPPLIER
TSV	TENANT'S SIGN VENDOR
TUV	TENANT'S UV SANITIZER SUPPLIER
WCS	TENANT'S WALK-IN COOLER SUPPLIER
WHS	TENANT'S WATER HEATER SUPPLIER

MATERIAL SCHEDULE		
CATEGORY	APPLICATION	ALLOWABLE MATERIAL
DUCT	EXPOSED SUPPLY	RECT. LINED OR ROUND AS SHOWN, NO EXPOSED DUCT SEALING MASTIC
	EXPOSED RETURN	RECTANGULAR, NO EXPOSED DUCT SEALING MASTIC
	EXPOSED GEN. EXHAUST	RECTANGULAR, NO EXPOSED DUCT SEALING MASTIC
	CONCEALED, SUPPLY	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED, RETURN	RECT. OR ROUND AS SHOWN, LINED OR INSULATED
	CONCEALED, GEN. EXHAUST	RECT. OR ROUND AS SHOWN
	CONCEALED, TYPE I HOOD EXHAUST	RECTANGULAR 12 GA. BLACK IRON W/ WRAP OR UL 1978 FACTORY-MANUFACTURED DUCT W/ WRAP (SUBMIT SHOP DRAWINGS FOR FACTORY-MANUFACTURED DUCT PRIOR TO ORDERING FOR APPROVAL)

#### HVAC SYMBOLS

	CEILING DIFFUSER
	CEILING-MOUNTED RETURN REGISTER
	CEILING-MOUNTED EXHAUST REGISTER
	SUPPLY REGISTER
	RETURN REGISTER
	FLEXIBLE DUCT
	MITERED CORNER WITH TURNING VANES
	DUCTWORK INTERNAL FREE DIMENSIONS (WIDTH x HEIGHT)
	RECTANGULAR TO ROUND DUCT TRANSITION
	DUCT-MOUNTED SMOKE DETECTOR
	MOTOR-OPERATED DAMPER
	MANUAL VOLUME DAMPER
	GREASE DUCT CLEANOUT
	MITERED CORNER WITHOUT TURNING VANES
	GRIDPOINT THERMOSTAT
	GRIDPOINT ZONE SENSOR MODULE
	GRIDPOINT SUPPLY PROBE
	PLAN NOTE: SEE PLAN NOTES LISTED ON THE SAME SHEET FOR NOTE MEANING
	CONNECT TO EXISTING
	EQUIPMENT TAG: SEE EQUIPMENT SCHEDULE ON SHEET M-600 FOR EQUIPMENT INFORMATION
	AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET
	MOTORIZED DAMPER
	FIRE DAMPER W/ ACCESS DOOR
	CD-1 12" ROUND 550 CFM

#### HVAC GENERAL NOTES

- GENERAL NOTES APPLY TO HVAC SHEETS.
- WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION, INCLUDING APPLICABLE SECTIONS OF NFPA, THE MECHANICAL CODE, AND ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL. PURCHASE PERMITS ASSOCIATED WITH THE WORK. OBTAIN INSPECTIONS REQUIRED BY CODE. SEE SHEET G-001 FOR THE PREVAILING CODES.
- CONTRACTOR AND SUBCONTRACTORS SHALL REVIEW A COMPLETE SET OF THE CONSTRUCTION DOCUMENTS.
- COORDINATE WORK WITH THE WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND OF THE EXISTING CONDITIONS AT THE PROJECT SITE.
- DRAWINGS FOR THE MECHANICAL WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWING SHALL NOT BE SCALED FOR EXACT MEASUREMENTS, REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, OFFSETS, ACCESSORIES, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
- DUCT DIMENSIONS ON PLANS INDICATE DIMENSIONS OF INTERNAL FREE AREA.
- PERFORATED CEILING DIFFUSERS SHALL BE 4-WAY UNLESS NOTED OTHERWISE.
- COORDINATE ROOF WORK WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
- UNLESS NOTED OTHERWISE, RECTANGULAR DUCT ELBOWS GREATER THAN 45° SHALL BE MITERED ELBOWS WITH DOUBLE-THICKNESS TURNING VANES AND RECTANGULAR DUCT ELBOWS 45° OR LESS SHALL BE RADIUSSED ELBOWS WITH AN INSIDE RADIUS OF AT LEAST 1/2 THE WIDTH OF THE DUCT.
- REPLACE AIR FILTERS WITH NEW, CLEAN, MERV 7 AIR FILTERS AT TURNOVER.
- THE TERM "FURNISH" MEANS SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS. THE TERM "INSTALL" DESCRIBES THE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL UNLOADING, UNPACKING, ASSEMBLY, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS. THE TERM "PROVIDE" MEANS TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
- PROVIDE LABELING CALLED FOR IN THE HVAC PLANS USING ENGRAVED PHENOLIC PLATES.
- PROVIDE P3000 12 GA. UNISTRUT WITH PG FINISH FOR DUCT SUPPORTS AND OTHER UNISTRUT IN AREAS EXPOSED TO VIEW. SLOTTED UNISTRUT AND OTHER UNISTRUT WITH HOLES IS NOT ACCTEABLE.

#### HVAC SPECIFICATIONS

- ##### SECTION 15732 - PACKAGED ROOFTOP AIR-CONDITIONING UNITS
- ###### PART 1 - GENERAL
- ###### 1.1 SECTION REQUIREMENTS
- Submittals: Product Data and Shop Drawings.
  - Comply with ASHRAE 15.
  - EER: Equal to or greater than prescribed by NYCECC 2020.
  - Warranties: Submit a written warranty, signed by the manufacturer, agreeing to the repair or replacement of components that fail within 5 years of Substantial Completion.
- ###### PART 2 - PRODUCTS
- ###### 2.1 PACKAGED UNITS, 5 TO 20 TONS
- Factory assembled and tested, consisting of compressors, condensers, evaporator coils, condenser and evaporator fans, refrigeration and temperature controls, filters, and dampers.
    - Refer to Rooftop Heating/Cooling Unit Schedule on drawing M600 for capacities, and manufacturers.
    - Evaporator Fans: Belt or direct drive, forward curved centrifugal.
    - Exhaust/Relief Fans: Direct drive, forward curved centrifugal or propeller.
    - Condenser Fans: Direct drive propeller.
    - Refrigerant Coils: Aluminum fins and copper coil.
    - Compressors: Serviceable hermetic or fully hermetic, with safety controls, hot gas bypass, and timed off controls.
    - Heat Exchangers: Gas fired, with gas controls, electronic ignition, high limit cutout, and forced draft proving switch.
    - Economizer controls (Comparative Enthalpy, 100% capacity).
    - Low ambient controls.
    - Smoke Detectors: Photoelectric - In supply and/or return as called for on teh schedule on M-600.
    - Operating Controls: Two stage heating and two stage cooling on units 8-1/2 tons and over.
    - Roof curb.
    - Control Wiring from T-stat to rooftop unit: Shall be 18ga / 7 conductor, rated for plenum applications.
    - Control Wiring from T-stat to remote sensor: Shall be a separate 18ga / 2 conductor shielded, rated for plenum applications.
- ###### PART 3 - EXECUTION
- ###### 3.1 INSTALLATION
- Install units level and plumb and firmly anchored.
  - Connect gas piping to burner with pipe same size as gas train inlet, and provide union with sufficient clearance for burner removal and service.
  - Connect to supply and return hydronic piping with shutoff valve and union or flange at each connection.
  - Install ducts to termination in roof mounting frames. Terminate return air duct through roof structure.
  - Connect units to wiring systems and to ground.
- END OF SECTION 15732

- ##### SECTION 15810 - DUCTS AND ACCESSORIES
- ###### PART 1 - GENERAL
- ###### 1.1 SECTION REQUIREMENTS
- Submittals: Product Data for fire and smoke dampers.
  - Comply with NFPA 90A for systems serving spaces more than 25,000 cu. ft. in volume or building Types II, IV, and V construction more than 3 stories in height.
  - Comply with NFPA 90B for systems serving spaces in 1 or 2 family dwellings or serving spaces less than 25,000 cu. ft.
  - Comply with NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," Chapter 3, "Duct System," for range hood ducts, except single family residential usage, unless otherwise indicated.
  - Comply with UL 181 and UL 181A for ducts and closures.
  - Testing, Adjusting, and Balancing Agency Qualifications: AABC certified.
- ###### PART 2 - PRODUCTS
- ###### 2.1 DUCTS
- Spiral Duct: Spiral Lock Seam, without insulation, G90 galvanized finish, ASTM A-653/924
    - Basis of Design Manufacturers: Lindab SPIROsafe, alternates to the basis of design must be submitted for review.
    - Fittings: Factory produced standing seam construction with internal sealing. Fittings with a major axis of 36" or smaller shall be 20 gauge. Fittings with a major axis of 37"-48" shall be 18 gauge.
    - Galvanized Steel Sheet: Forming steel, ASTM A 653/653M, G90 coating designation.
    - Duct Liner: ASTM C 1071, Type II, with an airstream surface coated with a temperature resistant coating. Thickness: 1-1/2 inch. R-value : 6.3.
    - Adhesive: ASTM C 916, Type I.
    - Mechanical Fasteners: Galvanized steel pin, length as required to penetrate liner plus a 1/8 inch projection maximum into the airstream.
    - Joint and Seam Tape: Comply with UL 181A.
    - Joint and Seam Sealant: Comply with UL 181A.
    - Rectangular Metal Duct Fabrication: Comply with SMACNA's "HVAC Duct Construction Standard" for metal thickness, reinforcing types and intervals, tie rod applications, and joint types and intervals.
- ###### 2.2 ACCESSORIES
- Volume-Control Dampers: Factory fabricated volume control dampers, complete with required hardware and accessories. Single blade and multiple opposed blade, standard leakage rating, and suitable for horizontal or vertical applications.
  - Fire Dampers: Factory-fabricated fire dampers, complete with required hardware and accessories. UL labeled according to UL 555, "Fire Dampers".
  - Flexible Connectors: Flame retardant or noncombustible fabrics, coatings, and adhesives complying with UL 181, Class 1.
  - Flexible Ducts: Factory fabricated, insulated, round duct, with an outer jacket enclosing 2 inch thick, glass fiber insulation, R-value: 6.0, around a continuous inner liner.
- ###### PART 3 - EXECUTION
- ###### 3.1 INSTALLATION
- Duct System Pressure Class: Construct and install each duct system with 2 inch positive and negative duct pressure classifications.
  - Conceal ducts from view in finished and occupied spaces. Except where noted as exposed.
  - Avoid passing through electrical equipment spaces and enclosures.
  - Support and connect metal ducts according to SMACNA's "HVAC Duct Construction Standard".
  - Install duct accessories according to applicable portions of details of construction as shown in SMACNA standards.
  - Install liner on all supply and return duct.
  - Install volume control dampers in lined duct with methods to avoid damage to liner and to avoid erosion of duct liner.
  - Install fire and smoke dampers according to manufacturer's UL approved written instructions.
  - Install fusible links in fire dampers.
  - Provide saddle taps at tees for exposed ductwork.
- ###### 3.2 TESTING, ADJUSTING, AND BALANCING
- The owner will supply an independent balance agent to to balance and adjust the HVAC installation. The balance agent will be responsible for any pulley or belt changes required.
  - The general contractor is to have trained staffed available during the balancing to correct issues noted by the balance agent.
  - The balance agent is to balance airflow within distribution systems, including submains, branches, and terminals to indicated quantities +/- 10%. The hood exhaust system shall be balanced to a tolerance of -0+10% and the make-up air system to a tolerance of -10+0%.
  - The balance agent is to supply a copy of the balance report to the owner, engineer and general contractor for review.
- END OF SECTION 15810

- ##### SECTION 15855 - DIFFUSERS, REGISTERS, AND GRILLES
- ###### PART 1 - GENERAL
- ###### 1.1 SECTION REQUIREMENTS
- Submittals: None.
- ###### PART 2 - PRODUCTS
- ###### 2.1 OUTLETS AND INLETS
- Diffusers:
    - Refer to Grills, Registers, and Diffusers Schedule for equipment schedule
    - Manufacturer: As scheduled (NO SUBSTITUTIONS)
    - Material: As scheduled.
    - Finish: As scheduled.
    - Mounting: As scheduled.
  - Wall and Ceiling Registers:
    - Refer to Grills, Registers, and Diffusers Schedule for equipment schedule
    - Manufacturer: As scheduled (NO SUBSTITUTIONS)
    - Material: As scheduled.
    - Finish: As Scheduled.
    - Mounting: Countersunk screw.
  - Wall and Ceiling Grilles:
    - Refer to Grills, Registers, and Diffusers Schedule for equipment schedule
    - Manufacturer: As scheduled (NO SUBSTITUTIONS)
    - Material: As scheduled.
    - Finish: As Scheduled.
    - Mounting: Countersunk screw or lay in depending location.
- ###### PART 3 - EXECUTION
- ###### 3.1 INSTALLATION
- Coordinate location and installation with duct installation and installation of other ceiling and wall mounted items.
  - Locate ceiling diffusers, registers, and grilles, as indicated on general construction "reflected ceiling plans." Unless otherwise indicated, locate units in center of acoustical ceiling panels.
- END OF SECTION 15855
- ##### SECTION 15900 - HVAC INSTRUMENTATION AND CONTROLS
- ###### PART 1 - GENERAL
- ###### 1.1 SECTION REQUIREMENTS
- Summary: Electric/electronic control sequences for HVAC systems and equipment.
  - Submittals: Shop Drawings detailing operating control sequences of each item of HVAC equipment and system and Product Data for controllers, sensors, operators, control panels, thermostats, humidistats, actuators, control valves and dampers.
  - System Description: Control systems consists of sensors, indicators, actuators, final control elements, interface equipment, and other apparatus, accessories, required to operate mechanical systems according to sequences of operation indicated and specified.
  - Operation Sequence:
    - Unoccupied Cycle: During unoccupied hours, as set by the Energy Management System, the outside air and return dampers for the HVAC unit close, the exhaust fans are de-energized, and the thermostat set point resets to 65° F (user adjustable). Upon a call for heating, the HVAC heat pump unit energizes to maintain set-point. If the heat pump mode is unable to maintain set-point, or if the unit is in defrost mode, the supplemental electric heat shall be energized.
    - Occupied Cycle: During occupied hours, as set by the Energy Management System, the outside air and return dampers open to a minimum set point. The heat pump supply fan and exhaust fans run continuously. Upon a call for heating, the heat pump goes into heating mode and the supplemental electric heat shall be energized only if the heat pump mode is unable to maintain set-point, or if the heat pump is in defrost mode and the space is calling for heat. Upon a call for cooling, the heat pump goes into cooling mode.
      - Economizer: When outdoor conditions allow as determined by the heat pump's outdoor air enthalpy sensor, the heat pump shall utilize economizer mode to de-energize the compressor and provide free cooling using 100% outside air.
- ###### PART 2 - PRODUCTS (Not Applicable)
- ###### PART 3 - EXECUTION
- ###### 3.1 INSTALLATION
- Install control wiring concealed, except in mechanical rooms, and according to requirements specified in Division 16 Sections.
- END OF SECTION 15900

Consultant:



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CONSTRUCTION SET  
04/02/2025

REV.	DATE	DESCRIPTION
	08/06/2024	LANDLORD SET
	10/07/2024	PERMIT SET
	11/18/2024	BID SET
1	03/28/2025	CONSTRUCTION SET

PROFESSIONAL SEAL

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PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
DRAWN BY: PCE  
CHECKED BY: AIS

PROJECT NUMBER:  
24007

SHEET TITLE:

MECHANICAL  
SPECIFICATIONS,  
SYMBOLS, & GENERAL  
INFORMATION

SHEET NUMBER:

M-010.00

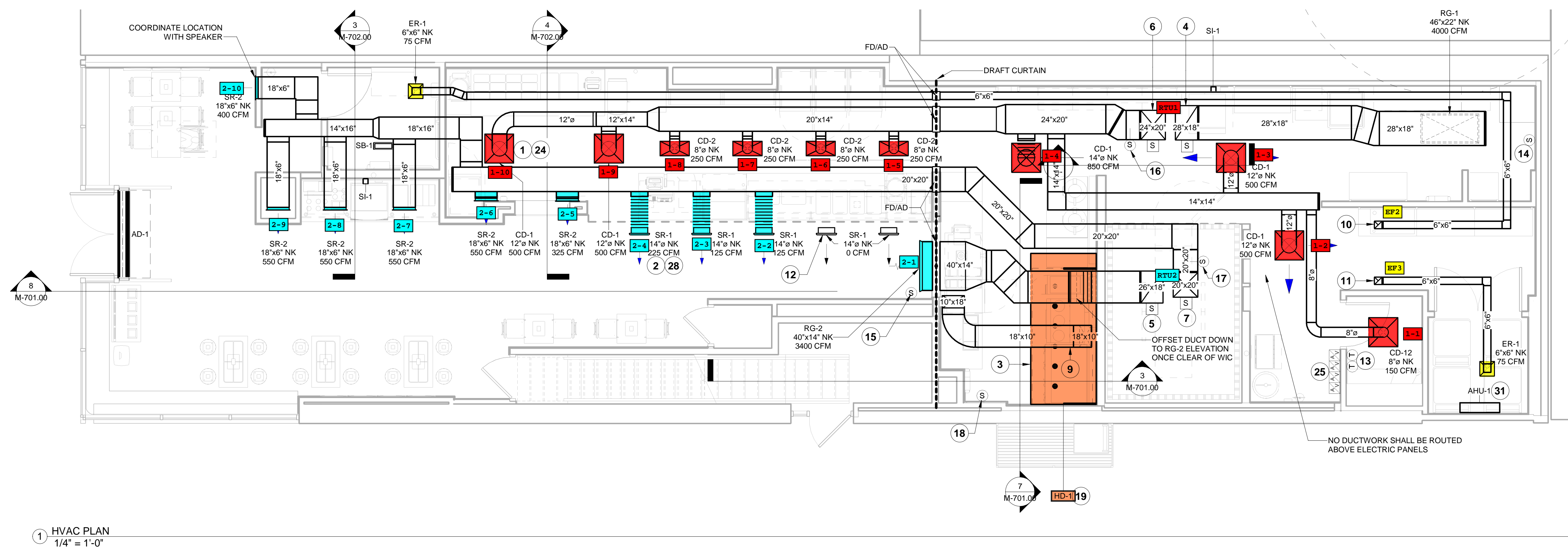
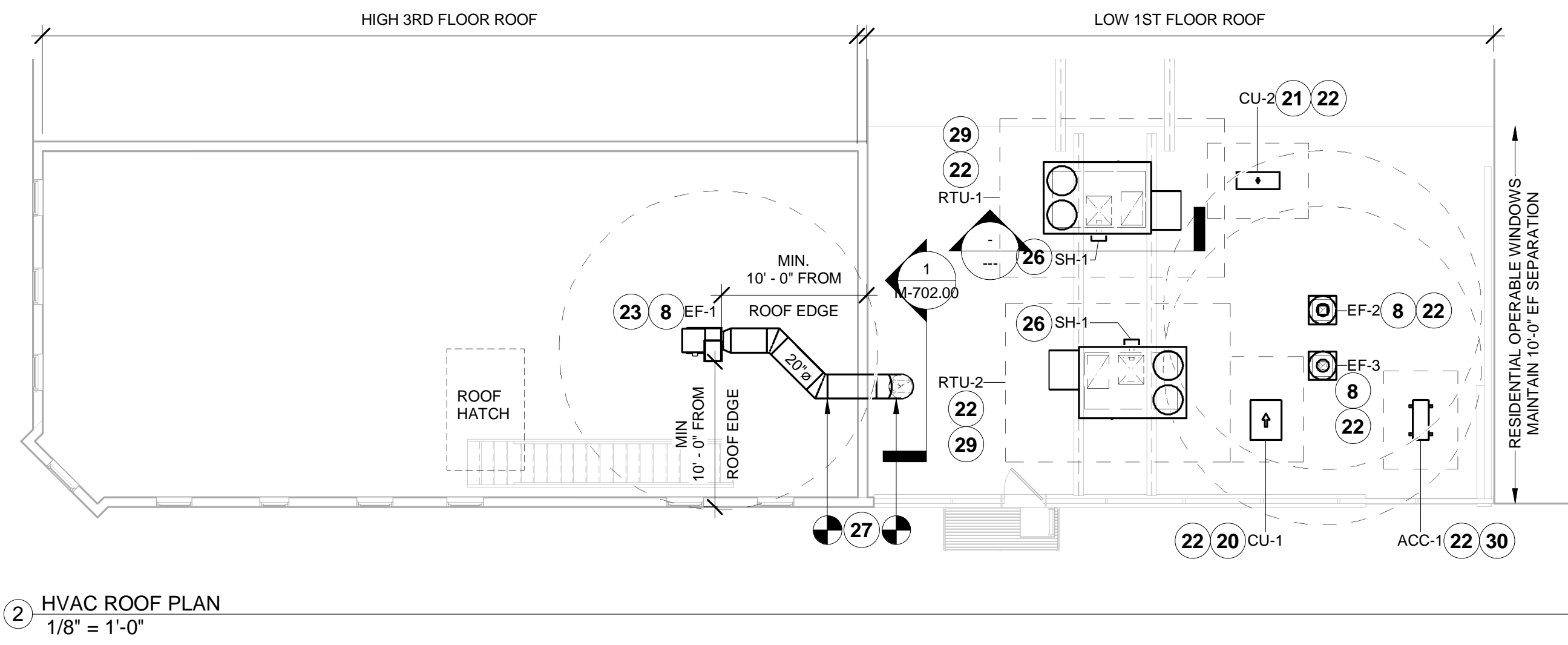
1 OF 12

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KEYNOTES FOR THIS SHEET 1, 2 ETC.	
1	SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING MOUNTED EQUIPMENT LOCATION. TYPICAL.
2	PAINT DUCTWORK VISIBLE THROUGH DINING ROOM SUPPLY REGISTERS BLACK. TYPICAL.
3	NO SUPPLY DIFFUSERS SHOULD BE LOCATED CLOSER THAN 4' FROM THE HOOD AND SHOULD BE PERFORATED CEILING DIFFUSERS WITH THE DEFLECTORS REMOVED SO THAT AIR DROPS STRAIGHT DOWN, RATHER THAN POTENTIALLY AFFECTING THE HOOD CAPTURE. THESE CEILING DIFFUSERS SHOULD NOT BE PLACED OVER EQUIPMENT OR PREP SURFACES. TYPICAL.
4	28/18 DUCT UP THROUGH ROOF FOR TRANSITION TO RTU-1 RETURN CONNECTION. RTU-1 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-1 OPERATION.
5	26/18 DUCT UP THROUGH ROOF FOR TRANSITION TO RTU-2 RETURN CONNECTION. RTU-2 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE RETURN AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-2 OPERATION.
6	24/20 DUCT UP THROUGH ROOF FOR TRANSITION TO RTU-1 SUPPLY CONNECTION. RTU-1 SHALL HAVE AN INTEGRAL SMOKE DETECTOR MOUNTED IN THE SUPPLY AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-1 OPERATION.
7	20/20 DUCT UP THROUGH ROOF FOR TRANSITION TO RTU-2 HORIZONTAL SUPPLY CONNECTION. SEE 2/M-100 FOR CONTINUATION. RTU-2 SHALL HAVE A FIELD SUPPLIED, FIELD INSTALLED SMOKE DETECTOR MOUNTED IN THE SUPPLY AIR STREAM. INTERLOCK SMOKE DETECTOR TO RTU-2 OPERATION.
8	10'-0" MIN. CLEARANCE FROM OUTER EDGE OF EXHAUST FAN TO FRESH AIR INTAKES. TYPICAL.
9	18/10 DUCT UP FROM HOOD THROUGH ROOF TO LANDLORD PROVIDED PRE-FABRICATED DUCTWORK UP TO HIGH ROOF. SEE 2/M-100 FOR CONTINUATION. VERIFY (E) CONDITIONS IN FIELD. SEE DETAIL 1/M-702 FOR TRANSITION FROM RECTANGULAR TO PRE-FABRICATED GREASE DUCT. NEW GREASE DUCT SHALL BE COMPLIANT WITH NFPA 96. PROVIDE RADIUS ELBOWS WITH AN INSIDE RADIUS OF 0.5W AT ELBOWS IN GREASE DUCT. PROVIDE DUCT CLEANOUT ACCESS DOOR AT ALL CHANGES IN DIRECTION AND AT LINEAR INTERVALS PER LOCAL CODE.
10	6/6 DUCT UP THROUGH ROOF TO EF-2. SEE DETAIL 6/M-701.
11	6/6 DUCT UP THROUGH ROOF TO EF-3. SEE DETAIL 6/M-701.
12	DIFFUSER FOR AESTHETIC PURPOSES ONLY, NO DUCTWORK CONNECTION. TYPICAL FOR (2).
13	INSTALL SINGLE-GANG VERTICAL J-BOX FOR GRIDPOINT THERMOSTATS FURNISHED BY TEMS FOR RTU-1 AND RTU-2 AT THIS LOCATION AT 48" AFF. COORDINATE WITH ELECTRICAL SWITCHING IN THIS AREA. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710. LABEL THERMOSTAT WITH CORRESPONDING UNIT.
14	INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-1 AT THIS LOCATION AT 72" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710. LABEL SENSOR WITH CORRESPONDING UNIT.
15	INSTALL GRIDPOINT ZONE SENSOR MODULE FURNISHED BY TEMS FOR RTU-2 AT THIS LOCATION AT 66" AFF DIRECTLY TO WALL (NO JUNCTION BOX). COORDINATE LOCATION WITH EQUIPMENT. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710. LABEL SENSOR WITH CORRESPONDING UNIT.
16	INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-1 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.

KEYNOTES FOR THIS SHEET 1, 2 ETC.	
17	INSTALL GRIDPOINT SUPPLY PROBE FURNISHED BY TEMS FOR RTU-2 IN THE SUPPLY DUCTWORK UPSTREAM FROM THE FIRST BRANCH CONNECTION. PROVIDE WIRING AS SHOWN IN DETAIL 8/E710.
18	INSTALL REMOTE TEMPERATURE SENSOR FOR HOOD HD-1 AT THIS LOCATION AT 72" AFF. COORDINATE LOCATION WITH EQUIPMENT. PROVIDE (2) #18 G. THERMISTOR CABLE FROM TEMPERATURE SENSOR TO HOOD CONTROL PANEL. LABEL SENSOR "HD-1".
19	INSTALL KITCHEN HOOD, HD-1. SUPPORT HOOD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL HOOD ACCORDING TO THE REQUIREMENTS OF ITS LISTING. IN COMPLIANCE WITH NFPA 96, THE BUILDING CODE, AND AUTHORITIES HAVING JURISDICTION. HOOD SHALL HAVE AN INTEGRAL DUCT COLLAR TEMPERATURE SENSOR TO AUTOMATICALLY ENERGIZE THE EXHAUST FAN IF COOKING TEMPERATURES ARE DETECTED. EXHAUST DUCT SYSTEM TO BE WELDED OR FACTORY-MANUFACTURED WATER AND AIR TIGHT. INSTALL CLEANOUTS PER CODE AND AS SHOWN. INSTALL HOOD PER DETAILS 4/M-700, 2/M-701, AND 3/M-701. CHIPOTLE WILL PROVIDE AN INDEPENDENT TESTING AGENCY FOR TESTING THE INTEGRITY OF THE GREASE DUCT SYSTEM.
20	INSTALL REMOTE CONDENSING UNIT FOR WALK-IN COOLER ON ROOF AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS, AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3'-0" OF THE CONDENSING UNIT. CUT 2-1/2" HOLE IN WALK-IN COOLER ROOF FOR REFRIGERANT LINE SET AND SEAL PER THE COOLER MANUFACTURER'S INSTALLATION INSTRUCTIONS AFTER LINE SET IS INSTALLED.
21	INSTALL REMOTE CONDENSER FOR ICE MACHINE ON ROOF. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3'-0" OF THE REMOTE CONDENSER. IF REFRIGERANT PIPING TO ICE MACHINE IS EXPOSED TO PUBLIC VIEW, CONCEAL WITHIN A STAINLESS STEEL SHROUD AS SHOWN IN THE ARCHITECTURAL DRAWINGS.
22	INSTALL ROOFTOP EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
23	INSTALL EXHAUST FAN EF-1 PER DETAIL 8/M-700 AND AS DETAILED IN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. INSTALL GREASE CUP FURNISHED BY MANUFACTURER.
24	PROVIDE SUPPLY DIFFUSER CONNECTION TO SUPPLY SYSTEM PER DETAIL 6/M-700. TYPICAL.
25	PROVIDE AUDIOVISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET. WIRE A UNIT BACK TO EACH SMOKE DETECTOR. MOUNT UNIT 60" AFF. LABEL ANNUNCIATOR WITH CORRESPONDING UNIT. TYPICAL.

KEYNOTES FOR THIS SHEET 1, 2 ETC.	
26	INSTALL REME HALO AIR PURIFIER FURNISHED BY TUV IN RTU PER DETAIL 5/M-700. SEE ELECTRICAL DRAWINGS FOR POWER CONNECTION INFORMATION. INSTALL UV WARNING STICKERS ON FACE OF ENCLOSURE PER DETAIL AND ON ANY RTU ACCESS DOOR(S) THROUGH WHICH THE REME HALO WOULD BE VISIBLE IF OPENED.
27	CONNECT TO (E) LANDLORD PROVIDED PRE-FABRICATED GREASE DUCT AT 3RD FLOOR ROOF AND BOTTOM OF VERTICAL RISER ABOVE 1ST FLOOR ROOF. VERIFY CONNECTION POINTS IN THE FIELD.
28	ADJUST SUPPLY REGISTERS SO THAT SUPPLY AIR HITS WALL ON OPPOSITE SIDE OF ROOM AT APPROXIMATELY 7'-0" AFF WITH NO DRAFTS FELT IN THE DINING ROOM.
29	PROVIDE DUCT INSULATION BOARD ON EXTERIOR DUCTWORK (BELOW RTUS), MINIMUM PER SCHEDULE ON M-601, WITH ASJ OR FSK FACING. AFTER FACING HAS BEEN INSTALLED, INSTALL ALUMAGUARD PEEL AND STICK, SELF-HEALING, UV STABLE, BITUMEN MEMBRANE BY POLYGUARD PRODUCTS, INC..
30	INSTALL REMOTE CONDENSER FOR TRASH ROOM SPLIT SYSTEM ON ROOF. INSTALL REFRIGERANT LINE SET, THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE, TEMPERATURE CONTROL, SIGHT GLASS, FILTER DRIER, PRESSURE CONTROL, LOW AMBIENT CONTROLS AND WEATHERPROOF HOUSING. TRAP AND SLOPE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS. SEAL PIPING PENETRATIONS THROUGH ROOF. INSTALLATION SHALL COMPLY WITH ASHRAE/ANSI STANDARD 15. INSTALL THE REFRIGERANT LINE SET UNDER THE ROOF DECK TO WITHIN 3'-0" OF THE REMOTE CONDENSER.
31	RUN CONDENSATE LINE FROM AHU-1 TO 6" ABOVE FLOOR DRAIN IN TRASH ROOM.



Consultant:  
**Polaris**  
 Consulting Engineers, PC  
 214 W. Main Street, Suite 208  
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 KNICKERBOCKER AVE.  
 431 KNICKERBOCKER AVENUE  
 BROOKLYN, NY 11237

CONSTRUCTION SET  
 04/02/2025

REV. DATE	DESCRIPTION
08/06/2024	LANDLORD SET
10/07/2024	PERMIT SET
11/18/2024	BID SET
03/28/2025	CONSTRUCTION SET

PROFESSIONAL SEAL

Michael L. Wilson, P.E.  
 NY License #073765-1

PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
 DRAWN BY: PCE  
 CHECKED BY: AIS

PROJECT NUMBER:  
 24007

SHEET TITLE:  
 1st FLOOR & ROOF  
 HVAC PLANS

SHEET NUMBER:  
 M-100.00  
 2 OF 12

DOB NOW Filing #: 601113056-51

2024-DB#4/P#1-4



**HOOD SHOP DRAWING PRODUCED BY  
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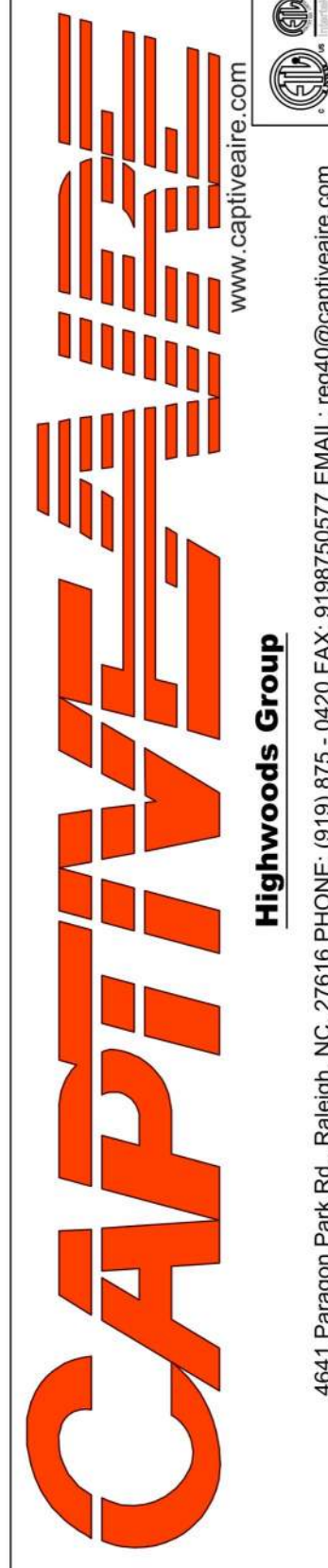
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**CAPTIVEAIRE  
 DRAWINGS**

SHEET NUMBER:  
**M-402.00**

4 OF 12

DOB NOW Filing #: B01113056-51

REVISIONS	
DESCRIPTION	DATE



CHIPOTLE KNICKERBOCKER AVE #5375  
 431 Knickerbocker Avenue,  
 Brooklyn, NY, 11237

DATE: 7/23/2024  
 DWG.#:  
 6934110  
 DRAWN BY:  
 SCALE:  
 3/4" = 1'-0"  
**MASTER DRAWING**  
 SHEET NO.  
 2

**EXHAUST FAN INFORMATION - JOB#6934110**

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	EF-1	1	USB115DD-RM	CAPTIVEAIRE	1900	1.200	1444	ODP, PREMIUM	1.500	0.6970	3	208	4.4	1321 FPM	296	14.4
2	EF-2	1	DR10HFA	CAPTIVEAIRE	75	0.100	658	TEAD-ECM	0.166	0.0060	1	115	1.9		49	0.8
3	EF-3	1	DR10HFA	CAPTIVEAIRE	75	0.100	658	TEAD-ECM	0.166	0.0060	1	115	1.9		49	0.8

**FAN OPTIONS**

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1	1	BI15 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 16" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER
		1	UTILITY SET GREASE CUP
		1	BI15 - 24" DISCHARGE EXTENSION
		1	BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE
		1	BI15 - INLET CONNECTION STANDARD 16" FLANGED GREASE DUCT
2	EF-2	1	UTILITY SET - SPRING VIBRATION ISOLATORS - B111 THRU B115 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE
		1	2 YEAR PARTS WARRANTY
		1	ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCO MOTOR), CCW ROTATION
3	EF-3	1	UTILITY SET - SPRING VIBRATION ISOLATORS - B111 THRU B115 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE
		1	2 YEAR PARTS WARRANTY
		1	ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCO MOTOR), CCW ROTATION

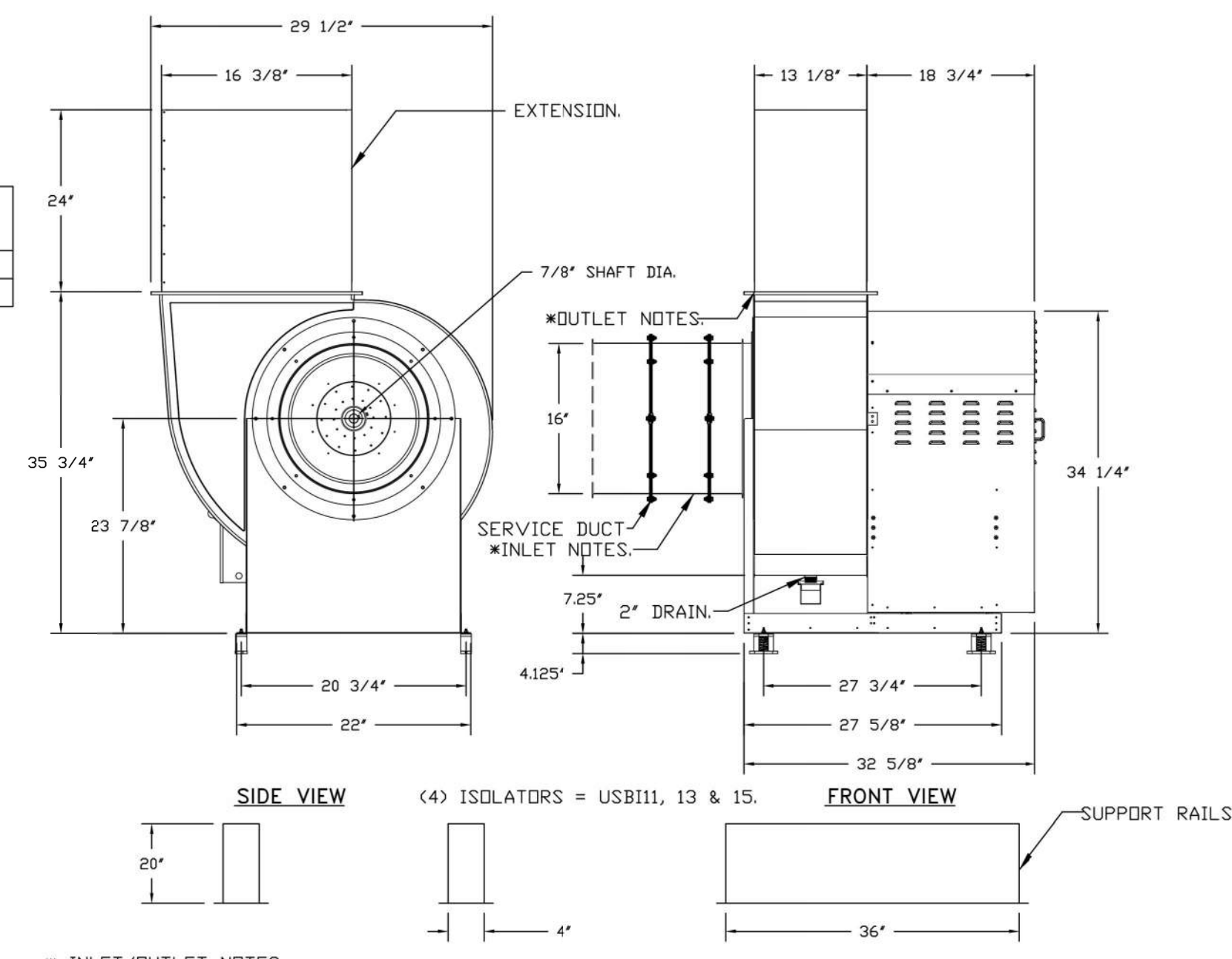
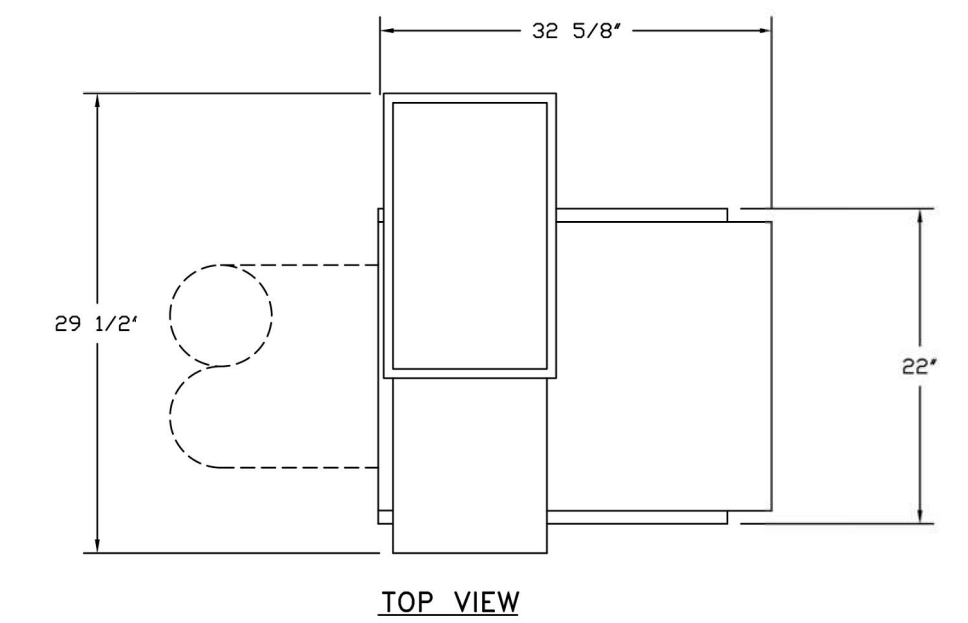
FAN #1 USB115DD-RM - EXHAUST FAN (EF-1)

**FAN ACCESSORIES**

FAN UNIT NO	TAG	EXHAUST				SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT	
1	EF-1	YES							
2	EF-2		YES						
3	EF-3		YES						

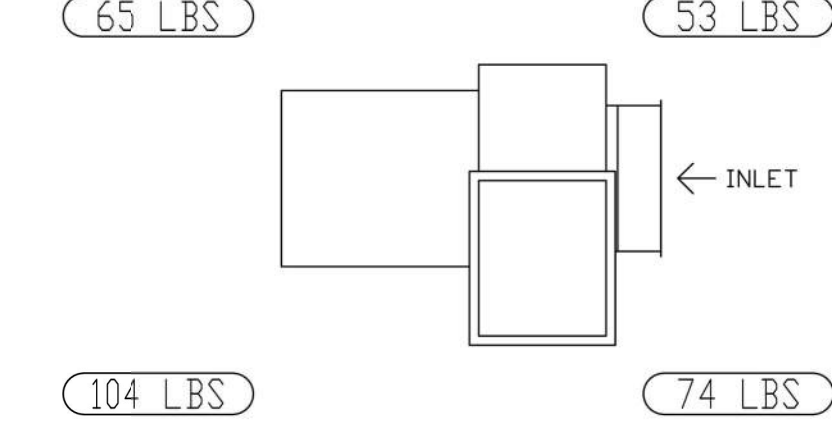
**CURB ASSEMBLIES**

NO	DN FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1	38 LBS	RAIL	4.000"W X 36.000"L X 20.000"H COMES AS A SET OF 2.
2	# 2	EF-2	31 LBS	CURB	17.500"W X 17.500"L X 26.000"H.



\* INLET/OUTLET NOTES:  
 LENGTH OF THE STRAIGHT DUCT ON THE INLET AND OUTLET TO BE 3 TIMES THE EQUIVALENT DUCT DIAMETER BEFORE CONNECTING TO ANY FITTINGS SUCH AS ELBOWS TO AVOID SYSTEM EFFECT.

UNIT PLAN VIEW CORNER WEIGHTS:



CORNER WEIGHTS ARE CALCULATED BASED ON VERTICAL DISCHARGE. SUPPORT DUCT PROPERLY BEFORE FAN TO ENSURE CORNER WEIGHTS ARE NOT AFFECTED.

**NORMAL TEMPERATURE TEST DIRECT DRIVE EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 350°F (176°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.**

**FEATURES:**

- ROOF MOUNTED FANS.
- UL705.
- UL762 AND ULC-S645 (RESTAURANT MODEL).
- HIGH HEAT OPERATION DIRECT DRIVE 350°F (176°C).
- HEAT SLINGER.
- NEMA 3R SAFETY DISCONNECT SWITCH.
- GREASE CLASSIFICATION TESTING.
- 2" DRAIN.
- MOTOR WEATHER COVER.
- FULLY SEALED SCROLL HOUSING.
- SCROLL ACCESS DOOR.
- FLANGE 1 1/4".

**OPTIONS:**

- BI15 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 16" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER.
- UTILITY SET GREASE CUP.
- BI15 - 24" DISCHARGE EXTENSION.
- BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE.
- BI15 - INLET CONNECTION STANDARD 16" FLANGED GREASE DUCT.
- UTILITY SET - SPRING VIBRATION ISOLATORS - B111 THRU B115 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE.
- 2 YEAR PARTS WARRANTY.

2024-DB#4/P#1-4

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NY License #073765-1

PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
DRAWN BY: PCE  
CHECKED BY: AIS

PROJECT NUMBER:  
24007

SHEET TITLE:  
CAPTIVEAIRE  
DRAWINGS

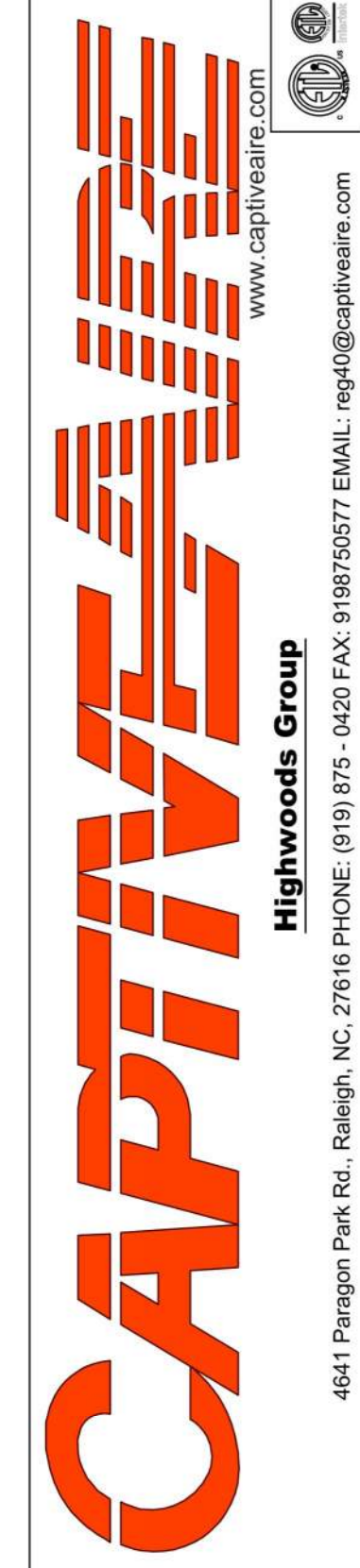
SHEET NUMBER:

M-403.00

5 OF 12

DOB NOW Filing #: B01113056-51

REVISIONS	
DESCRIPTION	DATE



Highwoods Group

4641 Paignton Park Rd., Raleigh, NC 27616 PHONE: (919) 875-0420 FAX: 9198750577 EMAIL: reg@captivaire.com

CHIPOTLE KNICKERBOCKER AVE #5375  
431 Knickerbocker Avenue,  
Brooklyn, NY, 11237

DATE: 7/23/2024

DWG.#:  
6934110

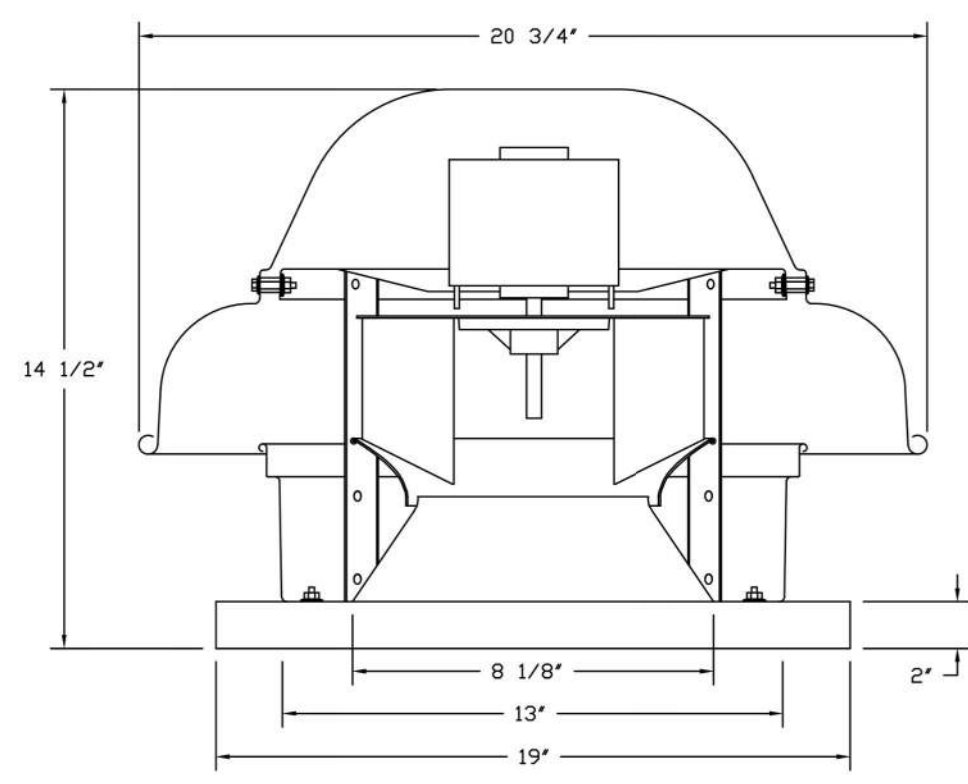
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SCALE:  
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MASTER DRAWING

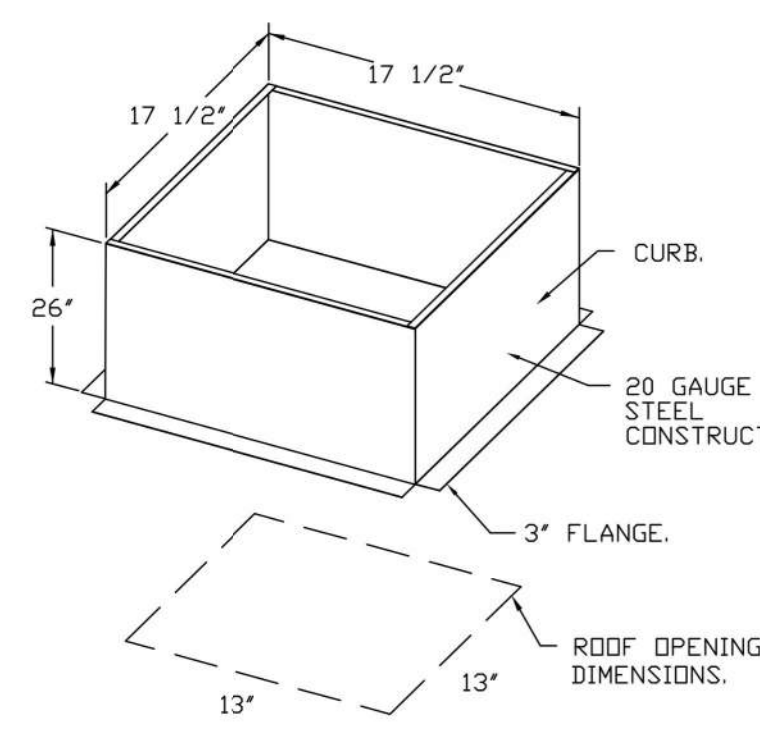
SHEET NO.  
3

FAN #2 DR10HFA - EXHAUST FAN (CF-2)

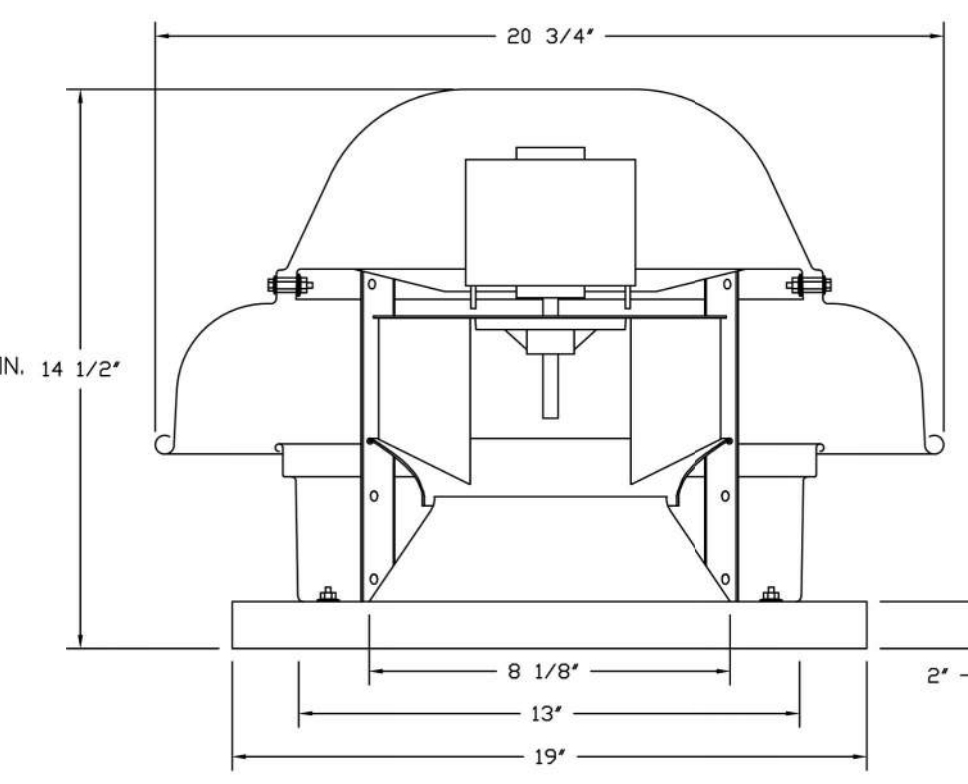


- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
  - ROOF MOUNTED FANS.
  - UL705.
  - SAFETY DISCONNECT.
  - STANDARD BIRD SCREEN.
  - SPEED CONTROL.
  - THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

- OPTIONS:**
- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL.
  - RTC - (TELED MOTOR), CCW ROTATION.
  - 1 1/2" BIRD DAMPER.
  - 2 YEAR PARTS WARRANTY.



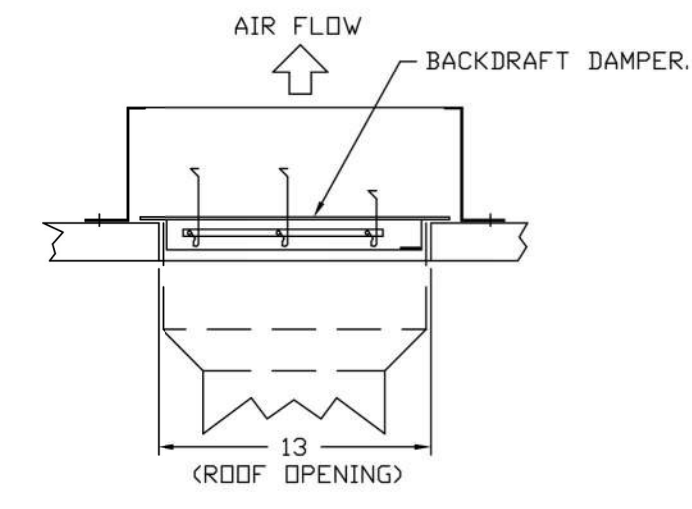
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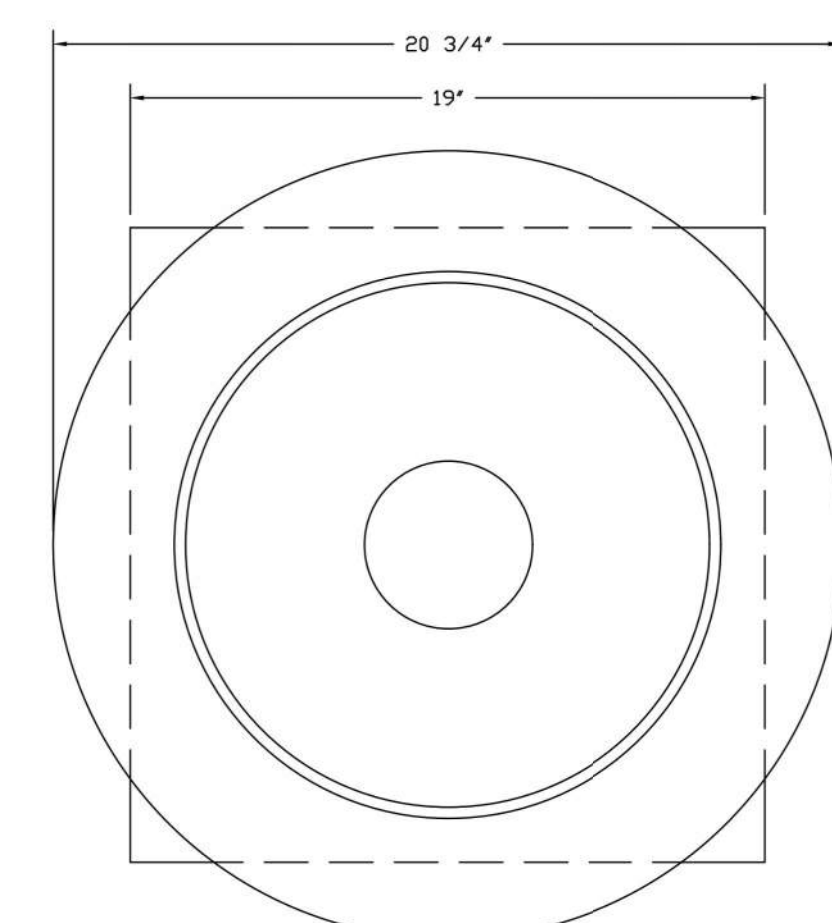
- FEATURES:**
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
  - ROOF MOUNTED FANS.
  - UL705.
  - SAFETY DISCONNECT.
  - STANDARD BIRD SCREEN.
  - SPEED CONTROL.
  - THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

- OPTIONS:**
- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL.
  - RTC - (TELED MOTOR), CCW ROTATION.
  - 1 1/2" BIRD DAMPER.
  - 2 YEAR PARTS WARRANTY.

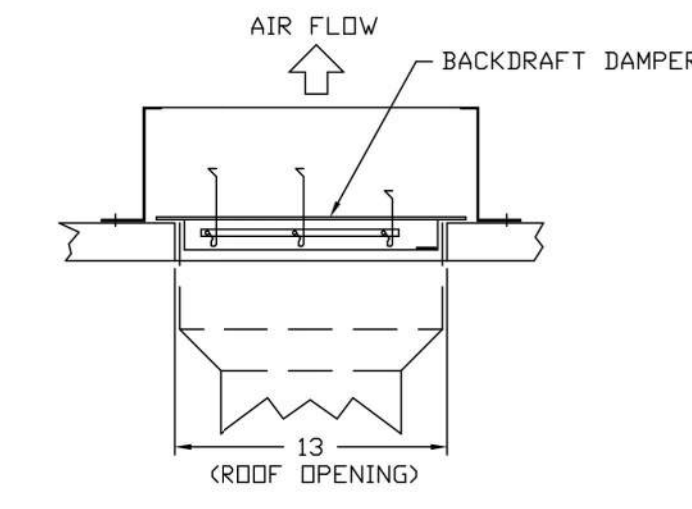
BACKDRAFT DAMPER INSTALLATION



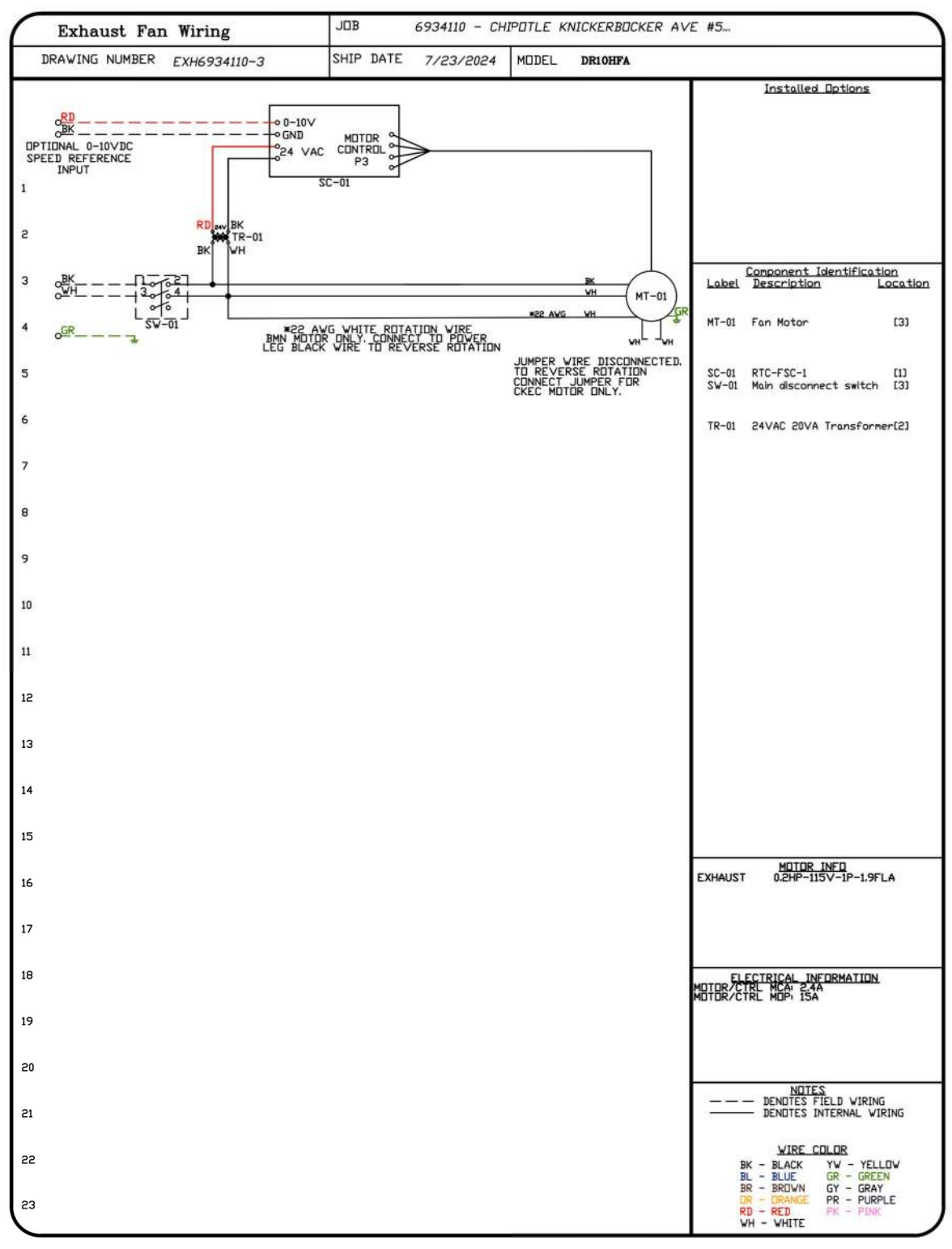
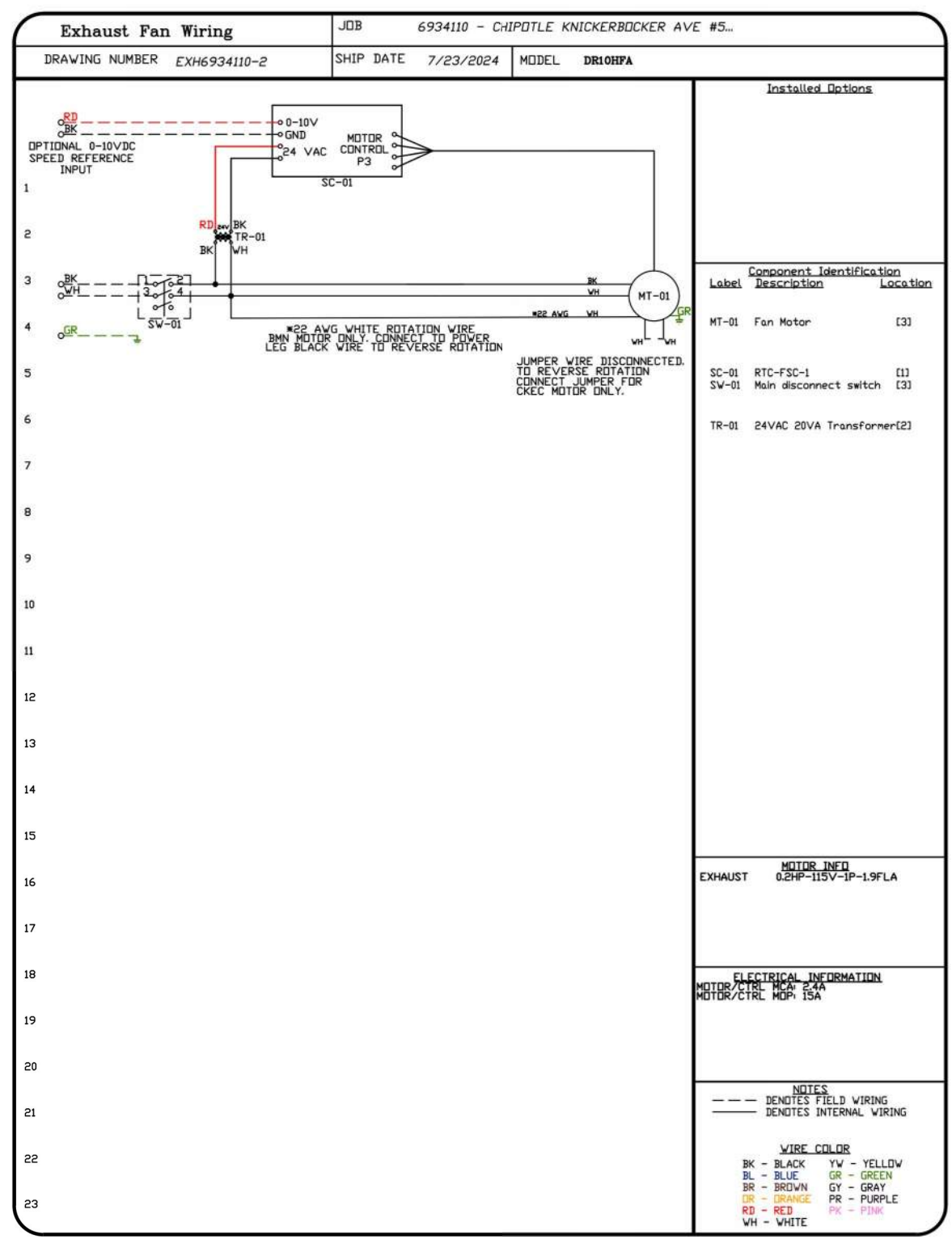
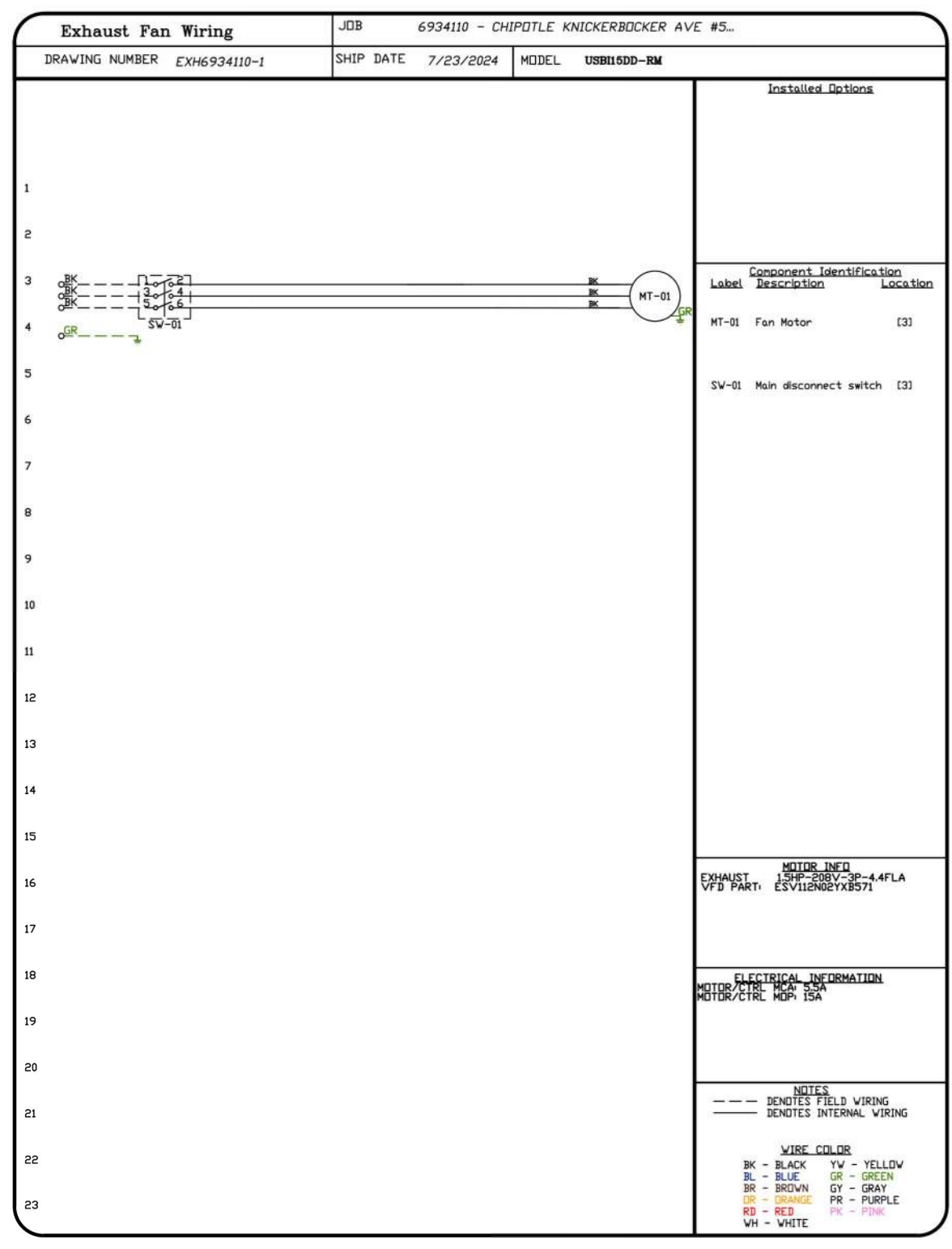
TOP VIEW



BACKDRAFT DAMPER INSTALLATION



TOP VIEW



2024-DB#4/P#1-4





EXHAUST FAN SCHEDULE																
Tag	Manufacturer	Model	Type	Drive	CFM	E.S.P. IN. W.C.	Motor H.P.	Volts	PH.	Hz.	RPM	Sone Level	Weight lbs.	Furnished By	Installed By	Comments
EF-1	Captive-Aire	USBI15DD-RM	Roof	Direct	1900	1.2	1.5	208	3	60	1444	14.4	296	HS	GC	See Captive-Aire drawings for options & accessories.
EF-2	Captive-Aire	DR10HFA	Roof	Direct	75	0.1	.166	115	1	60	658	0.80	49	HS	GC	See Captive-Aire drawings for options & accessories.
EF-3	Captive-Aire	DR10HFA	Roof	Direct	75	0.1	.166	115	1	60	658	0.80	49	HS	GC	See Captive-Aire drawings for options & accessories.

OUTDOOR AIR COOLED CONDENSING UNIT SCHEDULE															
Unit ID	Nominal Cooling Capacity (Tons)	Manuf.	Model	Description	Refrig. Type	Refrig. Charge	Unit Electrical Data					Unit Installed Weight lbs.	Furnished By	Installed By	Comments
							Voltage	Phase	Hz.	FLA	MOCPP				
CU-1	-	Manitowoc (Harford)	PC98MZOP-3	Walk-in Cooler Remote CU	R-404A	10.4	208	3	60	9	15	250	WCS	GC	Furnished with walk-in cooler
CU-2	-	Hoshizaki	URC-9FZ	Ice Maker Remote CU	R-404A	11.46	120	1	60	-	-	100	KES	GC	Furnished with ice maker
CU-3	-	Hoshizaki	URC-5FZ	PUW Ice Maker Remote CU	R-404A	3.86	120	1	60	-	-	100	KES	GC	Furnished with ice maker

AIR DOOR SCHEDULE												
ID	Manufacturer	Model	Airflow Max FPM	Avg FPM	CFM	Electrical KW	V/PH	MCA	MOCPP	Furnished By	Installed By	Remarks
AD-1	Berner	AI081072E	2149	1582	1780	11.2	208/3/60	32.8	45.0	GC	GC	Supplied and installed by GC

VENTILATION SCHEDULE																	
Space Served Name	Area (SQ.FT.)	Calculation of Minimum Outside Air (OA) Per NYC MC 2022 Classification	Based on Occupancy				Based on CFM / SQ.FT.				Based on Exhaust				OA CFM Required	Ventilation System	Comments
			Persons Per 1000 SQ.FT.	Estimated Max. Occupant Load	Design Occupant Load	CFM Per Person	Total OA CFM	CFM Per SQ.FT.	Total OA CFM	Fixture Quantity	CFM Per Fixture	CFM Per SQ.FT.	Total Exhaust CFM				
101-Dining	577	Food and beverage service: Cafeteria, fast food	100	58	22	7.5	165	0.18	104					269	907	RTU-2	See Note 1
102-Utensil	45	Public spaces, Corridors and utilities						0.06	3					3	9	RTU-2	
103-Passage	30	Public spaces, Corridors and utilities						0.06	2					2	6	RTU-2	
105-Ordering	31	Food and beverage service: Cafeteria, fast food	100	3	3	7.5	23.25	0.18	6					29	97	RTU-2	See Note 1
111-Unisex	53	Public spaces: Toilet rooms - public						0	0	1	70			0	0	EF-2	
<b>Totals</b>	<b>736</b>				<b>25</b>						<b>70</b>			<b>302</b>	<b>1020</b>	<b>RTU-2</b>	
106-Serving	106	Food and beverage service: Cafeteria, fast food	100	11	4	7.5	30	0.18	19					49	236	RTU-1	See Note 1
104-POS	134	Food and beverage service: Cafeteria, fast food	100	13	2	7.5	15	0.18	24					39	188	RTU-1	See Note 1
107-Cooking	395	Food and beverage service: Kitchens (cooking)	20	8	2	7.5	15	0.12	47			0.7		62	299	EF-1	
108-Kitchen	330	Food and beverage service: Cafeteria, fast food	100	33	4	7.5	30	0.18	59					89	429	RTU-1	See Note 1
109-Office	39	Offices: Office spaces	5	0	1	5	5	0.06	2					7	35	RTU-1	
112-Trash Room	45	Public spaces, Corridors and utilities						0.06	3					3	13	RTU-1	Via EF-3
<b>Totals</b>	<b>1049</b>				<b>13</b>									<b>250</b>	<b>1200</b>	<b>RTU-1</b>	

Notes:  
1. Classification of "Food and beverage service, Cafeteria, fast food" results in an estimated quantity of people on a square footage basis that is unrealistic with regard to the actual use of the space. The calculated number of people has been noted in the above calculation, but an alternative, reasonably conservative actual maximum occupancy (which is supported by the Owner's historical data) is utilized in the calculation for the Total Outside Air CFM required for the respective Zones. The code-mandated value of 7.5 cfm/person for "Food and beverage service, Cafeteria, fast food" is used in the calculation.

ROOFTOP UNIT SCHEDULE																																		
Unit ID	Nominal Cooling Capacity (Tons)	Manuf.	Model	Area Served	Orientation	Fan Performance						Cooling Capacity						Heating Performance						Aux Elec heat		Unit Electrical Data					Unit Installed Weight lbs.	Furnished By	Installed By	Comments
						Air Balance		Motor	Total	Net Capacity		Efficiency	EAT (Deg. F)		Cond.	Unit	Type	Net Capacity		Nom.	Applied	Unit Discharge @ 17°F D.B. w/ Elec Heat	Efficiency		Voltage	Ph.	Hz.	MCA	MOCPP					
						Supply CFM	Outdoor CFM	BHP	E.S.P. in. w.c.	Total MBH	Sensible MBH	EER	IEER	DB	WB	EAT (Def. F)	LAT (Def. F)	MBH @ 17°F D.B.	MBH @ 47°F D.B.				COP @ 17°F D.B.	COP @ 47°F D.B.										
RTU-1	10	York	XP120	BOH	Downflow	4000	1200	3.00	0.8	123.0	89.6	11.0	14.5	80.0	67.0	95.0	57.8	Heat Pump	59.0	102.0	54	40.6	101.8	2.25	3.50	208	3	60	152.9	175	1135	HES	GC	X X X X X X X X X X X X
RTU-2	8.5	York	XP102	Dining	Downflow	3400	1020	3.00	0.8	106.5	77.3	11.1	14.4	80.0	67.0	95.0	57.8	Heat Pump	53.0	93.0	36	25.5	93.8	2.25	3.50	208	3	60	134.0	150	1137	HES	GC	X X X X X X X X X X X X

- Notes that apply to all units:
- Static pressure indicated above is the external static pressure which excludes any pressure drops within the unit.
  - Unit shall be complete with side outlet drain and access doors. Outside air dampers shall be equipped with blade and jamb seals.
  - Contractor to ensure that outdoor air intakes are a minimum of 10'-0" away from any exhaust fan discharge, plumbing vent or other contaminant source.
  - Maximum air velocity through cooling coil shall not exceed 500 feet per min.
  - Provide 4 sided factory roof curb suitable for seismic conditions of project location.
  - Perform testing and balancing and submit reports to the engineer in accordance with specification.
  - Refer to roof framing plan for exact location of rooftop units.
  - Mechanical subcontractor shall affix unit designation decal on unit.
  - Unit to operate at 7 in. w.g. natural gas pressure. See Manufacturer's specifications for final connection size to unit.
  - Provide alternate bid to supply all rooftop units with coastal package (coated coils, painted rails, etc.) when site is located within 5 miles of the coast.

- Accessories, Features & Options:
- MERV-8 filters.
  - Roof curb - 14" high.
  - M.O.D.
  - Hail guard.
  - Unit mounted convenience receptacle.
  - R.A. & S.A. smoke detector w/ remote keyed annunciator/reset.
  - Comp. enthalpy econ.
  - Barometric relief.
  - Toolless hinged access panels.
  - Unit shall be charged with refrigerant type R-410A
  - Disconnect.
  - Hi-static motor
  - Provide coastal package (coated coils, painted rails, etc.).

GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE											
Tag	Description	Face Size / Neck Size	Material	Finish	Mounting	Furnished By	Installed By	Manufacturer	Model	Notes	
BS-1	Bathroom Air Purification Unit	Face: 5.44"x16"	Stainless Steel	Stainless Steel	Surface mount	TUV	GC	RGF Environmental Group	BRU Assembly	See electrical sheets for connection information	
CD-1	Perforated ceiling diffuser	Face: 24"x24" Neck: Varies	Aluminum	White	Lay-in ceiling	GC	GC	Nailor	4320A Type L	Provide with integral OBD	
CD-2	Perforated ceiling diffuser	Face: 24"x12" Neck: Varies	Aluminum	White	Lay-in ceiling	GC	GC	Nailor	4320A Type L	Provide with integral OBP Remove 4-way deflectors Provide with integral OBD	
CD-3	Perforated ceiling diffuser	Face: 20"x20" Neck: Varies	Aluminum	White	Surface mount	GC	GC	Nailor	4320A Type S	Provide with integral OBD	
ER-1	Perforated ceiling exhaust	Face: 12"x12" Neck: Varies	Aluminum	White	Surface mount	GC	GC	Nailor	4330R Type S	Provide with integral OBD	
RG-1	Perforated ceiling return	Face: 48"x24" Neck: Varies	Aluminum	White	Lay-in ceiling	GC	GC	Nailor	4330R Type L		
RG-2	Perforated ceiling return	Face: 42"x16" Neck: Varies	Aluminum	White	Surface mount	GC	GC	Nailor	51FH-O	Provide with integral OBD	
SR-1	Adjustable turbo nozzle	Neck: Varies	Aluminum	White	Wall	GC	GC	Air Concepts	ANR-14	Provide with concealed mounting and integral OBD	
SR-2	Double-deflection supply register	Neck: Varies	Aluminum	White	Wall	GC	GC	Nailor	51DH	Provide with integral OBD	

AIR BALANCE CALCULATIONS					
System	Supply Air CFM	Return Air CFM	Outdoor Air CFM	Exhaust Air CFM	Pressure CFM
RTU-1	4000	2800	1200		1200
RTU-2	3400	2380	1020		1020
EF-1				1900	-1900
EF-2				75	-75
EF-3				75	-75
<b>Total</b>	<b>7400</b>	<b>5180</b>	<b>2220</b>	<b>1975</b>	<b>170</b>

**CONTROL FUNCTIONS**

A. THE MAIN COOKING EXHAUST FAN AND MAKE-UP AIR UNIT SHALL BE INTERLOCKED TO OPERATE TOGETHER. THIS CONTROL CIRCUIT IS ACTIVATED BY A SWITCH AND INCLUDES A FIRE PROTECTION OVERRIDE.

B. THE TEMPERATURE IN EACH ZONE IS CONTROLLED BY SPACE TEMPERATURE SENSORS CONNECTED TO THE THERMOSTATS LOCATED IN THE OFFICE. ALL ZONES SHALL OPERATE WITH CONTINUOUS FAN OPERATION DURING OCCUPIED TIMES AND INTERMITTENTLY AS NEEDED TO MAINTAIN SET POINTS DURING UNOCCUPIED TIMES. OUTSIDE AIR DAMPERS SHALL BE OPEN CONTINUOUSLY WHEN EITHER IN OCCUPIED MODE OR WHEN HOOD SYSTEM IS ON AND SHALL BE CLOSED DURING UNOCCUPIED PERIODS.

C. THE THERMOSTATS SHALL DETERMINE OCCUPIED/UNOCCUPIED STATUS BASED ON THE SCHEDULE IN THE ENERGY MANAGEMENT SYSTEM.

SANITIZING EQUIPMENT SCHEDULE							
TAG	COUNT	DESCRIPTION	FURNISHED BY	INSTALLED BY	BASIS FOR DESIGN		REMARKS
					MANUFACTURER	MODEL	
SB-1	1	BATHROOM AIR PURIFICATION UNIT	TUV	GC	RGF ENVIRONMENTAL GROUP	BRU ASSEMBLY	SEE ELECTRICAL SHEETS FOR CONNECTION INFORMATION
SH-1	2	HVAC AIR PURIFICATION UNIT	TUV	GC	RGF ENVIRONMENTAL GROUP	REME-HALO	SEE DETAIL 5/M-700 FOR INSTALLATION INFORMATION
SI-1	2	ICE MACHINE TREATMENT SYSTEM	TUV	GC	RGF ENVIRONMENTAL GROUP	IMS-B-GA	SEE PLUMBING DRAWINGS FOR INSTALLATION INFORMATION

2024-DB#4/P#1-4

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CONSTRUCTION SET  
04/02/2025

REV. DATE DESCRIPTION  
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1 03/28/2025 CONSTRUCTION SET

PROFESSIONAL SEAL

Michael L. Wilson, P.E.  
NY License #073765-1

PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
DRAWN BY: PCE  
CHECKED BY: AIS

PROJECT NUMBER:  
24007

SHEET TITLE:

HVAC SCHEDULES

SHEET NUMBER:

**M-600.00**  
8 OF 12

DOB NOW Filing #: B01113056-51

NYCECC 2020 - TABLE C403.2.10: MINIMUM PIPE INSULATION THICKNESS							
FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (in.)				
	CONDUCTIVITY Btu-in / (hr-ft <sup>2</sup> -°F)	MEAN RATING TEMPERATURE (°F)	< 1.0	1.0 < 1.5	1.5 < 4.0	4.0 to < 8.0	8.0 and up
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	50	0.5	1.0	1.0	1.0	1.5

#### SPLIT TYPE AC UNIT SCHEDULE

UNIT ID	INDOOR UNIT			OUTDOOR CONDENSING UNIT						SEER	HSPF	ACCESSORIES	
	MODEL	CAPACITY (BTUH) TOTAL	WEIGHT LBS	MODEL	MCA	MAX FUSE	ELECTRICAL VOLTS	PH	HZ				WEIGHT LBS
AHU/ACC-1	DHX09NWB21S	9,000	22.0	DHX09CSB21S	9	15	208	1	60	32.8	23.0	10.5	1,2,3

#### NOTES

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>Unit Selection Based On York.</li> <li>All Remote Condensing Units Shall Be Securely Mounted On Equipment Curbs, Flashed To Roof, Where Applicable.</li> <li>All Refrigerant Piping Shall Be Sized And Installed As Per The Unit Manufacturer's Recommendations.</li> <li>AHU and ACC Shall Be Of The Same Manufacturer.</li> </ol> | <b>ACCESSORIES</b> <ol style="list-style-type: none"> <li>Provide Low Ambient Control.</li> <li>Remote Mounted Temperature Controller.</li> <li>Condensate Pump.</li> </ol> |
|--|---|

#### DUCT INSULATION

PER SECTION C403.11.1 OF THE 2020 NYC ENERGY CONSERVATION CODE, ALL SUPPLY & RETURN DUCTS & PLENUMS SHALL BE INSULATED IN THE FOLLOWING MANNER:

- LOCATED IN UNCONDITIONED SPACES: MINIMUM OF R-6 INSULATION
- LOCATED OUTSIDE THE BUILDING: MINIMUM OF R-8 INSULATION (CLIMATE ZONES 1-4) AND R-12 INSULATION (CLIMATE ZONES 5-8)
- LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, SEPARATED FROM THE BUILDING EXTERIOR, UNCONDITIONED, OR EXEMPT SPACE BY A MINIMUM OF R-8 INSULATION (CLIMATE ZONES 1-4) AND R-12 INSULATION (CLIMATE ZONES 5-8)

## DUCTWORK INSULATION SPEC

### 6. DUCTWORK INSULATION

- ALL NEW AND EXISTING CONCEALED SHEET METAL SUPPLY DUCTWORK (AND RETURN DUCTWORK IN UNCONDITIONED SPACES) SHALL BE INSULATED WITH 2" THICK FLEXIBLE DUCT INSULATION, WITH A MINIMUM R VALUE OF 6, WITH REINFORCED FOIL FACED, FLAME RESISTANT, ALUMINUM FOIL VAPOR BARRIER SIMILAR TO KNAUF FRIENDLY FEEL DUCT WRAP WITH ECOSE. THE DUCT SIZES SHOWN ON THE FLOOR PLANS ARE CLEAR INSIDE DIMENSIONS. THE SHEET METAL SIZE SHALL BE INCREASED TO ACCOMMODATE THE LINER. INSULATION AND FACING WILL HAVE A COMBINED FLAME SPREAD RATING NO GREATER THAN 25 AND SMOKE DEVELOPED RATING NOT EXCEEDING 50. ALL INSULATION SHALL BE SECURED WITH DUCT ADHESIVE AND SEEMS SEALED BY TWO-INCH SEALING LIP WITH ADHESIVE AND FASTENED WITH 16 GAUGE RUST RESISTANT WIRE OR FIBERGLASS CORD ON 12" CENTERS. ON DUCTS OVER 24" WIDE, WELDED PINS AND CLIPS SHALL BE USED ON THE UNDERSIDE FOR FASTENING INSULATION.
- FRESH AIR INTAKE, MIXED AIR DUCTWORK AND LOUVER BLANK-OFF PANELS SHALL BE INSULATED WITH RIGID DUCT INSULATION 2" THICK WITH A MINIMUM R VALUE OF 8, WITH WHITE VINYL FOIL BARRIER FACING SIMILAR TO KNAUF ECLIPSE DUCTBOARD WITH ECOSE. INSULATION AND FACING WILL HAVE A COMBINED FLAME SPREAD RATINGS NO GREATER THAN 25 AND SMOKE DEVELOPED RATING NOT EXCEEDING 50. INSULATION SHALL BE IMPALED OVER WELDED PINS WITH CLIPS FIRMLY EMBEDDED INTO INSULATION. ALL JOINTS AND CLIPS SHALL BE SEALED WITH MATCHING STRIPS OF VINYL COATED VAPOR BARRIER LAMINATE SIMILAR TO OWENS CORNING 24 ASJ FOR DUCTS.
- ALL SEALING TAPE SHALL CONFORM TO UL181A OR UL181B WHEN USED AS PRIMARY SEALANT.

## ENERGY ANALYSIS (DUCTWORK INSULATION) CLIMATE ZONE 4A

ITEM DESCRIPTION	PROPOSED DESIGN VALUE	CODE PRESCRIBED VALUE
ALL SUPPLY & RETURN DUCTWORK INSIDE BUILDING	R-VALUE > 6	R-VALUE > 6
FRESH AIR INTAKE DUCTWORK	R-VALUE > 8	R-VALUE > 8

**NOTES:** ALL SEALING TAPE SHALL CONFORM TO UL-181A OR UL-181B WHEN USED AS A PRIMARY SEALANT.

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 NEW YORK CITY ENERGY CONSERVATION CODE.

## REQUIRED INSPECTIONS

SPECIAL INSPECTIONS SHALL BE MADE BY A "SPECIAL INSPECTOR", AN ENGINEER, OR ARCHITECT LICENSED IN NEW YORK STATE WORKING FOR AN APPROVED SPECIAL INSPECTION AGENCY. THE SPECIAL INSPECTOR SHALL MEET THE QUALIFICATIONS REQUIREMENTS AS DEFINED BY THE NYC BUILDING CODE AND ALL RELEVANT MEMORANDA AND DIRECTIVES THAT APPLY TO THIS WORK. ALL INSPECTIONS SHALL BE MADE IN ACCORDANCE WITH CHAPTER 17 OF THE 2022 NYC BUILDING CODE AND THE DEPARTMENT'S SPECIAL INSPECTIONS RULE.

THE SELECTED CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR AND PERFORMING THE REQUIRED NEW YORK CITY DEPARTMENT OF BUILDINGS SPECIAL INSPECTIONS WITH THE SELECTED EXPEDITOR OF RECORD.

SPECIAL INSPECTIONS ARE REQUIRED FOR:

- MECHANICAL SYSTEMS (BC 1704.16)
- FINAL INSPECTION UNDER DIRECTIVE 14
- ENERGY CODE INSPECTIONS (NYC AND IRC/NYS000)
- HVAC-R AND SERVICE HEATING EQUIPMENT
- HVAC-R AND SERVICE WATER HEATING SYSTEM CONTROLS
- HVAC-R AND SERVICE WATER PIPING DESIGN & INSULATION

## BUILDING DEPARTMENT NOTES

- ALL WORK SHALL COMPLY WITH THE APPLICABLE SECTIONS OF THE BUILDING CODE, CITY OF NEW YORK, EFFECTIVE NOVEMBER 7, 2022 AND ALL AMENDMENTS TO DATE, MATERIALS AND EQUIPMENT SUBJECT TO CONTROLLED INSPECTION.
- MECHANICAL VENTILATION AIR CONDITIONING AND REFRIGERATION INSPECTION AND TESTS OF THE REQUIRED VENTILATION SYSTEMS AND NOISE CONTROL AS CHAPTER 17 OF THE NEW YORK CITY BUILDING CODE AND CHAPTER 1 OF THE NEW YORK CITY MECHANICAL CODE.
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC., SHALL COMPLY WITH THE FOLLOWING CODE REFERENCE:
  - DUCT CONSTRUCTION AND SUPPLY INTAKES, EXHAUST AND RELIEF FILTERS AS PER CHAPTER 6 OF THE 2022 NEW YORK CITY MECHANICAL CODE
  - NOISE CRITERIA LEVELS AND TEST PROCEDURE FOR SOUND POWER LEVELS AS PER CHAPTER 9, SECTION 928 OF THE 2022 NEW YORK CITY MECHANICAL CODE
  - ELECTRIC WIRING EQUIPMENT, FIRE CONTROL AND CONTROLS MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON AS PER NEC 70 DEGREE F WHEN 5 DEGREE OUTSIDE (WITH 15 MPH WIND) AS PER ASHRAE.
- REFER TO ARCHITECTURAL DRAWING FOR FIRE RATED WALL LOCATIONS AND RATED CONSTRUCTION.
- THE VENTILATION REQUIREMENTS FOR ALL AREAS COMPLIES WITH THE MINIMUM CODE REQUIREMENTS OF CHAPTER 4 (VENTILATION) OF THE NEW YORK CITY MECHANICAL CODE. THE VENTILATION REQUIREMENTS ARE MADE WITHOUT TAKING ANY CREDIT FOR EXTERIOR WINDOWS AND/OR OPENING IN AIR CONDITIONED AREAS.
- UPON COMPLETION OF THIS VENTILATION SYSTEM, A TEST SHALL BE CONDUCTED IN THE PRESENCE OF AND DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR HAVING NOT LESS THAN FIVE (5) YEARS OF EXPERIENCE SUPERVISING INSTALLATION OF VENTILATING SYSTEMS. THE TEST SHALL SHOW COMPLIANCE WITH THE CODE REQUIREMENTS FOR VENTILATION AND THE PROPER FUNCTIONING OF ALL OPERATING DEVICES BEFORE THE SYSTEM IS APPROVED. THE LICENSED PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT WHO CONDUCTS THE TESTS SHALL FILE A CERTIFICATE AS TO WHETHER THE SYSTEM COMPLIES WITH THE APPLICABLE LAWS. HE SHALL ALSO FILE WITH THE CERTIFICATION, A REPORT OF THE TEST. THE TEST AND REPORT SHALL BE MADE IN A MANNER SATISFACTORY TO THE SUPERINTENDENT. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING NORMAL OCCUPANCY OF THE STRUCTURE AS PROVIDED IN THE APPLICABLE SECTIONS OF THE CODE. BASE BUILDING PLANS ARE FILED FOR SINGLE TENANT OCCUPANCY. ALL TENANT PLANS WILL BE FILED UNDER SEPARATE APPLICATIONS.
- DETAIL OF DUCT SUPPORTS SHALL BE IN ACCORDANCE WITH THE 2022 NEW YORK CITY MECHANICAL CODE. UNLESS OTHERWISE NOTED, ALL DUCTS SHALL BE CONSTRUCTED OF GALVANIZED IRON. SEE DETAIL FOR METHOD USED FOR HANGING DUCT.
- ALL VENTILATING AND HANGING DUCTWORK, BOTH HIGH AND LOW VELOCITY, TO BE CONSTRUCTED IN ACCORDANCE WITH THE DUCT MANUALS OF SMACNA, LATEST EDITION.
- ALL FIRE DAMPERS SHALL BE APPROVED BY THE NEW YORK CITY BOARD OF STANDARDS AND APPEALS AND SHALL BE MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS (NBFU PAMPHLETS 90A AND 90B). FIRE DAMPERS SHALL BE AIR BALANCE AND TESTING CO., B.S.A. CATALOG NO. 100-6-SM OR IF DIFFERENT MANUFACTURED, NUMBER SHALL BE FILED AT THE COMPLETION OF THE INSTALLATION.
- THIS PLAN IS APPROVED ONLY FOR WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON, OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- TO THE BEST OF MY KNOWLEDGE, BELIEF AND PERSONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE 2020 NEW YORK CITY ENERGY CONSERVATION CONSTRUCTION CODE.

Consultant:



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CONSTRUCTION SET  
04/02/2025

REV.	DATE	DESCRIPTION
	08/06/2024	LANDLORD SET
	10/07/2024	PERMIT SET
	11/18/2024	BID SET
1	03/28/2025	CONSTRUCTION SET

PROFESSIONAL SEAL

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PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
DRAWN BY: PCE  
CHECKED BY: AJS

PROJECT NUMBER:  
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SHEET TITLE:

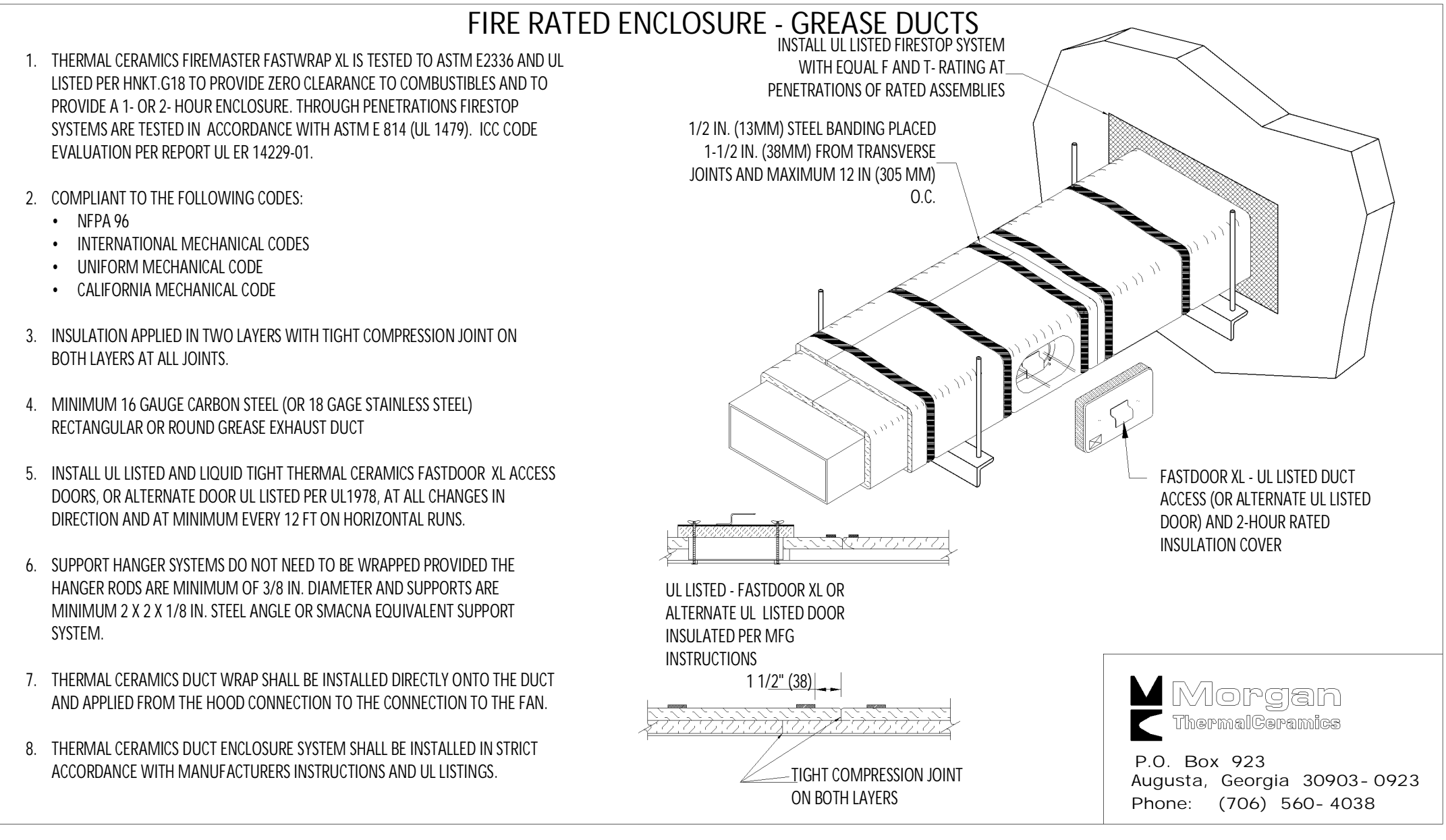
HVAC SCHEDULES

SHEET NUMBER:

M-601.00

9 OF 12

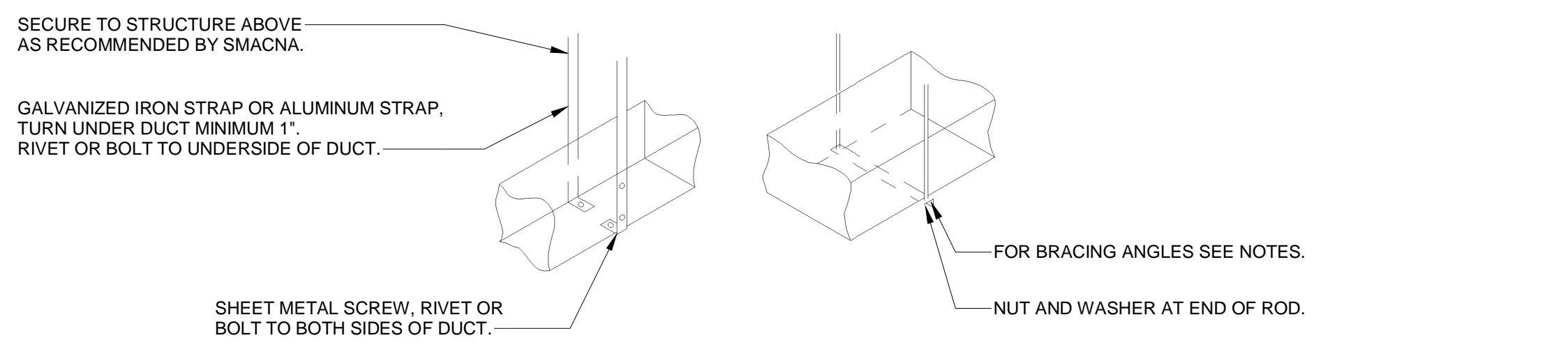
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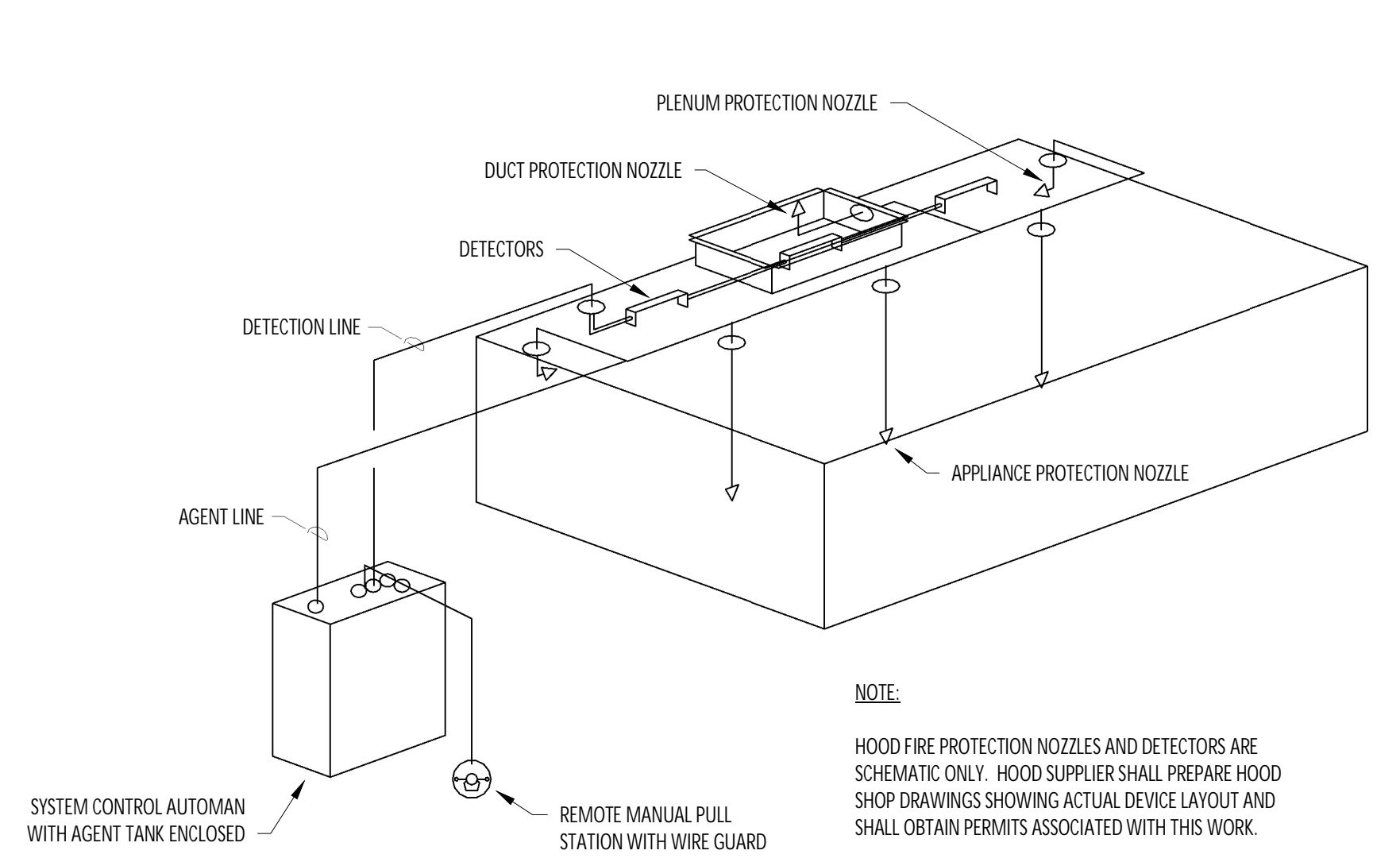
1 FIREMASTER DUCT WRAP - UL HNK1-G18  
NOT TO SCALE

### RECTANGULAR DUCT HANGER SCHEDULE (MINIMUM SIZES)

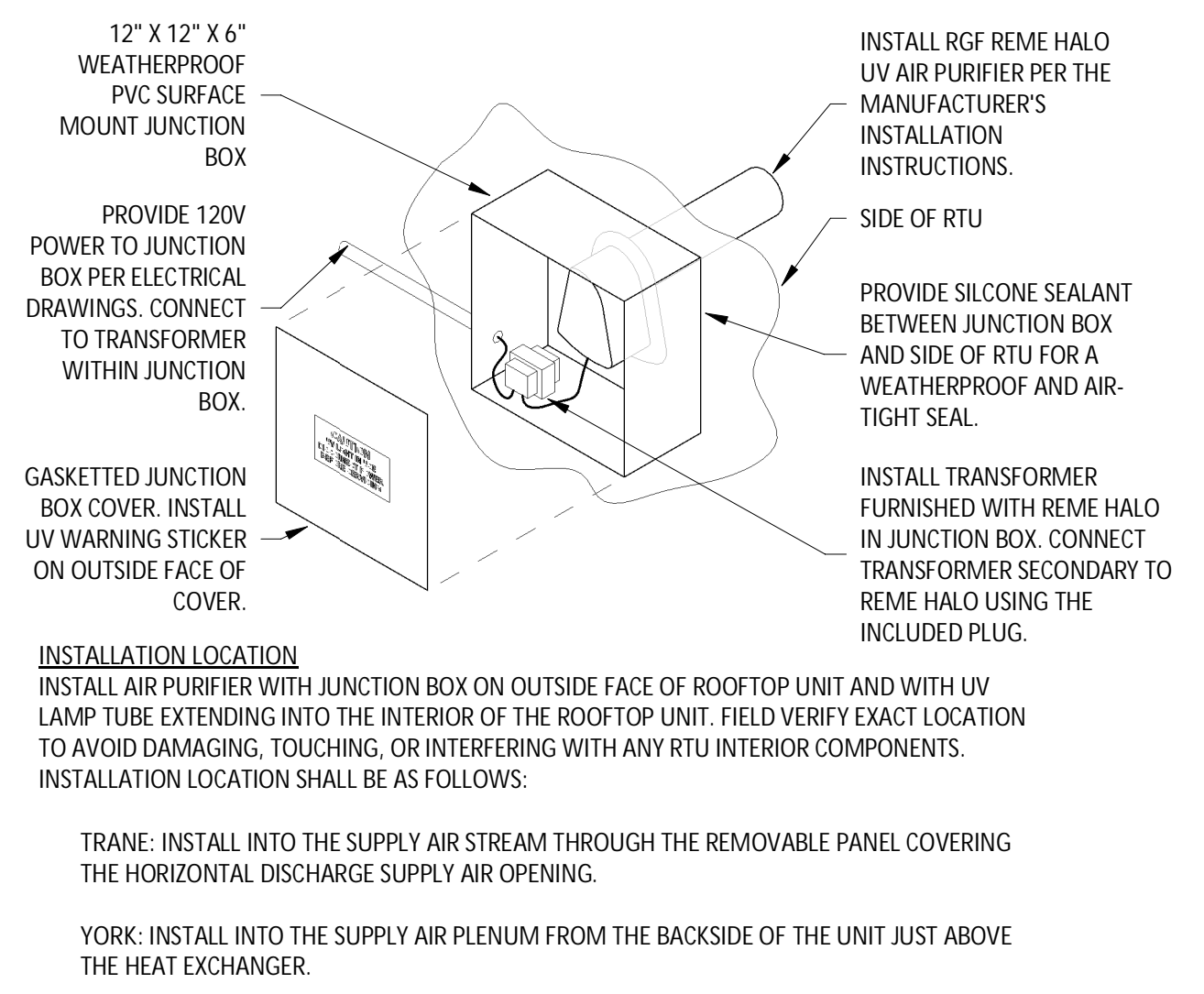
HALF DUCT PERIMETER RANGE	PAIR AT 10' SPACING		PAIR AT 8' SPACING		PAIR AT 5' SPACING		PAIR AT 4' SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
P/2-30"	1"x22 GA.	10 GA. (0.135")	1"x22 GA.	10 GA. (0.135")	1"x22 GA.	12 GA. (0.106")	1"x22 GA.	12 GA. (0.106")
P/2-72"	1"x18 GA.	3/8"	1"x20 GA.	1/4"	1"x22 GA.	1/4"	1"x22 GA.	1/4"
P/2-96"	1"x16 GA.	3/8"	1"x18 GA.	3/8"	1"x20 GA.	3/8"	1"x22 GA.	1/4"
P/2-120"	1-1/2"x16 GA.	1/2"	1"x16 GA.	3/8"	1"x18 GA.	3/8"	1"x20 GA.	1/4"
P/2-168"	1-1/2"x16 GA.	1/2"	1"x16 GA.	1/2"	1"x16 GA.	3/8"	1"x18 GA.	3/8"
P/2-192"	-	1/2"	1-1/2"x16 GA.	1/2"	1"x16 GA.	3/8"	1"x16 GA.	3/8"



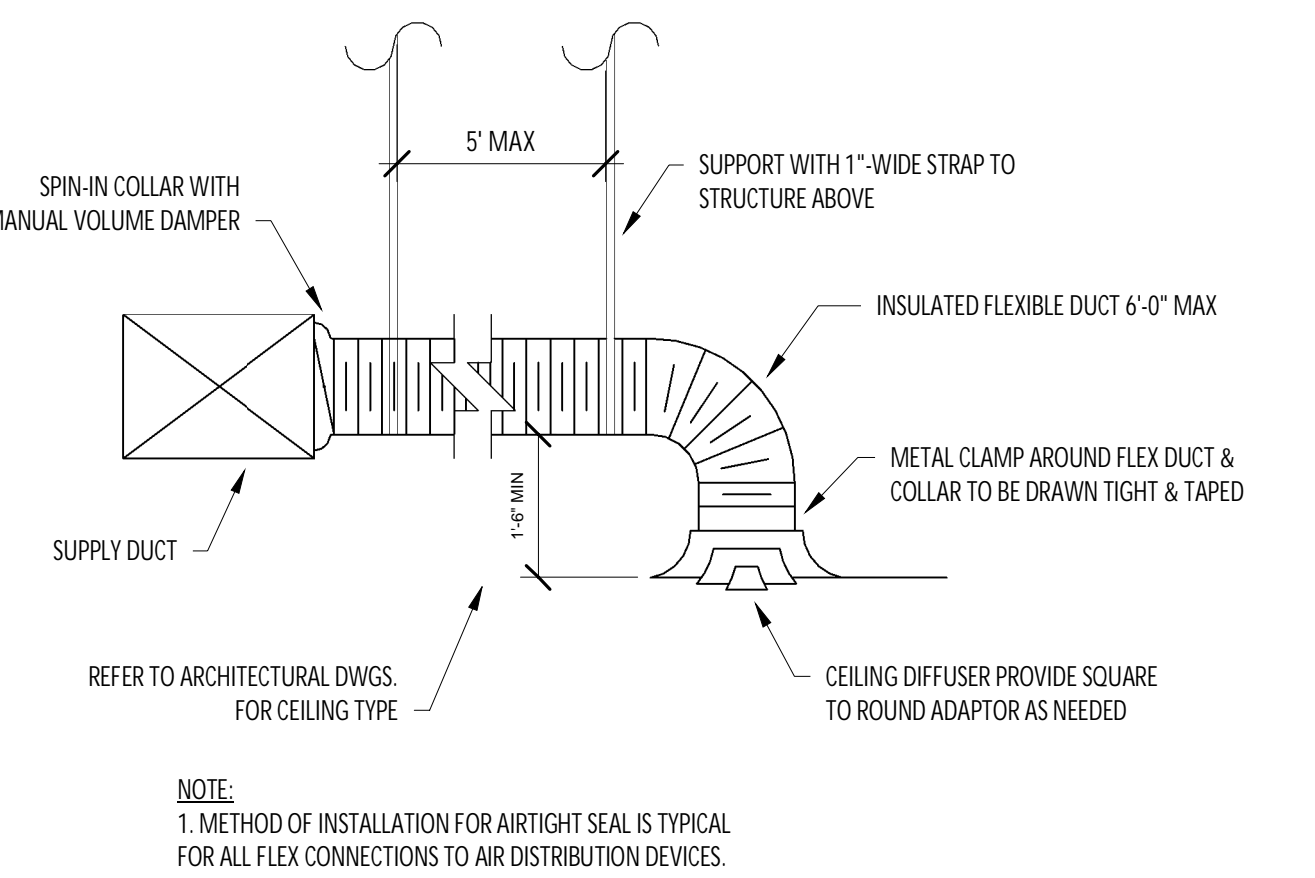
3 HVAC - DUCT HANGER DETAILS  
NOT TO SCALE



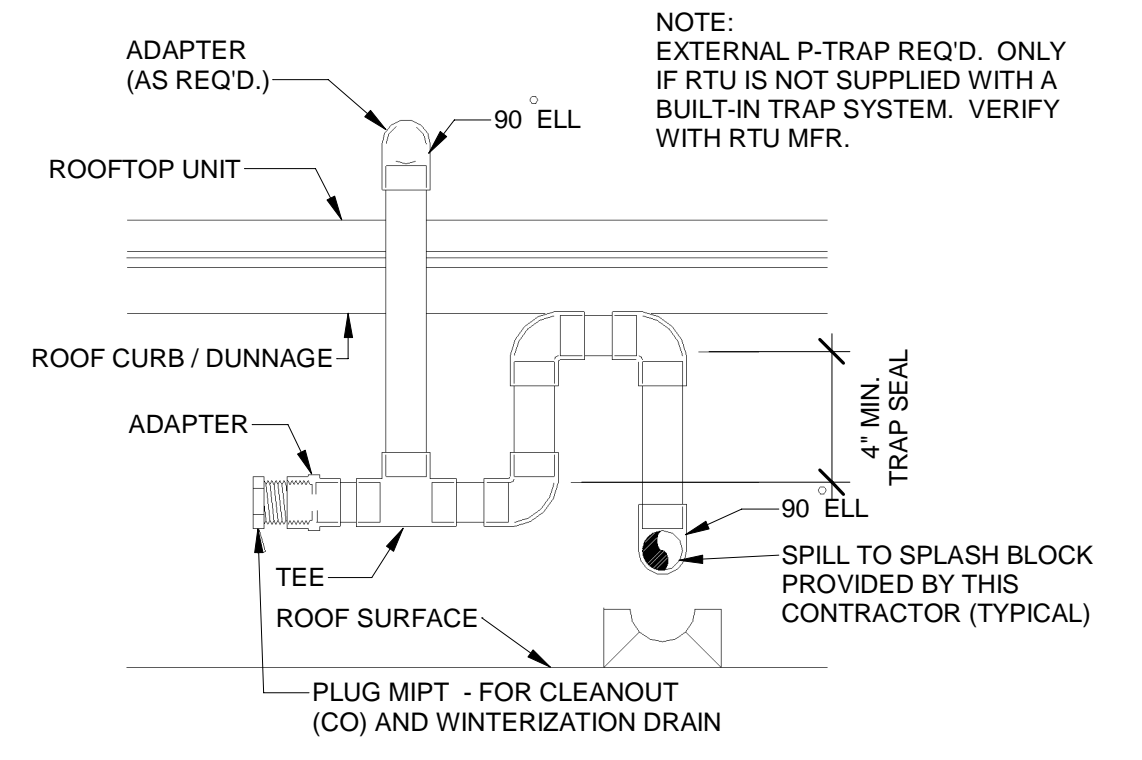
4 HVAC - FIRE SUPPRESSION SYSTEM SCHEMATIC  
NOT TO SCALE



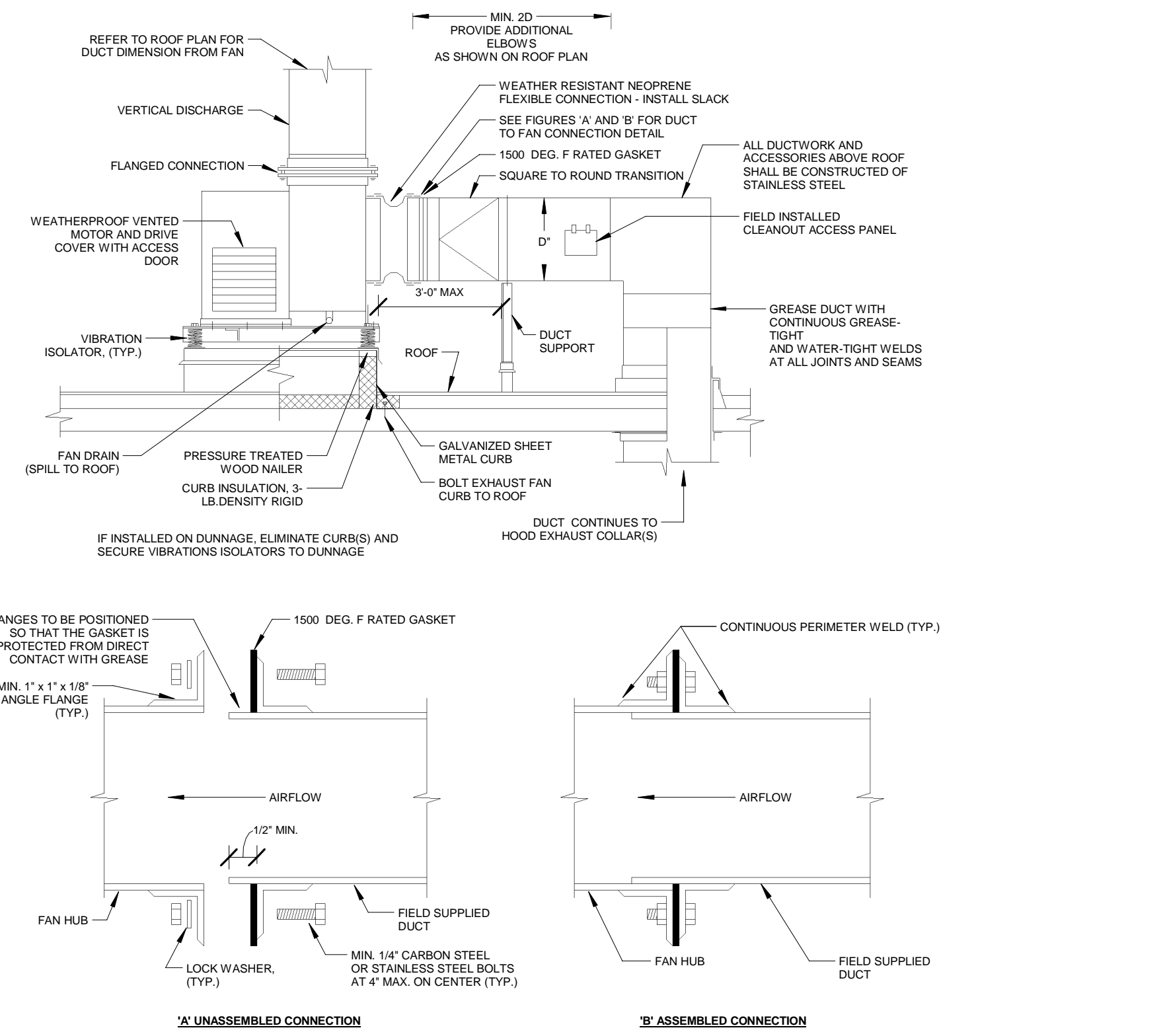
5 UV AIR PURIFIER INSTALLATION  
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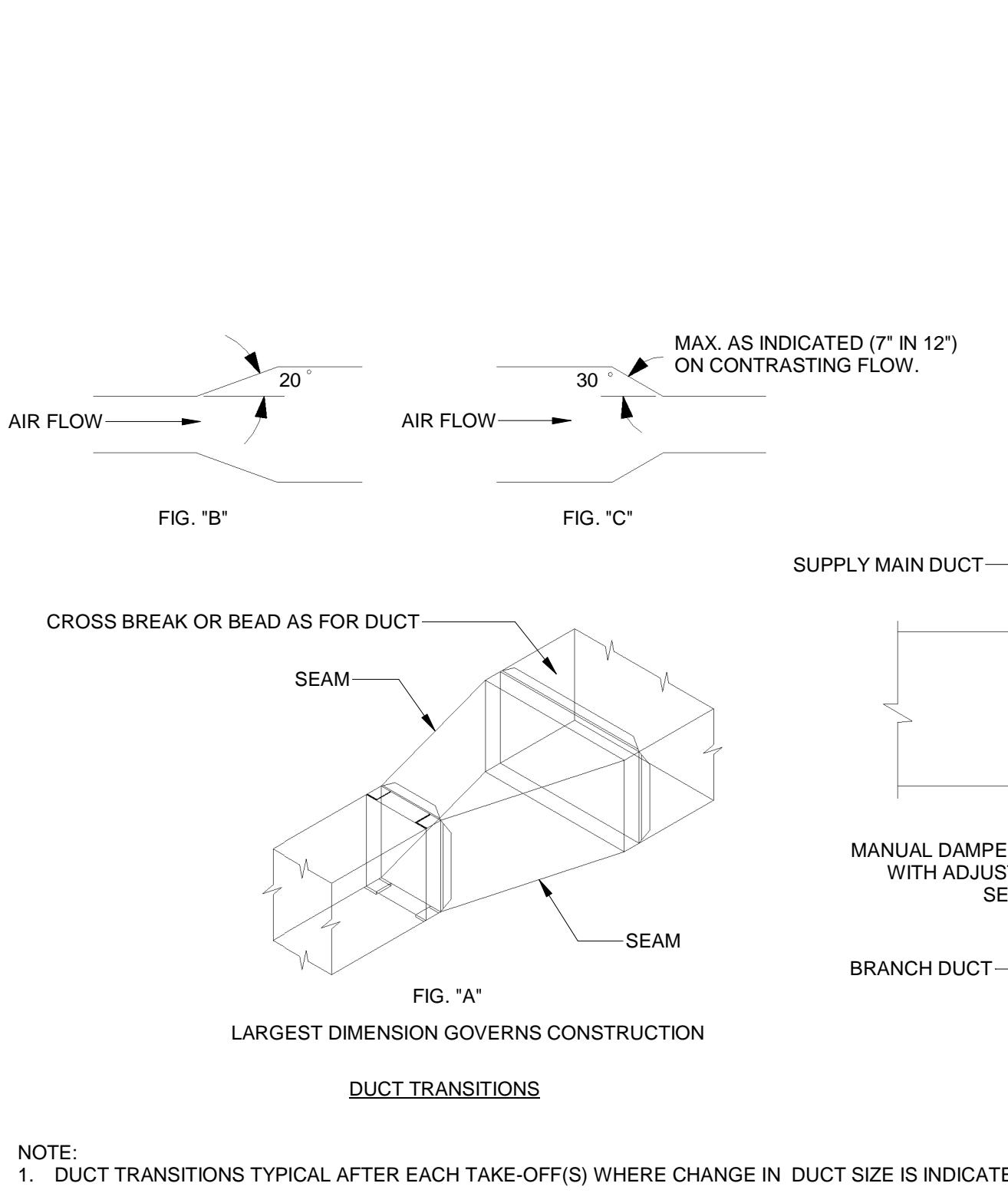
6 HVAC - DIFFUSER CONNECTION  
NOT TO SCALE



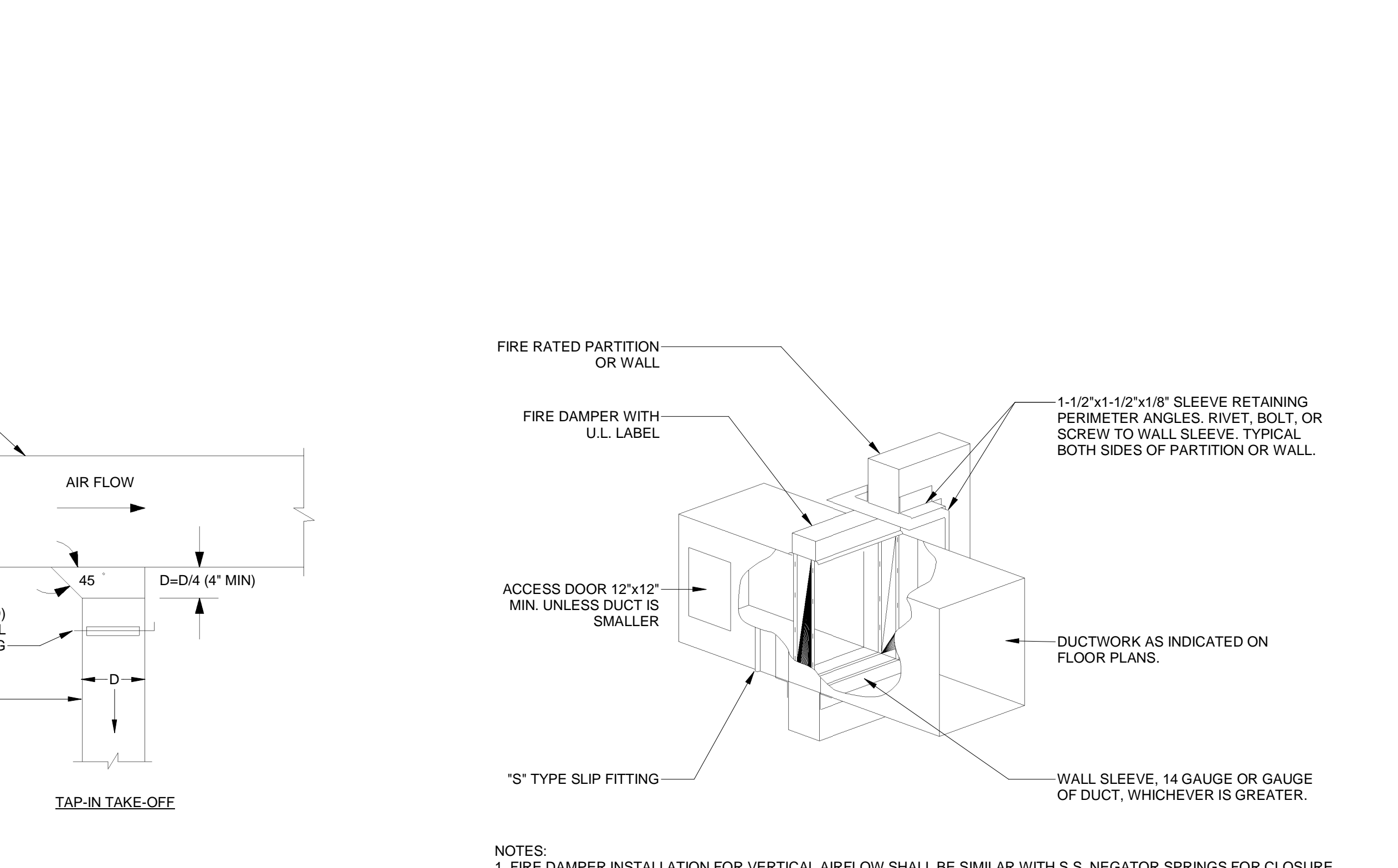
7 HVAC - CONDENSATE PIPING FROM RTU  
NOT TO SCALE



8 HVAC - UTILITY SET GREASE EXHAUST FAN DETAIL  
NOT TO SCALE



9 HVAC - DUCT TRANSITION DETAILS  
NOT TO SCALE



10 HVAC - FIRE DAMPER DETAIL  
NOT TO SCALE

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PROFESSIONAL SEAL

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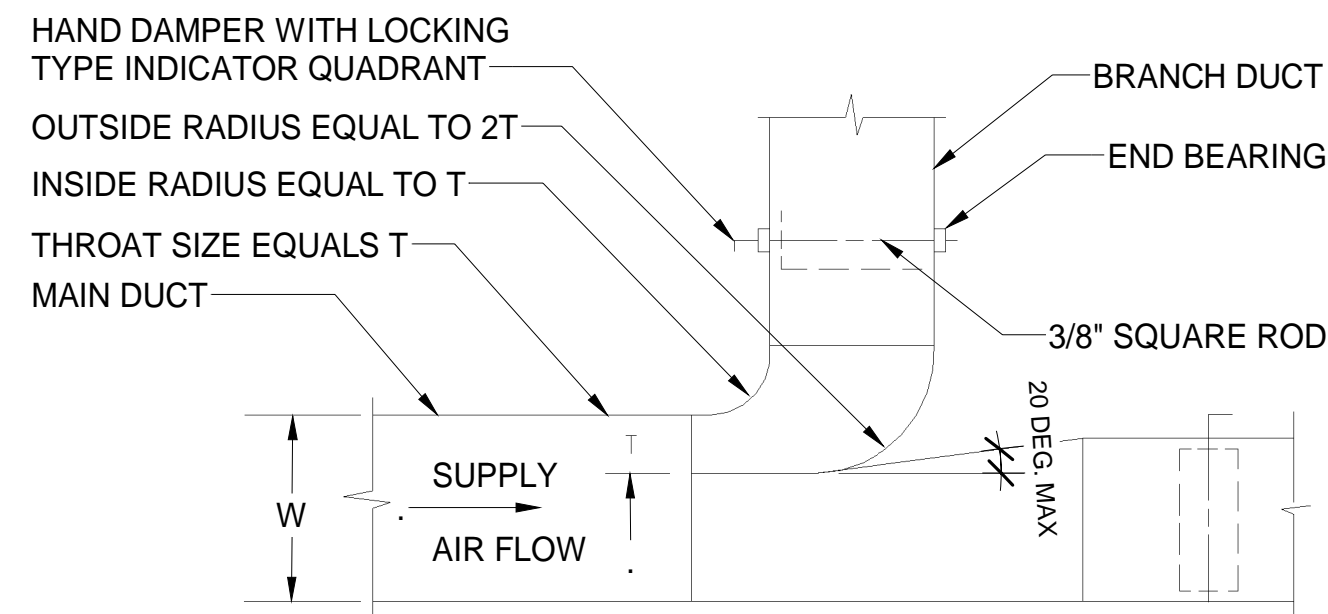
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DRAWN BY: PCE  
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24007

SHEET TITLE:  
HVAC DETAILS

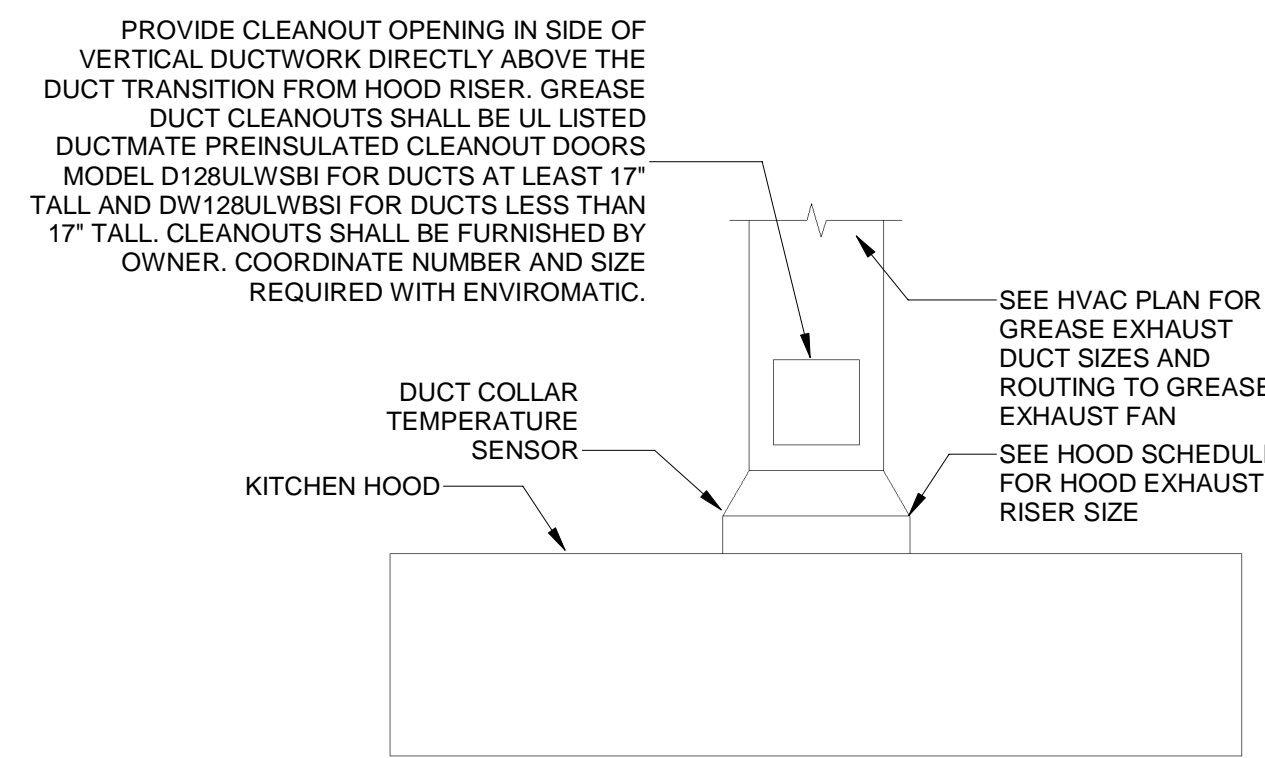
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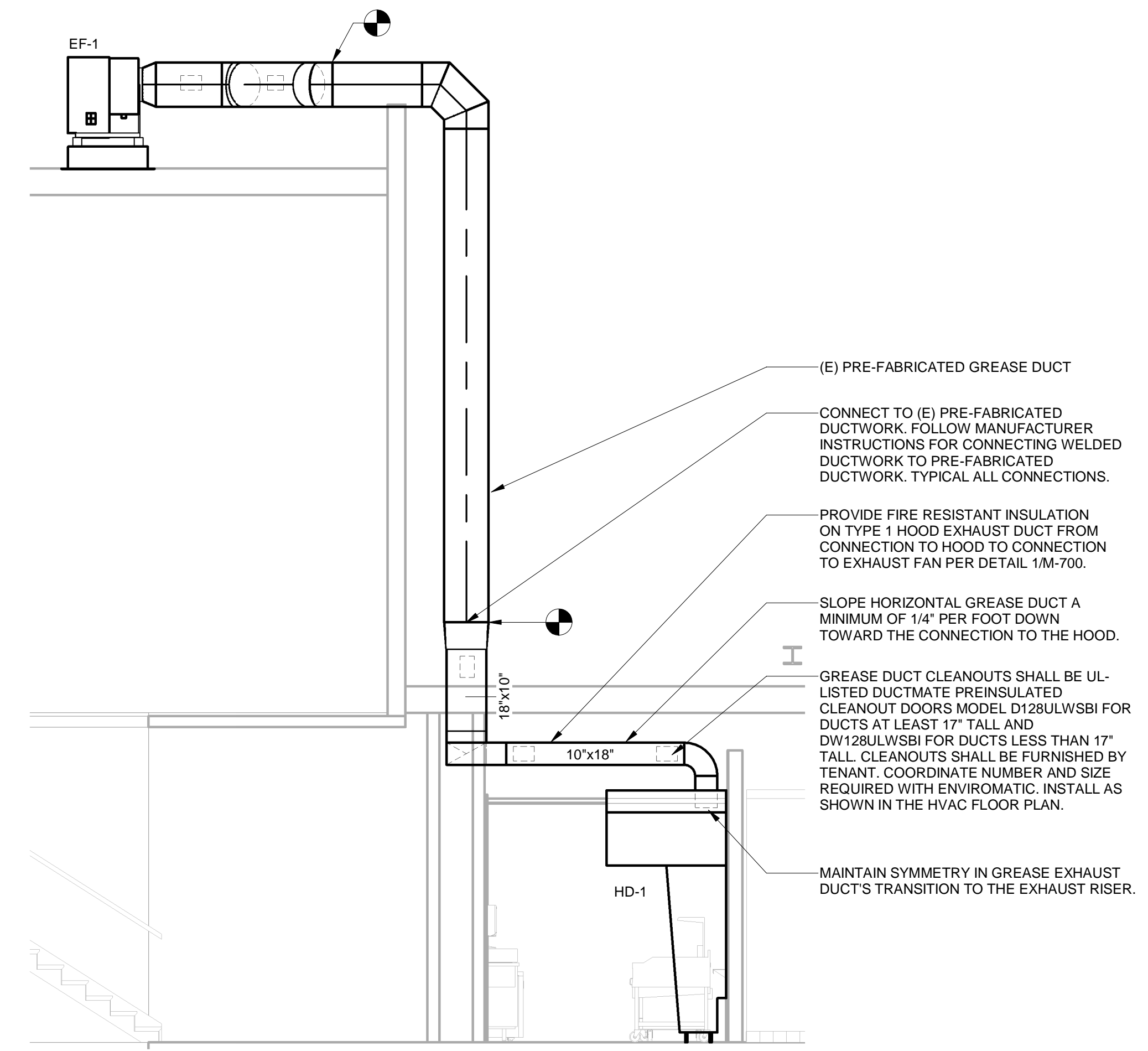


- NOTES:
- FURNISH THIS TYPE CONNECTION FOR BRANCHES WITH MORE THAN 200 CFM. MUST BE USED WHEN W IS GREATER THAN, OR EQUAL TO 36".
  - MINIMUM T = 4".

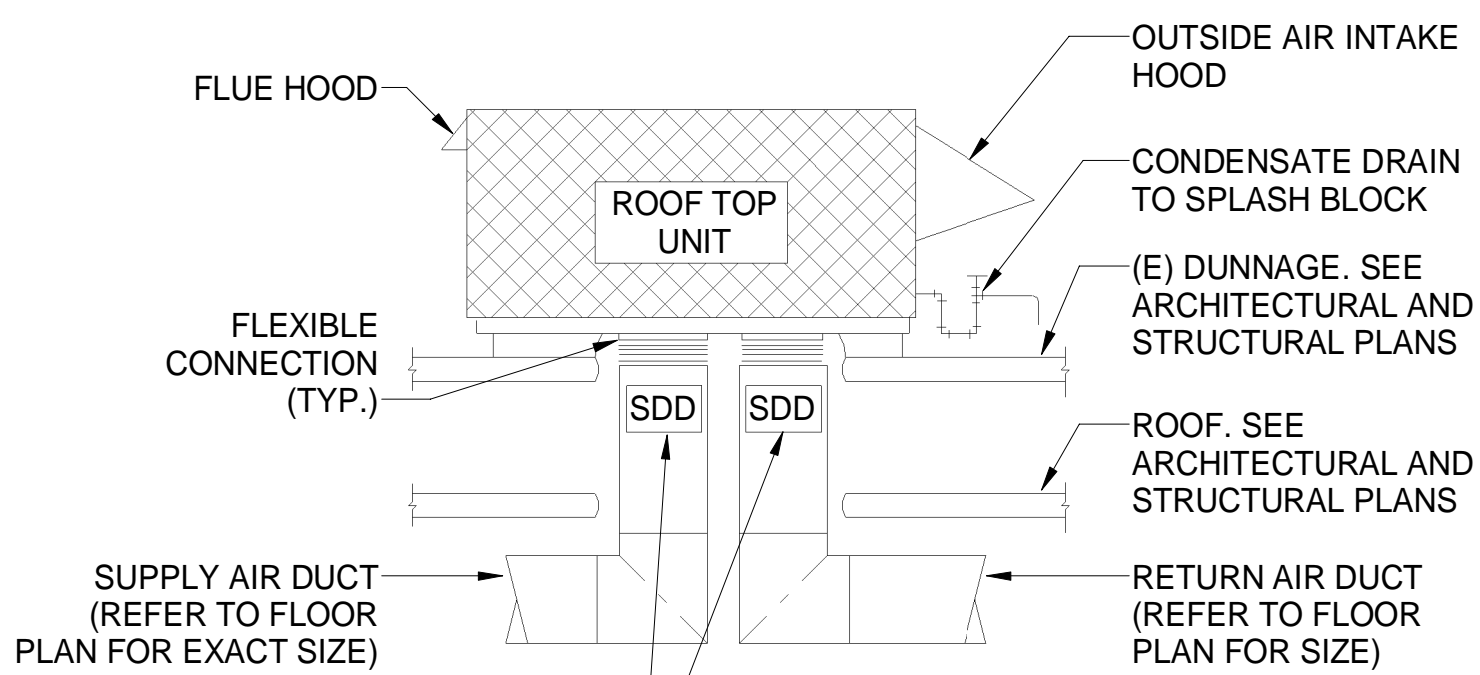
① HVAC - RECTANGULAR DUCT BRANCH  
NOT TO SCALE



② HVAC - GREASE EXHAUST DUCT AT HOOD  
NOT TO SCALE



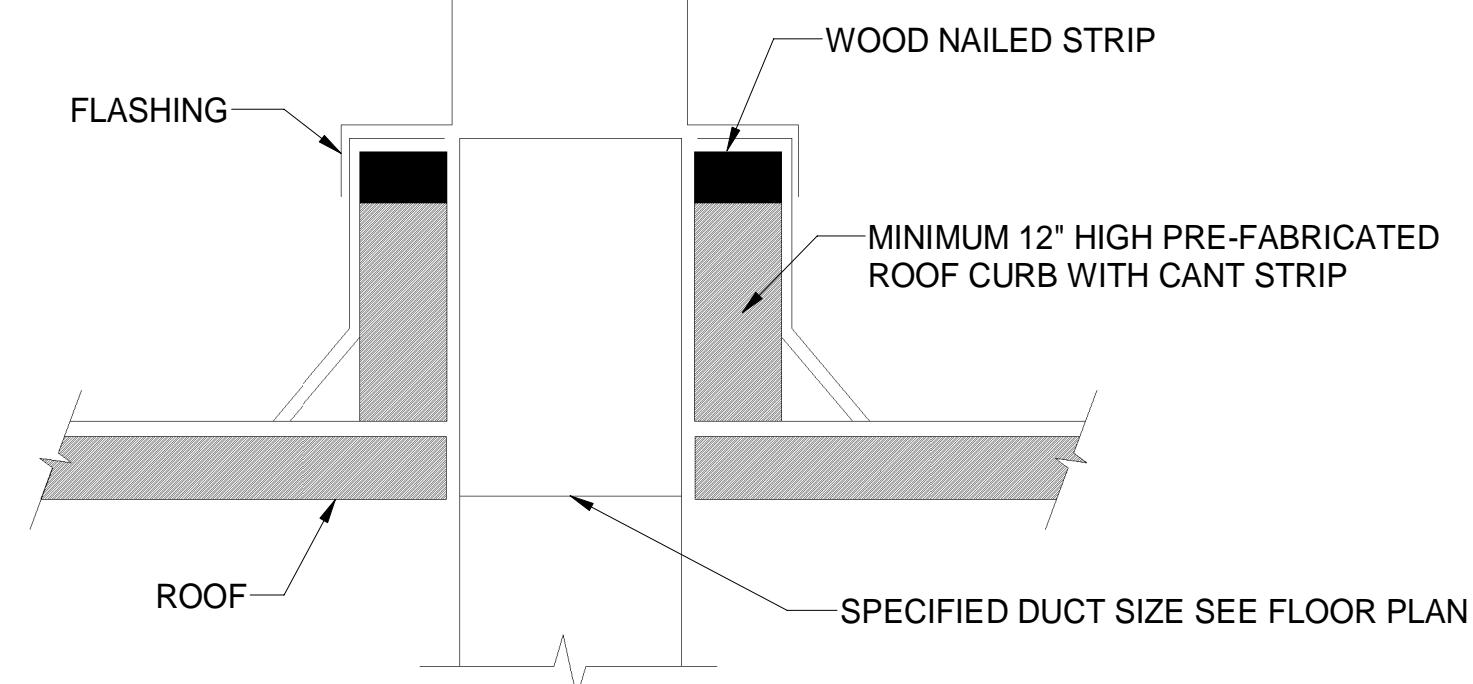
③ HVAC - HOOD DUCTWORK SECTION  
1/4" = 1'-0"



INTEGRAL R/A & S/ADUCT SMOKE DETECTOR SHOWN OFFSET FOR CLARITY, FURNISHED WITH UNIT AND WIRED BY ELECTRICAL CONTRACTOR TO SHUT DOWN UNIT WHEN SMOKE IS DETECTED.

- NOTES:
- THIS DETAIL SHALL SERVE AS A STANDARD FOR INSTALLATION FOR ALL ROOFTOP UNITS. REFER TO FLOOR PLANS FOR EXACT REQUIREMENTS FOR EACH UNIT.
  - ALL ROOF PENETRATIONS ARE BASED ON MANUFACTURERS EQUIPMENT S/A & R/A OPENING SIZE UNLESS NOTED OTHERWISE. EXTEND FULL SIZE DUCT DOWN TO ABOVE CEILING AND TRANSITION AS SHOWN ON PLANS.

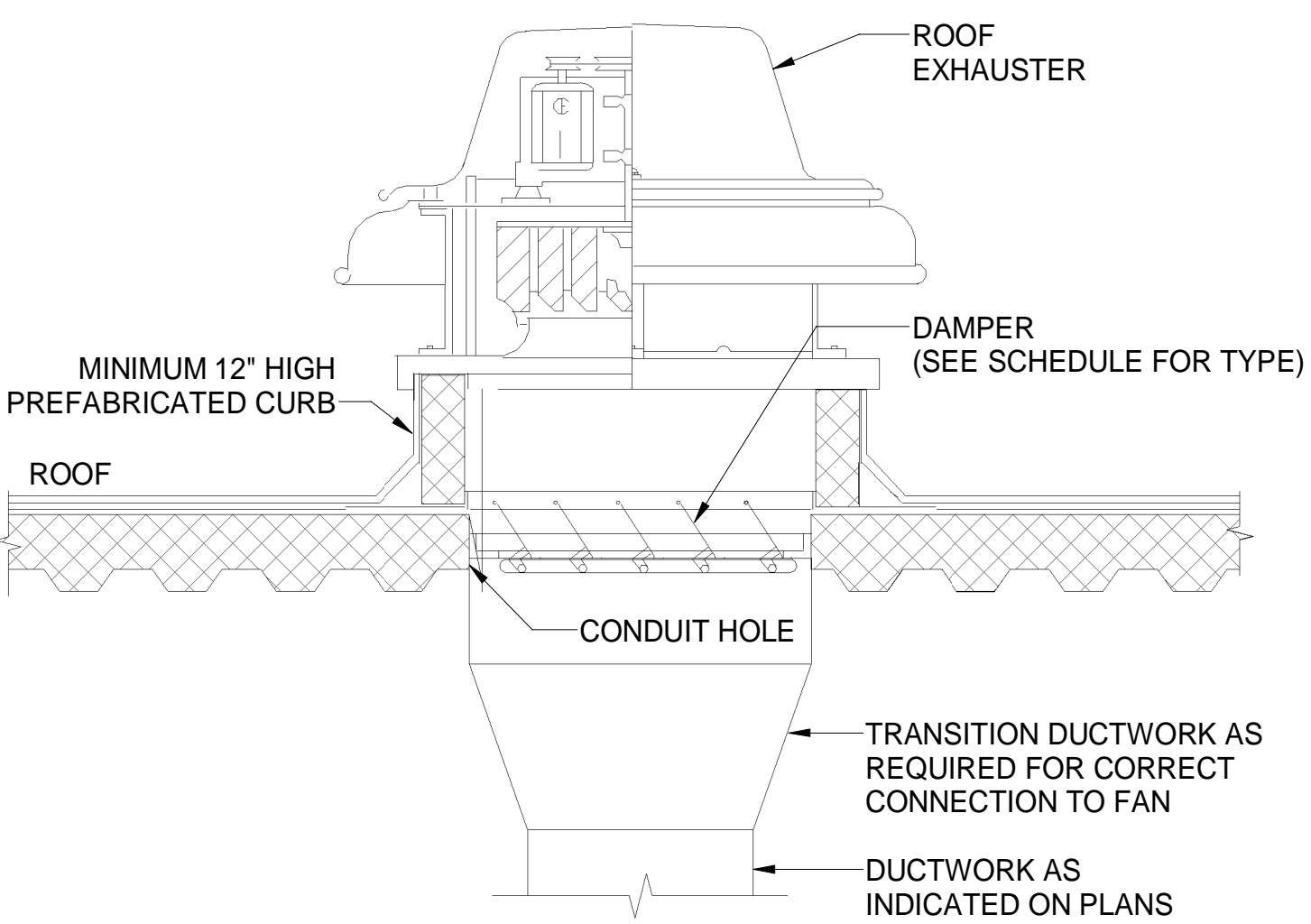
④ HVAC - ROOFTOP UNIT MOUNTING DETAIL - VERTICAL DISCHARGE  
1/8" = 1'-0"



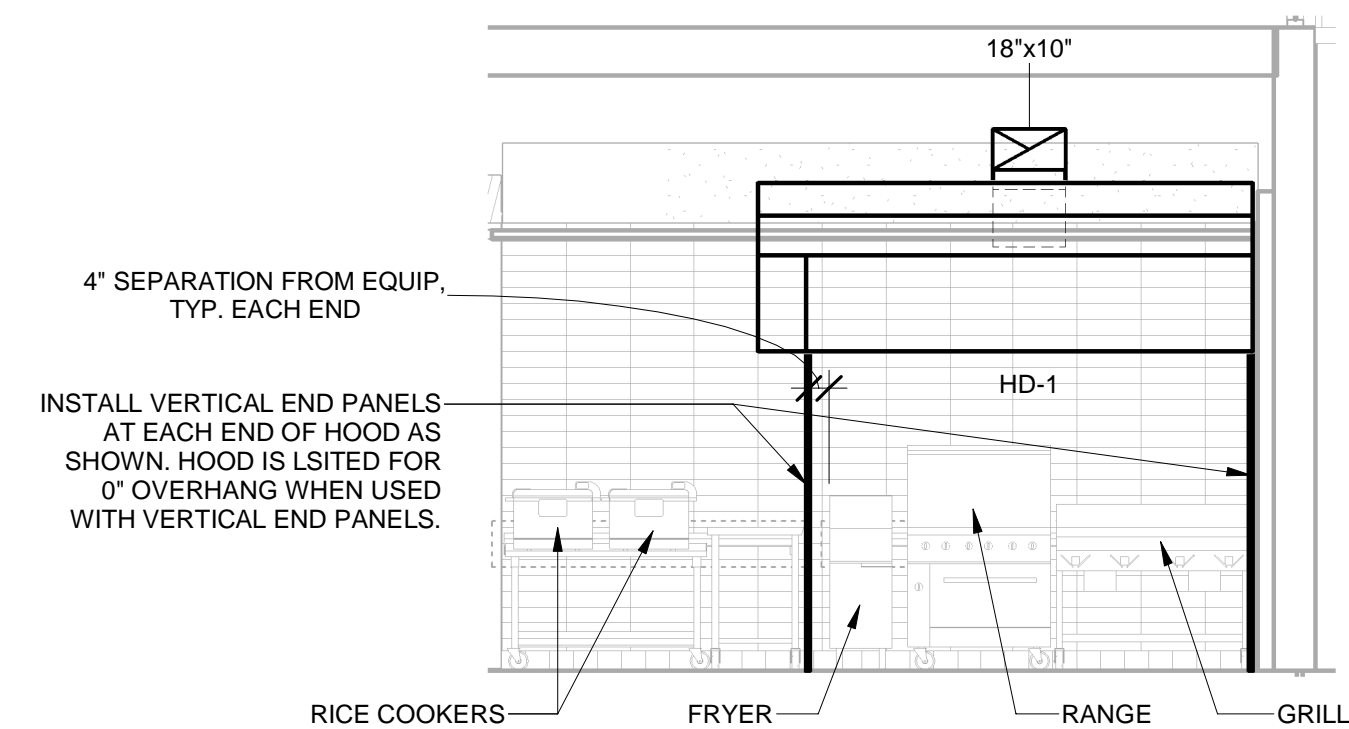
NOTES:

HVAC CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE EXISTING ROOFING WHERE NEW EQUIPMENT AND DUCT CURBS ARE TO BE SET AND WHERE NEW DUCT PENETRATIONS THROUGH THE ROOF OCCUR. HVAC CONTRACTOR SHALL BE RESPONSIBLE TO CUT NEWROOF OPENINGS FOR NEW DUCTWORK, PIPING, ETC. AFTER SETTING OF THE DUCT AND EQUIPMENT CURBS, PROVIDE NEW ROOF FLASHING AND COUNTER FLASHING. IF THE ROOF HAS BEEN INSTALLED WITHIN THE PAST 5 YEARS THE HVAC CONTRACTOR SHALL HIRE THE SERVICES OF THAT ROOFING CONTRACTOR TO INSTALL ALL CURBS AND DUCT PENETRATIONS SO NOT TO VOID ROOF GUARANTIES. COORDINATE THE ABOVE WITH THE OWNER AND THE ARCHITECT.

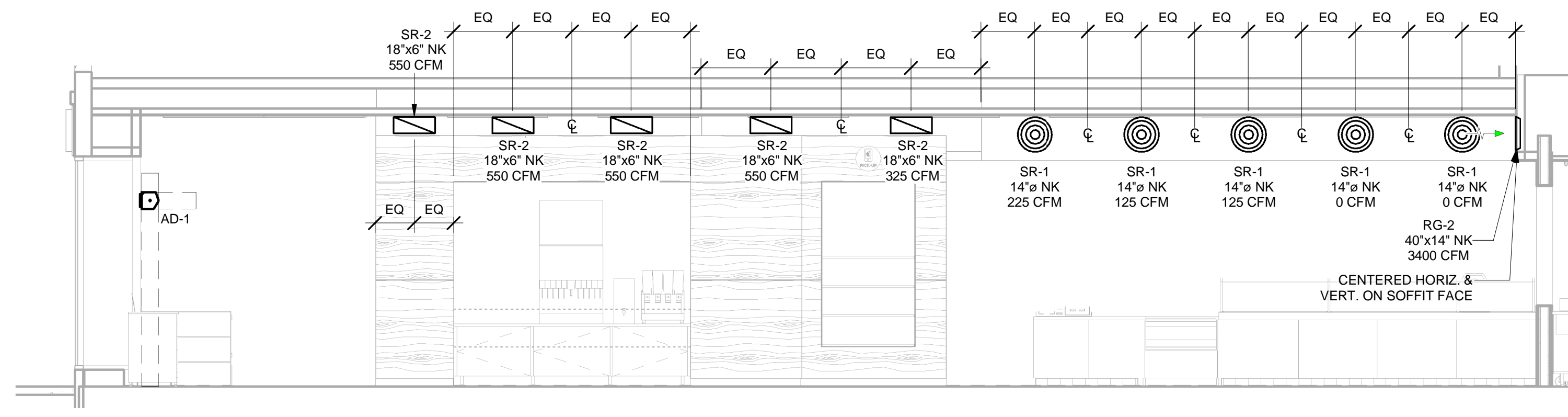
⑤ HVAC - DUCTWORK ROOF PENETRATION DETAIL  
NOT TO SCALE



⑥ HVAC - ROOF MOUNTED EXHAUST FAN  
NOT TO SCALE



⑦ HVAC - HOOD ELEVATION  
1/4" = 1'-0"



⑧ HVAC - DINING ROOM DUCTWORK SECTION  
1/4" = 1'-0"

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STORE NO.: 31-5375  
KNICKERBOCKER AVE.  
431 KNICKERBOCKER AVENUE  
BROOKLYN, NY 11237

CONSTRUCTION SET  
04/02/2025

REV. DATE	DESCRIPTION
08/06/2024	LANDLORD SET
10/07/2024	PERMIT SET
11/18/2024	BID SET
1	03/28/2025 CONSTRUCTION SET

PROFESSIONAL SEAL

Michael L. Wilson, P.E.  
NY License #073765-1

PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
DRAWN BY: PCE  
CHECKED BY: AIS

PROJECT NUMBER:  
24007

SHEET TITLE:

HVAC DETAILS

SHEET NUMBER:  
**M-701.00**  
11 OF 12

DOB NOW Filing #: B01113056-51

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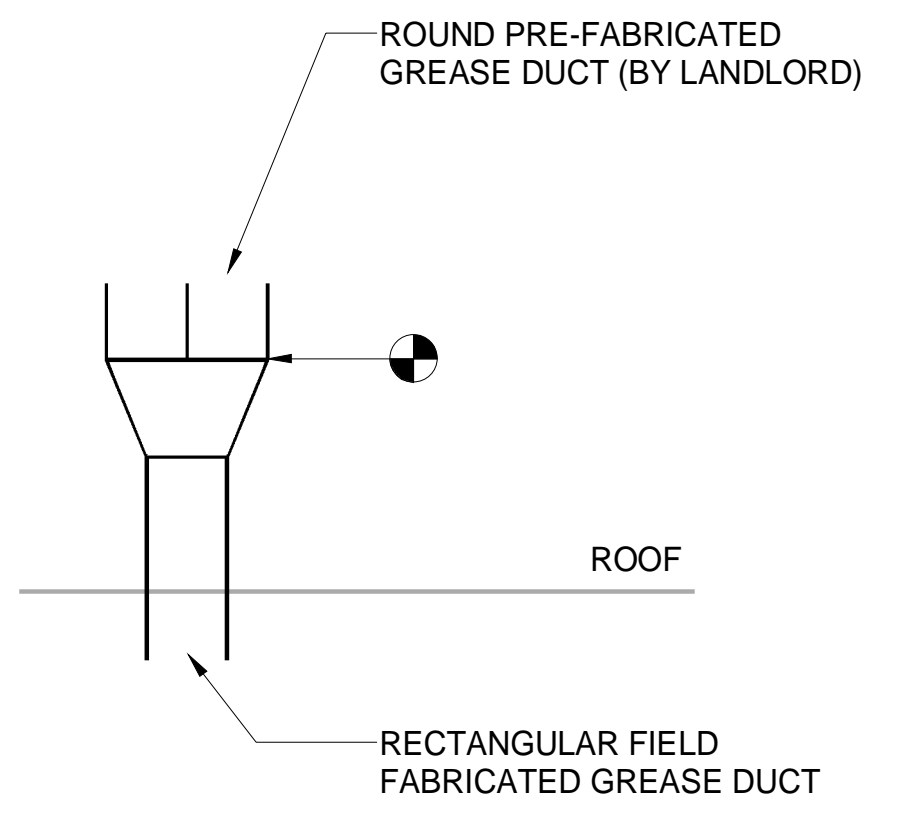
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 NY License #073765-1  
 PROFESSIONAL IN CHARGE: Michael L. Wilson, P.E.  
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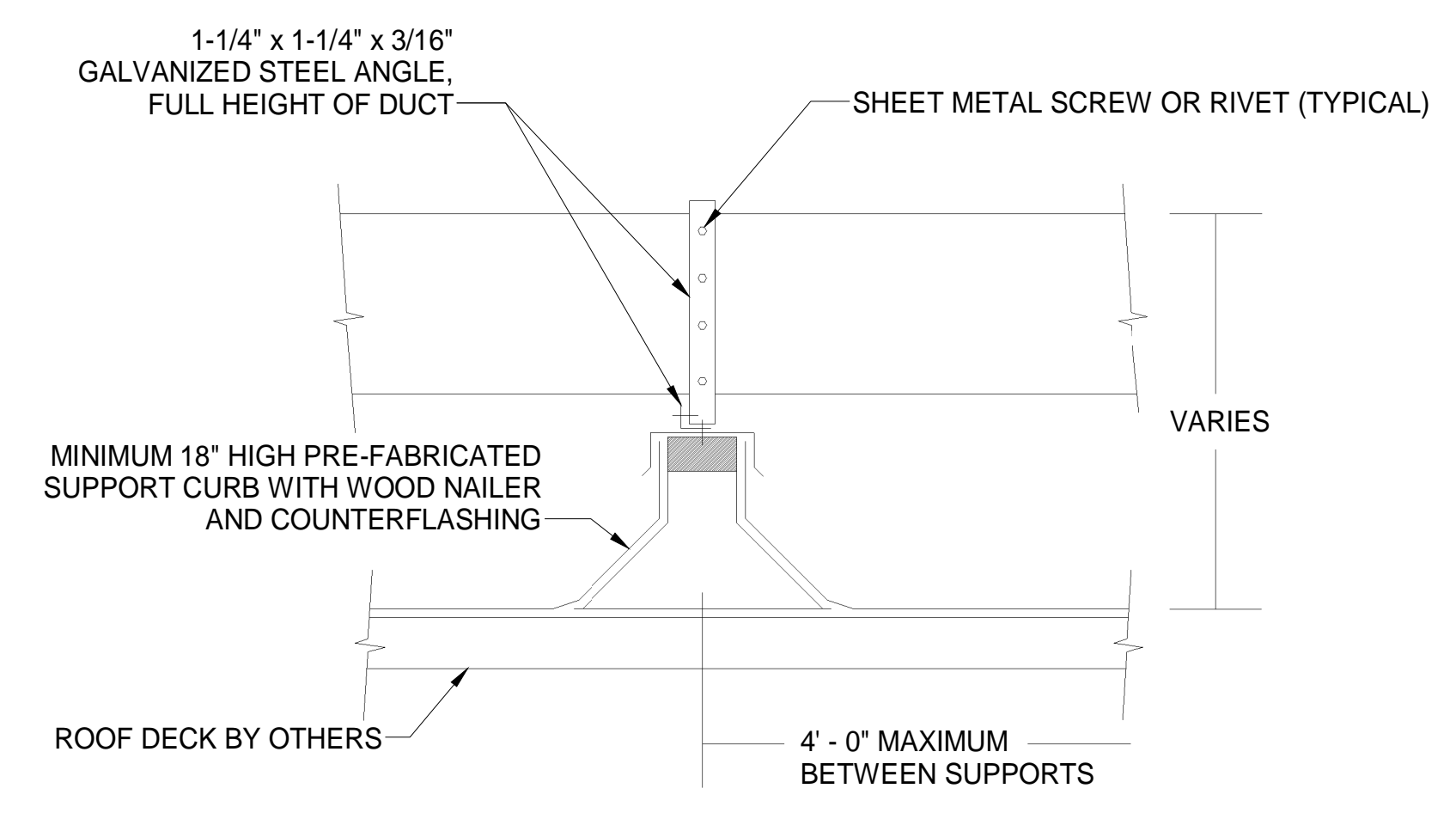
HVAC DETAILS

SHEET NUMBER:  
**M-702.00**  
 12 OF 12  
 DOB NOW Filing #: B01113056-S1

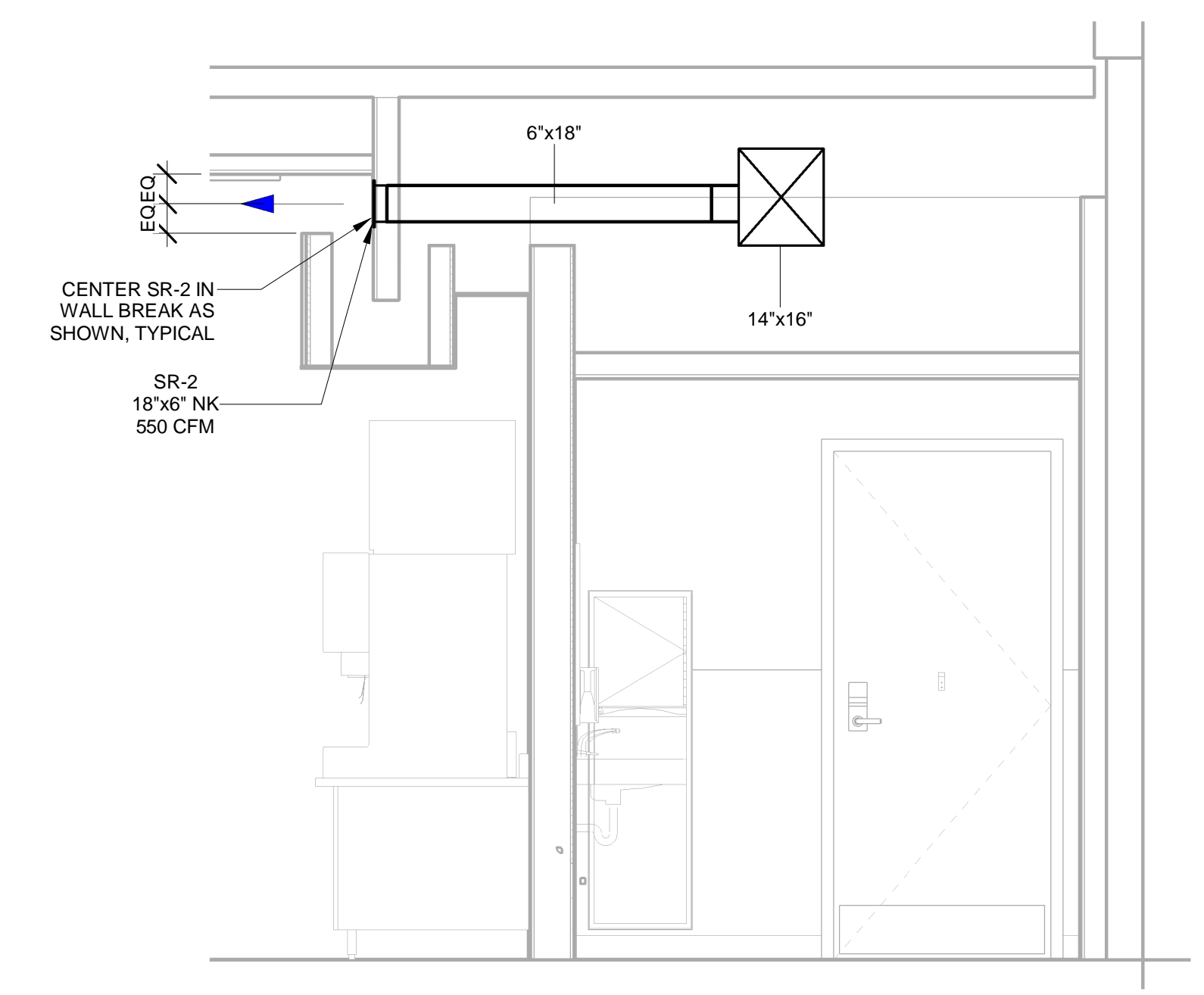
**NOTES:**  
 INSTALLATION OF THE SYSTEM MUST FOLLOW INSTRUCTIONS LAID FORTH IN THE OPERATION AND MAINTENANCE MANUAL AND PER NFPA 96.  
 DOUBLE WALL FACTORY TO FIELD WELDED WRAPPED DUCTWORK IS ACCEPTABLE WHEN THE WRAP OVERLAPS THE DOUBLE WALL A MINIMUM OF 12", OR AS APPROVED BY THE MANUFACTURER OF THE WRAP.  
 THE CONNECTION BETWEEN THE FIELD WELDED DUCTWORK AND THE FACTORY BUILT SYSTEM MUST BE FULLY WELDED AND INSPECTED PER NFPA 96 AND/OR APPLICABLE MECHANICAL CODE.



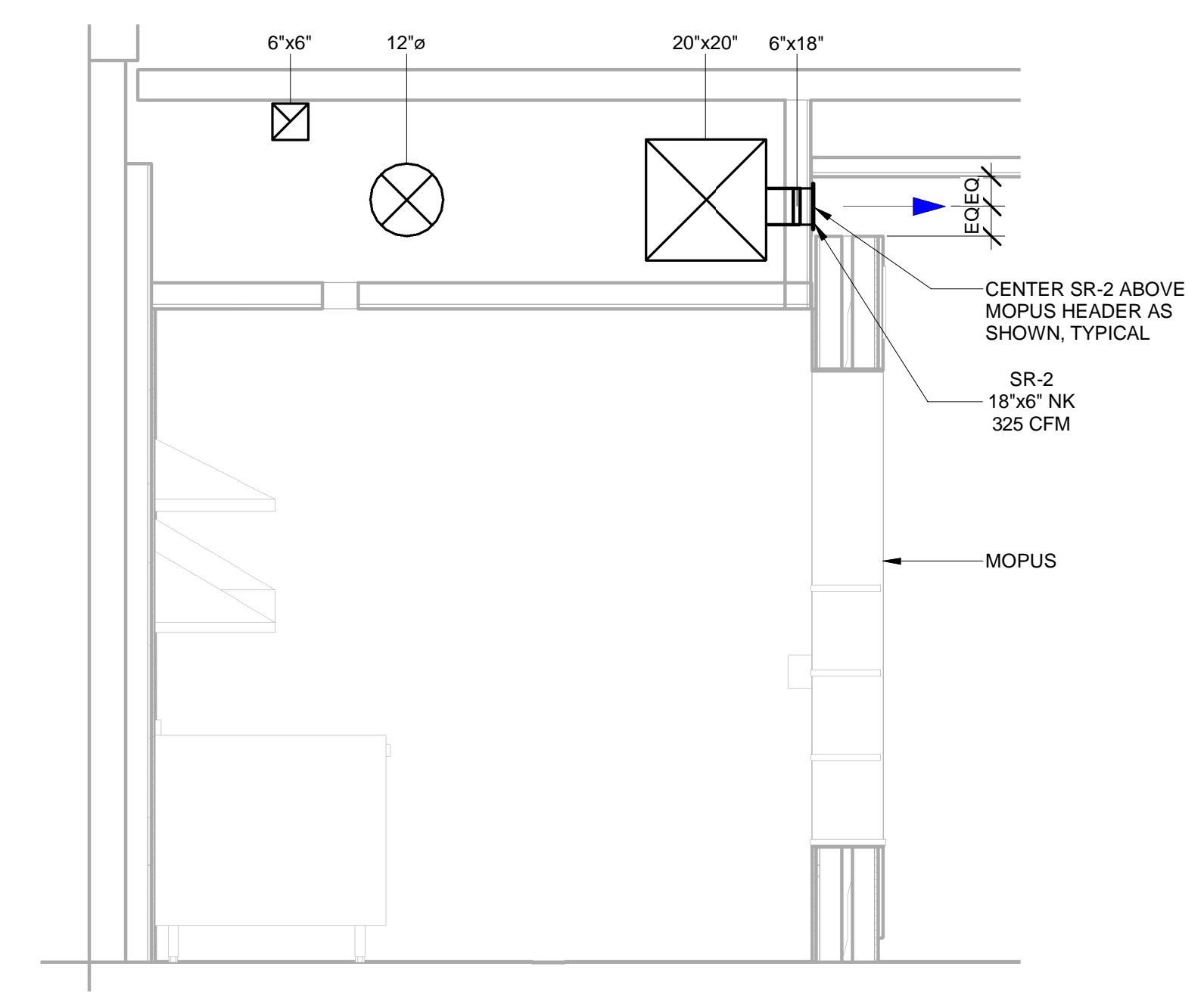
① HVAC - WELDED TO PREFABRICATED DUCTWORK REQUIREMENTS  
 NOT TO SCALE



② HVAC - ROOFTOP DUCT SUPPORT CURB DETAIL  
 NOT TO SCALE



③ HVAC - UTENSIL COUNTER SR-2 DETAIL  
 1/2\"/>



④ HVAC - MOPUS SR-2 DETAIL  
 1/2\"/>

FOR QUESTIONS, CALL THE  
Highwoods Group  
REGION 40  
PHONE: (919) 875 - 0420  
EMAIL: reg40@captivaire.com

PATENT NUMBERS  
EXHAUST HOODS ND-2/BD-2/SND-2 (CANADA) - CA PATENT 2520435 C.

**HOOD INFORMATION - JOB#6934110**

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)				HOOD CONSTRUCTION	HOOD CONFIG			
										WIDTH	LENG	HEIGHT	DIA		CFM	VEL	SP	END TO END
1		5424 ND-2	CAPTIVEAIRE	9' 4"	600 DEG	I	HEAVY	204	1900	10'	18'	4'	1900	1520	-0.818'	430 SS WHERE EXPOSED	ALONE	ALONE

**HOOD INFORMATION**

HOOD NO	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT		
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM TYPE	SIZE			ELECTRICAL MODEL #	SWITCHES QUANTITY
1		CAPTRATE SOLID FILTER	7	16"	16"	85% SEE FILTER SPEC	6	L55 SERIES E26	NO	LEFT	12"x54"x24"	TANK FS	4.0/4.0	SC-310110MA	1 LIGHT 1 FAN	YES	928 LBS

**HOOD OPTIONS**

HOOD NO	TAG	OPTION
1		FIELD WRAPPER 10.00' HIGH FRONT, LEFT. RIGHT END STANDOFF (FINISHED) 1' WIDE 54" LONG INSULATED. INSULATION FOR TOP OF HOOD. INSULATION FOR BACK OF HOOD. NYC CONSTRUCTION. RISER SENSOR INSTALL 6IN PLEN. LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS. FULL DIMENSION HANGING BRACKET - FRONT. RIGHT WALL AS END PANEL.

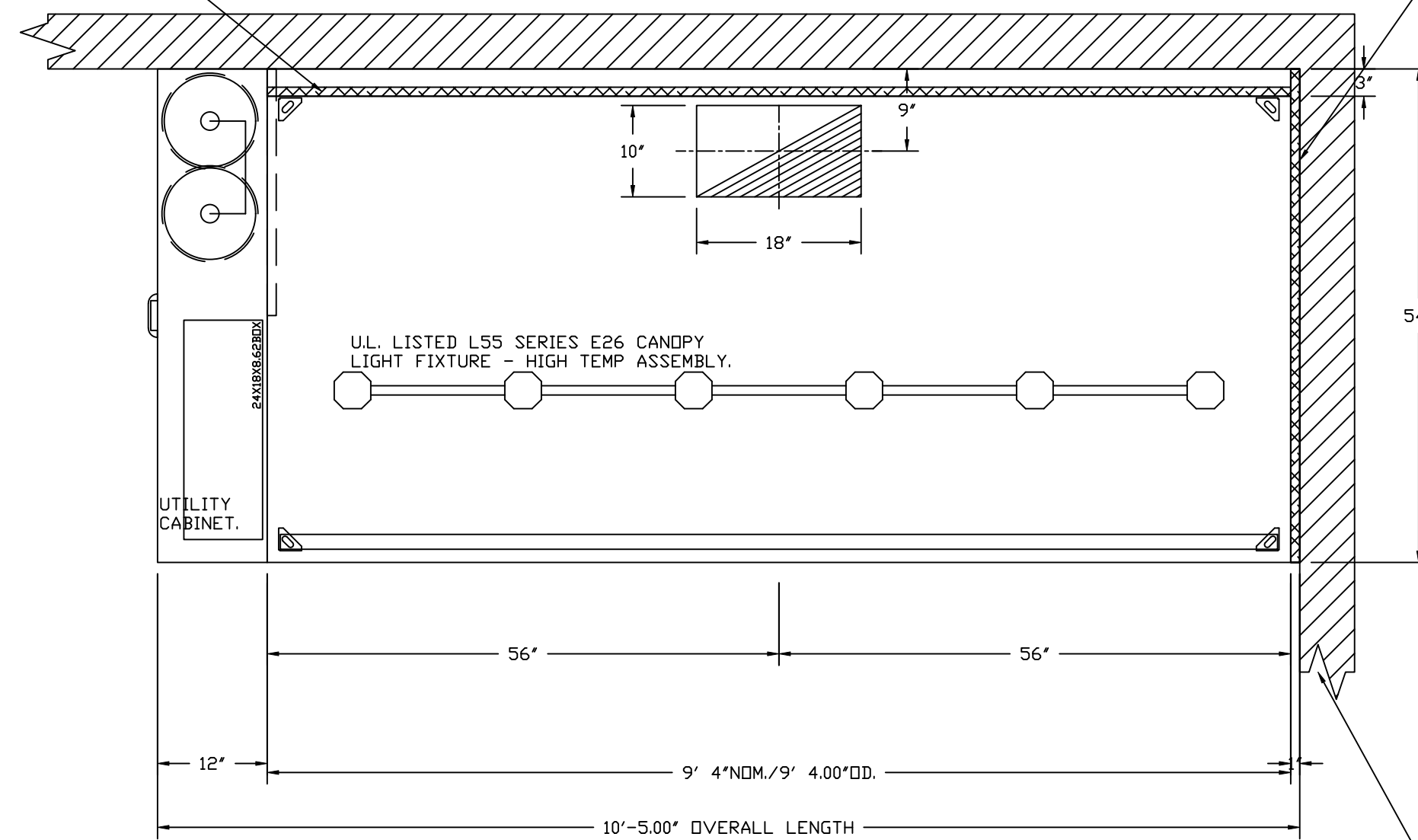
**CLEARANCE TO COMBUSTIBLES**

HOODS #	SURFACE	*CLEARANCE
1	TOP	0"
1	FRONT	0"
1	BACK	0"
1	LEFT	0"
1	RIGHT	0"

- \*0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

1" LAYER OF INSULATION FACTORY INSTALLED IN INTERNAL BACK STANDOFF. MEETS 0 INCH REQUIREMENTS FOR CLEARANCE TO COMBUSTIBLE SURFACES.

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



PLAN VIEW - HOOD #1  
9' 4.00" LONG 5424ND-2

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

**SPECIFICATION: CAPTRATE® GREASE-STOP® SOLID FILTER**

THE CAPTRATE GREASE-STOP SOLID FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

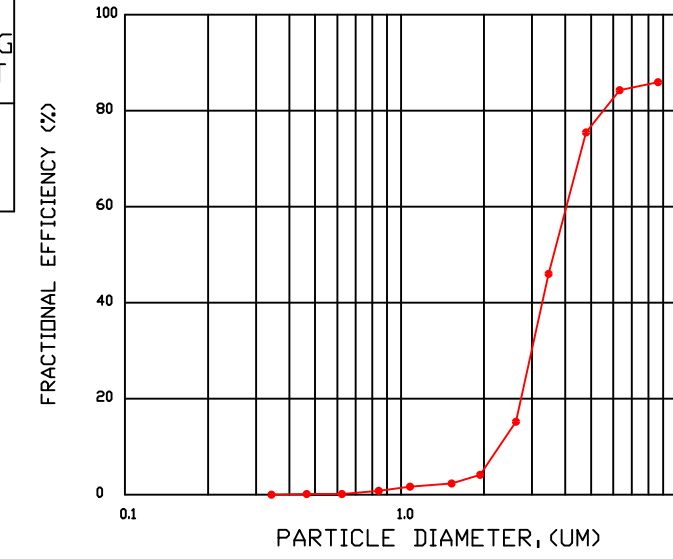
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

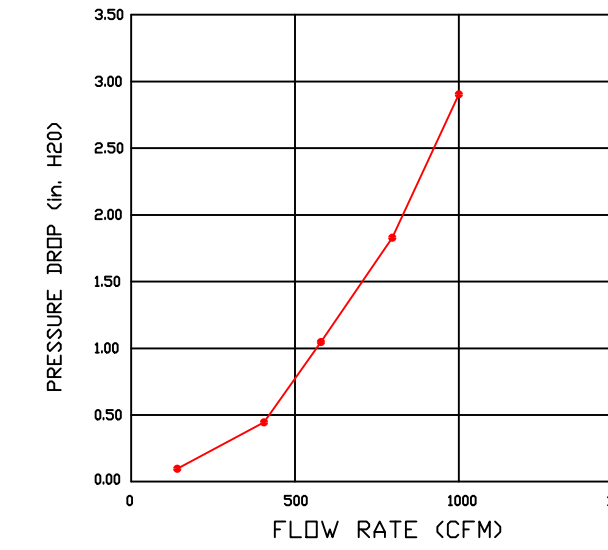
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLID WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.

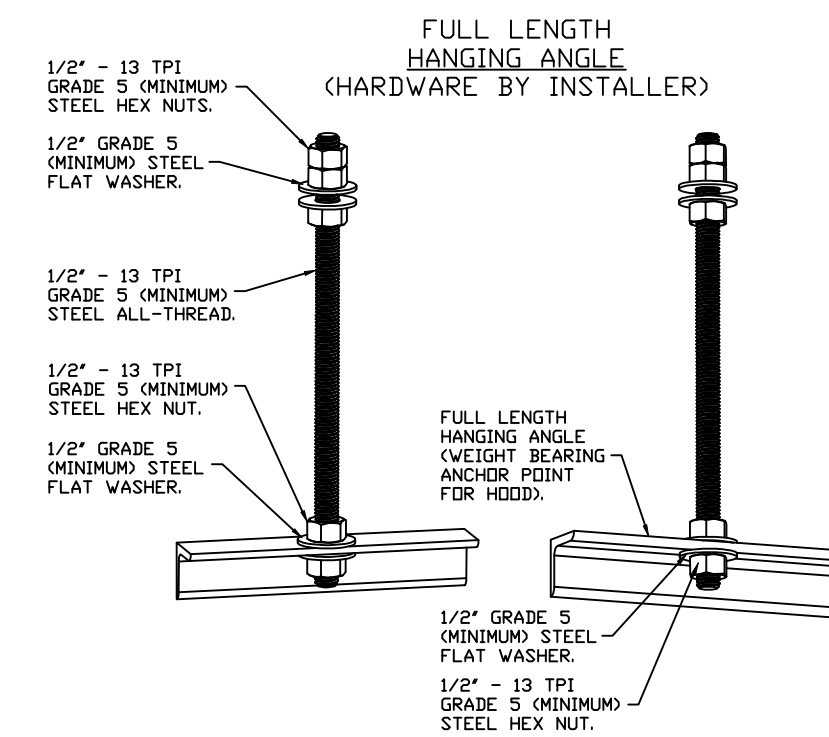
EFFICIENCY VS. PARTICLE DIAMETER



PRESSURE DROP VS. FLOW RATE

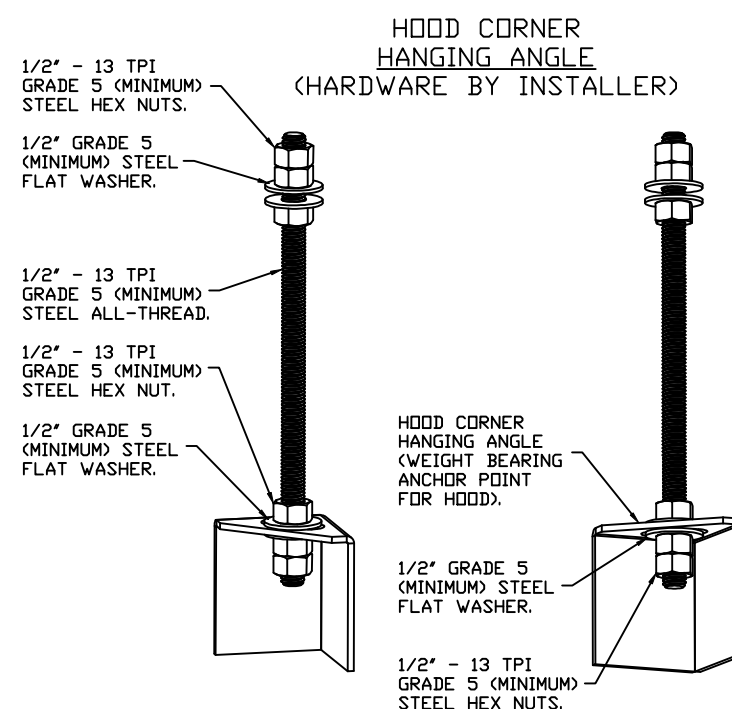


CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:  
NFPA #96.  
NSF STANDARD #2.  
UL STANDARD #1046.  
INT. MECH. CODE (IMC).  
ULC-S649.



**ASSEMBLY INSTRUCTIONS**

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

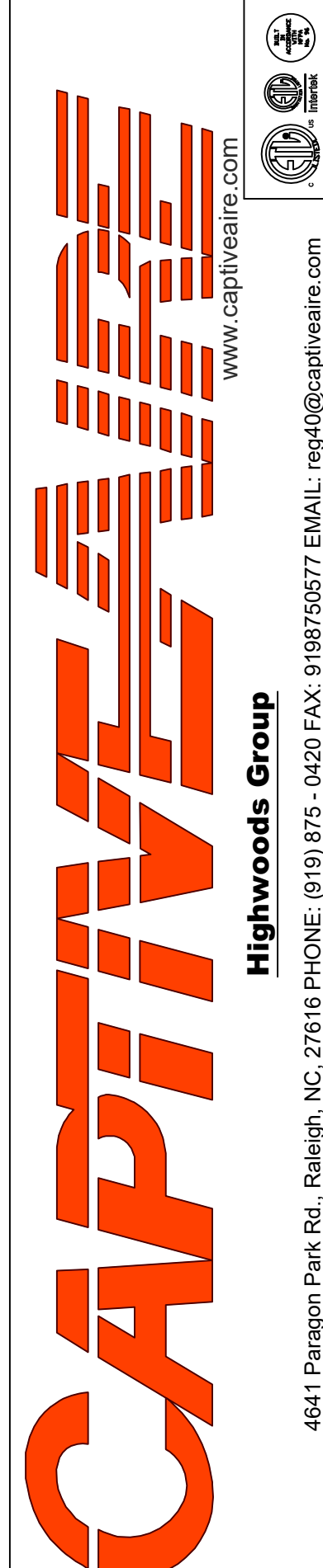


**ASSEMBLY INSTRUCTIONS**

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**REVISIONS**

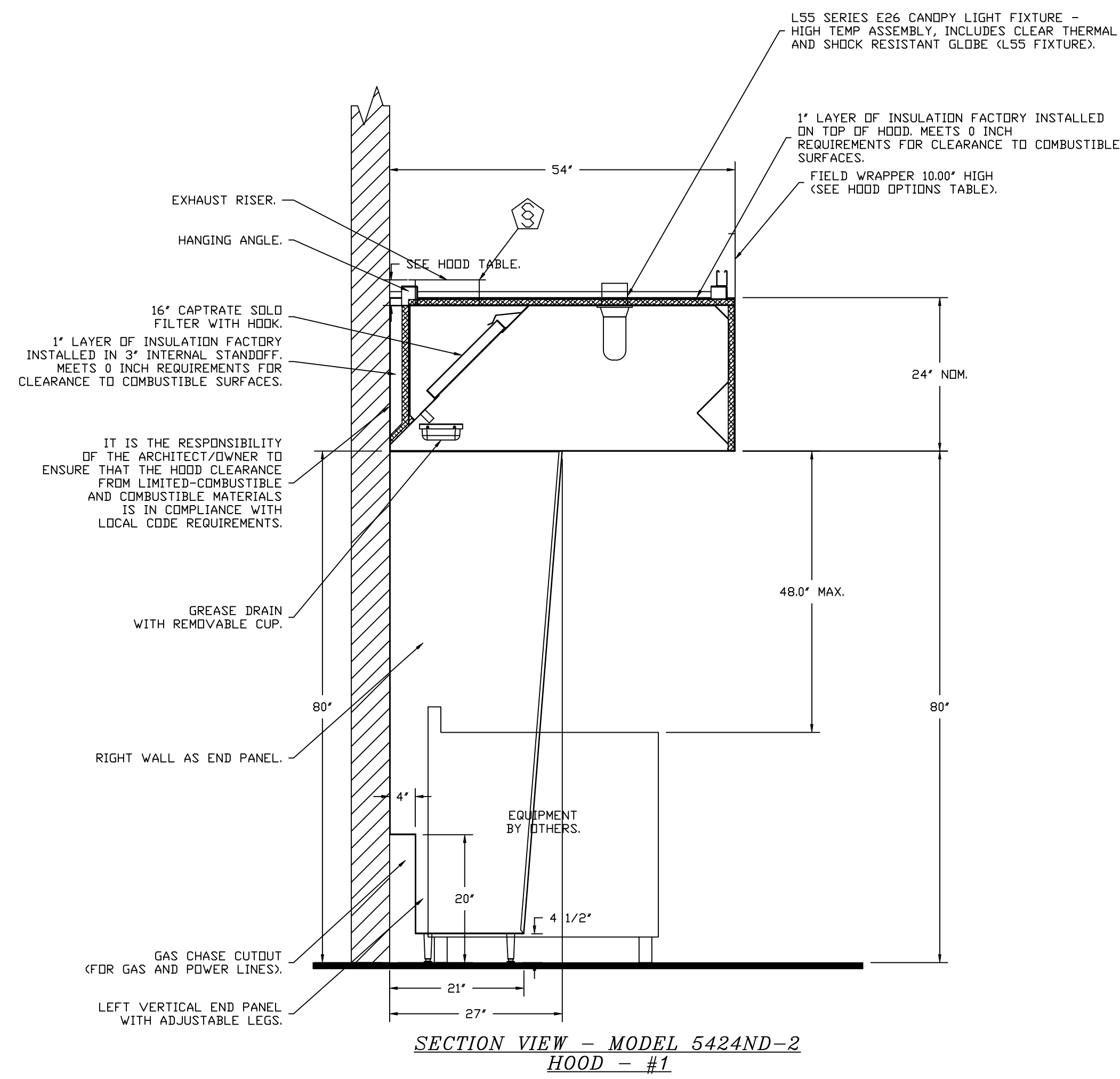
DESCRIPTION	DATE



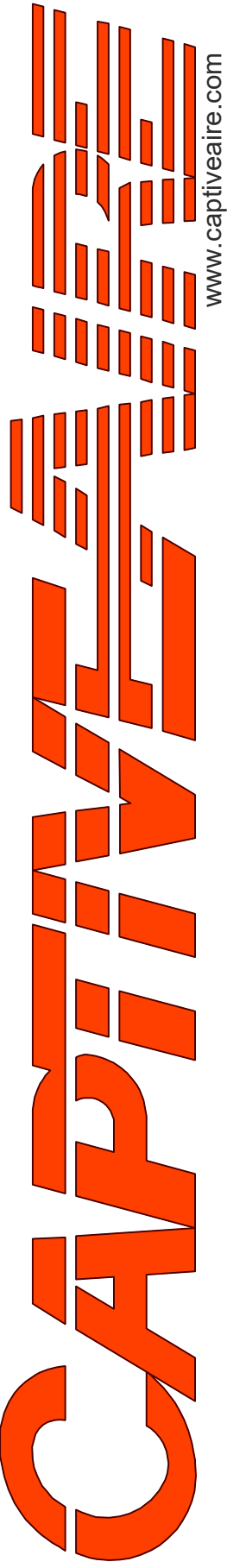
CHIPOTLE KNICKERBOCKER AVE #5375  
431 Knickerbocker Avenue,  
Brooklyn, NY, 11237

DATE: 10/7/2024  
DWG.#: 6934110  
DRAWN BY: JMB-40  
SCALE: 3/4" = 1'-0"  
MASTER DRAWING

SHEET NO. 1



REVISIONS	
DESCRIPTION	DATE



**Highwoods Group**  
www.captiveaire.com  
4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 875-0420 FAX: 9198750577 EMAIL: reg4@captiveaire.com

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431 Knickerbocker Avenue,  
Brooklyn, NY, 11237

**DATE:** 10/7/2024

**DWG.#:** 6934110

**DRAWN BY:** JMB-40

**SCALE:** 3/4" = 1'-0"

**MASTER DRAWING**

**SHEET NO.**  
2

**FIRE SYSTEM INFORMATION – JOB#6934110**

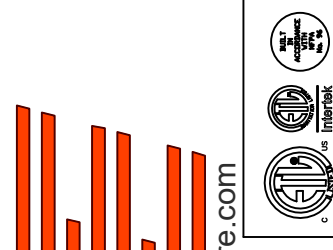
FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0	40	28	FIRE CABINET LEFT	LEFT, HOOD 1

**FIRE SYSTEM PARTS LIST KEY**

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 12-F28021-32144-DT-360 DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. ND, CLOSE ON TEMP RISE AT 360°F. (A0034310).	1	0
		0 - 0 - 32-00002 QUIK SEAL - 1/2" (UL).	1	0
		0 - 0 - 4429K153 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	2	0
		0 - 0 - 4429K422 1/2" X 1/4" BRASS REDUCING BUSHING.	1	0
		0 - 0 - 79525 1/2" 90 PRO-PRESS ELBOW WITH 1/2" NPT FEMALE CONNECTION, VIEGA.	1	0
		0 - 0 - 79580 1/2" X 1/2" PRO-PRESS TEE X 1/2" NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 87-120042-001 SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-120045-001 HOSE, SECONDARY ACTUATOR HOSE, 7.5' BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300001-001 TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300030-001 PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-300152-001 HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	8	0
		0 - 0 - 9055455PC PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	6	0
		0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.	5	0
		0 - 0 - 98694A115 HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	4	0
		0 - 0 - A0034332 JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - A31484 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	1	0
		0 - 0 - B1145 3/8" BLACK IRON 90 ELL.	2	0
		0 - 0 - DATANKLOCK DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	6	0
		0 - 0 - TFS-UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - WK-283952-000 DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	2	0
		16 - 16 - 79210 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	6	0
		16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	6	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	6	0
		34 - 34 - A0034331 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT. RED COLOR.	1	0

**REVISIONS**

DESCRIPTION	DATE:



www.captivefire.com  
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**Highwoods Group**

4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 875 - 0420 FAX: 9198750577 EMAIL: reg40@captivefire.com

CHIPOTLE KNICKERBOCKER AVE #5375  
431 Knickerbocker Avenue,  
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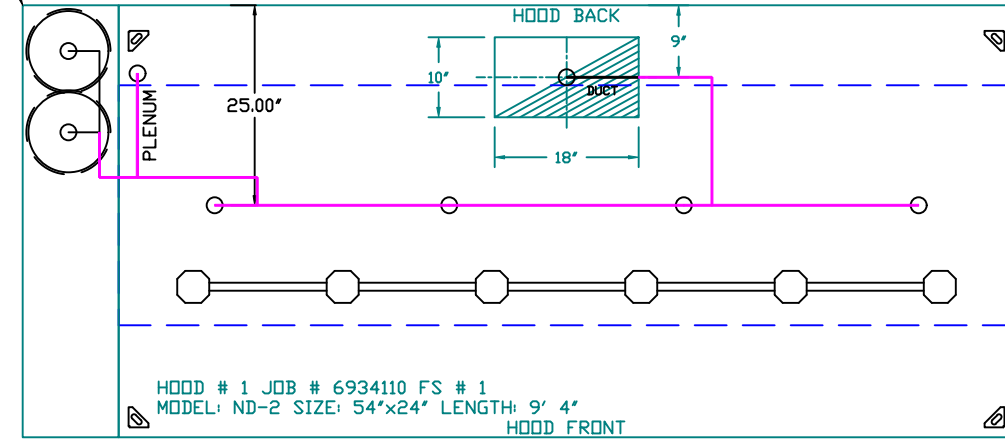
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**SCALE:**  
3/4" = 1'-0"

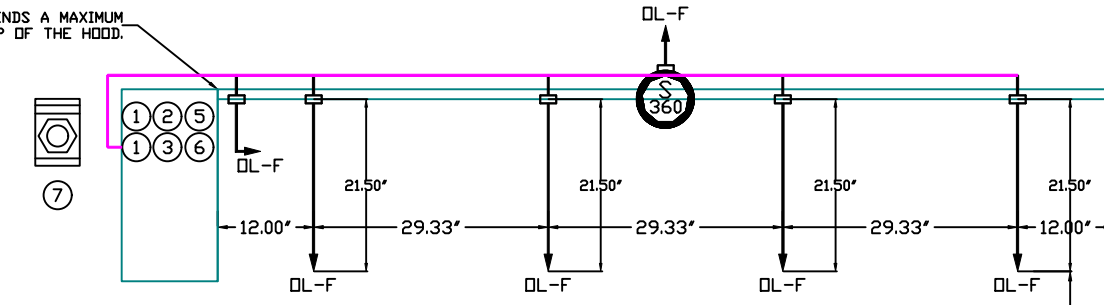
**MASTER DRAWING**

**SHEET NO.**  
3

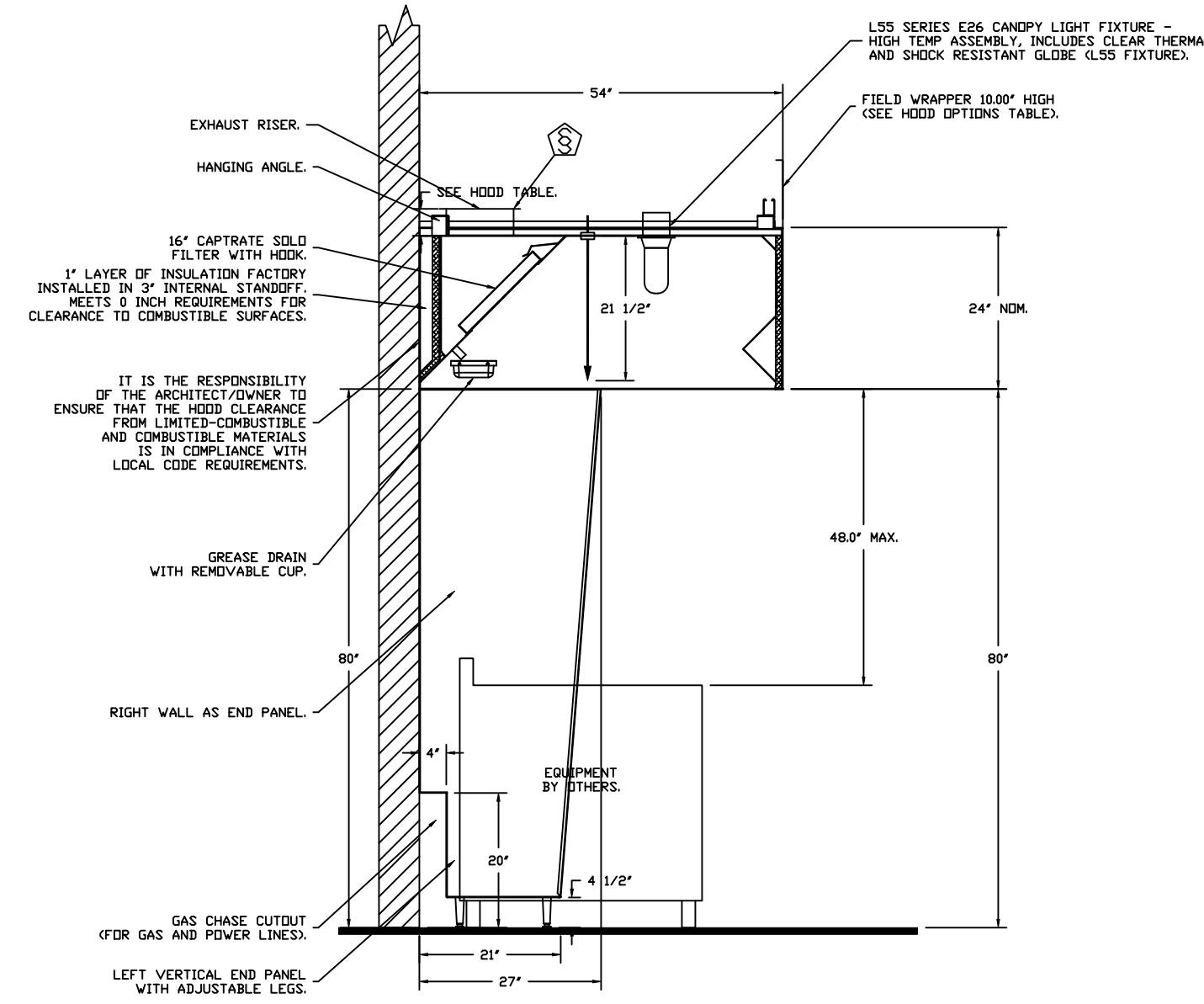
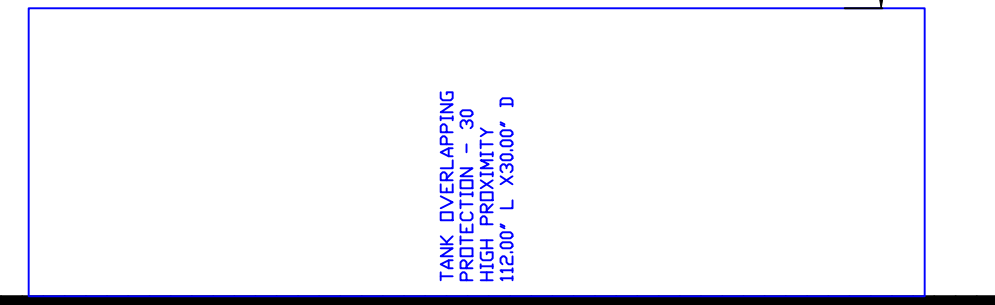
SYSTEM REQUIRES A MINIMUM OF 7 FT. OF EQUIVALENT PIPE LENGTH BETWEEN TANK AND NEAREST APPLIANCE NOZZLE FOR MOST APPLIANCES. EACH 90 DEGREE ELBOW ADDS 1.5 FT. OF EQUIVALENT LENGTH. SEE MANUAL FOR DETAILS.



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



NOZZLE HEIGHT 35-38" FROM COOKING SURFACE (45.25")



SECTION VIEW - MODEL 5424ND-2 HOOD - #1

**NOTES**

- FIELD PIPE DROPS AS SHOWN
- PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP; FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP; FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6' ABOVE THE TOP OF THE HOOD.
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.
- THIS FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

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

JOB #: 6934110.  
JOB NAME: CHIPOTLE KNICKERBOCKER AVE #5375.

SYSTEM SIZE: TANK-SP-2 DESIGN FP: 28, MAXIMUM FP: 40.  
HOOD # 1 9' 4.00' LONG x 54' WIDE x 24' HIGH.  
RISER # 1 SIZE: 10" x 18".  
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

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

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

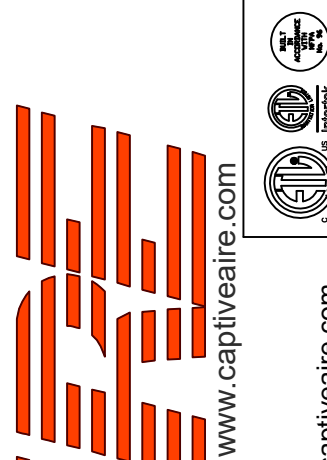
**LEGEND - FIRE CABINET TANK SYSTEM**

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

INCLUDES: FIELD INSTALLATION AND HOOKUP DURING NORMAL BUSINESS HOURS BY CERTIFIED INSTALLERS ONLY IN THE LOCATION NOTED ABOVE. TWO SITE VISITS ONLY ONE VISIT TO SET PULL STATION & SYSTEM HOOKUP AND ONE VISIT FOR ONE TEST; ADDITIONAL VISITS WILL RESULT IN ADDITIONAL CHARGES. ONE MECHANICAL OR ELECTRICAL GAS VALVE PER SYSTEM AT A MAXIMUM SIZE OF 2", PERMIT, AND SYSTEM TEST.  
EXCLUDES: UNION LABOR & PREVAILING WAGE (LABOR & WAGES WILL BE ADDED IF APPLICABLE), GAS VALVE INSTALLATION, ELECTRICAL HOOKUP AND CONNECTIONS, HANGING OF FIRE CABINET, SHUNT TRIP, HANDHELD EXTINGUISHERS, ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

**REVISIONS**

DESCRIPTION	DATE



CHIPOTLE KNICKERBOCKER AVE #5375  
431 Knickerbocker Avenue,  
Brooklyn, NY, 11237

DATE: 10/7/2024

DWG.#:  
6934110

DRAWN BY: JMB-40

SCALE:  
1/2" = 1'-0"

MASTER DRAWING

SHEET NO.  
4

**EXHAUST FAN INFORMATION – JOB#6934110**

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SDNES
1	EF-1	1	USB11SDD-RM	CAPTIVEAIRE	1900	1.200	1444	DDP,PREMIUM	1.500	0.6970	3	208	4.4	1321 FPM	296	14.4
2	EF-2	1	DR10HFA	CAPTIVEAIRE	75	0.100	658	TEAD-ECM	0.166	0.0060	1	115	1.9		49	0.8
3	EF-3	1	DR10HFA	CAPTIVEAIRE	75	0.100	658	TEAD-ECM	0.166	0.0060	1	115	1.9		49	0.8

**FAN OPTIONS**

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	EF-1	1	BI15 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 16" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER
		1	UTILITY SET GREASE CUP
		1	BI15 - 24" DISCHARGE EXTENSION
		1	BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE
		1	BI15 - INLET CONNECTION STANDARD 16" FLANGED GREASE DUCT
2	EF-2	1	UTILITY SET - SPRING VIBRATION ISOLATORS - BI11 THRU BI15 / EQUIVALENT SIZED UTILITY SET - INDDOR/OUTDOOR USE
		1	2 YEAR PARTS WARRANTY
		1	ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCD MOTOR), CCW ROTATION
3	EF-3	1	ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- (TELCD MOTOR), CCW ROTATION
		1	I 12-BDD DAMPER
		1	2 YEAR PARTS WARRANTY

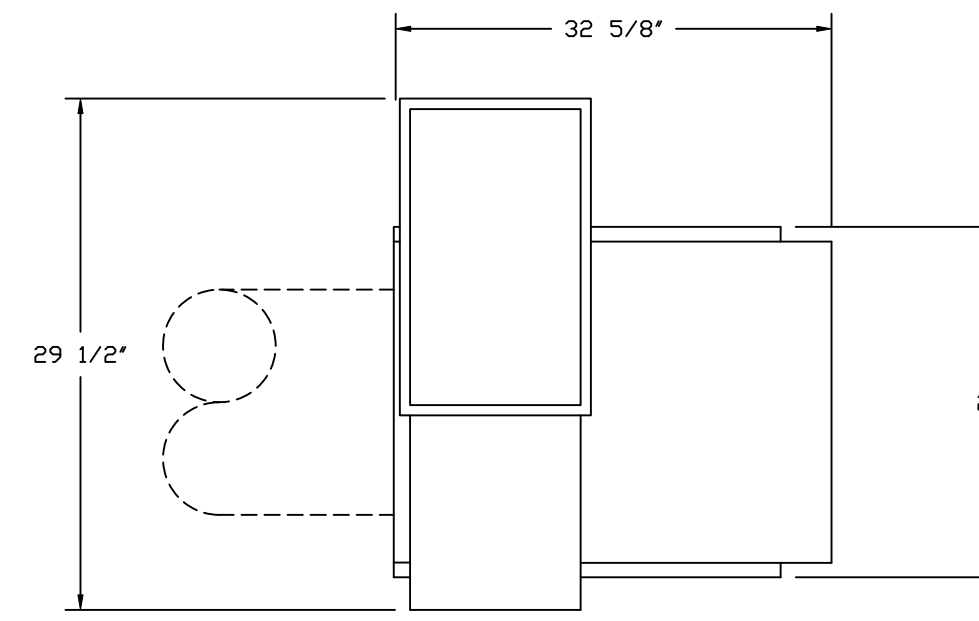
FAN #1 USB11SDD-RM - EXHAUST FAN (EF-1)

**FAN ACCESSORIES**

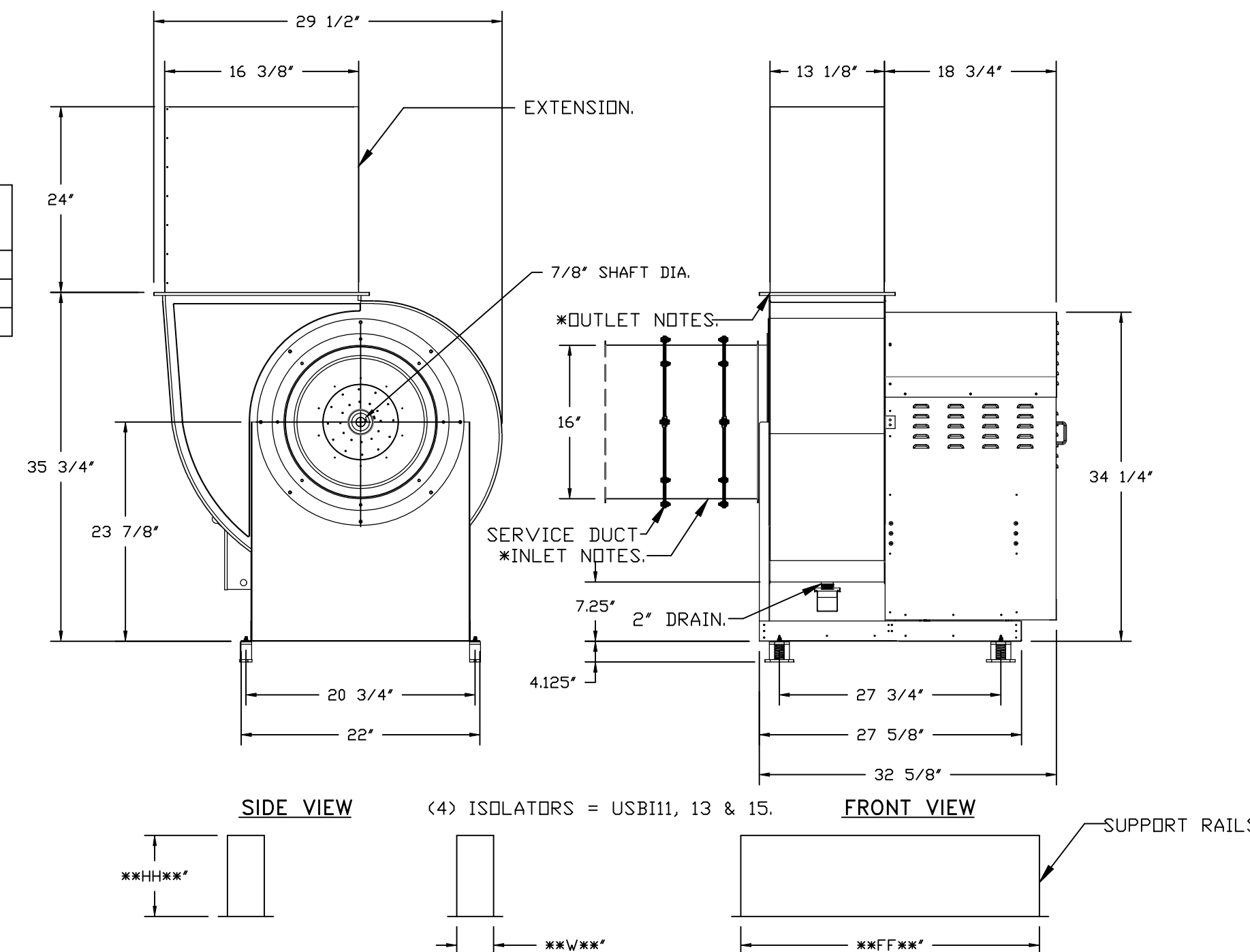
FAN UNIT NO	TAG	EXHAUST				SUPPLY		
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	EF-1	YES						
2	EF-2		YES					
3	EF-3	YES						

**CURB ASSEMBLIES**

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	EF-1	38 LBS	RAIL	4.000"W X 36.000"L X 20.000"H COMES AS A SET OF 2.
2	# 2	EF-2	31 LBS	CURB	17.500"W X 17.500"L X 26.000"H.
3	# 3	EF-3	31 LBS	CURB	17.500"W X 17.500"L X 26.000"H.



TOP VIEW



\* INLET/OUTLET NOTES:  
LENGTH OF THE STRAIGHT DUCT ON THE INLET AND OUTLET TO BE 3 TIMES THE EQUIVALENT DUCT DIAMETER BEFORE CONNECTING TO ANY FITTINGS SUCH AS ELBOWS TO AVOID SYSTEM EFFECT.

UNIT PLAN VIEW CORNER WEIGHTS:

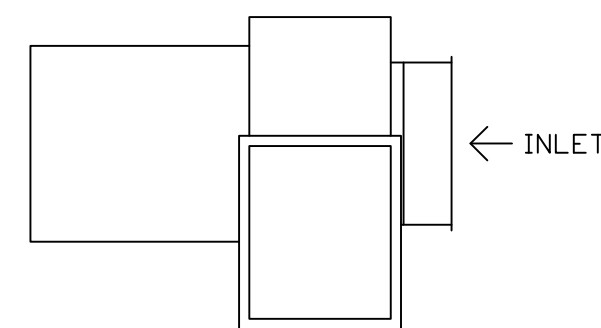
65 LBS

53 LBS

104 LBS

74 LBS

CORNER WEIGHTS ARE CALCULATED BASED ON VERTICAL DISCHARGE. SUPPORT DUCT PROPERLY BEFORE FAN TO ENSURE CORNER WEIGHTS ARE NOT AFFECTED.



NORMAL TEMPERATURE TEST DIRECT DRIVE EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 350°F (176°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

**FEATURES:**

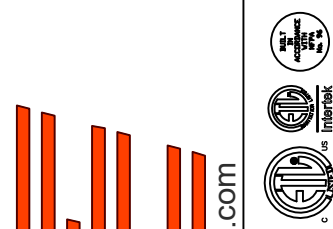
- RDDF MOUNTED FANS.
- UL705.
- UL762 AND ULC-S645 (RESTAURANT MODEL).
- HIGH HEAT OPERATION DIRECT DRIVE 350°F (176°C).
- HEAT SLINGER.
- NEMA 3R SAFETY DISCONNECT SWITCH.
- GREASE CLASSIFICATION TESTING.
- 2" DRAIN.
- MOTOR WEATHER COVER.
- FULLY SEALED SCROLL HOUSING.
- SCROLL ACCESS DOOR.
- FLANGE 1 1/4".

**OPTIONS**

- BI15 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 16" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER.
- UTILITY SET GREASE CUP.
- BI15 - 24" DISCHARGE EXTENSION.
- BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE.
- BI15 - INLET CONNECTION STANDARD 16" FLANGED GREASE DUCT.
- UTILITY SET - SPRING VIBRATION ISOLATORS - BI11 THRU BI15 / EQUIVALENT SIZED UTILITY SET - INDDOR/OUTDOOR USE.
- 2 YEAR PARTS WARRANTY.

**REVISIONS**

DESCRIPTION	DATE



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CHIPOTLE KNICKERBOCKER AVE #5375  
431 Knickerbocker Avenue,  
Brooklyn, NY, 11237

DATE: 10/7/2024

DWG.#: 6934110

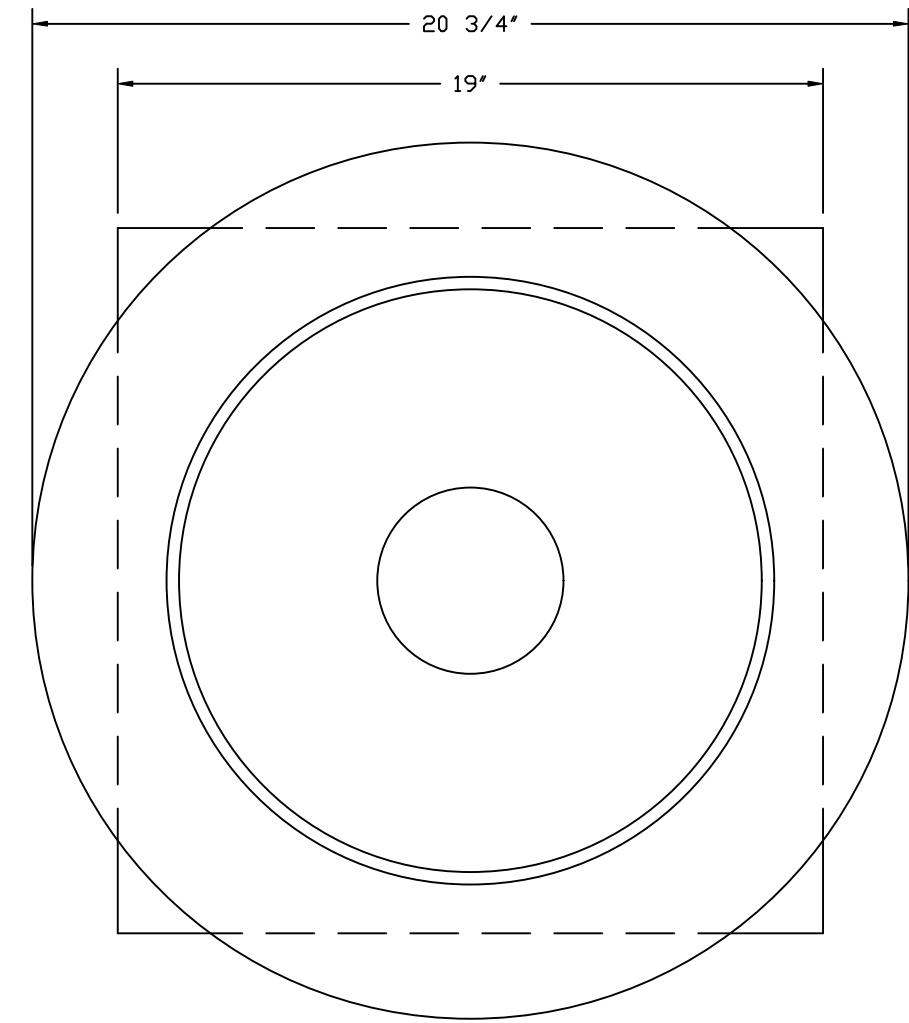
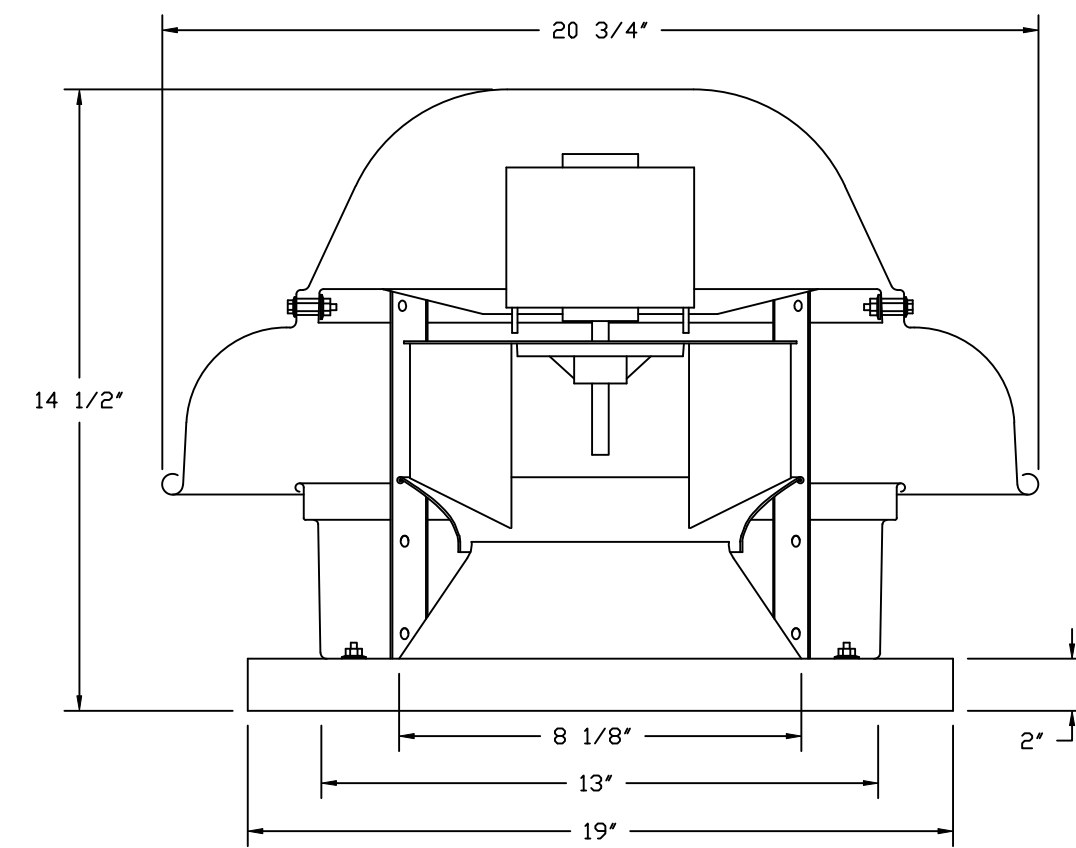
DRAWN BY: JMB-40

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO.

FANS #2 (EF-2), #3 (EF-3) - DR10HFA EXHAUST FAN



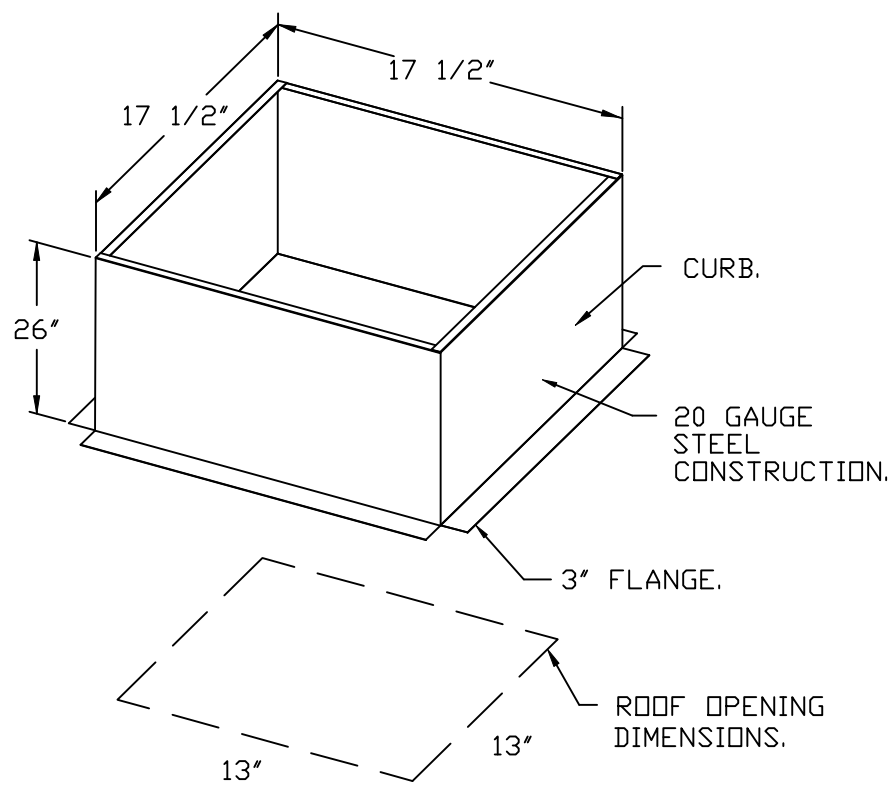
TOP VIEW

**FEATURES:**

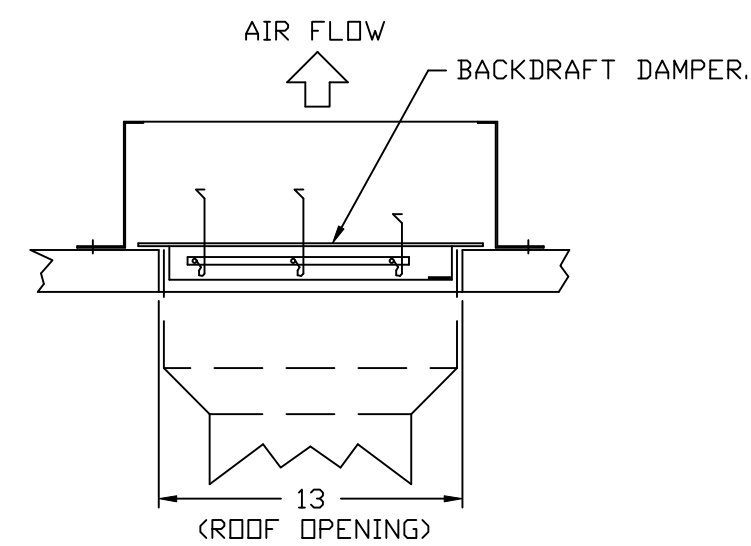
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- SAFETY DISCONNECT.
- STANDARD BIRD SCREEN.
- SPEED CONTROL.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

**OPTIONS**

- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL.
- RTC - (TELCO MOTOR), CCW ROTATION.
- 1 1/2" BDD DAMPER.
- 2 YEAR PARTS WARRANTY.

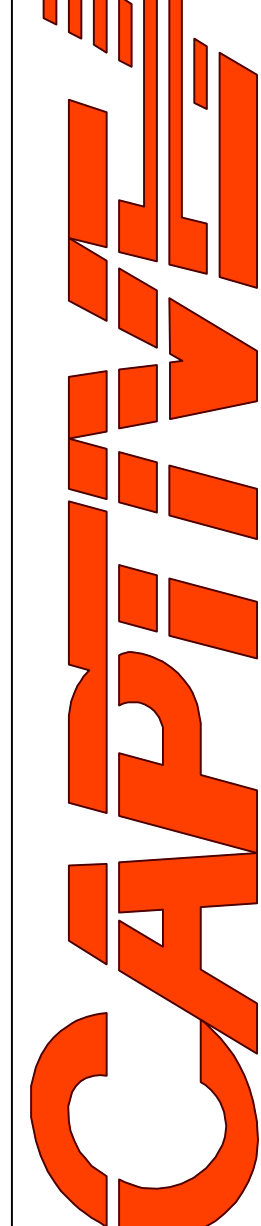
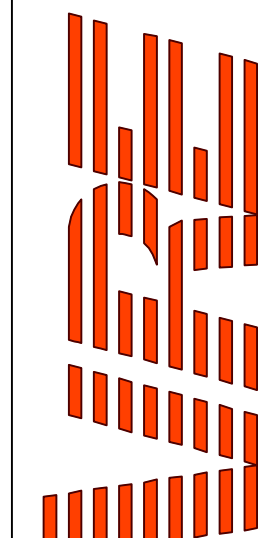
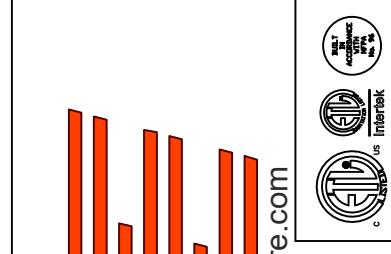


**BACKDRAFT DAMPER INSTALLATION**



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 Brooklyn, NY, 11237

**DATE:** 10/7/2024

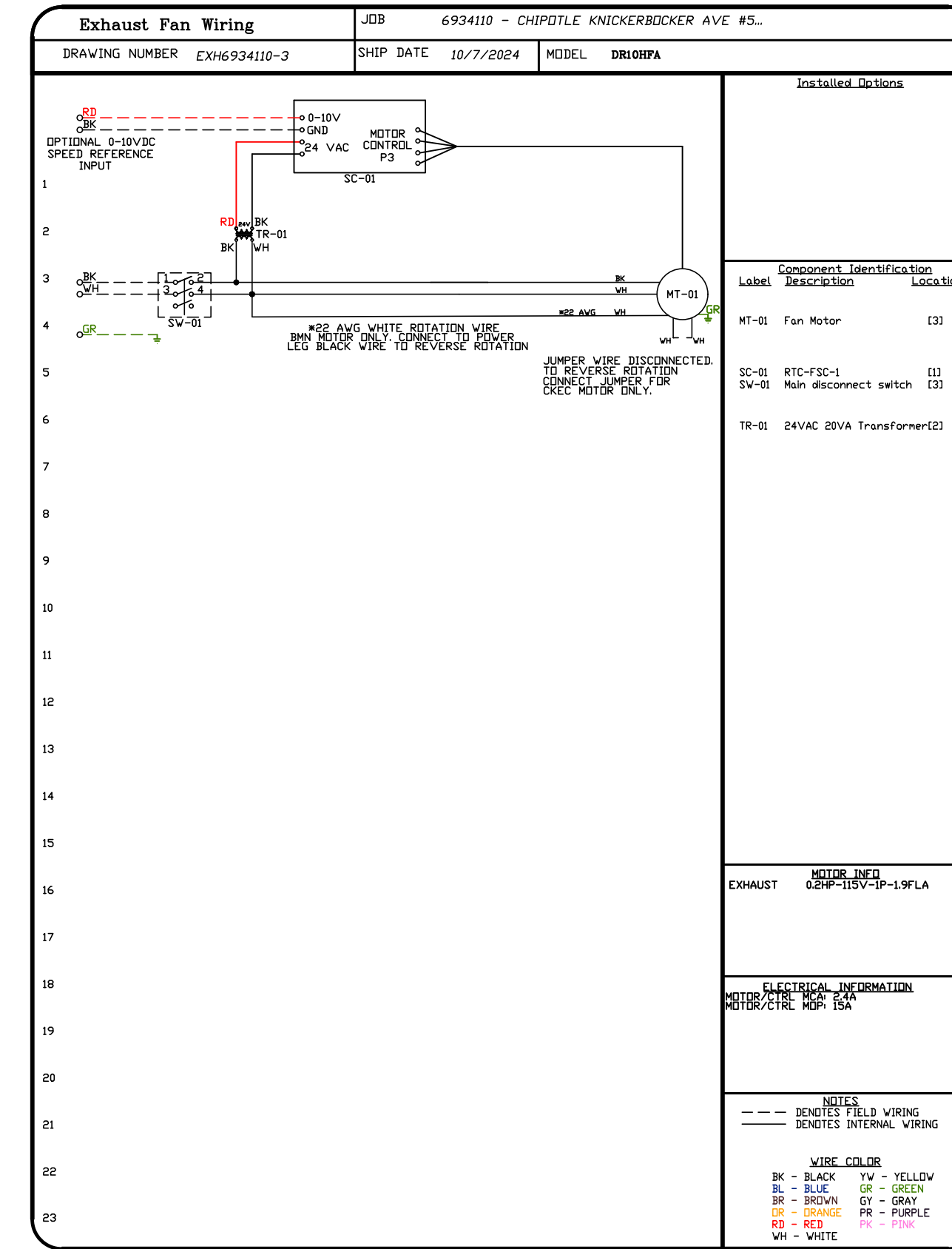
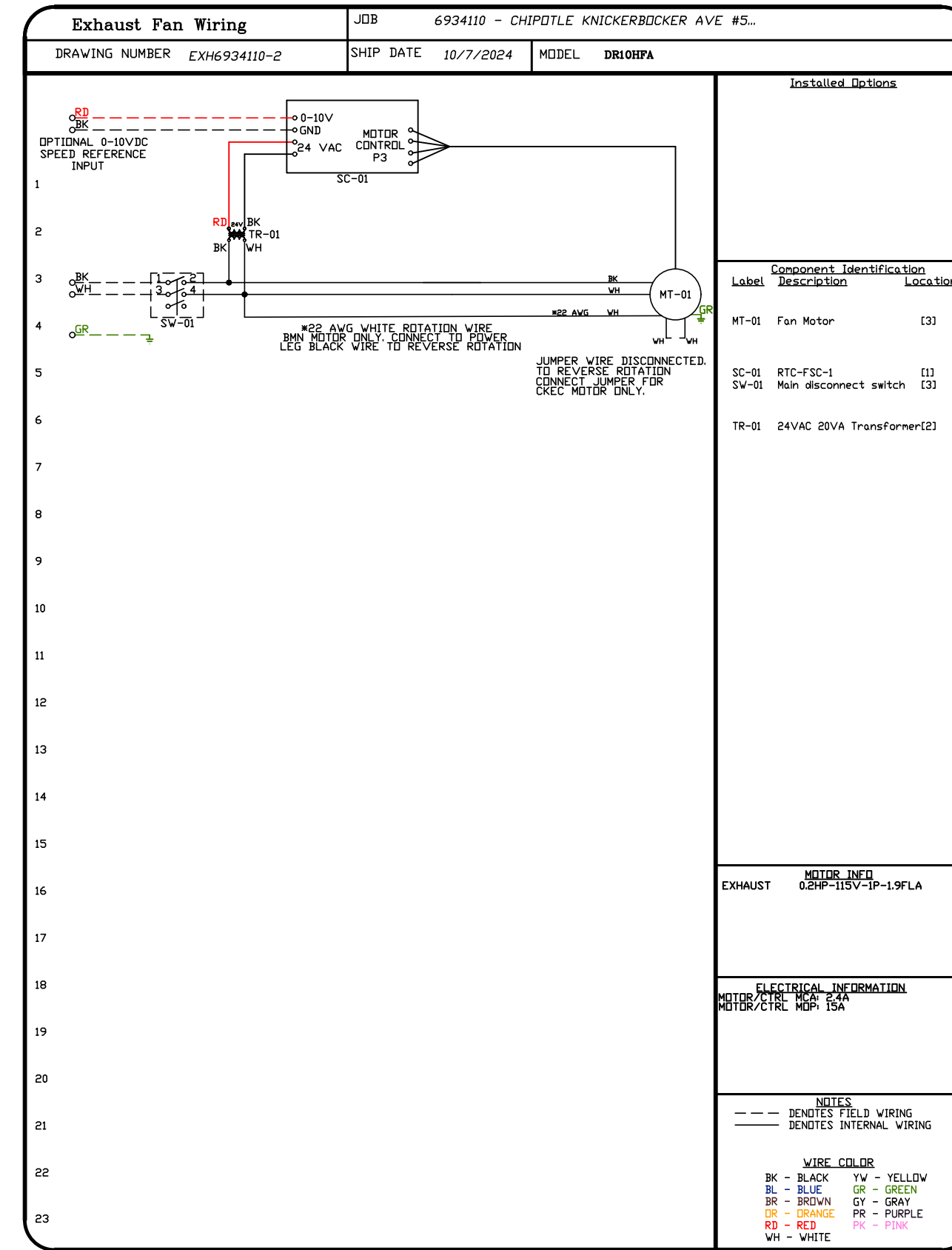
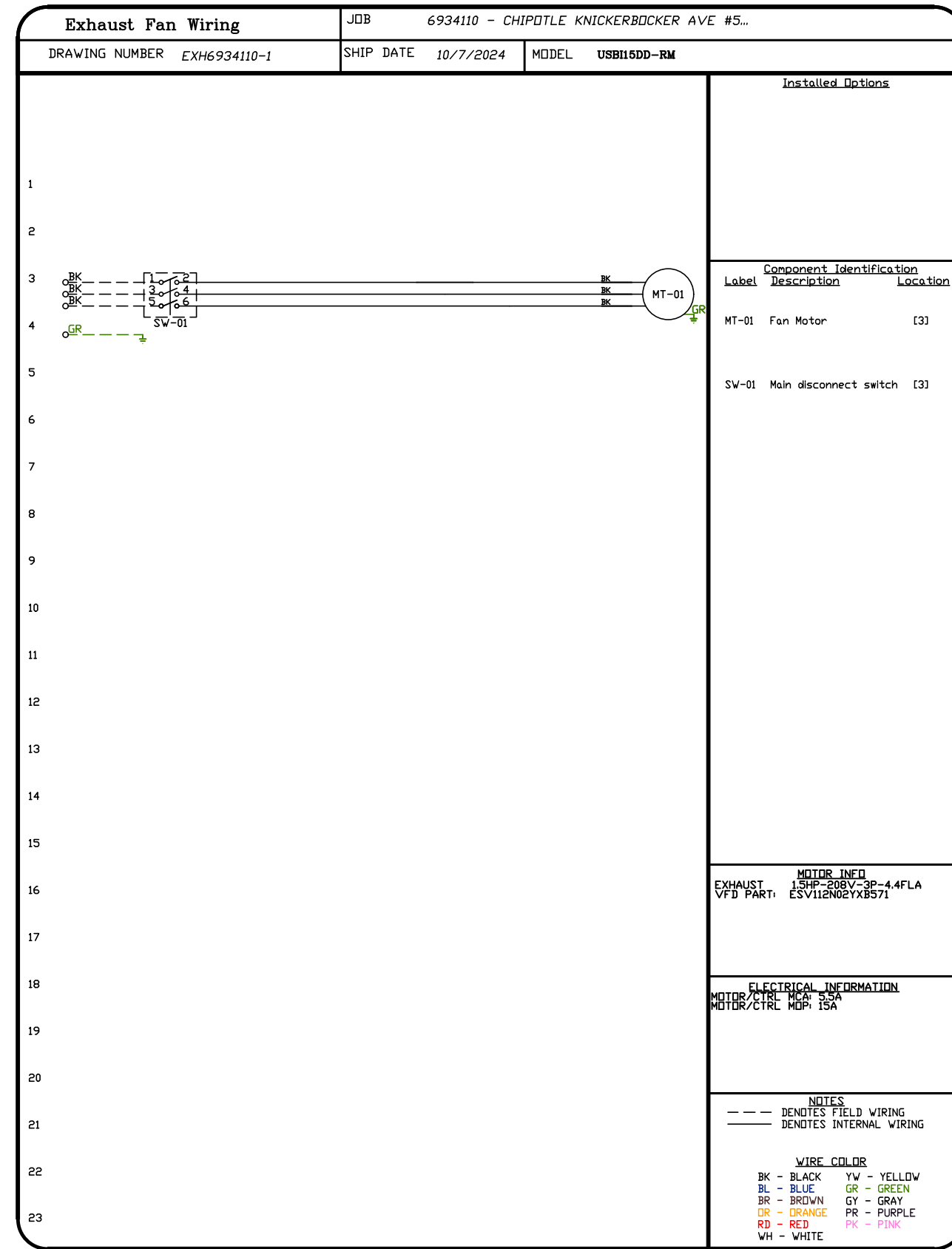
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6934110

**DRAWN BY:** JMB-40

**SCALE:**  
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6



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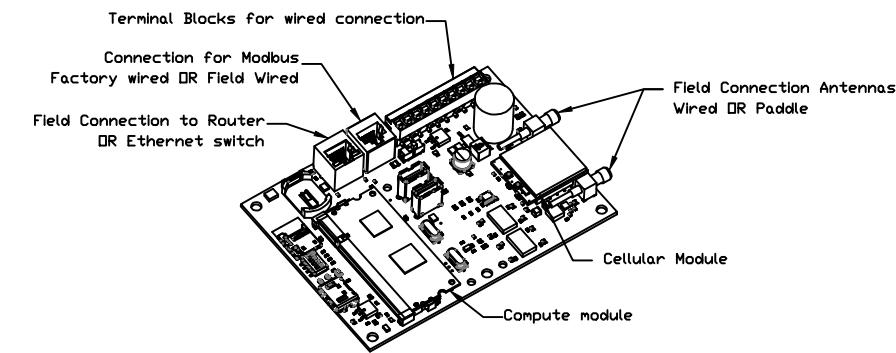
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**ELECTRICAL PACKAGE - JOB#6934110**

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	#	HP	VOLT	FLA
1		SC-310110MA	UTILITY CABINET LEFT	UTILITY CABINET LEFT	1 LIGHT	SMART CONTROLS THERMOSTATIC CONTROL V/ RELAY ON/OFF WITH SUPPLY	EF-1	EXHAUST	3	1.500	208	4.4
				HOOD # 1	1 FAN							

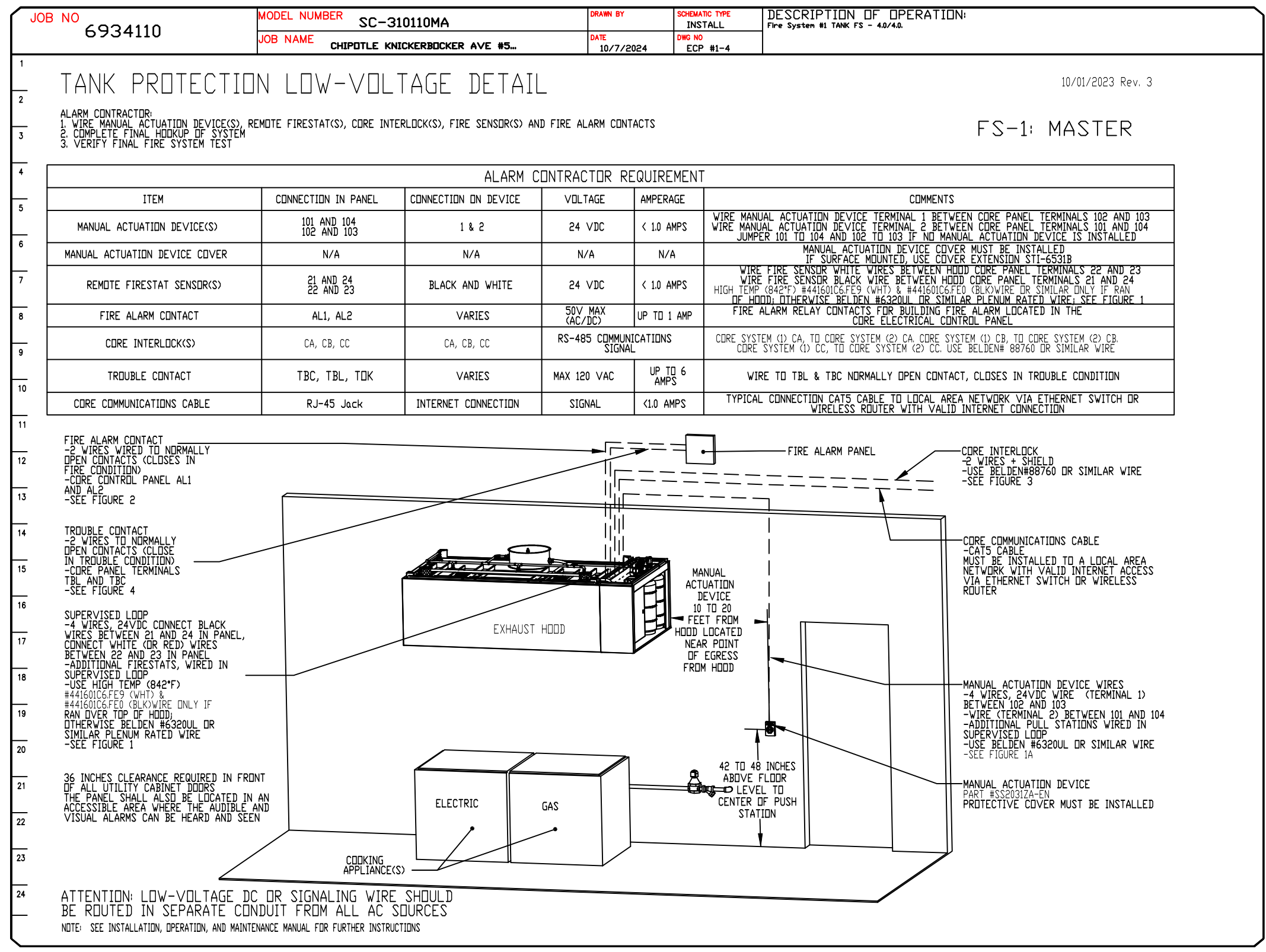
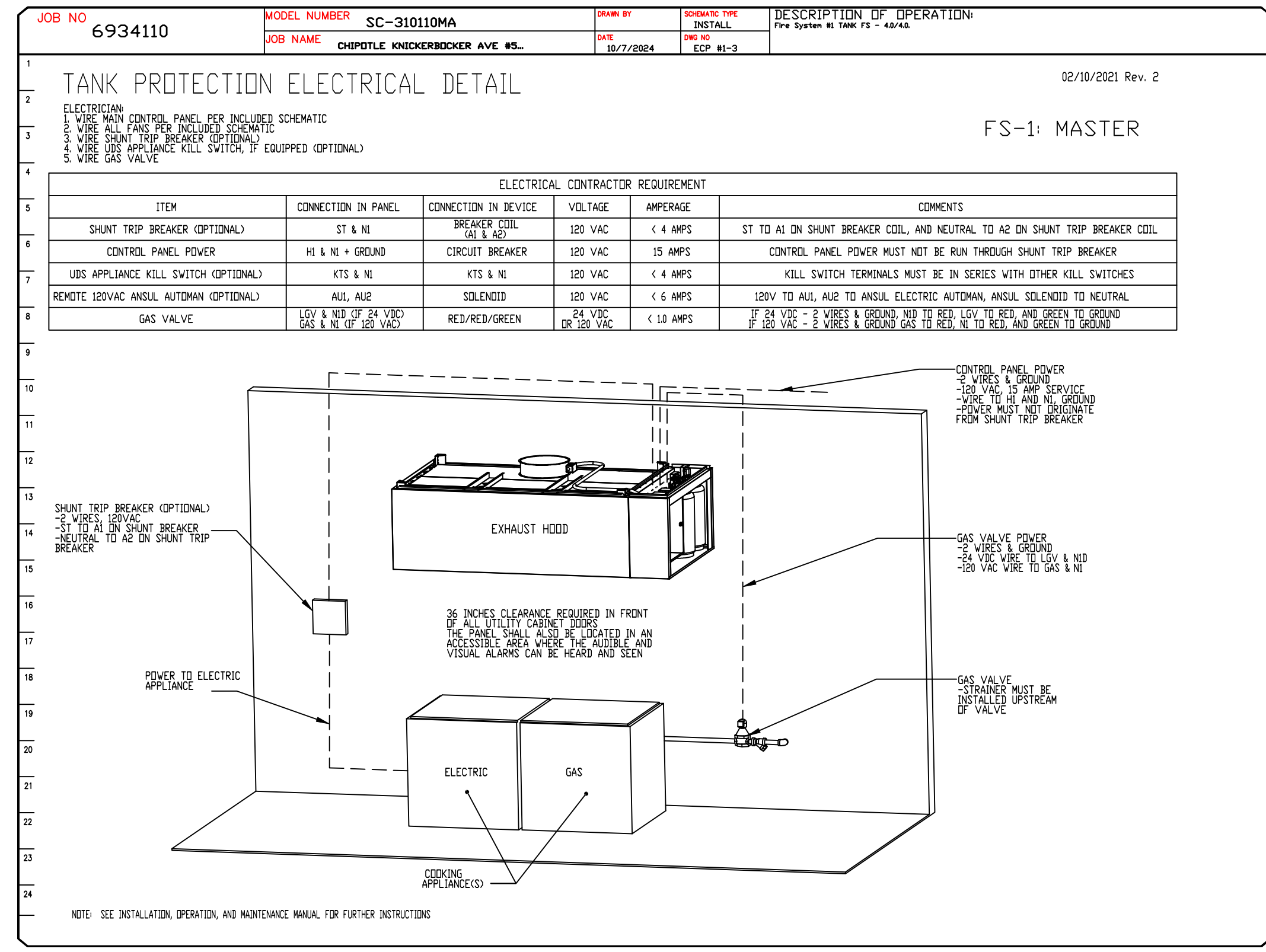
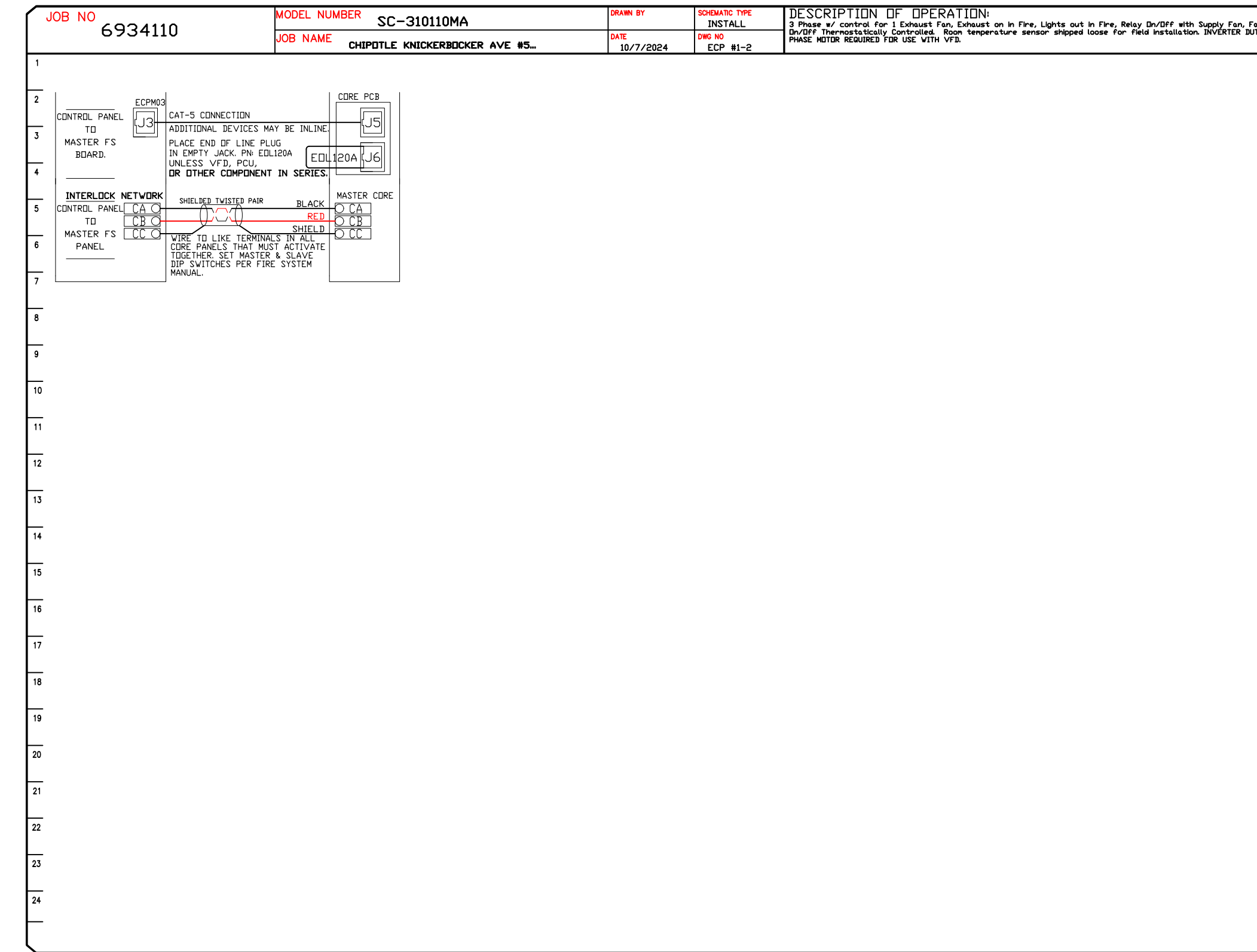
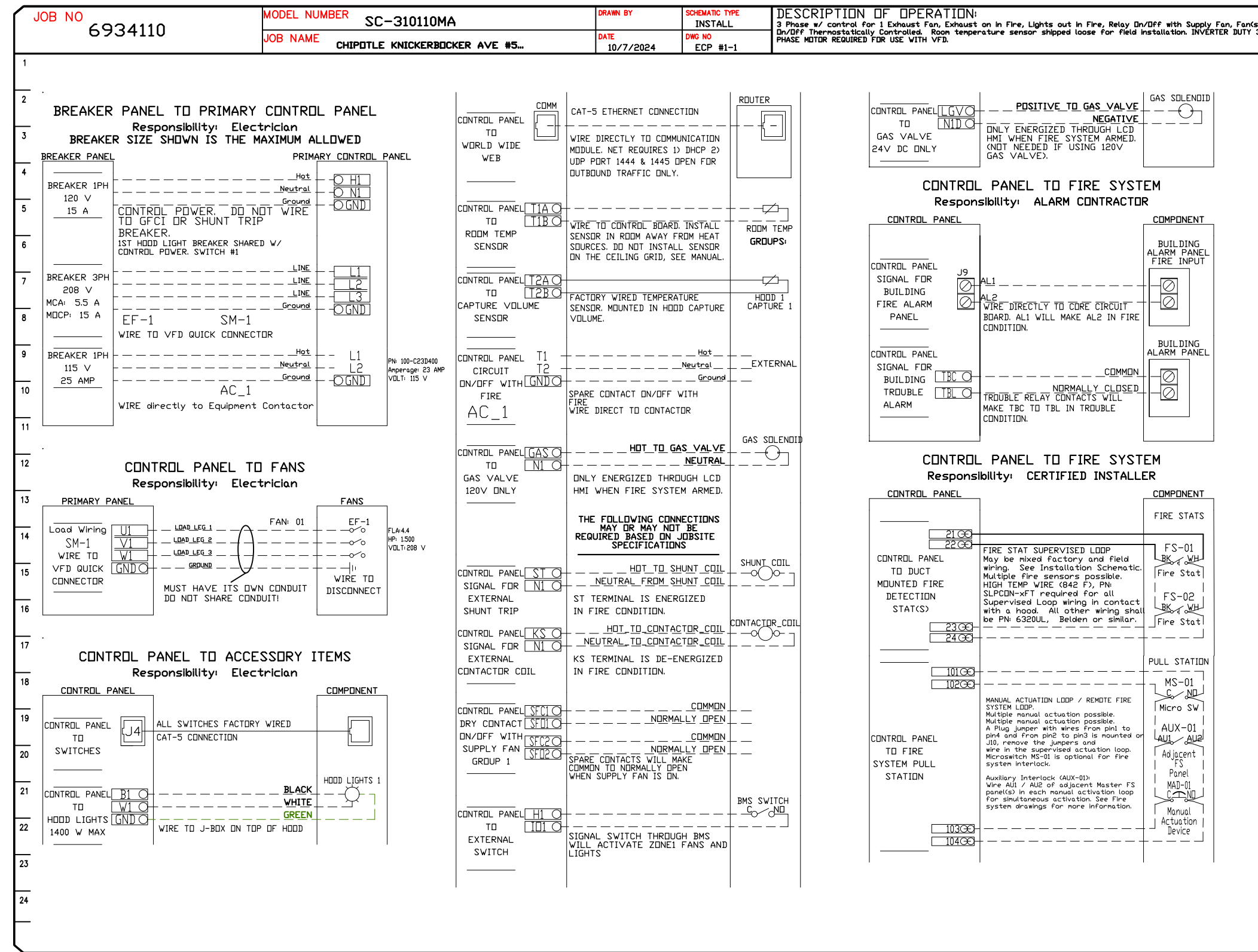


**CASlink Monitor and Control**

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

**MONITORING AND CONTROL POINTS LIST**

ICV Packages	Function	IC Packages	Function
Room Temperature	MONITOR	Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR	Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR	MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR	Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR	Controller Fan(s)	MONITOR
Fan Amps	MONITOR	Fan Status	MONITOR
Fan Power	MONITOR	Fan Status	MONITOR
VFD Faults	MONITOR	PCU Faults	MONITOR
Controller Faults	MONITOR	PCU Filter Clog Percentages	MONITOR
Fan Status	MONITOR	Flow Condition	MONITOR
Building Pressures	MONITOR	CO2 Fire System	MONITOR
PCU Filter Clog Percentages	MONITOR	Building Pressures	MONITOR
Fan Status	MONITOR	Pans Filter(s)	MONITOR & CONTROL
Prep Time Button	MONITOR & CONTROL	Light(s) Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL	Wash Button	MONITOR & CONTROL



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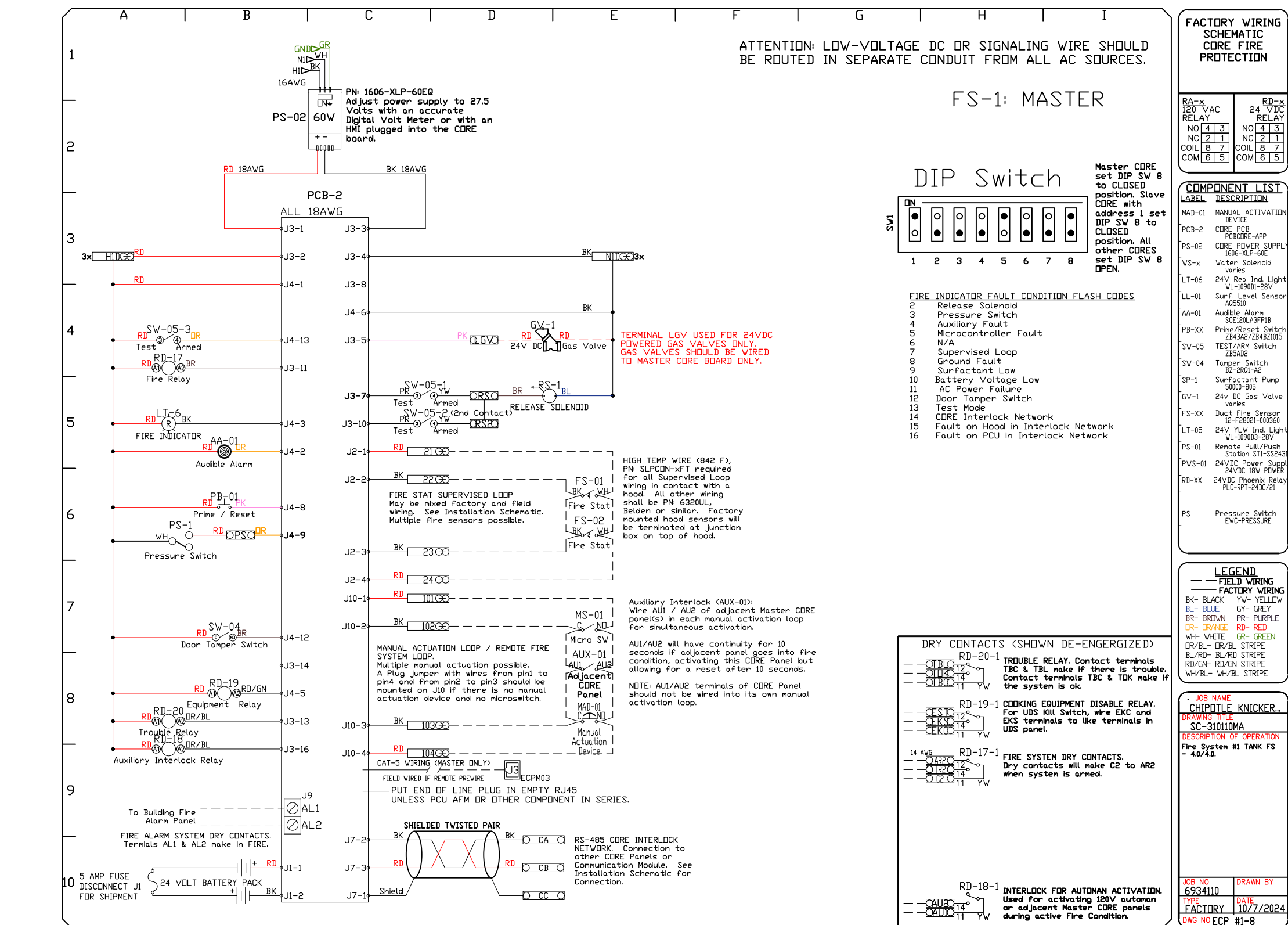
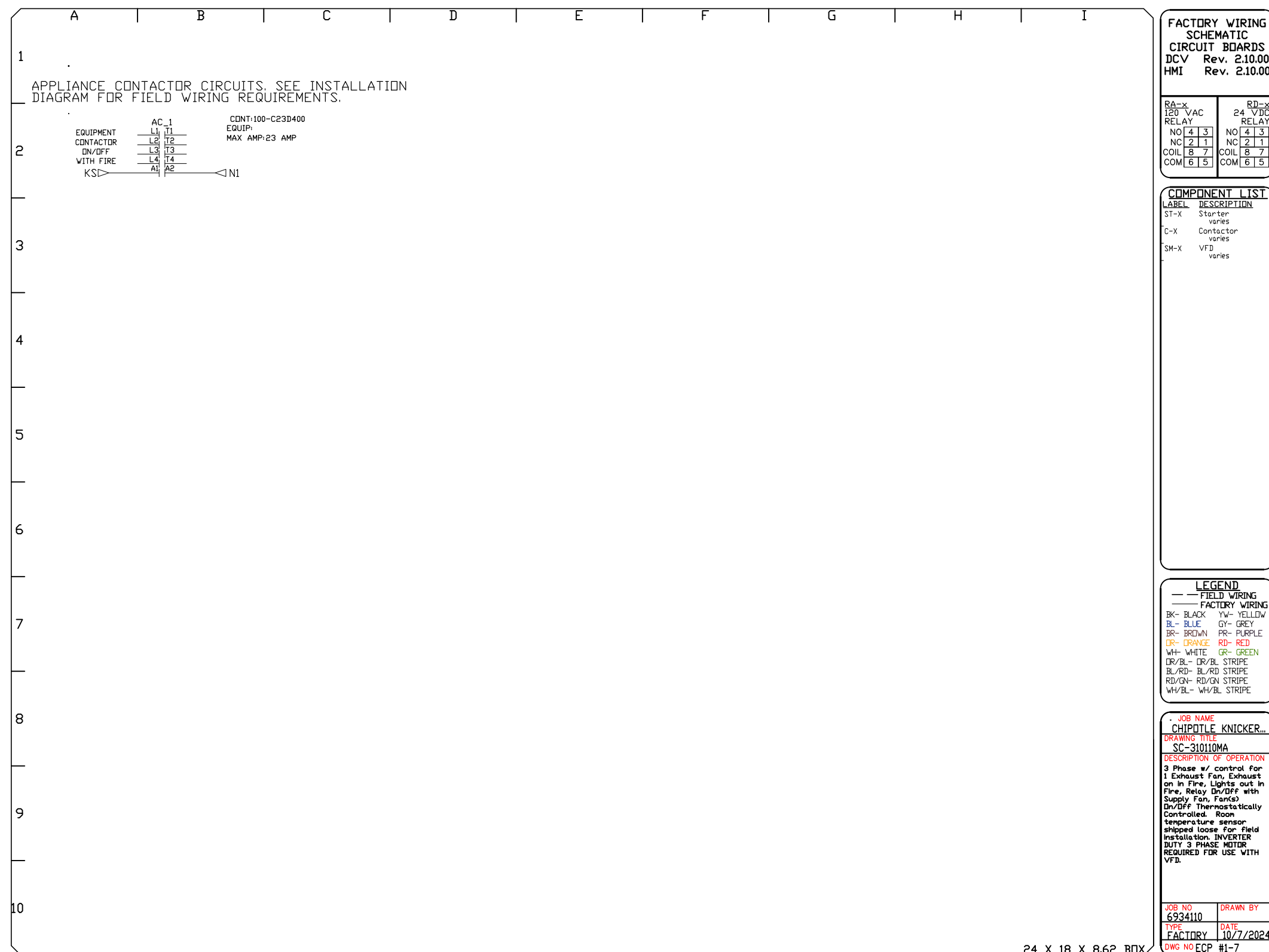
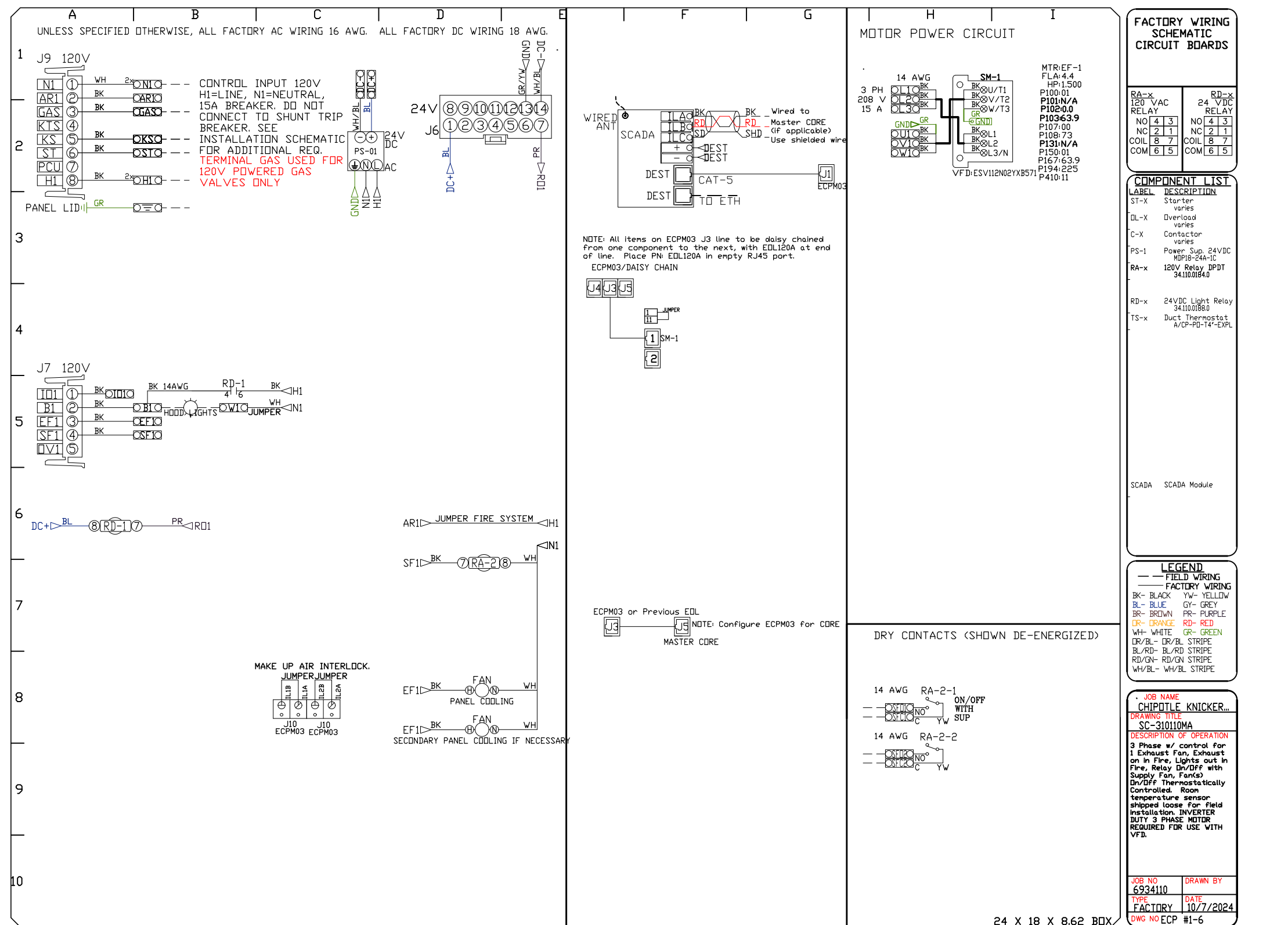
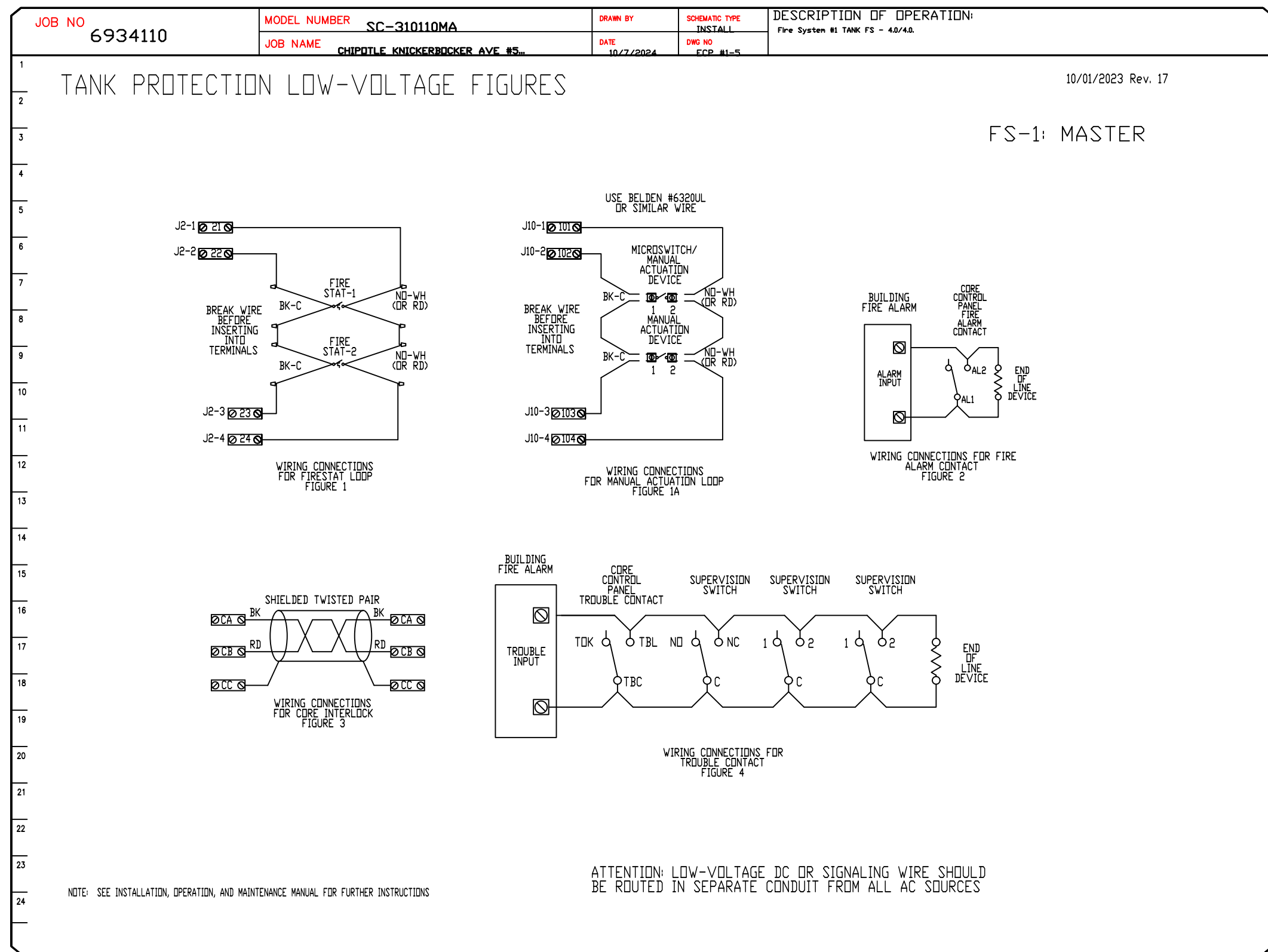
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