

| BUILDING CODE DATA  |                                  |         |
|---|----------------------------------|---------|
|   | CODE                             |         |
| GENERAL   | WASHINGTON STATE BUILDING CODE   | 2021    |
| HVAC/MECHANICAL   | WASHINGTON STATE MECHANICAL CODE | 2021    |
| PLUMBING  | WASHINGTON PLUMBING CODE         | 2021    |
| ELECTRICAL  | NATIONAL ELECTRICAL CODE         | 2023    |
| FIRE PROTECTION   | WASHINGTON STATE FIRE CODE       | 2021    |
|   | NFPA STANDARDS                   | CURRENT |
| FUEL  | WASHINGTON STATE FUEL GAS CODE   | 2021    |
| ENERGY  | WASHINGTON STATE ENERGY CODE     | 2021    |
| LOCAL AMENDMENTS  | RENTON MUNICIPAL CODE: TITLE IV  | CURRENT |
| NOTES:  |                                  |         |
| A. ALL WORK PERFORMED SHALL COMPLY WITH THE REQUIREMENTS OF THE LISTED CODES, LOCAL CODE AMENDMENTS, AND REFERENCED STANDARDS AS ENFORCED BY THE AUTHORITY HAVING JURISDICTION (AHJ). |                                  |         |
| B. ALL WORK SUBJECT TO INSPECTION BY THE AHJ AT THE PROJECT SITE FOR COMPLIANCE   |                                  |         |

| PROJECT DESCRIPTION  |
|--|
| THIS PROJECT CONSISTS OF A RESTAURANT REMODEL OF AN EXISTING BUILDING. THE NEW MECHANICAL WORK INCLUDES NEW ROOFTOP UNITS TO PROVIDE HEATING, COOLING, AND VENTILATION FOR THE NEW SPACE. A KITCHEN EXHAUST HOOD, FAN, AND MAKE-UP AIR UNIT ARE PROVIDED TO SERVE THE COOKING EQUIPMENT. A BATHROOM EXHAUST FAN IS PROVIDED, SERVING THE RESTROOM EXHAUST. |

SECTION 15732 - PACKAGED ROOFTOP AIR-CONDITIONING UNITS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Shop Drawings.
- B. Comply with ASHRAE 15.
- C. EER: Equal to or greater than prescribed by the energy code adopted by the Authority Having Jurisdiction.
- D. 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

- A. Factory assembled and tested, consisting of compressors, condensers, evaporator coils, condenser and evaporator fans, refrigeration and temperature controls, filters, and dampers.
  - 1. Refer to Rooftop Heating/Cooling Unit Schedule on drawing M600 for capacities, and manufacturers.
  - 2. Evaporator Fans: Belt or direct driven, forward curved centrifugal.
  - 3. Exhaust/Relief Fans: Direct drive, forward curved centrifugal or propeller.
  - 4. Condenser Fans: Direct drive propeller.
  - 5. Refrigerant Coils: Aluminum fins and copper coil.
  - 6. Compressors: Serviceable hermetic or fully hermetic, with safety controls, hot gas bypass, and timed off controls.
  - 7. Heat Exchangers: Gas fired, with gas controls, electronic ignition, high limit cutout, and forced draft proving switch.
  - 8. Economizer controls (Comparative Enthalpy, 100% capacity).
  - 9. Smoke Detectors: Photoelectric in supply and/or return as called for in schedule on sheet M600.
  - 10. Operating Controls: Two stage heating and two stage cooling on units 7-1/2 tons and over.
  - 11. Roof curb.
  - 12. Control Wiring from T-stat to rooftop unit: Shall be 18ga / 7 conductor, rated for plenum applications.
  - 13. 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

- A. Install units level and plumb and firmly anchored.
- B. Connect gas piping to burner with pipe same size as gas train inlet, and provide union with sufficient clearance for burner removal and service.
- C. Install ducts to termination in roof mounting frames. Terminate ducts through roof structure.
- D. Connect units to wiring systems and to ground.

END OF SECTION 15732

SECTION 15810 - DUCTS AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data for fire and smoke dampers.
- B. 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.
- C. Comply with NFPA 90B for systems serving spaces in 1 or 2 family dwellings or serving spaces less than 25,000 cu. ft.
- D. Comply with NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," for kitchen hood ducts.
- E. Comply with UL 181 and UL 181A for ducts and closures.
- F. Testing, Adjusting, and Balancing Agency Qualifications: AABC certified (to be furnished by Tenant).

PART 2 - PRODUCTS

2.1 DUCTS

- A. Spiral Duct: Spiral Lock Seam, without insulation, G90 galvanized finish, ASTM A-653/924
  - 1. Basis of Design Manufacturers: Lindab SPIROsafe, alternates to the basis of design must be submitted for review.
  - 2. 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.
- B. Galvanized Steel Sheet: Forming steel, ASTM A 653/653M, G90 coating designation.
- C. Duct Liner: ASTM C 1071, Type II, with an airstream surface coated with a temperature resistant coating. Thickness: 1-1/2 inch. R-value : 8.
  - 1. Adhesive: ASTM C 916, Type I.
  - 2. Mechanical Fasteners: Galvanized steel pin, length as required to penetrate liner plus a 1/8 inch projection maximum into the airstream.
- D. Joint and Seam Tape: Comply with UL 181A.
- E. Joint and Seam Sealant: Comply with UL 181A.
- F. 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

- A. 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.
- B. Fire Dampers: Factory-fabricated fire dampers, complete with required hardware and accessories. UL labeled according to UL 555, "Fire Dampers".
- C. Flexible Connectors: Flame retardant or noncombustible fabrics, coatings, and adhesives complying with UL 181, Class 1.
- D. 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

- A. Duct System Pressure Class: Construct and install each duct system with 2 inch positive and negative duct pressure classifications.
- B. Conceal ducts from view in finished and occupied spaces. Except where noted as exposed.
- C. Avoid passing through electrical equipment spaces and enclosures.
- D. Support and connect metal ducts according to SMACNA's "HVAC Duct Construction Standard".
- E. Install duct accessories according to applicable portions of details of construction as shown in SMACNA standards.
- F. Install liner and/or insulation on ductwork per the material schedule on sheet M010.
- G. Install volume control dampers in lined duct with methods to avoid damage to liner and to avoid erosion of duct liner.
- H. Install fire and smoke dampers according to manufacturer's UL approved written instructions.
- I. Install fusible links in fire dampers.
- J. Provide saddle taps at tees for exposed ductwork.

3.2 TESTING, ADJUSTING, AND BALANCING

- A. The Tenant 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.
- B. The GC is to have trained staffed available during the balancing to correct issues noted by the balance agent.
- C. 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%.
- D. The balance agent is to supply a copy of the balance report to the Tenant, engineer and general contractor for review.

END OF SECTION 15810

SECTION 15855 - DIFFUSERS, REGISTERS, AND GRILLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: None.

PART 2 - PRODUCTS

2.1 OUTLETS AND INLETS

- A. All air terminal devices:
  - 1. Refer to Grills, Registers, and Diffusers Schedule for equipment schedule
  - 2. Manufacturer: As scheduled (NO SUBSTITUTIONS)
  - 3. Material: As scheduled.
  - 4. Finish: As scheduled.
  - 5. Mounting: As scheduled.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Coordinate location and installation with duct installation and installation of other ceiling and wall mounted items.
- B. Locate ceiling diffusers, registers, and grilles, as indicated on the architectural "reflected ceiling plans." Unless otherwise indicated, locate units in center of acoustical ceiling panels.

END OF SECTION 15855

HVAC GENERAL NOTES

- A. GENERAL NOTES APPLY TO HVAC SHEETS.
- B. 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 ARCHITECTURAL SHEETS FOR THE PREVAILING CODES.
- C. CONTRACTOR AND SUBCONTRACTORS SHALL REVIEW A COMPLETE SET OF THE CONSTRUCTION DOCUMENTS.
- D. 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.
- E. 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.
- F. DUCT DIMENSIONS ON PLANS INDICATE DIMENSIONS OF INTERNAL FREE AREA.
- G. PERFORATED CEILING DIFFUSERS SHALL BE 4-WAY UNLESS NOTED OTHERWISE.
- H. COORDINATE ROOF WORK WITH THE OWNER'S CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
- I. 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.
- J. REPLACE AIR FILTERS WITH NEW, CLEAN MERV 8 AIR FILTERS AT TURNOVER.
- K. 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.
- L. INSTALL LABELING CALLED FOR IN THE MECHANICAL DRAWINGS USING ENGRAVED PHENOLIC PLATES (WHITE WITH BLACK LETTERING) FURNISHED BY TSV.
- M. 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 ACCEPTABLE.

HVAC MATERIAL SCHEDULE

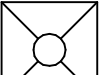
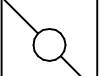
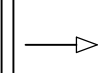
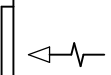


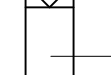
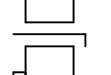
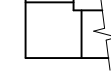

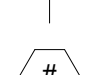


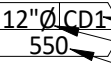
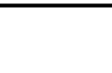

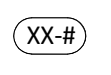
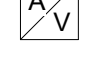


|      | APPLICATION                    | ALLOWABLE MATERIAL   |
|------|--------------------------------|--|
| DUCT | CONCEALED, GENERAL EXHAUST     | RECT. OR ROUND AS SHOWN  |
|      | CONCEALED, RETURN              | RECT. OR ROUND AS SHOWN, LINED OR INSULATED  |
|      | CONCEALED, SUPPLY              | RECT. OR ROUND AS SHOWN, LINED OR INSULATED  |
|      | CONCEALED, TYPE I HOOD EXHAUST | RECTANGULAR 16 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) |
|      | EXPOSED GENERAL EXHAUST        | RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC  |
|      | EXPOSED RETURN                 | RECTANGULAR, NO EXPOSED DUCT-SEALING MASTIC  |
|      | EXPOSED SUPPLY                 | RECT. LINED OR ROUND AS SHOWN, NO EXPOSED DUCT-SEALING MASTIC  |

HVAC ABBREVIATIONS

- (E) EXISTING
- ABV ABOVE
- ADA AMERICANS WITH DISABILITIES ACT
- AFF ABOVE FINISHED FLOOR
- AFG ABOVE FINISHED GRADE
- AHJ AUTHORITY HAVING JURISDICTION
- BFF BELOW FINISHED FLOOR
- BFG BELOW FINISHED GRADE
- BOH BACK OF HOUSE
- CLG CEILING
- CTE CONNECT TO EXISTING
- DN DOWN
- EXT'G EXISTING
- FLR FLOOR
- FOH FRONT OF HOUSE
- GYP GYPSUM BOARD
- NTS NOT TO SCALE
- O/H OVERHEAD
- OBD OPPOSED BLADE DAMPER
- TYP TYPICAL
- U/G UNDERGROUND
- VNO UNLESS NOTED OTHERWISE
- VFD VARIABLE FREQUENCY DRIVE
- VSC VARIABLE SPEED CONTROLLER
- W/ WITH
- WIC WALK-IN COOLER

- CO2AS TENANT'S CO2 ALARM SUPPLIER
- GC GENERAL CONTRACTOR
- HES TENANT'S HVAC EQUIPMENT SUPPLIER
- HS TENANT'S HOOD SUPPLIER
- KES TENANT'S KITCHEN EQUIPMENT SUPPLIER
- LL LANDLORD
- MSS TENANT'S MUSIC SYSTEMS SUPPLIER
- SPS TENANT'S SODA POP SUPPLIER
- TAB TENANT'S TEST AND 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
- TPS TENANT'S PANELBOARD SUPPLIER
- TRS TENANT'S RAILING SUPPLIER
- TSV TENANT'S SIGN VENDOR
- TUV TENANT'S UV SNATIZER SUPPLIER
- WCS TENANT'S WALK-IN COOLER SUPPLIER
- WHS TENANT'S WATER HEATER SUPPLIER

HVAC SYMBOLS

-  CEILING DIFFUSER
-  CEILING-MOUNTED RETURN OR EXHAUST REGISTER
-  SUPPLY REGISTER
-  RETURN GRILLE
-  FLEXIBLE DUCT
-  MITERED CORNER WITH TURNING VANES
-  DUCTWORK INTERNAL FREE DIMENSIONS (WIDTH/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 M600 FOR EQUIPMENT INFORMATION
-  AUDIO/VISUAL REMOTE SMOKE DETECTOR ANNUNCIATOR WITH REMOTE KEY OPERATED RESET
-  GRILL, REGISTER, OR DIFFUSER TAG: TAG, NECK SIZE, AIRFLOW (CFM)

Consultant:

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Project No.

230529

Contents:

HVAC SPECIFICATIONS

M010



FOR QUESTIONS, CALL THE  
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**PATENT NUMBERS**

AC-PSP (UNITED STATES) - US PATENT 7963830 B2.  
AC-PSP WALL (CANADA) - CA PATENT 2820509.  
AC-PSP ISLAND (CANADA) - CA PATENT 2520330.

**HOOD INFORMATION - JOB#7391706**

| HOOD NO | TAG | MODEL             | MANUFACTURER | LENGTH | MAX COOKING TEMP | TYPE | APPLIANCE DUTY | DESIGN CFM/FT | TOTAL EXH CFM | EXHAUST PLENUM RISER(S) |      |        |      |      | MUA CFM | AC CFM | HOOD CONSTRUCTION | HOOD CONFIG          |       |            |
|---------|-----|-------------------|--------------|--------|------------------|------|----------------|---------------|---------------|-------------------------|------|--------|------|------|---------|--------|-------------------|----------------------|-------|------------|
|         |     |                   |              |        |                  |      |                |               |               | WIDTH                   | LENG | HEIGHT | DIA  | CFM  |         |        |                   | VEL                  | SP    | END TO END |
| 1       |     | 5424 ND-2-ACPSP-F | CAPTIVEAIRE  | 12' 9" | 600 DEG          | I    | HEAVY          | 200           | 2550          | 10'                     | 24'  | 4'     | 2550 | 1530 | -0.966" | 1300   | 696               | 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 | 9   | 16"    | 16"    | 85% SEE FILTER SPEC    | 8        | L55 SERIES E26 | NO         | RIGHT    | 12"x54"x24"        | TANK FS          | 4.0/4.0 | SC-311110MA        | 1 LIGHT<br>1 FAN   | YES                 | 1213 LBS          |

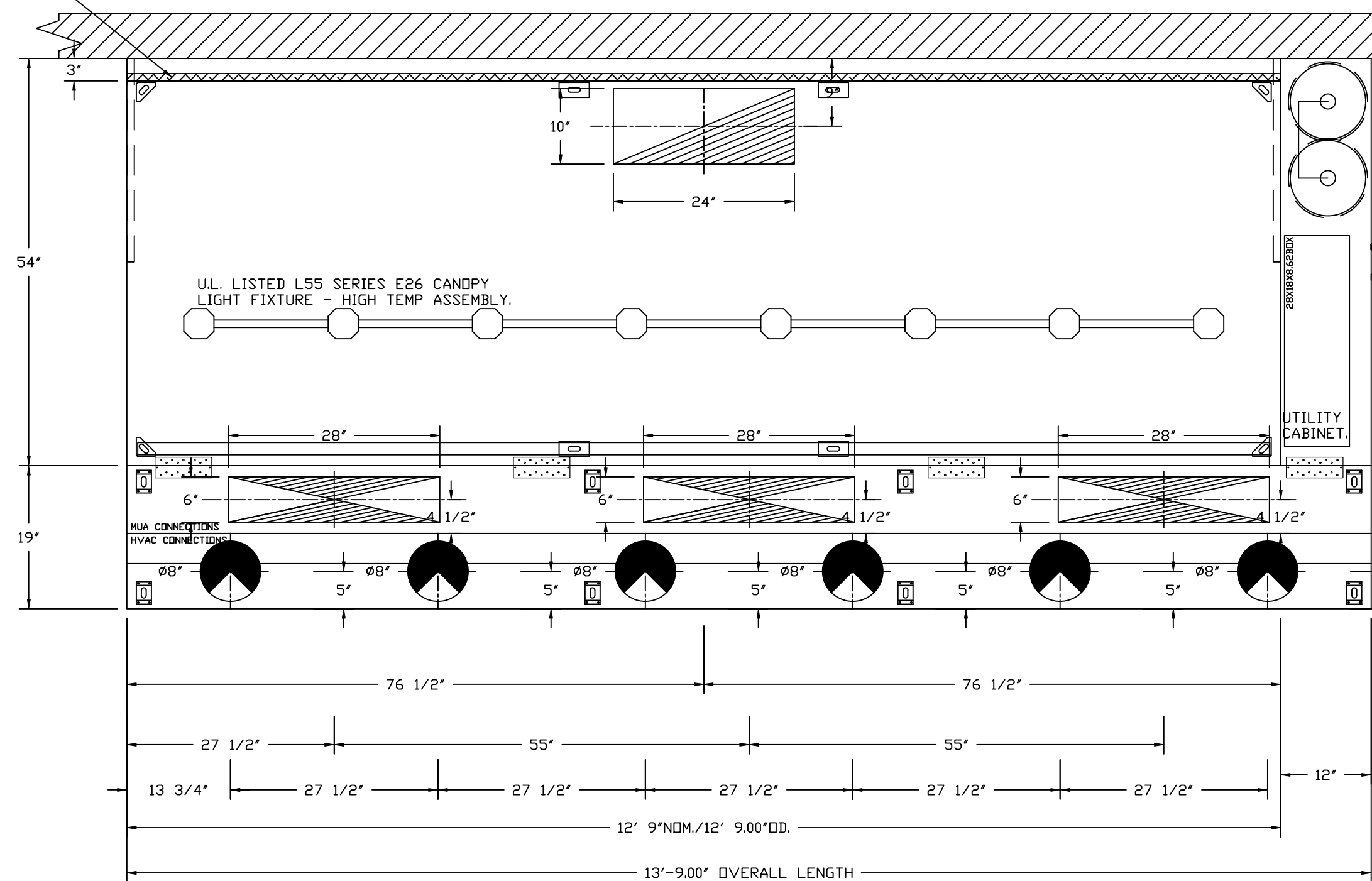
**HOOD OPTIONS**

| HOOD NO | TAG | OPTION  |
|---------|-----|---|
| 1       |     | FIELD WRAPPER 10.00' HIGH FRONT, LEFT, RIGHT.<br>INSULATION FOR BACK OF HOOD.<br>RISER SENSOR INSTALL 6IN PLEN.<br>RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.<br>LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.<br>FULL DIMENSION HANGING BRACKET - FRONT. |

**PERFORATED SUPPLY PLENUM(S)**

| HOOD NO | TAG   | POS  | LENGTH | WIDTH | HEIGHT | RISER(S) |       |        |        |     |
|---------|-------|------|--------|-------|--------|----------|-------|--------|--------|-----|
|         |       |      |        |       |        | TYPE     | WIDTH | LENG   | DIA    | CFM |
| 1       | Front | 165' | 19'    | 6'    | MUA    | 6"       | 28"   | 432    | 0.127" |     |
|         |       |      |        |       | MUA    | 6"       | 28"   | 432    | 0.127" |     |
|         |       |      |        |       | MUA    | 6"       | 28"   | 432    | 0.127" |     |
|         |       |      |        |       | AC     | 8"       | 116   | 0.043" |        |     |
|         |       |      |        |       | AC     | 8"       | 116   | 0.043" |        |     |
|         |       |      |        |       | AC     | 8"       | 116   | 0.043" |        |     |
|         |       |      |        |       | AC     | 8"       | 116   | 0.043" |        |     |
|         |       |      |        |       | AC     | 8"       | 116   | 0.043" |        |     |

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



PLAN VIEW - HOOD #1  
12' 9.00" LONG 5424ND-2-ACPSP-F  
NOTE: ADDITIONAL HANGING ANGLES PROVIDED FOR HOODS 12' AND LONGER.

ACPSP SHIPS LOOSE FOR FIELD INSTALLATION

**CLEARANCE TO COMBUSTIBLES**

| HOODS # | SURFACE | *CLEARANCE |
|---------|---------|------------|
| 1       | TOP     | 18"        |
|         | FRONT   | 0"         |
|         | BACK    | 0"         |
|         | LEFT    | 18"        |
|         | RIGHT   | 0"         |

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

**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.

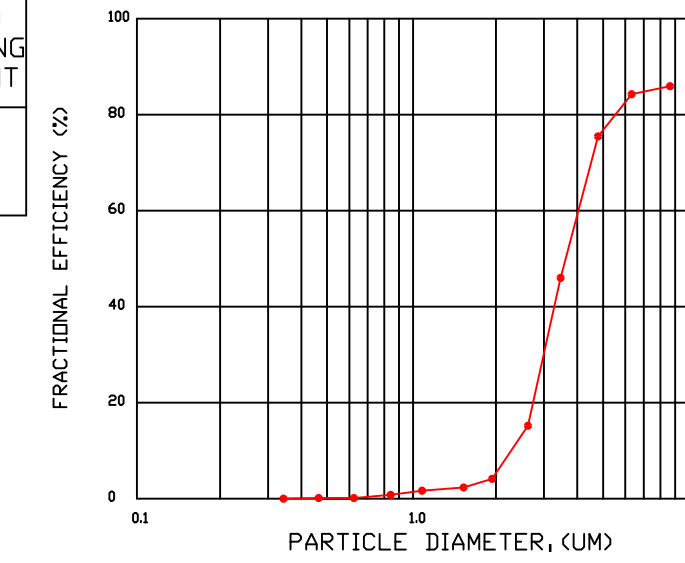
FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

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

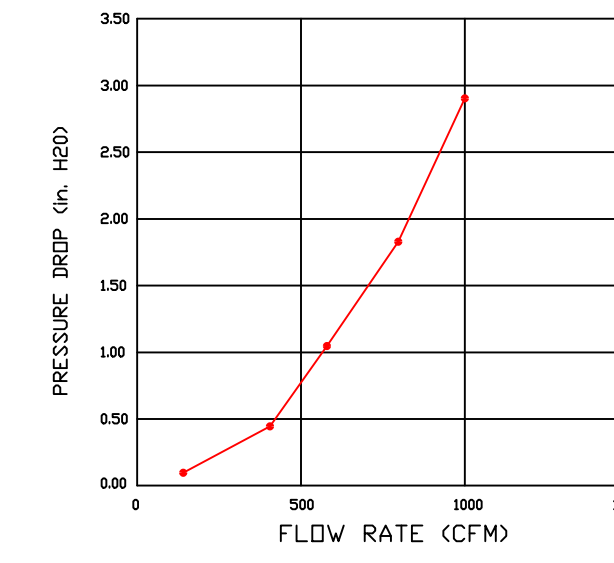
GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

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

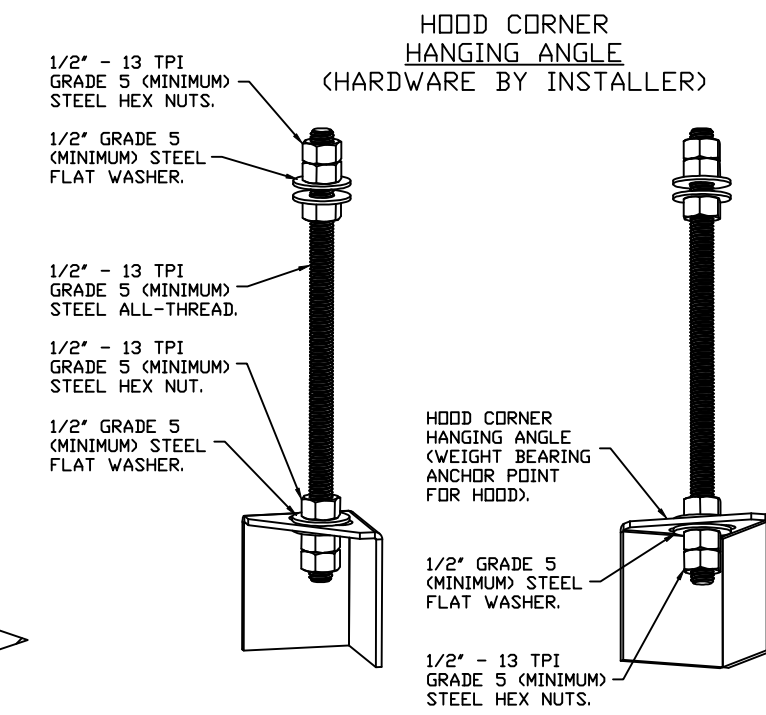


PRESSURE DROP VS. FLOW RATE



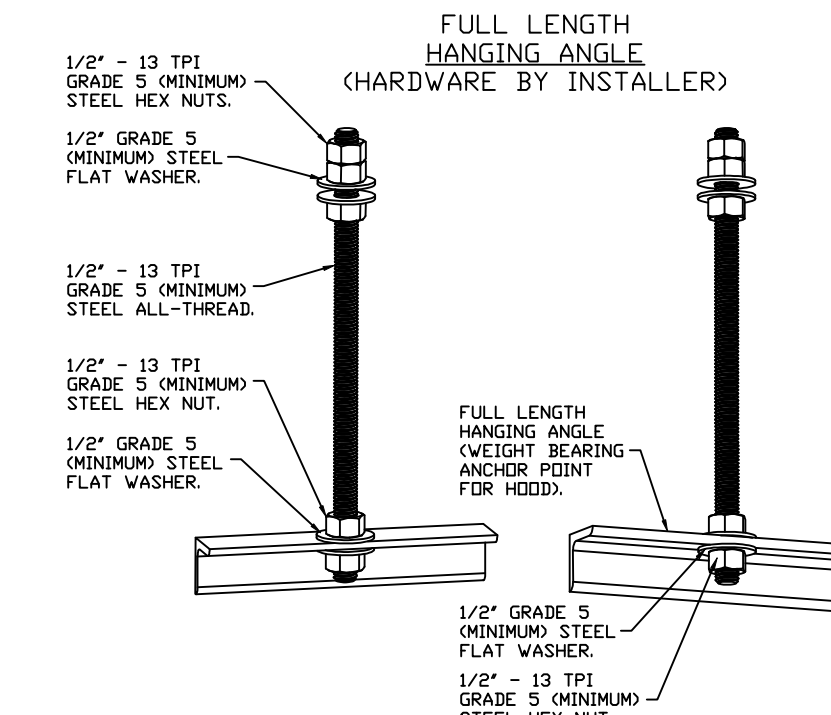
CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:

- NFPA #96.
- NSF STANDARD #2.
- UL STANDARD #1046.
- INT. MECH. CODE (IMC).
- ULC-S649.



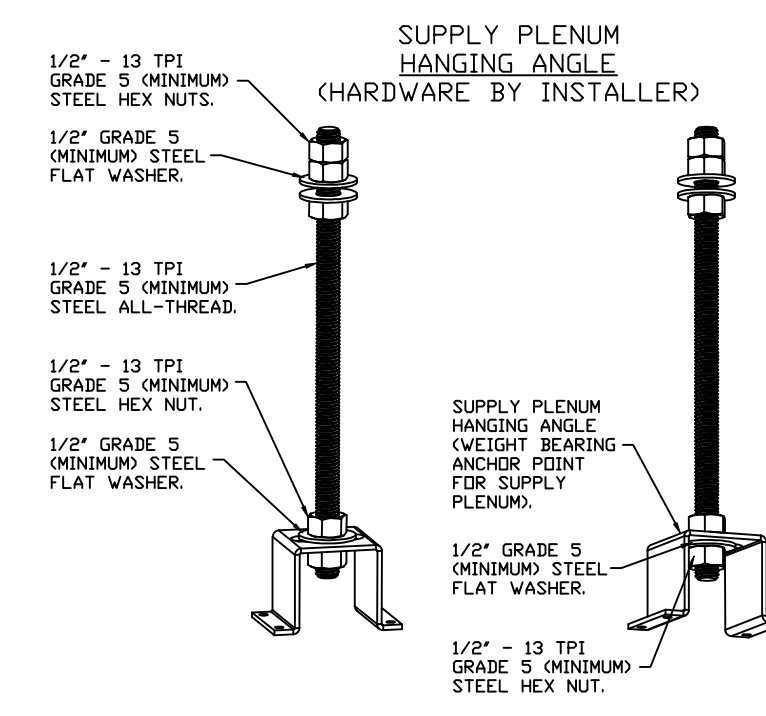
**ASSEMBLY INSTRUCTIONS**

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 BENEATH HOOD HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



**ASSEMBLY INSTRUCTIONS**

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**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 PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BENEATH BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.

BOWMAN: APPROVAL CONTINGENT ON THE AUTHORITY HAVING JURISDICTION (AHJ) REVIEW AND APPROVAL OF THE SUBMITTED PERMIT DOCUMENTS. BOWMAN CONSULTING GROUP IS NOT LIABLE FOR ANY REVISIONS REQUIRED BY THE AHJ.

**Bowman**

- No Exceptions Taken  Accepted As Noted  Rejected  
 Resubmit  Submit Specified Item  Reviewed

Bowman Consulting Group acknowledges its limited review of this document is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made by Bowman Consulting Group on any shop drawings / submittals during this review do not relieve the contractor or sub-contractor from full compliance with all requirements contained in any plans, specifications, construction related contracts, or documents. Review for a specific item shall not include review of an assembly of which the item is a component. Contractor and their subcontractors are responsible for: quantities and dimensions to be conformed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all other trades and performing all Work in a safe and satisfactory manner.

By: Sam Frank Date: 06/25/2025

**REVISIONS**

| DESCRIPTION | DATE |
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CHIPOTLE NORTH BENSON WA #5312  
17803 108th Avenue Southeast,  
Renton, WA, 98055

DATE: 5/12/2025

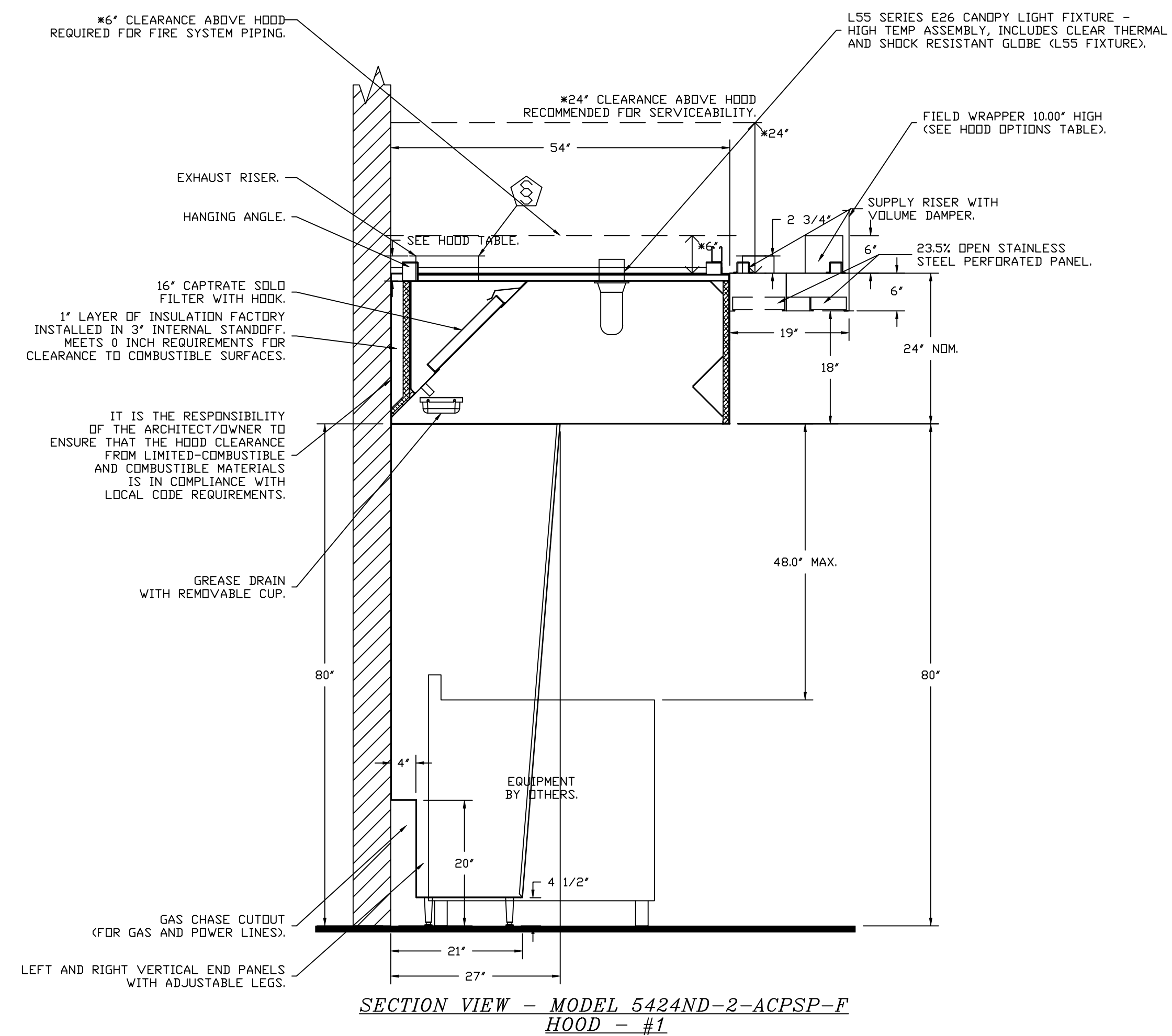
DWG.#:  
7391706

DRAWN BY: JMB-40

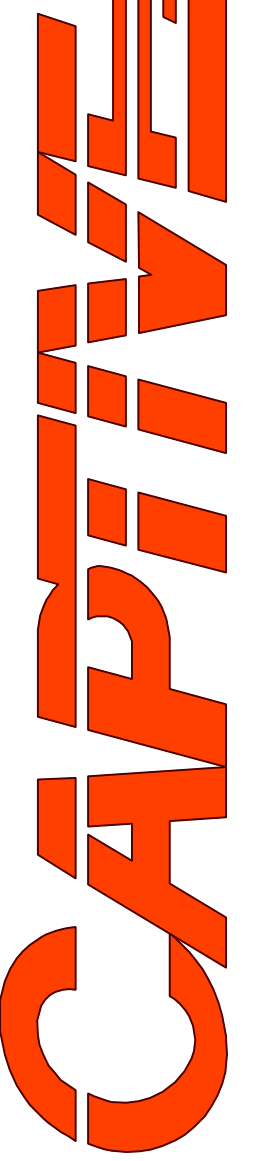
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3/4" = 1'-0"

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SHEET NO.



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 Highwoods Group  
 www.captiveaire.com  
 4641 Paragon Park Rd., Raleigh, NC, 27616 PHONE: (919) 875 - 0420 FAX: 9198750577 EMAIL: egr40@captiveaire.com

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**DRAWN BY:** JMB-40  
**SCALE:** 3/4" = 1'-0"  
**MASTER DRAWING**

**SHEET NO.**  
 2

**FIRE SYSTEM INFORMATION – JOB#7391706**

| FIRE SYSTEM NO | TAG | TYPE    | SIZE    | MAX FP | DESIGN FP | INSTALLATION       |                  |
|----------------|-----|---------|---------|--------|-----------|--------------------|------------------|
|                |     |         |         |        |           | SYSTEM             | LOCATION ON HOOD |
| 1              |     | TANK FS | 4.0/4.0 | 40     | 32        | FIRE CABINET RIGHT | RIGHT, HOOD 1    |

**GAS VALVE(S)**

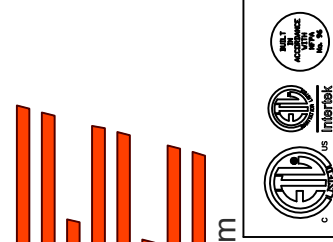
| FIRE SYSTEM NO | TAG | TYPE          | SIZE  | SUPPLIED BY        |
|----------------|-----|---------------|-------|--------------------|
| 1              |     | SC ELECTRICAL | 1.500 | CAPTIVEAIR SYSTEMS |

**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 - 87-300033-001 DIN CONNECTOR, CANFIELD PART #5J560-201-EU0A, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).            | 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.  | 7              | 0           |
|                |     | 0 - 0 - 9097200PC PRO PRESS PC611 1/2 PRESS TEE LD.   | 7              | 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.   | 3              | 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.  | 8              | 0           |
|                |     | 16 - 16 - DL-F NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).                   | 8              | 0           |
|                |     | 26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).  | 8              | 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           |

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**CAPTIVE**

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CHIPOTLE NORTH BENSON WA #5312  
17803 108th Avenue Southeast,  
Renton, WA, 98055

**DATE:** 5/12/2025

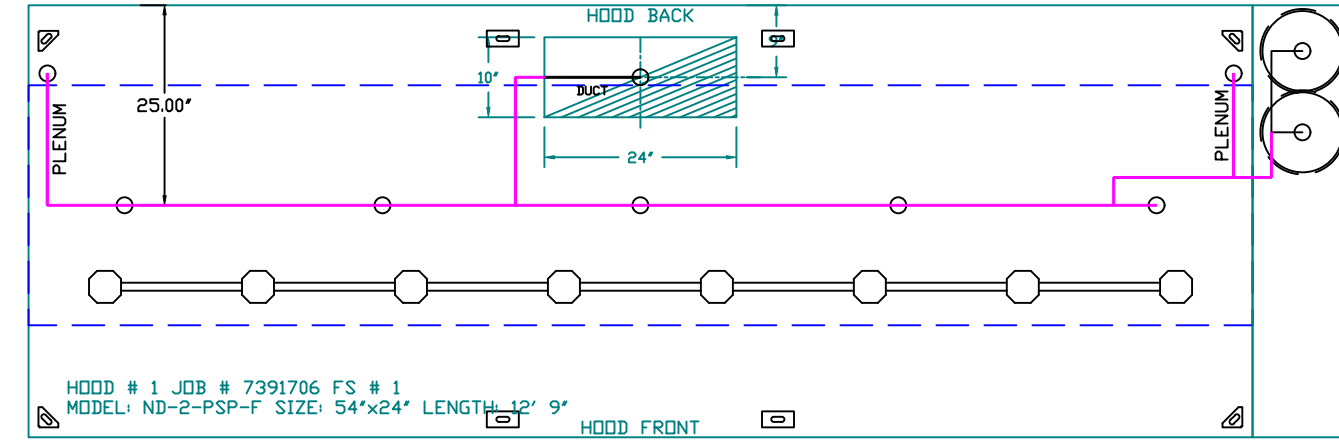
**DWG.#:**  
7391706

**DRAWN BY:** JMB-40

**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.

- 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 PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH UL 300 REQUIREMENTS.

- DL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS  
 JOB #: 7391706  
 JOB NAME: CHIPOTLE NORTH BENSON WA #5312.

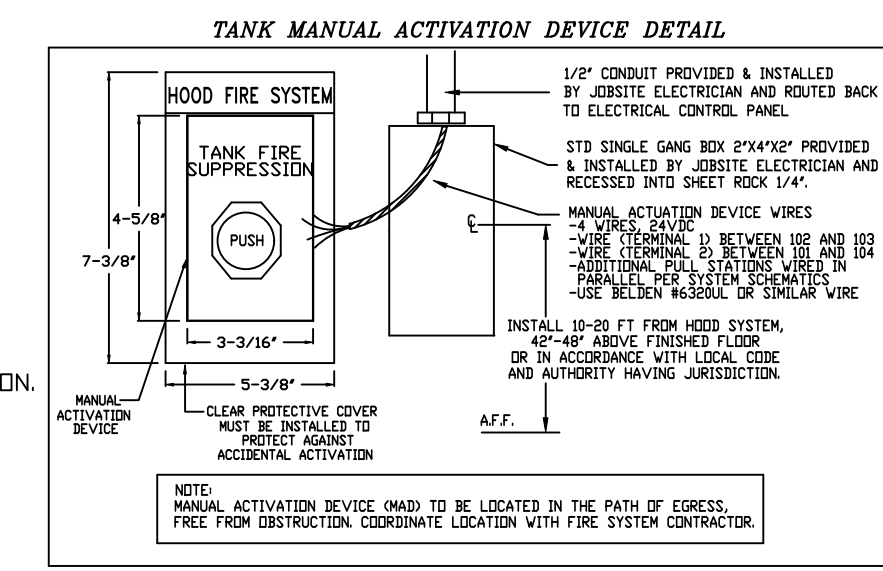
SYSTEM SIZE: TANK-SP-2 DESIGN FP: 32. MAXIMUM FP: 40.  
 HOOD # 1 12' 9.00' LONG x 54' WIDE x 24' HIGH.  
 RISER # 1 SIZE: 10' x 24'.  
 HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.

- 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.

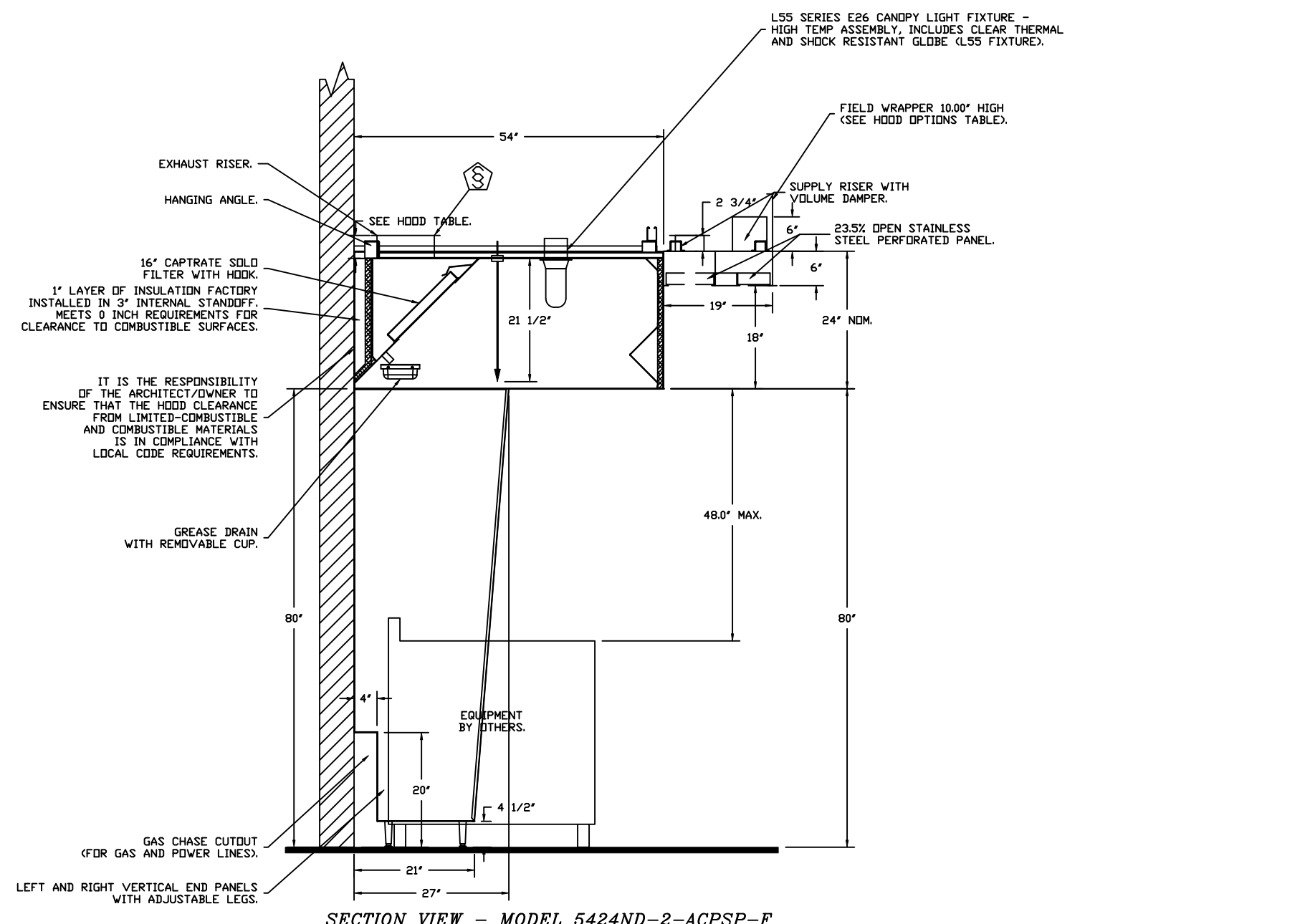
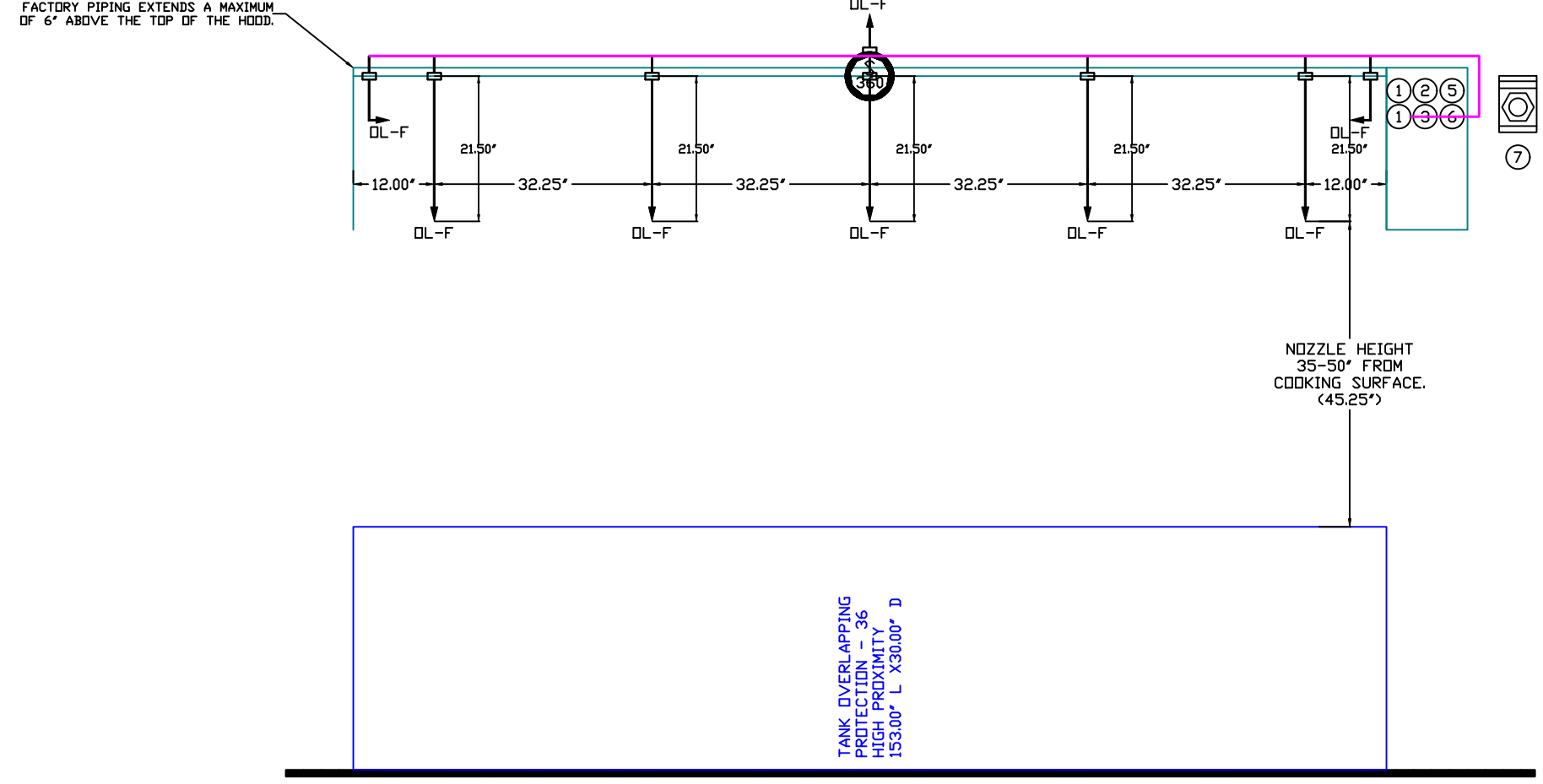
| AGENT DISTRIBUTION PIPING LIMITATIONS       |                      |
|---|----------------------|
| PIPE SECTION                                | MAX PIPE LENGTH (FT) |
| MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE | 42                   |
| OVERLAPPING NOZZLE APPLIANCE BRANCH         | 10        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

**LEGEND - FIRE CABINET TANK SYSTEM**

- 4 GALLON TANK.
- PRIMARY ACTUATOR RELEASE.
- SECONDARY ACTUATOR RELEASE.
- PRESSURE SUPERVISION SWITCH.
- PRIMARY HOSE ASSEMBLY.
- SECONDARY HOSE ASSEMBLY.
- 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 EXTINGUISHER(S), ON-SITE RE-PIPING DUE TO EQUIPMENT LAYOUT CHANGES.

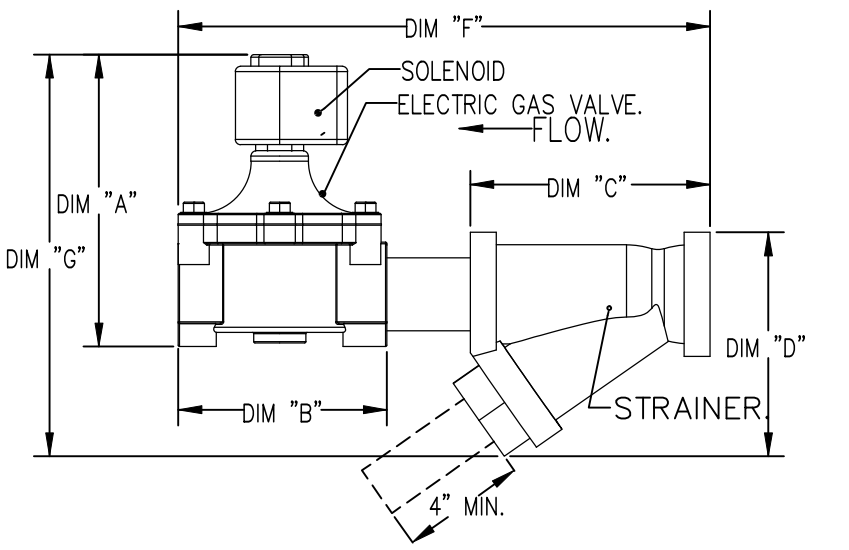


| GAS VALVES AND STRAINERS |        |         |                     |                      |                                    |                                |         |              |         |              |         |                  |                       |                      |                        |                  |
|--------------------------|--------|---------|---------------------|----------------------|------------------------------------|--------------------------------|---------|--------------|---------|--------------|---------|------------------|-----------------------|----------------------|------------------------|------------------|
| GAS VALVE SIZING         |        |         |                     | GAS VALVE DIMENSIONS |                                    |                                |         | INSTALLATION |         | PART NUMBERS |         |                  |                       |                      |                        |                  |
| TYPE                     | SIZE   | VOLTAGE | MIN. INLET PRESSURE | MAX. INLET PRESSURE  | FLOW AT 1 IN.W.C. DROP NATURAL GAS | FLOW AT 1 IN.W.C. DROP PROPANE | DIM "A" | DIM "B"      | DIM "C" | DIM "D"      | DIM "E" | PIPE ORIENTATION | GAS VALVE PART NUMBER | STRAINER PART NUMBER | GAS VALVE/STRAINER KIT |                  |
| ELECTRICAL               | 1-1/2" | 24 VDC  | 0 PSIG (0 IN.W.C.)  | 5 PSIG (138 IN.W.C.) | 2,400,000 BTU/HR                   | 1,561,219 BTU/HR               | 7-5/8"  | 6-3/8"       | 5-3/4"  | 6-3/16"      | 14-1/8" | 12-5/16"         | HORIZONTAL            | 8214276-24VDC        | 4417967                | (SCE)EVC1-1/2-24 |

**ELECTRIC GAS VALVES ONLY SOLIDNOZ OBSTRUCTION**  
 3/4"-2" 120VAC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION AT OR ABOVE HORIZONTAL. 2 1/2"-3" 120VAC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.  
 24VDC GAS VALVES MUST BE MOUNTED WITH THE SOLENOID VERTICAL AND UPRIGHT.

**ALL GAS VALVES/STRAINERS**  
 PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS. A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER. CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING, SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

**CALCULATIONS**  
 TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP:  
 NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP<sup>3/2</sup>  
 TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY:  
 NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)<sup>3/2</sup>



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

SHEET NO. 4

**EXHAUST FAN INFORMATION – JOB#7391706**

| 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   | DUI80HFA         | CAPTIVEAIRE  | 2550 | 1.450 | 1225 | TEFC,PREMIUM | 2.000 | 1.2780 | 3     | 208  | 7.3 | 589 FPM            | 199          | 16.8  |
| 2           | EF-2 | 1   | DR12HFA          | CAPTIVEAIRE  | 150  | 0.600 | 1293 | TEAD-ECM     | 0.250 | 0.0950 | 1     | 115  | 2.9 |                    | 50           | 6.2   |

**MUA FAN INFORMATION – JOB#7391706**

| FAN UNIT NO | TAG   | QTY | FAN UNIT MODEL # | BLOWER     | HOUSING  | MIN CFM | DESIGN CFM | ESP   | RPM  | MOTOR ENCL  | HP    | BHP    | PHASE | VOLT | FLA | MCA  | MOCF | WEIGHT (LBS) | SDNES |
|-------------|-------|-----|------------------|------------|----------|---------|------------|-------|------|-------------|-------|--------|-------|------|-----|------|------|--------------|-------|
| 3           | MAU-1 | 1   | A1-D.250-15D     | 15MF-1-MDD | A1-D.250 | 1000    | 1300       | 0.500 | 1551 | DDP,PREMIUM | 1.000 | 0.5670 | 3     | 208  | 3.1 | 3.9A | 15A  | 507          | 12.2  |

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

| FAN UNIT NO | TAG   | INPUT BTUs | OUTPUT BTUs | TEMP RISE | REQUIRED INPUT GAS PRESSURE | GAS TYPE | BURNER EFFICIENCY(%) |
|-------------|-------|------------|-------------|-----------|-----------------------------|----------|----------------------|
| 3           | MAU-1 | 67029      | 61667       | 45°F      | 7 IN. W.C. - 14 IN. W.C.    | NATURAL  | 92                   |

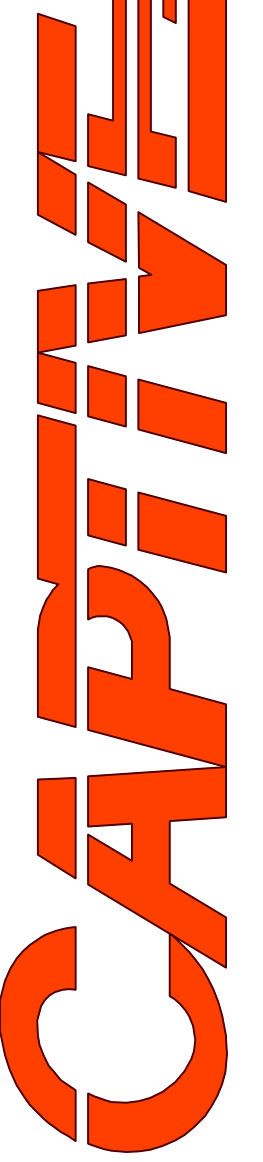
**FAN ACCESSORIES**

| 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           | MAU-1 |            |                |            |                |                | YES              |            |  |

**CURB ASSEMBLIES**

| NO | ON FAN | TAG   | WEIGHT | ITEM | SIZE                                      |
|----|--------|-------|--------|------|---|
| 1  | # 1    | EF-1  | 39 LBS | CURB | 26.500"W X 26.500"L X 20.000"H VENTED.    |
| 2  | # 2    | EF-2  | 31 LBS | CURB | 17.500"W X 17.500"L X 26.000"H.           |
| 3  | # 3    | MAU-1 | 65 LBS | CURB | 21.000"W X 71.000"L X 20.000"H INSULATED. |

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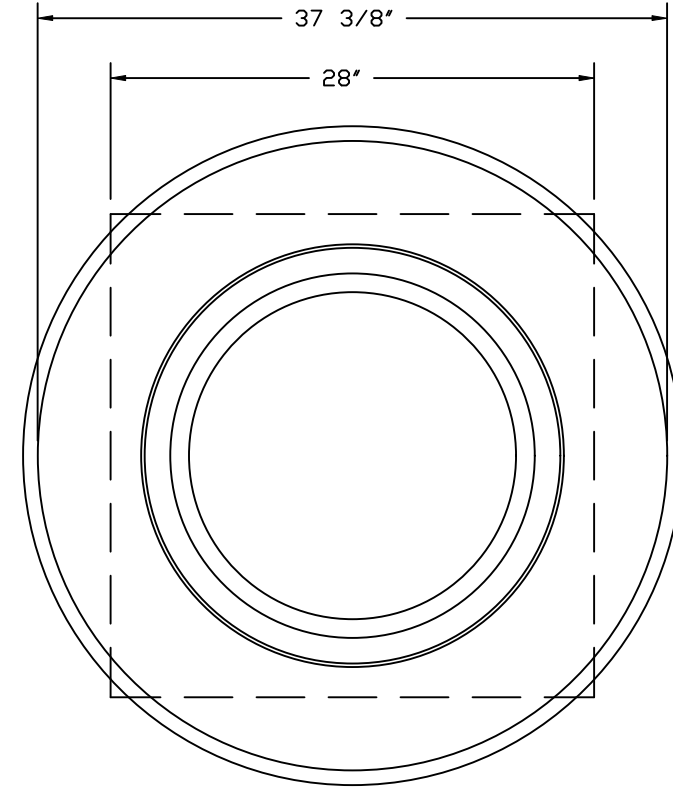
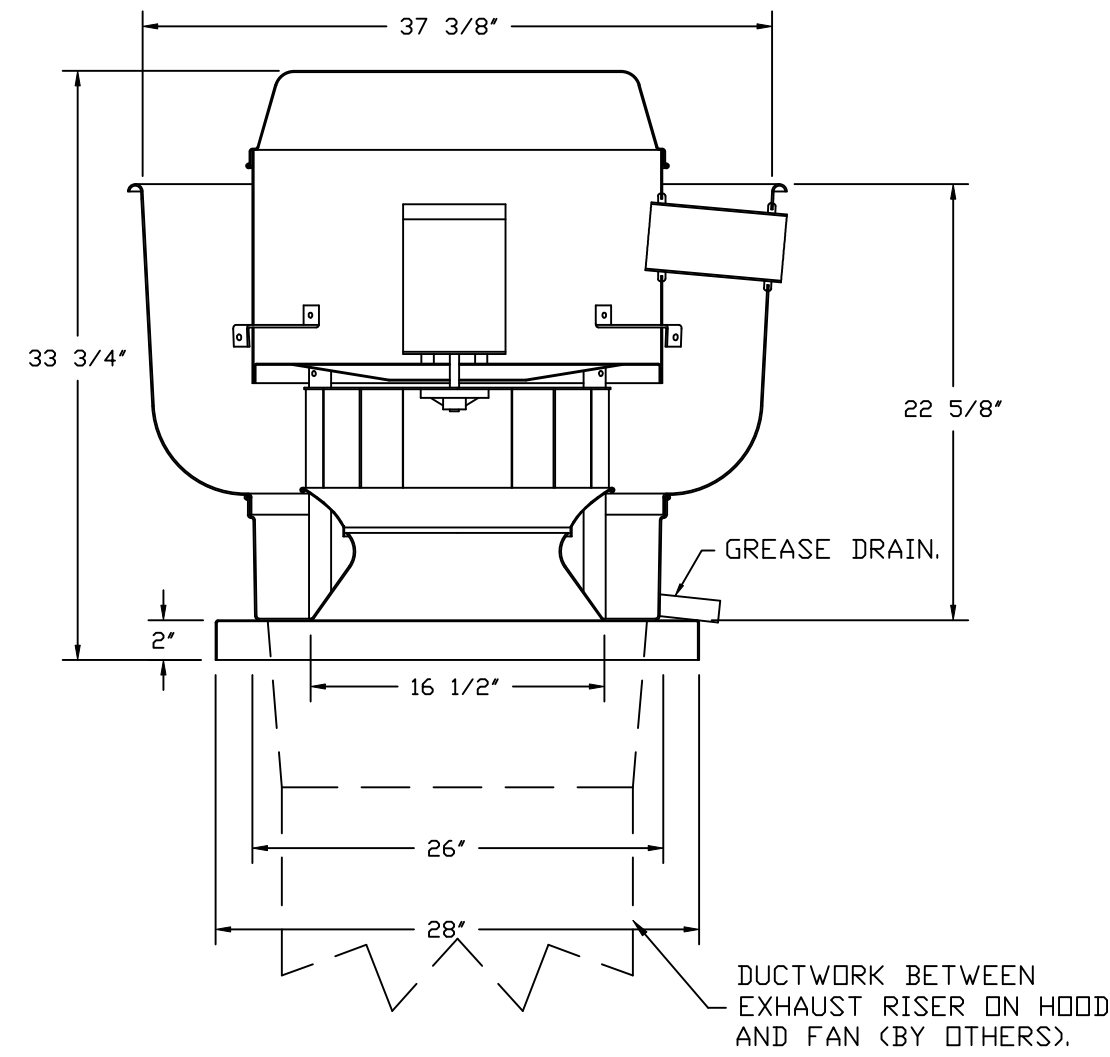
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FAN OPTIONS

| FAN UNIT NO | TAG   | QTY | DESCRIPTION  |
|-------------|---|-----|--|
| 1           | EF-1  | 1   | GREASE BDX   |
|             |   | 1   | REMOVE HINGE KIT LABEL FROM THE FAN BASE   |
|             |   | 1   | 2 YEAR PARTS WARRANTY  |
| 2           | EF-2  | 1   | I 12-BDD DAMPER  |
|             |   | 1   | ECM WIRING PACKAGE - MANUAL DR 0-10VDC REFERENCE SPEED CONTROL -RTC- <TELCD MOTOR>, CCW ROTATION     |
| 3           | MAU-1   | 1   | 2 YEAR PARTS WARRANTY  |
|             |   | 1   | SIZE 1 TEMPERED COMMERCIAL DOWN DISCHARGE FOR DIRECT DRIVE AHUS                                      |
|             |   | 1   | INLET PRESSURE GAUGE, 0-35"  |
|             |   | 1   | MANIFOLD PRESSURE GAUGE, -5 TO 15" WC  |
|             |   | 1   | SHIP LOOSE GAS STRAINER 3/4"   |
|             |   | 1   | MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING - MEETS AMCA CLASS 1A RATING                             |
|             |   | 1   | SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY |
| 1           | 2 YEAR PARTS WARRANTY   |     |  |
| 1           | EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET |     |  |

FAN #1\_DUI80HFA - EXHAUST FAN (EF-1)



TOP VIEW

FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST

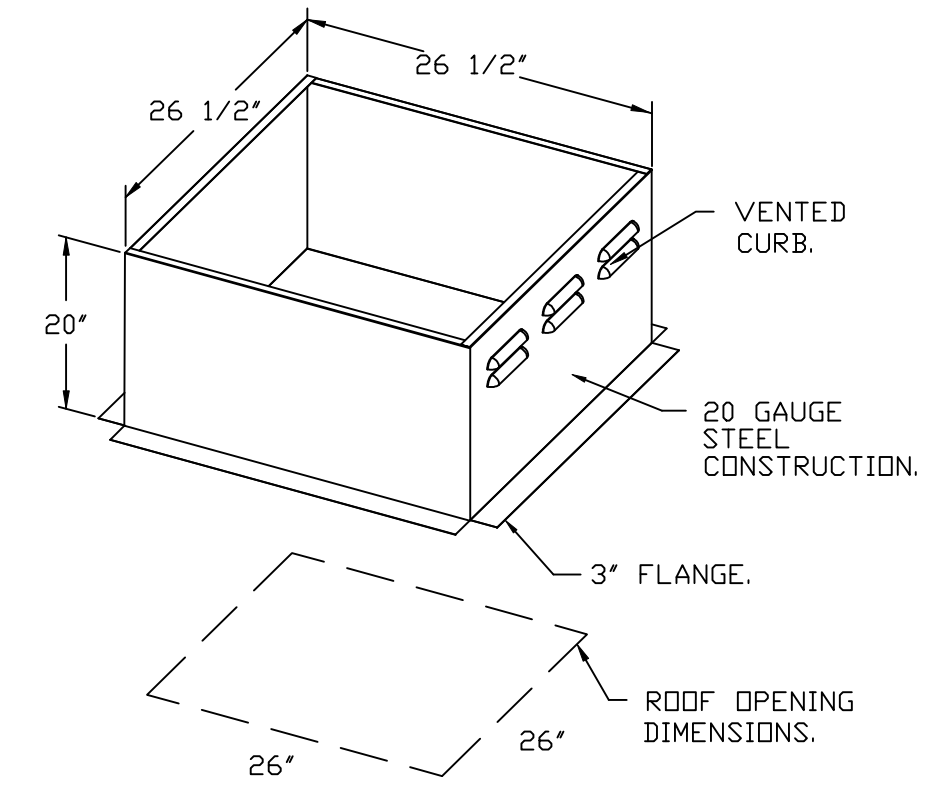
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST

EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

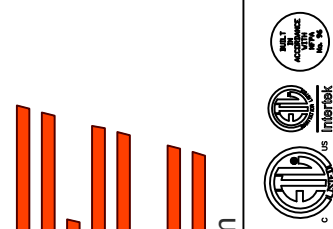
- GREASE BDX.
- REMOVE HINGE KIT LABEL FROM THE FAN BASE.
- 2 YEAR PARTS WARRANTY.



| HMI SCHEDULE |               |              |                |                |
|--------------|---------------|--------------|----------------|----------------|
| UNIT NUMBER  | HMI #         | HMI LOCATION | TEMP AVERAGING | MODBUS ADDRESS |
| FAN #3       | HMI #1 - UNIT | IN UNIT      | NOT AVERAGED   | 55             |

REVISIONS

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CHIPOTLE NORTH BENSON WA #5312  
17803 108th Avenue Southeast,  
Renton, WA, 98055

DATE: 5/12/2025

DWG.#:  
7391706

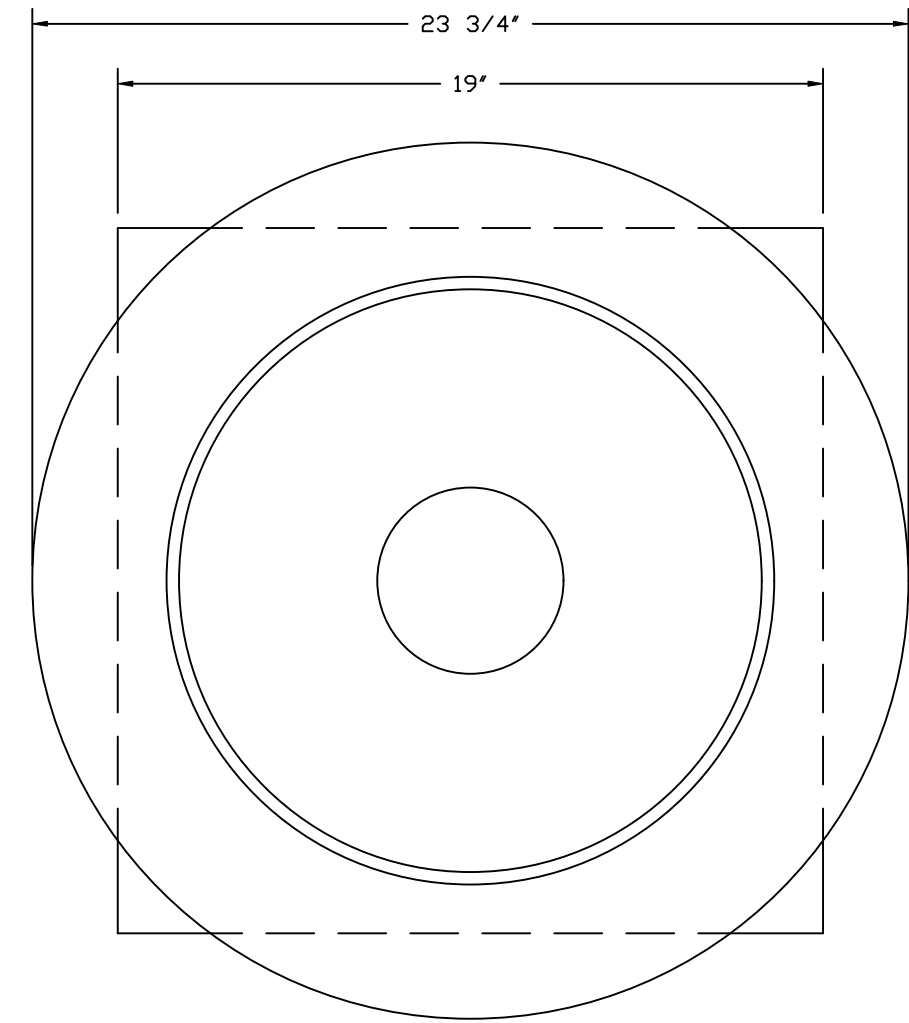
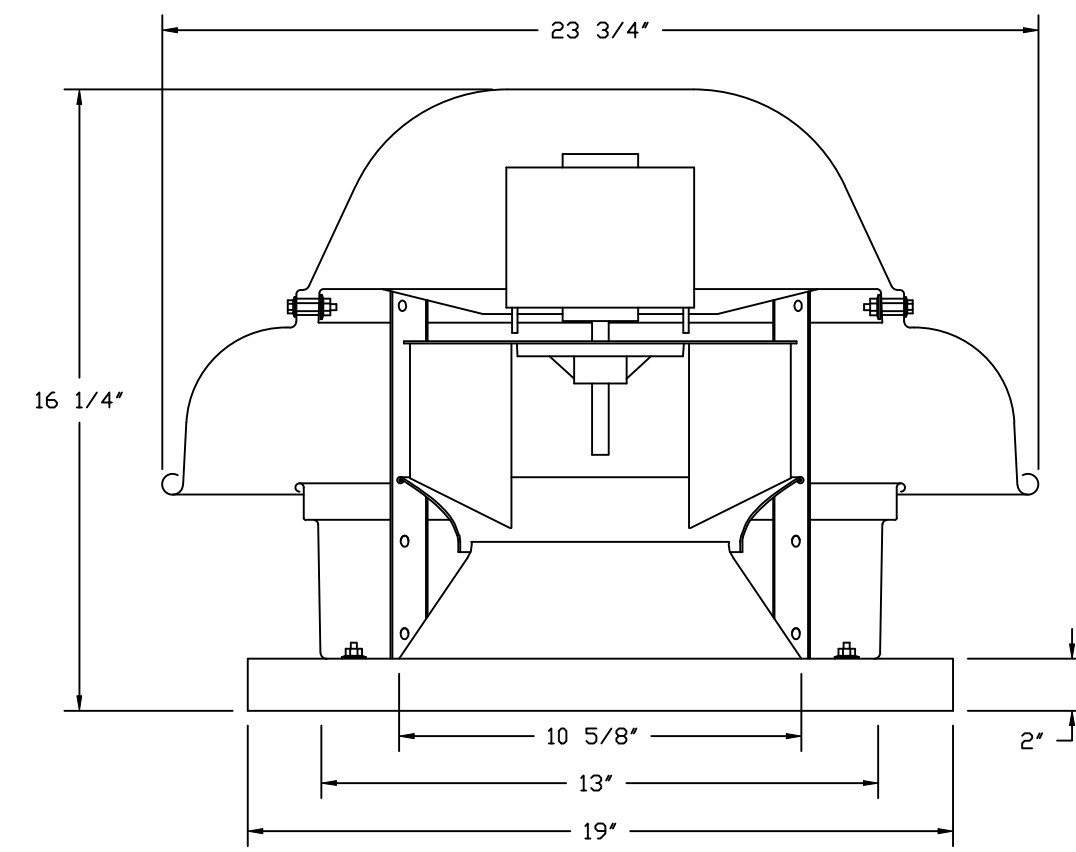
DRAWN BY: JMB-40

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

MASTER DRAWING

SHEET NO.

FAN #2\_DR12HFA - EXHAUST FAN (EF-2)



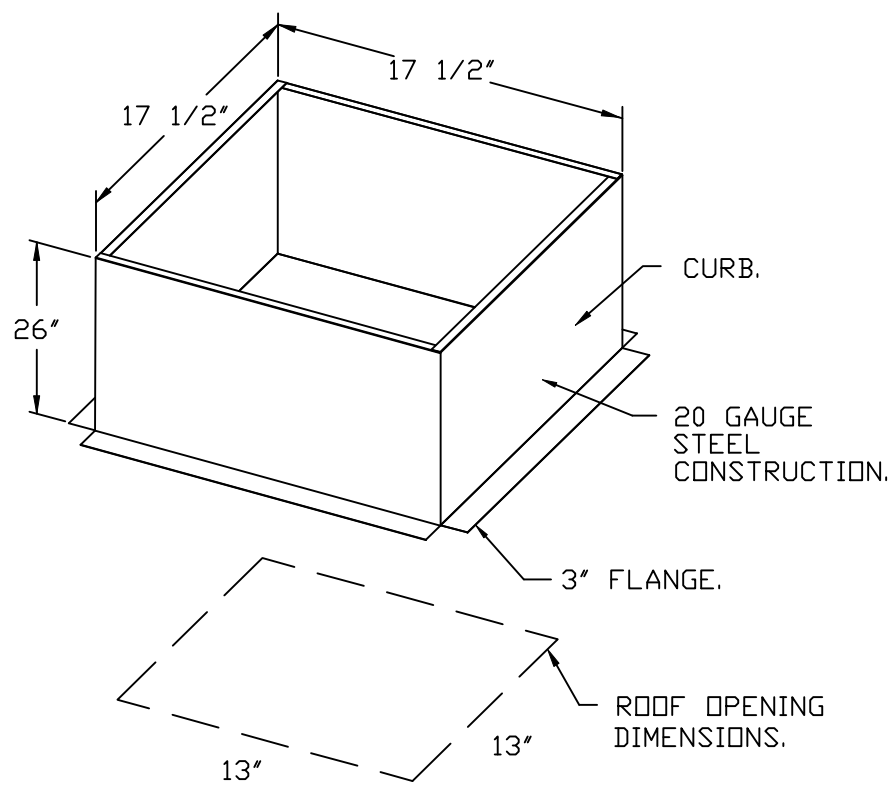
TOP VIEW

**FEATURES:**

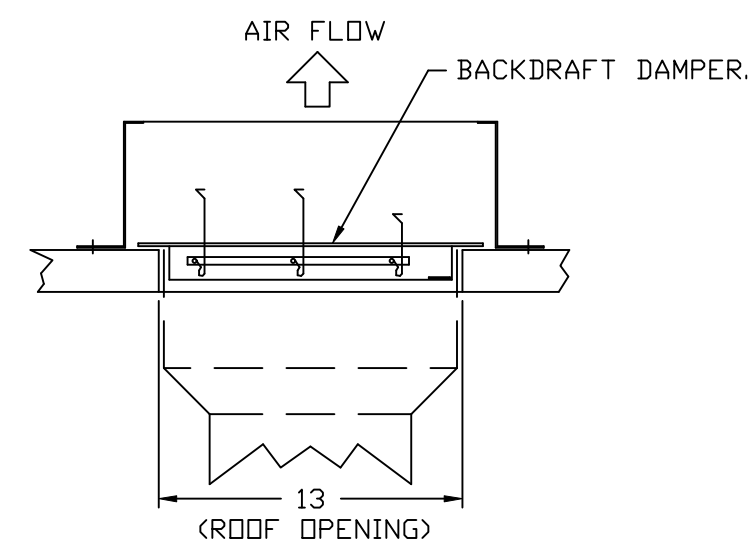
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- UL705.
- SAFETY DISCONNECT.
- STANDARD BIRD SCREEN.
- SPEED CONTROL.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).

**OPTIONS:**

- 1 12-BDD DAMPER.
- ECM WIRING PACKAGE - MANUAL OR 0-10VDC REFERENCE SPEED CONTROL.
- RTC - (TELCO MOTOR), CCW ROTATION.
- 2 YEAR PARTS WARRANTY.

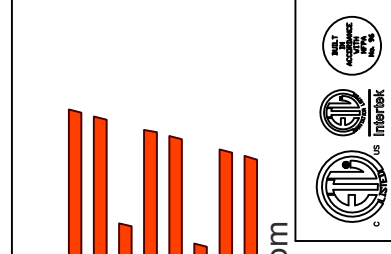


**BACKDRAFT DAMPER INSTALLATION**



**REVISIONS**

| DESCRIPTION | DATE: |
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**CAPTIVE**

**Highwoods Group**

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**DRAWN BY:** JMB-40

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

**MASTER DRAWING**

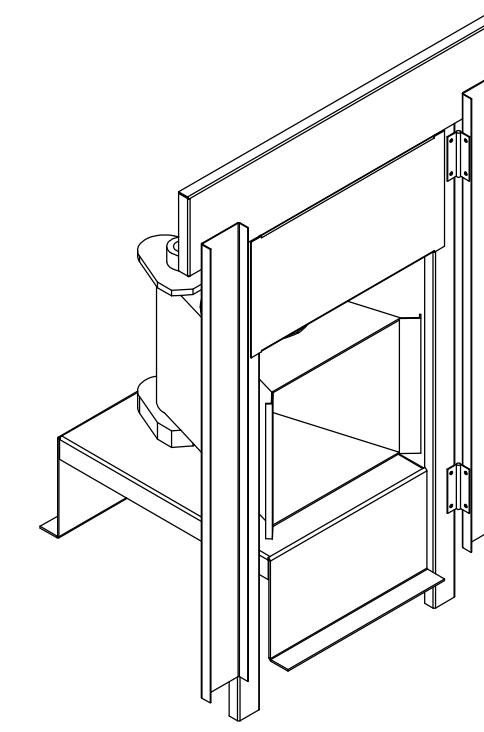
**SHEET NO.**  
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- FAN #3 A1-D250-1SD - HEATER (MAU-1)
1. DIRECT GAS FIRED HEATED MAKE-UP AIR UNIT WITH 15" MIXED FLOW DIRECT DRIVE FAN.
  2. INTAKE HOOD WITH EZ FILTERS.
  3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT.
  4. DOWN DISCHARGE CONSTRUCTION FOR SIZE 1 DIRECT DRIVE AHUS.
  5. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE.
  6. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
  7. SHIP LOOSE GAS STRAINER TO BE INSTALLED UPSTREAM OF UNIT CONNECTION, 3/4" CONNECTION.
  8. MODORIZED BACK DRAFT DAMPER 16" X 16" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LDW LEAKAGE, TFB20S ACTUATOR INCLUDED.
  9. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTIDON MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRE PANEL OR WITH DCV PACKAGE. PROVIDES SEPARATE 120VAC INPUT TO SUPPLY FAN. THIS 120V SIGNAL MUST BE RUN BY ELECTRICIAN FROM DCV TO MUA SWITCH.
  10. HINGED DOUBLE WALL INSULATED DOOR ASSEMBLY (BURNER/BLOWER SECTION).
  11. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.
  12. 2 YEAR PARTS WARRANTY.

\*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT. SUGGESTED STRAIGHT DUCT SIZE IS 14" X 14".

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 30°F. TEMP. RISE = 45°F.  
 BTUS CALCULATED OFF ACTUAL AIR DENSITY.  
 OUTPUT BTUS AT ALTITUDE OF 0.0 FT. = 62498.  
 INPUT BTUS AT ALTITUDE OF 0.0 FT. = 67932.  
 OUTPUT BTUS AT ALTITUDE OF 370 FT. = 61667.  
 INPUT BTUS AT ALTITUDE OF 370 FT. = 67029.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DIRECT FIRED PROFILE PLATE SPECIFICATIONS:

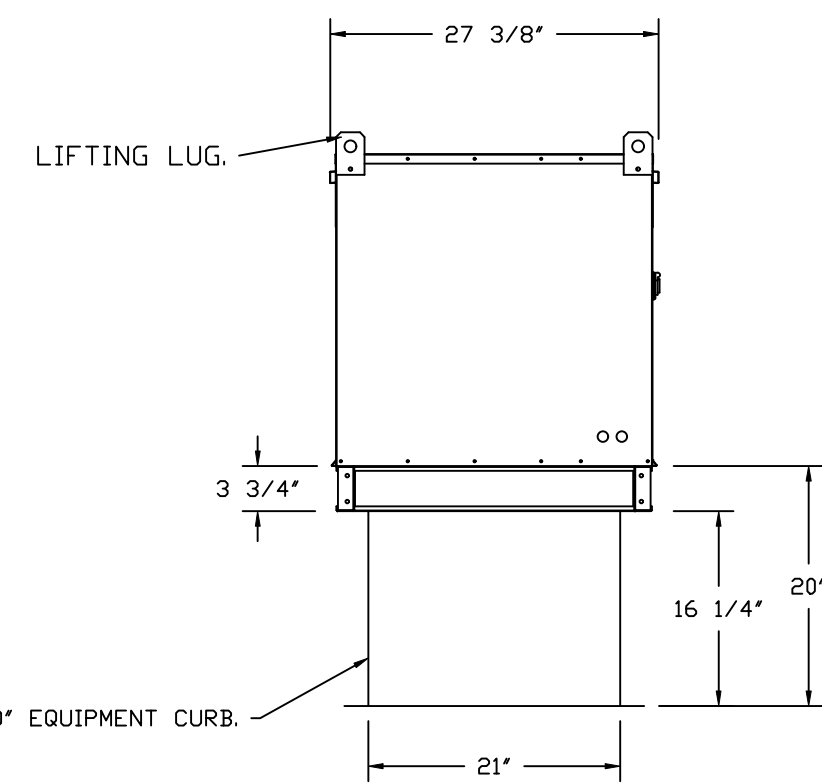
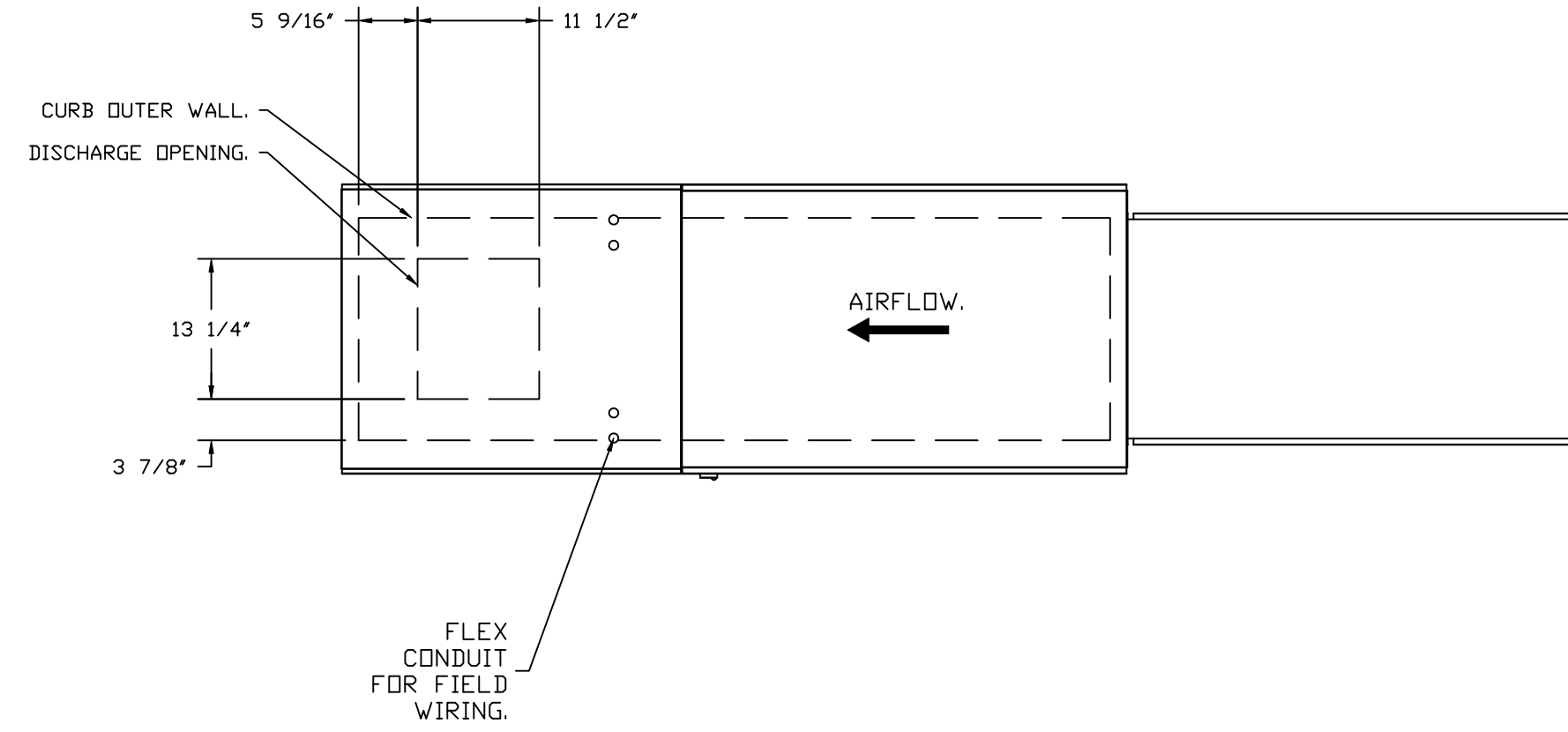
**DESCRIPTION:**  
 DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO. US6629523B2), SELF-ADJUSTING PROFILE PLATES DESIGNED TO ENSURE PROPER AIR VELOCITY AND PRESSURE DROP ACROSS THE BURNER. PROFILE PLATES SHALL ALLOW BURNERS TO ACHIEVE CLEAN COMBUSTION BY LIMITING BY-PRODUCT LEVELS TO A MAXIMUM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

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

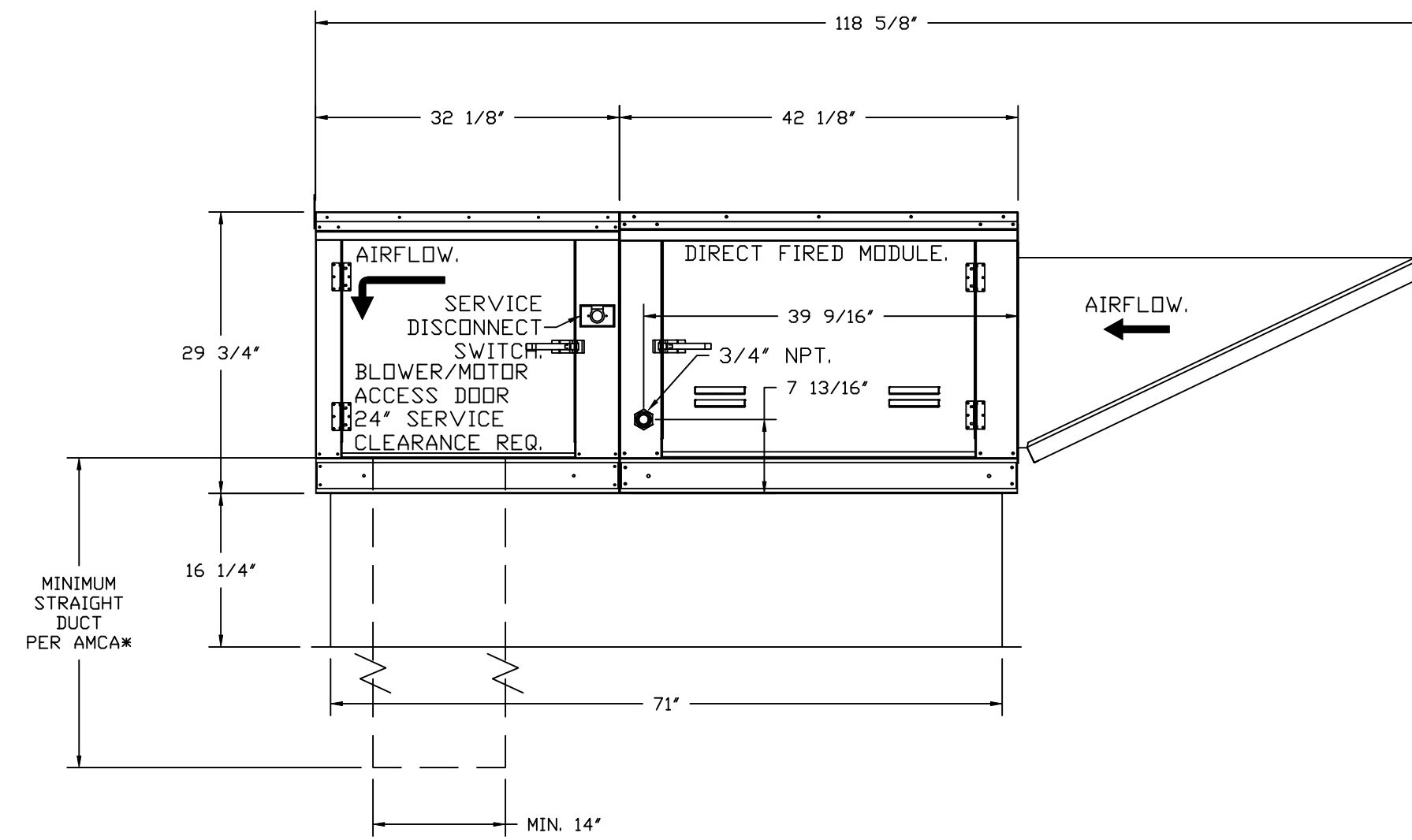
**CERTIFICATIONS:**  
 ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNIT'S ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 3.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.18 (RECIRCULATING DF HEATERS).

GENERAL CONSTRUCTION:

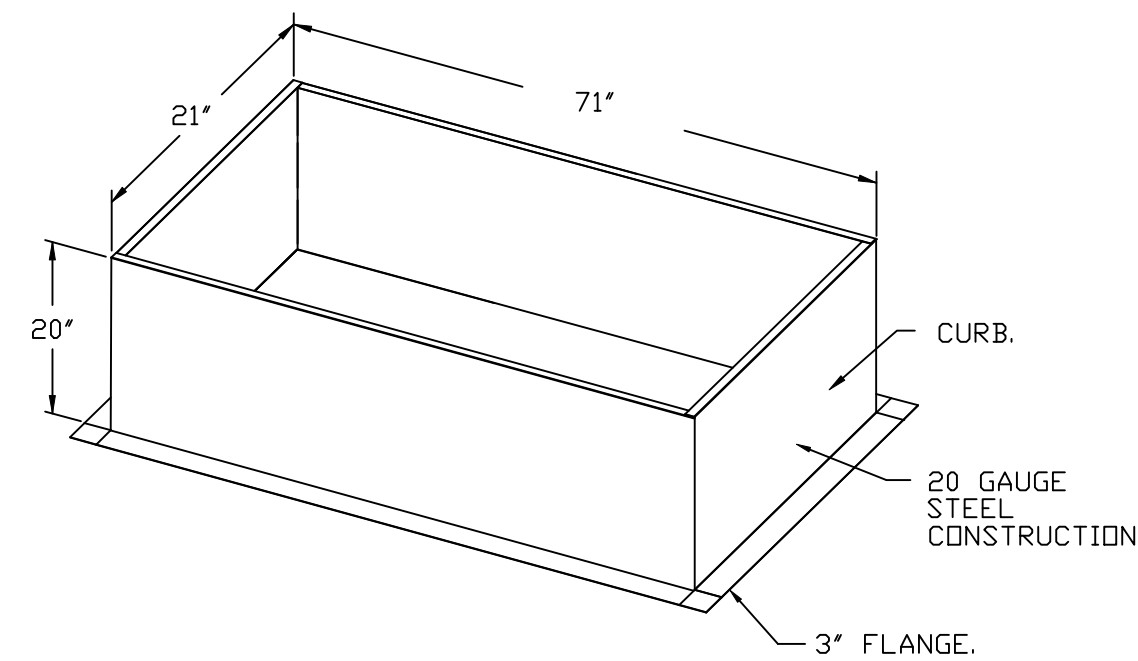
- PROFILE PLATES SHALL BE FORMED FROM G90 GALVANIZED STEEL.
- PROFILE PLATES SHALL VARY IN SIZE PER UNIT.
- PROFILE PLATES SHALL BE MOUNTED ALONG THE SAME PLANE AS THE DISCHARGE OF THE BURNER.
- DESIGN SHALL INCORPORATE PROPERLY TORQUED, PERMANENTLY MOUNTED SPRING HINGES.
- SPRING HINGES SHALL BE MADE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



ROOF OPENING 2" SMALLER THAN CURB DIMENSION.



OPTIONS:  
 - FULL BOTTOM CORNERS.



REVISIONS

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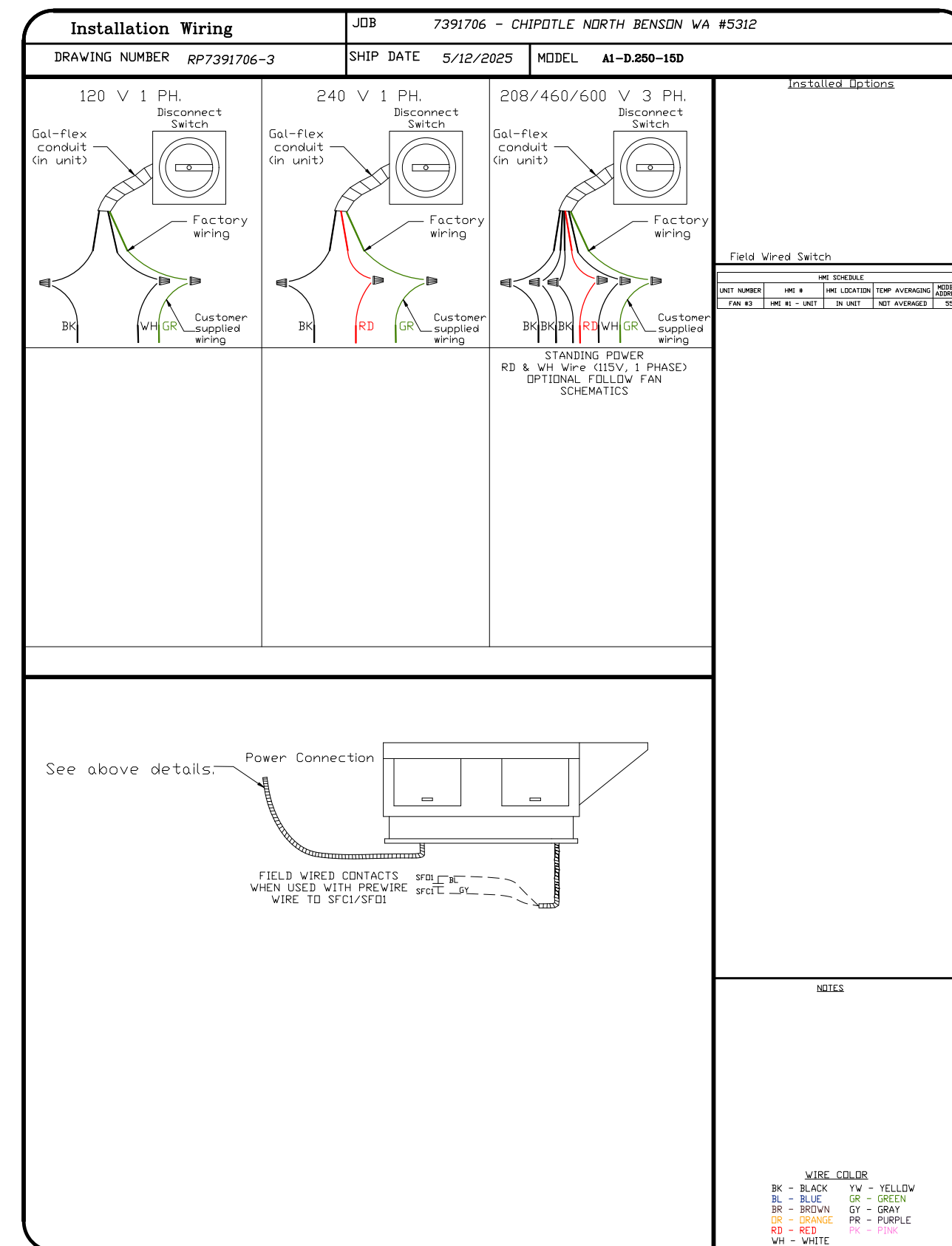
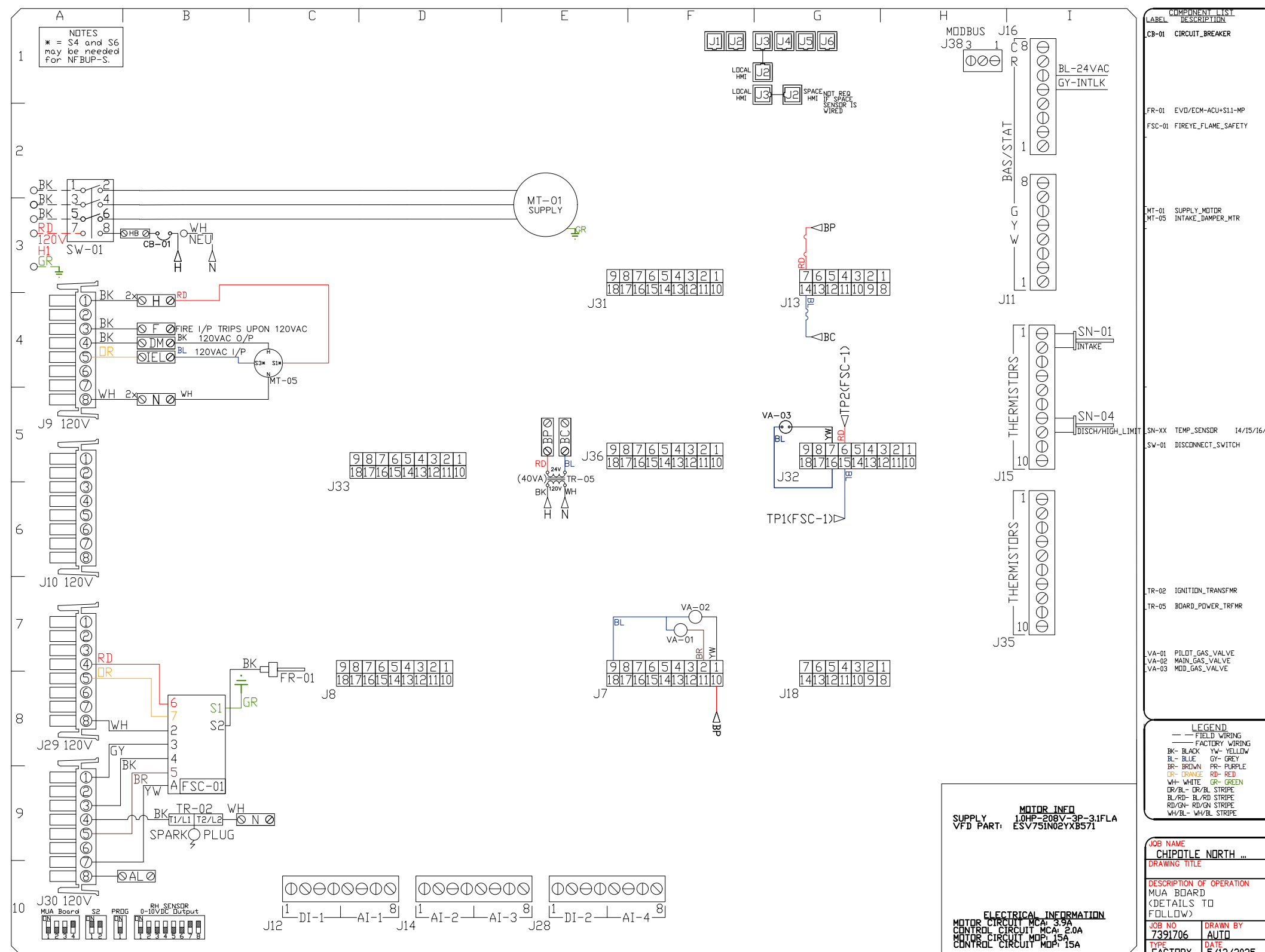
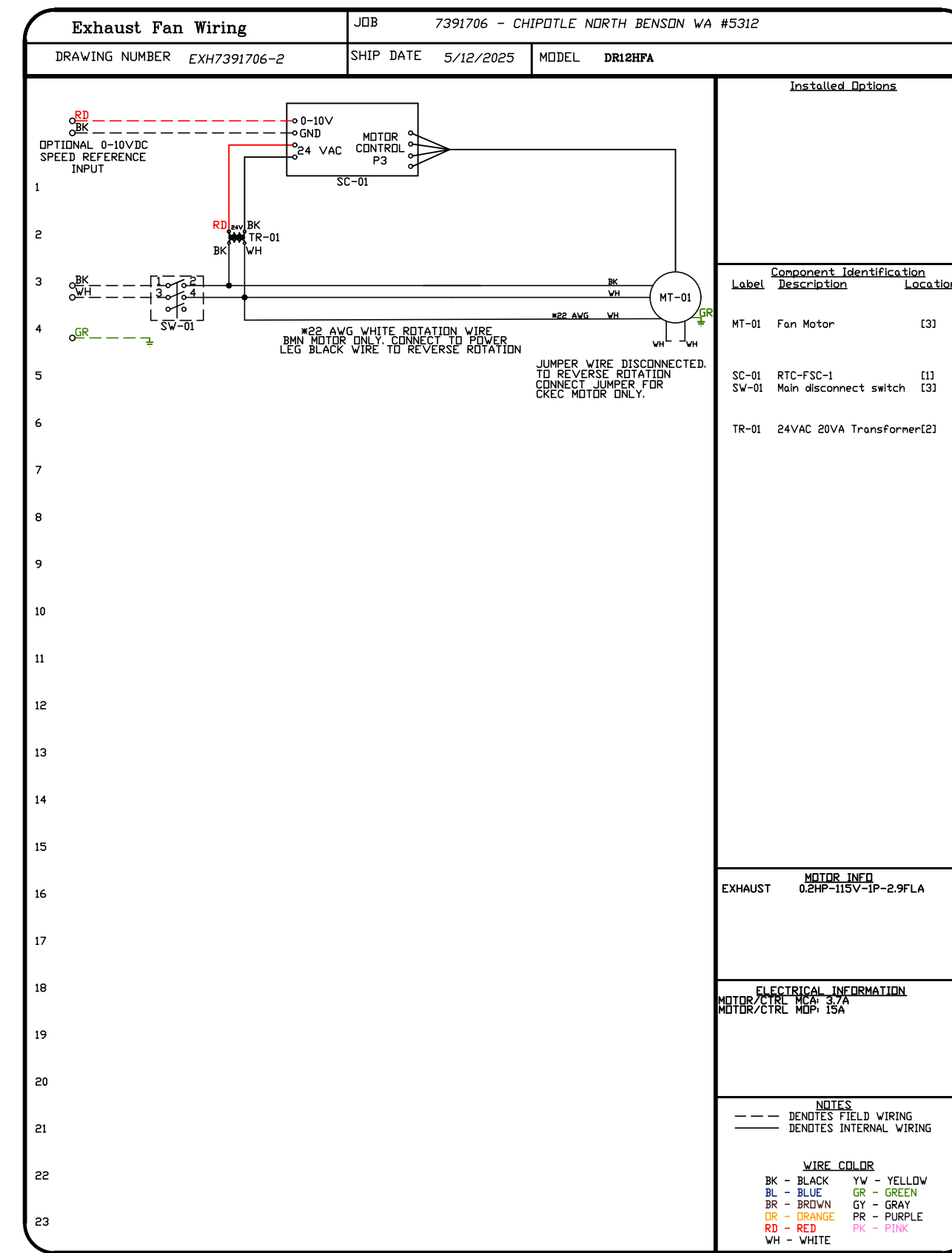
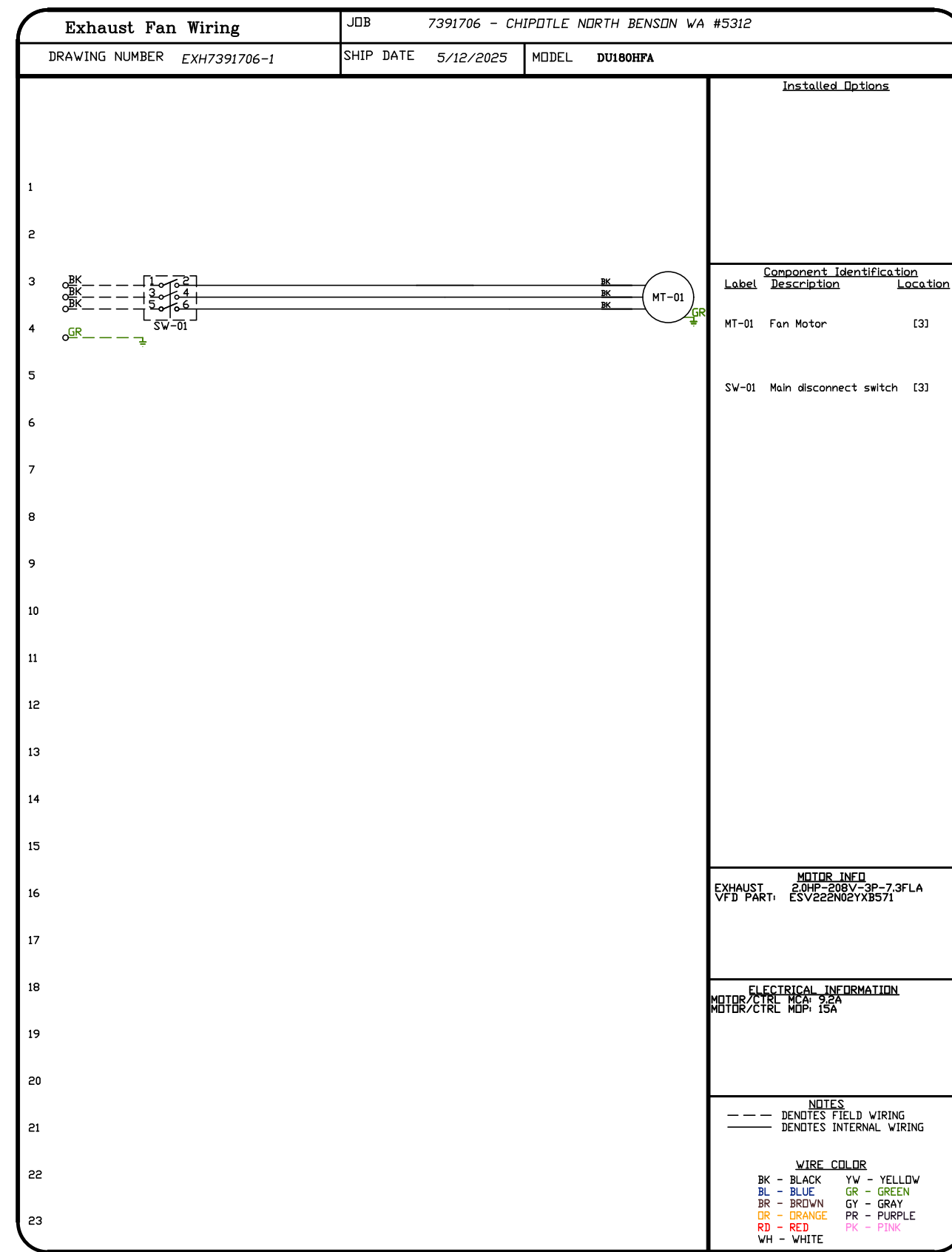
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SCALE:  
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SHEET NO.  
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**REVISIONS**

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