

NOTE "1": PROVIDE 12X10 (120 SQ.IN.) OF WALL RETURN GRILLE 24" ABOVE COOLER / FREEZER WALL (both sides of wall)

HVAC PLAN
SCALE 1/4" = 1'-0"

REFER TO SHEET P-1 FOR HOOD FIRE SUPPRESSION SYSTEM

SPECIFICATIONS (MECHANICAL)
GENERAL

A. FURNISH ALL LABOR, MATERIAL, TOOLS, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM. INCLUDE ANY LABOR AND MATERIAL NOT SPECIFICALLY MENTIONED, BUT NECESSARY TO PROVIDE A COMPLETE AND OPERATING SYSTEM. ALL WORK SHALL BE INSTALLED IN A PROFESSIONAL MANNER AND SHALL MEET ALL THE REQUIREMENTS OF THE STATE BUILDING CODE, CITY BUILDING CODE, SAFETY AND HEALTH CODES, NFPA, MECHANICAL CODES AND ALL OTHER APPLICABLE CODES AND REGULATIONS.

B. THE WORK INCLUDED IN THE CONTRACT SHALL CONSIST OF FURNISHING, INSTALLING, LASTING AND GUARANTEEING OF THE FOLLOWING WORK:

1. LOW PRESSURE DUCT WORK AND INSULATION.
2. HOT AND COLD WATER PIPING AND INSULATION.
3. SANITARY PIPING.
4. WATER HEATERS.
5. AIR DEVICES/ ACCESSORIES.
6. POWER VENTILATORS.
7. HVAC UNITS.
8. TESTS, ADJUSTMENTS AND BALANCING OF ALL SYSTEMS.

HVAC UNIT
HVAC UNITS SHALL BE FACTORY ASSEMBLED AND TESTED, CONSISTING OF: BLOWER, EVAPORATOR COIL, ECONOMIZER, REFRIGERANT AND TEMPERATURE CONTROL, FILTERS AND DAMPERS. CAPACITY AS INDICATED ON SCHEDULE.

HVAC UNITS SHALL BEAR "UL" LABEL. UNIT SHALL COMPLY WITH AGA SAFETY STD. AND ASHRAE 15 "SAFETY CODE FOR MECHANICAL REFRIGERATION".

1. INSTALL UNIT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS PLUMB AND LEVEL FIRMLY ANCHORED IN INDICATED LOCATION.
2. ACCEPTABLE MANUFACTURERS: TRANE, LENNOX, CARRIER OR EQUAL.

POWER VENTILATORS
FURNISH AND INSTALL CENTRIFUGAL AND CABINET EXHAUST FAN THAT IS FACTORY FABRICATED AND ASSEMBLED WITH CAPACITY AS SCHEDULED. PROVIDE HANGING VIBRATION ISOLATORS AND NECESSARY ACCESSORIES. COORDINATE LOCATION AND DIMENSIONS. PROVIDE WALL LOUVER WHERE APPLICABLE.

1. PROVIDE THE FOLLOWING ACCESSORIES: DISCONNECT SWITCH, BIRD SCREEN AND BACK DRAFT DAMPER MOUNTED IN CURB BASE, FACTORY SET TO CLOSE WHEN FAN STOPS.
2. FANS SHALL COMPLY WITH "UL" 705 "POWER VENTILATORS" AND SHALL BE LISTED AND LABELED. MOTOR AND ELECTRICAL ACCESSORIES SHALL COMPLY WITH NEMA STANDARDS AND "NFPA 70" NATIONAL ELECTRICAL CODE.
3. ACCEPTABLE MANUFACTURERS: COOK, GREENHECK AND ACME.

SHEET METAL AND ACCESSORIES

FURNISH AND INSTALL GALVANIZED DUCTWORK AND ACCESSORIES AS INDICATED ON DRAWING.

ALL SHEET METAL WORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE "DUCT MANUAL AND SHEET METAL CONSTRUCTION FOR VENTILATING AND AIR CONDITIONING SYSTEM" PUBLISHED BY "SMACNA". DUCTS SHALL BE SECURELY SUPPORTED AND ANCHORED TO THE BUILDING CONSTRUCTION WITH DOUBLE-STRAP HANGERS NOT EXCEEDING FOUR (4) FEET SPACING. GAGES FOR ROUND AND RECTANGULAR LOW PRESSURE SHALL BE PER SMACNA 0-2 INCHES STATIC PRESSURE CLASS

FURNISH AND INSTALL FLEXIBLE ROUND DUCTS TO AIR DEVICES GENFLEX TYPE SLR FAN GENFLEX MODEL #SM-20E CONICAL FITTING AT NEW RUN OUTS FROM MAIN. SECURE ALL FLEXIBLE DUCT CONNECTIONS WITH PANDUIT ADJUSTABLE DIAMETER RYLON CLAMPS.

FURNISH AND INSTALL ALL AIR DEVICES (DIFFUSERS, GRILLES) AS SCHEDULED. ACCEPTABLE MANUFACTURERS: TITUS, CRANE AND KRUGER.

INSULATION

GENERAL: PROVIDE PIPE AND DUCT INSULATION AS DESCRIBED BELOW. INCLUDE ALL ADHESIVE, SEALERS, JACKETS ETC., FOR A COMPLETE INSTALLATION. EXPOSED ROUND DUCTWORK IS NOT TO BE INSULATED.

WATER PIPING: GLASS FIBER COVERING 0.26K FACTOR @ 75 F. SINGLE CYLINDRICAL CONSTRUCTION.

SUPPLY DUCTS: FDB-FIBERGLASS DUCT BLANKET, FOIL FACED FIBERGLASS DUCT WRAP BLANKET "UL" LABELED REINFORCED VAPOR BARRIER JACKET, 0.3 K FACTOR AT 75 F.

1. LOW PRESSURE DUCT WORK: 1 1/2 INCH

TEST AND ADJUSTMENTS:

TEST AND ADJUSTMENTS OF ALL SPECIFIED SHALL BE MADE BY THIS CONTRACTOR, INCLUDING THE PAYMENT OF ALL COSTS OF SUCH TESTS. AIR BALANCE REPORT SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL PRIOR TO RELEASE OF FINAL PAYMENT.

BALANCE AIR QUALITIES TO WITHIN 5% AND LOCK VOLUME REGULATORS. AIR BALANCING SHALL COMPLY WITH THE LATEST STANDARDS OF THE ASSOCIATED AIR BALANCE COUNCIL OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU.

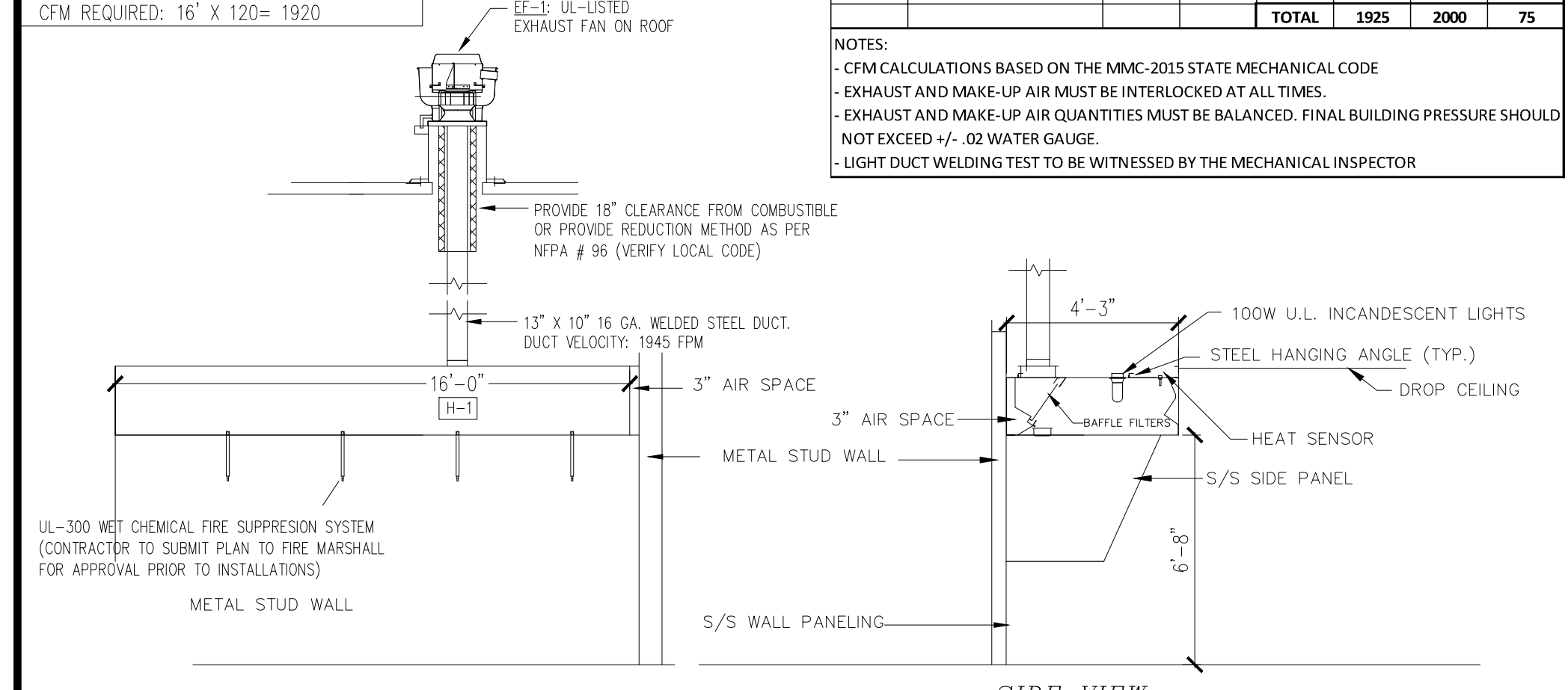
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL REQUIRED CHANGES IN THE SHEAVES, BELTS AND DAMPERS AND ALSO THE ADDITION OF DAMPERS AS REQUIRED FOR CORRECT BALANCE.

ALL AUTOMATIC TEMPERATURE CONTROLS SHALL BE ADJUSTED AND SET FOR PROPER OPERATION.

CFM CALCULATION HOOD #1:
CAPTIVE AIR NO-2 SERIES
TOTAL HOOD LENGTH: 16'-0"
CFM/FOOT AS PER LISTING: 120
CFM REQUIRED: 16' X 120 = 1920

UNIT NO.		AREA		VENTILATION SCHEDULE		HP	CFM	EXHAUST	OFA	PRESSURE
EF-1	HOOD	EXISTING / EAST	5-TON	0.5	0	1925	0	400	400	-1925
	MAKE-UP	PROPOSED	1600 CFM	2.0 HP	1600			1600	1600	
		TOTAL				1925		2000		75

NOTES:
- CFM CALCULATIONS BASED ON THE MMC-2015 STATE MECHANICAL CODE
- EXHAUST AND MAKE-UP AIR MUST BE INTERLOCKED AT ALL TIMES.
- EXHAUST AND MAKE-UP AIR QUANTITIES MUST BE BALANCED. FINAL BUILDING PRESSURE SHOULD NOT EXCEED +/- .02 WATER GAUGE.
- LIGHT DUCT WELDING TEST TO BE WITNESSED BY THE MECHANICAL INSPECTOR



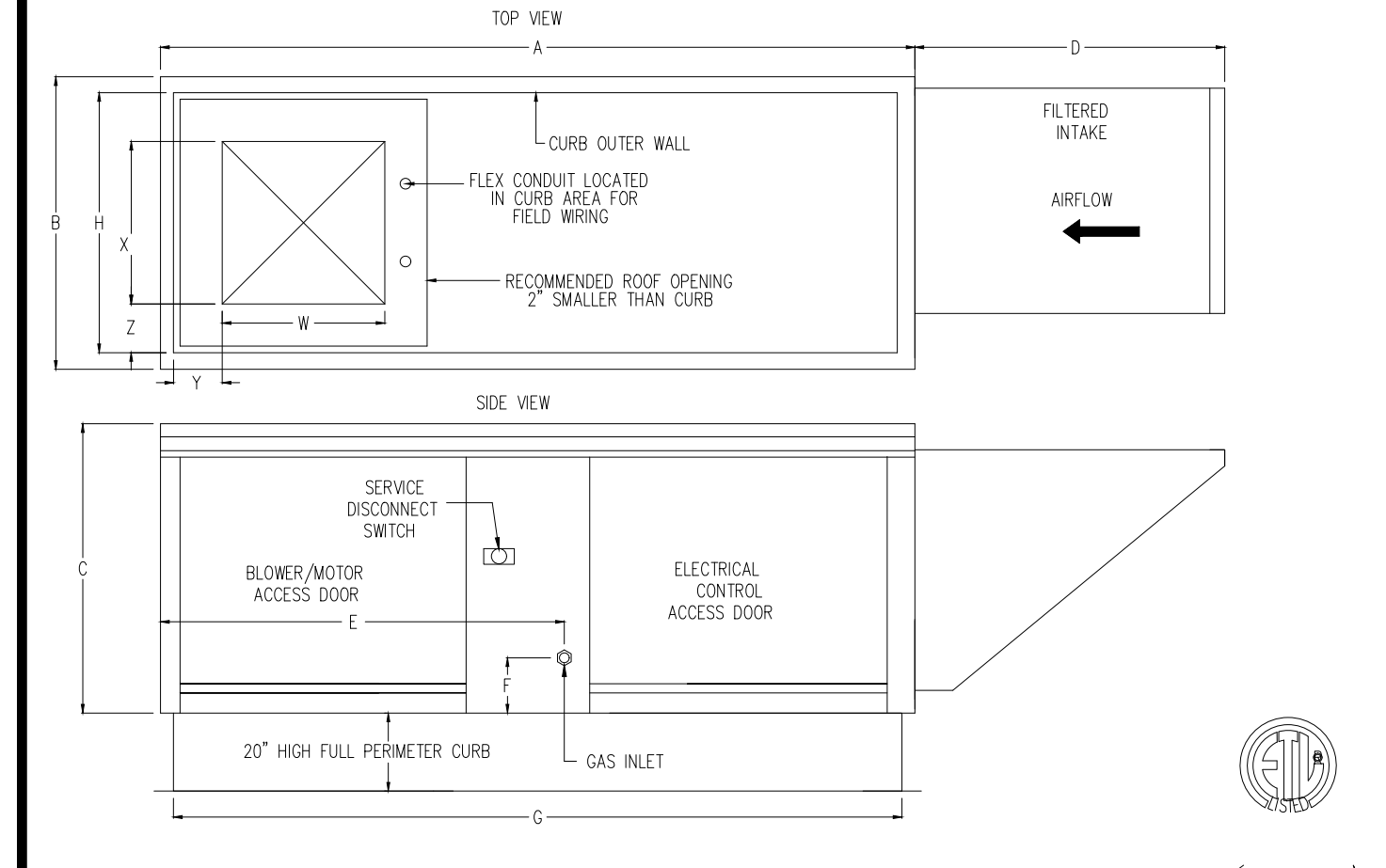
HOOD # 1 TYPE I DETAIL
SCALE: 1/4" = 1'-0"

NOTE:
- VENTILATION CONTRACTOR TO SET ALL CURBS ACCORDING TO JOB SITE REQUIREMENT
- COORDINATE LOCATION OF CURBS WITH ROOFING CONTRACTOR & ALL TRADE.
- EXHAUST FANS & MAKE-UP AIR TO BE INTERLOCKED AT ALL TIMES.

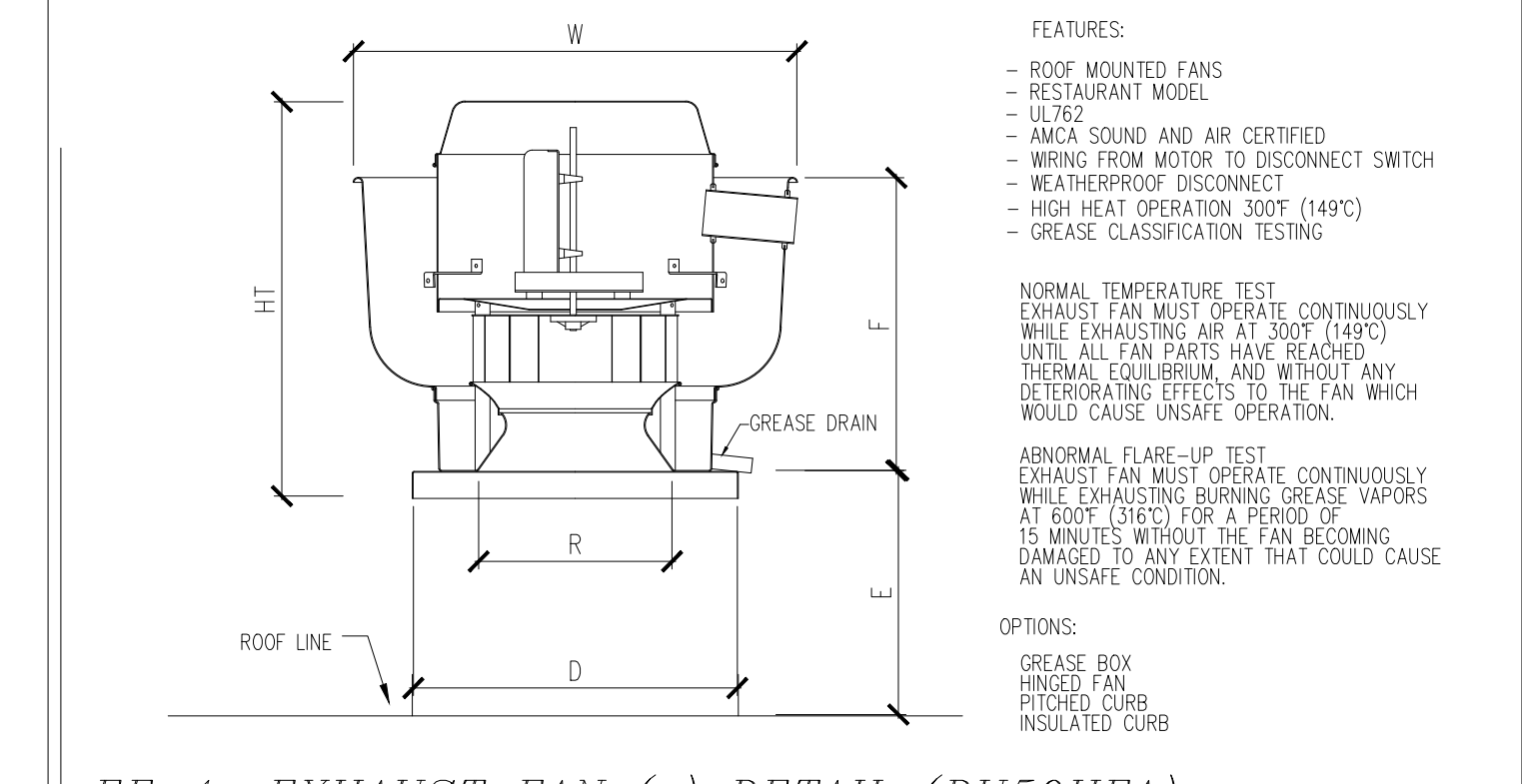
NOTES:
MECHANICAL CONTRACTOR TO INSTALL HEAT ACTIVATED SENSOR/SWITCH IN THE CAPTURE AREA OF HOODS AS PER MMC-2012 TO START HOODS AUTOMATICALLY IN CASE OF TEMPERATURE EXCEEDS 110° F. VERIFY LOCATION WITH LOCAL CODE.

NOTE: PROVIDE MIN. 10'-6" HORIZONTAL OR 3'-0" VERTICAL DISTANCE BETWEEN EXHAUST FANS AND FRESH AIR INTAKES OF ALL ROOF TOP UNITS.

NOTES:
MECHANICAL CONTRACTOR TO DISCUSS THE DETAILS & LOCATIONS OF HOOD/ FANS/ AND MAKE UP AIR UNIT PRIOR TO INSTALLATIONS.



MUA-1: DIRECT FIRED MAKE-UP AIR UNIT DETAIL (TYP.)
SCALE: N.T.S.



EF-1: EXHAUST FAN (s) DETAIL (DU50HFA)
SCALE: N.T.S.

E	QNTY.	MANUFACTURER	MODEL	DIMENSIONS	VOLTS/PHASE	AMP	H.P.	BTU/H
A1	2	PATRIOT 45-50 LB. LP GAS FRYER	PT-F4-NG	16 1/2"W x 32 1/4"D x 33 1/2"H				120,000
A2	1	ATOSA HOT PLATE	ACHP-2	12"W x 27.75"D x 13"H				64,000
A3	1	ATOSA SALAD PREP REFRIGERATOR	MSF8307GR	60"W x 34"D x 46 5/8"H	115/60/1 PH	2.8	1/5	
A4	1	COMSTOCK-CASTLE GRIDDLE	CCHG-48T-1	48"Wx30"Dx15.25"H				120,000
A5	1	SHAWARMA MACHINE	3P	17"W x 17"D x 32.5"H	120/60/1 PH	1		30,000
A6	1	MICHIGAN DIVERSIFIED METALS EQUIPMENT STAND	EQS-1930-HD	19"W x 30"D x 35"H				
A7	1	ATOSA EQUIPMENT STAND REFRIGERATED BASE	MGF8452GR	60 1/2"W x 33"D x 26 3/5"H	115/60/1 PH	2.3	1/7	
A8	1	CHICKEN HEATED DISPLAY CASE						
A9	1	38" VEGETABLE SINK						
A10	1	3 COMPARTMENT SINK		92"Wx24"Dx43 3/4H				
A11	1	HAND SINK		12"Wx12"D				
A12	1	MOP SINK		24"Wx24"D				
A13	1	CONVECTION OVEN						
A14	1	FOOD WARMER						
A15	1	EQUIPMENT TABLE		60"W x 30"D x 34"H				

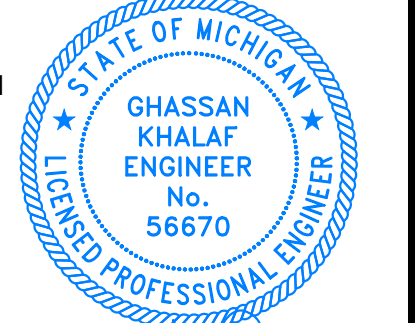
11-15-23	AS BUILT EQUIPMENT
7-20-23	REVIEW COMMENTS
5-14-20	REV. PER 5/8/20 LETTER
9-9-19	PERMITTING
DATE	DESCRIPTION

GK CONSULTING INC.

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I hereby certify that this plan and specification was prepared by me or under my direct supervision and that I am a duly registered Architect or Engineer under the Laws of the State of Michigan by my hand and seal.



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BP FUELING
STATION**
26727 SOUTHFIELD ROAD
LATHRUP VILLAGE, MI

OWNER AND THE CONTRACTORS ARE THE SOLELY RESPONSIBLE FOR THE PERFORMANCE AND THE EXECUTION OF THE PROJECT AND IT IS THEIR RESPONSIBILITY FOR THE SAFETY OF THE BUILDING STRUCTURE AND THE MATERIALS USED TO RENOVATE AND CONSTRUCT THE PROPOSED FACILITY SHOWN ON THE PLANS

Applicable codes:

- 2015 MICHIGAN BUILDING CODE
- 2015 MICHIGAN REHABILITATION CODE
- 2015 INTERNATIONAL FIRE CODE
- 2018 MICHIGAN PLUMBING CODE
- 2015 MICHIGAN MECHANICAL CODE
- 2017 NATIONAL ELECTRIC CODE, WITH PART 8
- ANSI 117.1-2009 ACCESSIBILITY
- 2009 MICHIGAN ENERGY CODE - ASHREA 90.1-2013

SHEET TITLE

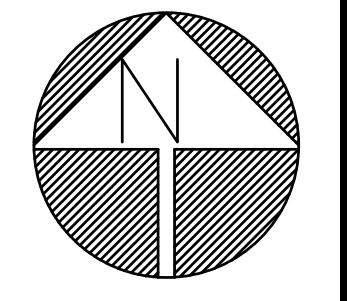
HVAC PLAN

SCALE

AS NOTED

SHEET No.

M-01



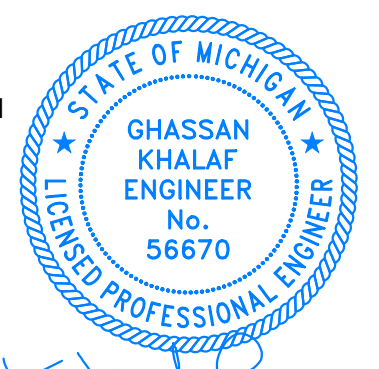
1	7-20-23	REVIEW COMMENTS
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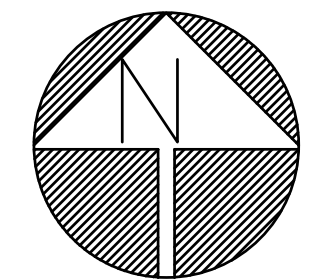
HOOD AND MAKE UP AIR DETAILS

SCALE

AS NOTED

SHEET No.

M-02



1

10FT Hood System
All makeup air hoods are constructed of 18 gauge steel
All joints are welded liquid tight, without seams by an automatic wire fed mig welder
Made in USA
All hoods are UL710 Listed and built in accordance with NFPA 96, NSF specifications.
NEW IPS (Internal Perforated Supply Plenum) is manufactured with High Quality 304 Stainless Perforated material.
Internal Perforated Supply Plenum enhances mixing Supply Air into the primary Effluent air being discharged.
Removable for ease of cleaning.
Grease trough is made to receive grease extracted by filters
Stainless Steel UL listed Grease Baffle Filters
A stainless steel cup attaches to the tray that runs beneath the entire length of the hood
2 Year Warranty

Exhaust Fan (1pc) 28B 2500 CFM, 115/230V
Supply Fan (1pc) SF7 Untempered 2000 CFM, .250 SP, 230V, 60HZ
Mounting Curb Wall / Roof (2pcs)
New 304 Stainless (IPS) Internal Perforated Supply Plenum
Stainless Steel UL listed Grease Baffle Filters
Pre-Wired Light(s)
Stainless Grease Cup(s)
Hanging Brackets



SHORT CYCLE MAKEUP AIR WITH NEW IPS (INTERNAL PERFORATED SUPPLY) TECHNOLOGY



LEARN MORE



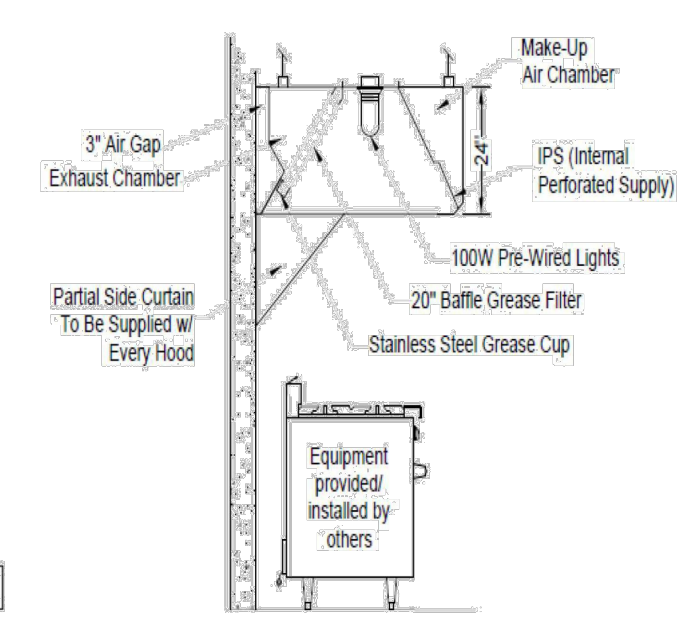
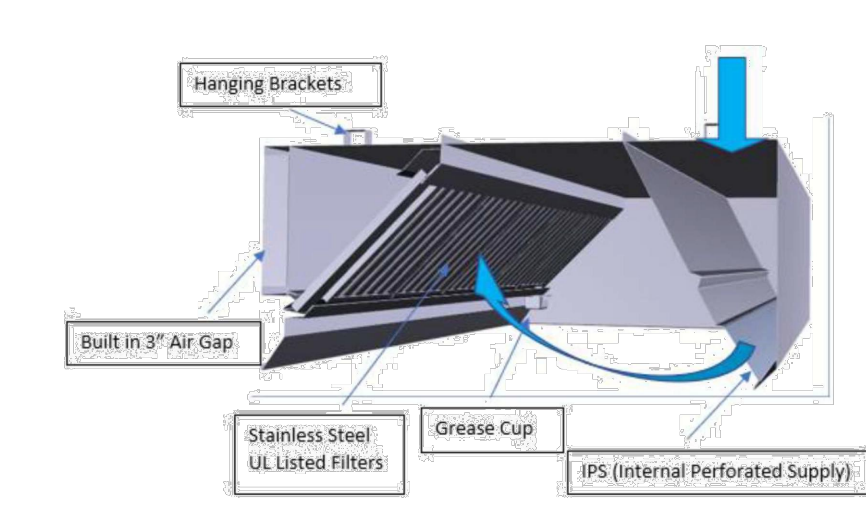
IPS (Internal Perforated Supply) slows air to assist in capture and containment

HoodMart's Short Cycle Makeup Air with I.P.S. (Internal Perforated Supply) removes grease laden vapors from the air without causing negative air pressure. This allows using a fresh makeup air fan instead of a costly tempered air unit.

- ❖ I.P.S. (Internal Perforated Supply) takes advantage of the Coanda Effect created inside the hood, further assisting with capture and containment of grease laden vapors.
- ❖ Short Cycle Make Up Air hoods with NEW I.P.S. (Internal Perforated Supply Plenum) slows the air by diffusing air across length of hood for ease of balancing.
- ❖ I.P.S enhances mixing Supply Air into the primary Effluent Air being discharged, reducing exhaust temperature, and increasing hood efficiency.
- ❖ Our UL710 hood design has the Lowest CFM per ft for appliances that operate up to 700-degree (UL or ETL) in the industry.
- ❖ I.P.S. (Internal Perforated Supply) is easily removed for ease of cleaning.
- ❖ First and only UL Listed hood that does not require factory cut duct connections.
- ❖ Allows for flexibility on supply connections when site is less than ideal.



IPS (Internal Perforated Supply) slows air to assist in capture and containment



- Optional Equipment:**
- Exhaust and Supply Fans – UL and ETL
 - Mounting Curbs – Flat or Pitched (Wall Mount – check for availability)
 - Fire Suppression System – Listed UL300 (Ansul or Kidde available)
 - Utility Cabinet – Side Mount to hood made with matching stainless steel
 - Ceiling Enclosure - Stainless Steel to cover from top of hood to ceiling

Hood Dimensions		Max Cooking Surface Temp (°F)	Min Exhaust Air Flow (CFM) per Linear Ft.
Hood Widths	Min 30"	400F	150 CFM
Hood Length	Min 3'-0"	600F	200 CFM
Hood Height	18" or 24"	700F	250 CFM

Low Profile (Sloped) Front Hood (Available) Dimension 6" – 24"

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