



Lawrence H. Finn & Associates, Inc.

55 S. Elm Ave., Suite 220 – Eaton CO 80615
Phone (970) 454-5351 – Fax (970) 454-5391

CERTIFIED TEST, ADJUST, AND BALANCE REPORT

DATE

1/20/21

PROJECT

Hypno-Chic Restaurant
255 Anglers Drive
Steamboat Springs, CO
Final Report

ARCHITECT

None Shown



ENGINEER

Timberlake Engineering
43 Giberson Road
Frisco, CO



CONTRACTOR

Laramie Heating
602 Skyline Road
Laramie, WY



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PROJECT: **Hypno-Chic**

ADDRESS: **255 Anglers Drive
Steamboat Springs, CO**

The data presented in this report is an exact record of the system performance and was obtained in accordance with NEBB Standard Procedures. Any variances from design quantities which exceed NEBB tolerances are noted throughout the report.

The air distribution systems have been tested & balanced and final adjustments have been made in accordance with NEBB “Procedural Standards for Testing, Adjusting & Balancing of Environmental Systems” and the project specifications.

NEBB TAB FIRM: **Lawrence H. Finn & Associates, Inc.**

REG. NO.: **2389**

CERTIFIED BY: **David C. Reichel**

DATE: **1/20/2021**

The hydronic distribution systems have been tested & balanced and final adjustments have been made in accordance with NEBB “Procedural Standards for Testing, Adjusting & Balancing of Environmental Systems” and the project specifications.

NEBB TAB FIRM: **Lawrence H. Finn & Associates, Inc.**

REG. NO.: **2389**

CERTIFIED BY: **David C. Reichel**

DATE: **1/20/2021**

SUBMITTED & CERTIFIED BY

NEBB TAB FIRM: **Lawrence H. Finn & Associates, Inc.**

TAB SUPERVISOR: **David C. Reichel**

REG. NO.: **2389**

SIGNATURE:

A handwritten signature in black ink, appearing to read "David C. Reichel", written over a horizontal line.

DATE: **1/20/2021**

CERTIFICATION EXPIRATION DATE: **3/31/2022**

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LOCATION: Steamboat Springs , CO

DATE: 1/20/2021
CONTACT: Joe Marshall
AUTHOR: Joe Marshall

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INSTRUMENT CALIBRATION REPORT

Project: Hypno Chic Restaurant

Manufacturer	Model	Serial	Application	Cal. Date
Alnor	HM-675	72032022	Hydronic Press. & Diff. Press.	8/18/2020
Extech	461895	Q477125	Rotation Measurement	1/4/2020
Fluke	336	97110538R	Electrical Measurement	1/6/2020
Evergreen Telemetry	S-PVF-1	2000476A	Pressure Velocity Module	10/5/2020
Evergreen Telemetry	RM-T-1	3000331A	Radio Module	9/28/2020
Evergreen Telemetry	PR-T-1	1400257	Temperature Probe (Air)	11/7/2019
Evergreen Telemetry	MS-T&H-101	2000111	Module Sensor T&H	6/11/2020
Evergreen Telemetry	PR-T-2	2000189	Temperature Probe (Surface)	10/7/2020
Evergreen Telemetry	PR-T-4-6	2000138	Temperature Probe (Insertion)	6/12/2020
Evergreen Telemetry	PR-T-5	2000300	Temperature Sensor	10/8/2020
Evergreen Telemetry	PR-TH-1	2000109	Humidity Sensor	6/9/2020

REMARKS: Not all equipment shown was used on this project.

Make-Up Air Unit

PROJECT: Hypno-Chic Restaurant
LOCATION: Steamboat Springs, CO

DATE: 1/20/2021
CONTACT: Joe Marshall
AUTHOR: Joe Marshall

SYSTEM/UNIT: MAU-01

Tested By: Joe Marshall
Date: 1/20/2021

Unit Data	
Unit Manufacturer	Econ Air
Unit Model Number	EA1-D.250-G10
Unit Serial Number	4410517
Unit Discharge	Vertical Down
MAU-01/Supply Fan	
Fan Type	Forward Curve
Fan Size	9" ID
Fan Class	1
Fan Arrangement	DWDI
Fan Discharge	Vertical/Down
MAU-01/Filter	
Filter Type	Washable
Filter Quantity	3
Filter Size	20x25x2

Starter Data	
MAU-01/Supply Fan	
Installed Thermal	VFD

Test Data	
Total CFM Design	2722 CFM
Total CFM Actual	2636 CFM
Outside Air CFM Design	2722 CFM
Outside Air CFM Actual	2636 CFM
MAU-01/Supply Fan	
Fan RPM Actual	1801 RPM
Motor Volts 1	213 Volts
Motor Volts 2	214 Volts
Motor Volts 3	213 Volts
Motor Amps 1	4.1 Amps
Motor Amps 2	4.1 Amps
Motor Amps 3	4.2 Amps
VFD Speed	60 HZ

Motor Data	
MAU-01/Supply Fan	
Motor Manufacturer	WEG
Motor Frame	56HZ
Motor HP	2 HP
Motor RPM	1740 RPM
Motor Rated Volts	230/460 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	5.38/2.69 Amps
Motor Service Factor	1.15
Nominal Efficiency	86.5 %
Power Factor	81

Sheave Data	
MAU-01/Supply Fan	
Motor Sheave Make	Power Drive
Motor Sheave Model	1VL40
Motor Sheave Diam.	3 7/8 in.
Motor Sheave Bore	7/8 in.
Motor Operating Diameter	3 in.
Fan Sheave Make	Power Drive
Fan Sheave Model	AK32
Fan Sheave Diam.	3 1/8 in.
Fan Sheave Bore	3/4 in.
Number of Belts	1
Belt Size	AX36
Sheave Center Line	14 1/4 in.

Log: MAU-01 1/20/2021 Joe Marshall Total building pressure is 150 CFM positive.

Make-Up Air Unit

PROJECT: Hypno-Chic Restaurant
LOCATION: Steamboat Springs, CO

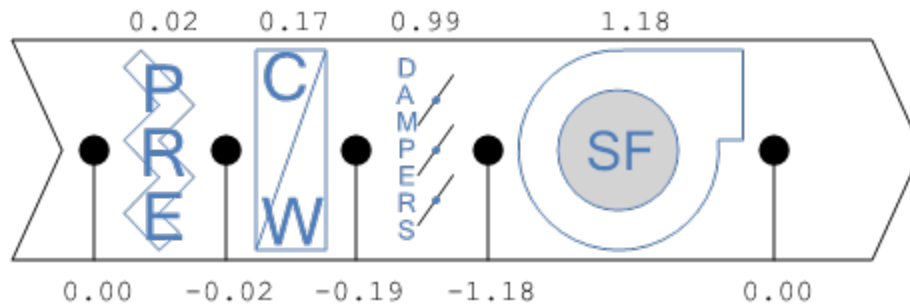
DATE: 1/20/2021
CONTACT: Joe Marshall
AUTHOR: Joe Marshall

SYSTEM/UNIT: MAU-01/SPP-01

Tested By: Joe Marshall
 Date: 1/20/2021

Test Pressures	
Damper SP In	-0.19 in. w.c.
Damper SP Out	-1.18 in. w.c.
EVAP Coil SP In	-0.02 in. w.c.
EVAP Coil SP Out	-0.19 in. w.c.
Pre Filter SP In	0.00 in. w.c.
Pre Filter SP Out	-0.02 in. w.c.
Supply Fan SP In	-1.18 in. w.c.
Supply Fan SP Out	ANA in. w.c.

Static Pressure Profile



Roof Top Unit

PROJECT: Hypno-Chic Restaurant
LOCATION: Steamboat Springs , CO

DATE: 1/20/2021
CONTACT: Joe Marshall
AUTHOR: Joe Marshall

SYSTEM/UNIT: RTU-01

Tested By: Joe Marshall
Date: 1/20/2021

Test Data	
Outside Air CFM Design	800 CFM
Outside Air CFM Actual	814 CFM

SYSTEM/UNIT: RTU-02

Tested By: Joe Marshall
Date: 1/20/2021

Test Data	
Outside Air CFM Design	500 CFM
Outside Air CFM Actual	506 CFM

Fan Unit

PROJECT: Hypno-Chic Restaurant
LOCATION: Steamboat Springs , CO

DATE: 1/20/2021
CONTACT: Joe Marshall
AUTHOR: Joe Marshall

SYSTEM/UNIT: Existing EFs

Tested By: Joe Marshall
 Date: 1/20/2021

Log:	Existing EFs	1/20/2021	Joe Marshall	Total airflow measured at existing EFs is 587 CFM
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SYSTEM/UNIT: KEF-01

Tested By: Joe Marshall
 Date: 1/20/2021

Unit Data	
Fan Manufacturer	Econ Air
Fan Model Number	EA-USBI18DD-RM
Fan Serial Number	4410517
Fan Type	Backward Incline
Fan Arrangement	SWSI
Fan Discharge	Vertical/Up

Starter Data	
Installed Thermal	VFD

Test Data	
Total CFM Design	3466 CFM
Total CFM Actual	3219 CFM
Fan RPM Actual	Direct Drive RPM
Motor Volts T1-T2	213 Volts
Motor Volts T2-T3	214 Volts
Motor Volts T1-T3	213 Volts
Motor Amps 1	7.6 Amps
Motor Amps 2	7.7 Amps
Motor Amps 3	7.6 Amps
SP In Actual	ANA in. wc
SP Out Actual	0.0 in. wc
Total SP Actual	NM in. wc

Motor Data	
Motor Manufacturer	Westinghouse
Motor Frame	182T
Motor HP	3 HP
Motor RPM	1755 RPM
Motor Rated Volts	230/460 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	10.0/5.0 Amps
Motor Service Factor	1.15
Nominal Efficiency	89.5 %
Power Factor	NS

Sheave Data	
Motor Sheave Make	Direct Drive

HVAC SPECIFICATIONS

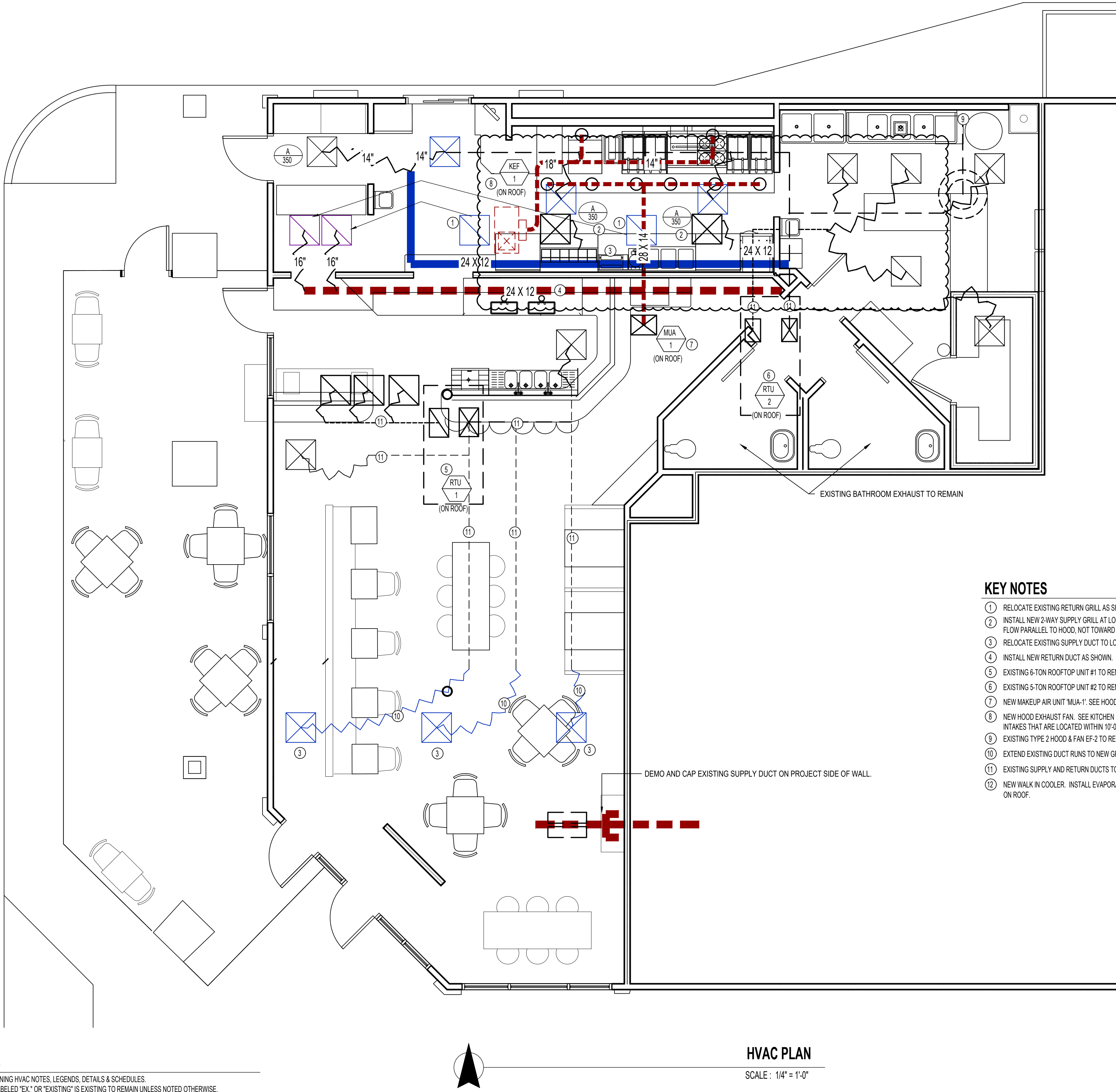
1. INSULATION:
- 1.1. ALL INTERNAL DUCT LINER TO BE 1" AND EQUAL TO "CERTAINTED TOUGHGUARD T" UNLESS NOTED OTHERWISE.
- 1.2. ALL DUCT WRAP SHALL BE 2" WITH VAPOR BARRIER EQUAL TO "CERTAINTED SOFTTOUCH DUCT WRAP WITH FSK JACKET" UNLESS NOTED OTHERWISE.
- 1.3. EXHAUST AIR DUCTS IN UNCONDITIONED SPACES SHALL HAVE DUCT WRAP.
- 1.4. OUTDOOR AIR DUCTS IN CONDITIONED SPACES SHALL HAVE DUCT WRAP.
- 1.5. ALL EXTERIOR DUCTS SHALL HAVE 2" THICK CLOSED CELL FLEXIBLE ELASTOMERIC DUCT WRAP AND 26 GA ALUMINUM JACKET WITH OVERLAPPED SEAMS SEALED WATERTIGHT AND SLOPED TO AID DRAINAGE.
- 1.6. REFRIGERANT PIPING:
- 1.6.1. SPLIT SYSTEMS - SUCTION LINE ONLY TO BE 1/2" ARMAFLEX.
- 1.6.2. VRV / VRF SPLIT SYSTEMS - BOTH SUCTION AND LIQUID LINES TO BE AS FOLLOWS:
- 3/4" ARMAFLEX FOR 3/8" THRU 7/8" PIPES
- 1" ARMAFLEX FOR 1 1/8" THRU 1 5/8" PIPES
- 1.7. CONDENSATE PIPING: 1/2" ARMAFLEX IN UNCONDITIONED SPACES ONLY.
2. ALL DUCTWORK SHALL BE MIN. 26 GA. UP TO 16", 24 GA. UP TO 20", 22 GA. UP TO 24", 20 GA. UP TO 26", AND 18 GA. UP TO 36" OF GALVANIZED STEEL, SEALING CLASS "B", FABRICATED AND INSTALLED IN STRICT CONFORMANCE TO SMACNA SPECIFICATIONS. ALL TEES, ELBOWS, OR CHANGES IN DIRECTIONS SHALL HAVE TURNING VANES.
3. AIR CONDITIONING EQUIPMENT SHALL BE AS SPECIFIED ON DRAWINGS, UNLESS APPROVED OTHERWISE BY THE ENGINEER. EQUIPMENT SHALL BE "COMMERCIAL" RATED IN ALL CASES EXCEPT RESIDENTIAL APPLICATIONS.
4. GRILLES AND REGISTERS SHALL BE PRICE, OR APPROVED EQUAL.
5. ALL TEMPERATURE CONTROLS SHALL BE MIN. 18 GA. COPPER, PLENUM RATED CABLE.
6. DUCTWORK DIMENSIONS ARE INSIDE DIMENSIONS.
7. ALL HORIZONTAL FURNACES MUST BE EQUIPPED WITH GALVANIZED STEEL DRAIN PAN, WITH DRAIN PIPED TO FLOOR DRAIN OR INDIRECT WASTE, IN AN OBVIOUS, VISIBLE LOCATION, PER IPC.
8. ALL SUPPLY BRANCHES TO INDIVIDUAL DIFFUSERS MUST BE SUPPLIED WITH BALANCING DAMPERS, WHERE BRANCH TAKEOFFS ARE INACCESSIBLE (ATTICS, SOFFITS, ETC) BALANCE DAMPER SHALL BE PROVIDED AT FACE OF DIFFUSER, WHERE BRANCH TAKEOFFS ARE ACCESSIBLE (ABOVE DROP CEILING, EXPOSED DUCTS, ETC) BALANCE DAMPER SHALL BE LOCATED AT BRANCH TAKEOFF.
9. ALL SYSTEMS MUST BE FIELD BALANCED TO WITHIN 10% OF THE DESIGN FLOWS INDICATED ON THE DRAWINGS. CERTIFIED AIR BALANCING IS NOT REQUIRED. CONTRACTOR MUST SUBMIT BALANCING REPORT PRIOR TO RECEIVING FINAL PAYMENT.
10. FLEX DUCT (THERMAFLEX M-KE OR EQUAL) IS ALLOWED FOR FINAL CONNECTION FROM STEEL DUCTWORK TO AIR TERMINAL DEVICES ONLY, LENGTHS NOT TO EXCEED 8'-0", AND SUPPORTED AS SHOWN ON HVAC DETAILS SHEET.
11. MINIMUM SPLIT SYSTEM EFFICIENCIES FOR HEATING AND COOLING SHALL BE:
- 11.6. HEATING AFUE = 90%
- 11.7. COOLING SEER = PER LATEST EDITION OF ASHRAE 90.1
12. MINIMUM ROOFTOP UNIT EFFICIENCIES SHALL MEET STANDARDS PER LATEST EDITION OF ASHRAE 90.1.
13. FINAL CONNECTIONS TO AIR HANDLING EQUIPMENT ARE NOT SHOWN. CONTRACTOR TO INCLUDE TRANSITIONS AND FITTINGS AS REQUIRED TO TRANSITION FROM EQUIPMENT DUCT CONNECTION SIZES TO TRUNK LINE SIZES SHOWN ON PLANS.
14. DUCTWORK SHALL NOT BE INSTALLED SUCH THAT IT RESTRICTS ACCESS TO ELECTRICAL JUNCTION BOXES OR DIRECTLY OVER ELECTRICAL PANELS.
15. REFRIGERANT PIPING MUST BE COPPER TYPE ACR OR TYPE L.
16. AIR CONDITIONING EQUIPMENT TO BE INSTALLED LEVEL AND PLUMB. ROOFTOP UNITS AND FANS SHALL BE ON FACTORY ROOF CURBS. ROOFTOP MOUNTED CONDENSING UNITS SHALL BE MOUNTED ON TREATED 4X4S WHICH ARE PLACED ON A WALK MAT COMPATIBLE WITH THE ROOFING SYSTEM, TO BE PURCHASED FROM THE ROOFING CONTRACTOR. ROOFTOP MOUNTED PIPING AND VRV/VRF EQUIPMENT SHALL BE ON A SUPPORT FRAME MOUNTED TO "ROOFTOP BLOC". GROUND-MOUNTED EQUIPMENT TO BE ON 4-INCH THICK, REINFORCED CONCRETE BASE THAT IS 4 INCHES LARGER, ON EACH SIDE, THAN UNIT.
17. ALL EQUIPMENT LOCATED OUTDOORS SHALL BE EQUIPPED WITH FACTORY HAIL GUARDS TO PROTECT EXPOSED COILS.
18. EQUIPMENT LOCATIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR TO CONFIRM THAT EQUIPMENT MOUNTED GREATER THAN 30" ABOVE ADJACENT GRADE, SHALL BE LOCATED MINIMUM 10'-0" FROM EDGE, UNLESS A GUARD OR PARAPET (MIN. 42" TALL) PROTECTS THE EDGE.
19. PROTECT DUCT INTERIORS FROM MOISTURE, DEBRIS, DUST & FOREIGN MATERIALS IN ACCORDANCE WITH SMACNA "DUCT CLEANLINESS FOR NEW CONSTRUCTION GUIDELINES".

HVAC SYMBOL LEGEND

- TYPE OF EQUIPMENT (SEE EQUIPMENT SCHEDULE)
- REFERENCE NUMBER
- TYPE OF DIFFUSER (SEE DIFFUSER SCHEDULE)
- CFM / FACE SIZE
- SUPPLY DIFFUSER
- IF OTHER THAN 4-WAY, SHADING INDICATES NO FLOW ZONE
- RETURN GRILLE
- BALANCE DAMPER
- MOTORIZED DAMPER
- CEILING RADIATION DAMPER
- SUPPLY DUCT
- EXISTING SUPPLY DUCT
- RETURN DUCT
- EXISTING RETURN DUCT
- EXHAUST DUCT (D.V. DESIGNATES DRYER VENT)
- EXISTING EXHAUST DUCT (D.V. DESIGNATES DRYER VENT)
- OUTSIDE AIR DUCT
- FLEX DUCT
- VENT / COMBUSTION AIR
- CONDENSATION LINE
- REFRIGERANT LINE
- TIE INTO EXISTING
- THERMOSTAT
- CO2 DETECTOR

GENERAL NOTES

1. REFER TO MD100 FOR REMAINING HVAC NOTES, LEGENDS, DETAILS & SCHEDULES.
2. DUCTWORK & EQUIPMENT LABELED "EX." OR "EXISTING" IS EXISTING TO REMAIN UNLESS NOTED OTHERWISE.



KEY NOTES

1. RELOCATE EXISTING RETURN GRILL AS SHOWN.
2. INSTALL NEW 2-WAY SUPPLY GRILL AT LOCATION SHOWN. CONNECT TO RELOCATED SUPPLY DUCT AS SHOWN. DIRECT FLOW PARALLEL TO HOOD, NOT TOWARD HOOD.
3. RELOCATE EXISTING SUPPLY DUCT TO LOCATION SHOWN.
4. INSTALL NEW RETURN DUCT AS SHOWN.
5. EXISTING 6-TON ROOFTOP UNIT #1 TO REMAIN. ADJUST OA TO AMOUNTS SHOWN IN TABLE BELOW.
6. EXISTING 5-TON ROOFTOP UNIT #2 TO REMAIN. ADJUST OA TO AMOUNTS SHOWN IN TABLE BELOW.
7. NEW MAKEUP AIR UNIT "MUA-1". SEE HOOD SHEETS.
8. NEW HOOD EXHAUST FAN. SEE KITCHEN HOOD DETAIL AND HOOD SHEETS. LOCATE DISCHARGE 36" ABOVE FRESH AIR INTAKES THAT ARE LOCATED WITHIN 10'-0" HORIZONTALLY.
9. EXISTING TYPE 2 HOOD & FAN EF-2 TO REMAIN.
10. EXTEND EXISTING DUCT RUNS TO NEW GRILL LOCATIONS AS SHOWN.
11. EXISTING SUPPLY AND RETURN DUCTS TO REMAIN
12. NEW WALK IN COOLER. INSTALL EVAPORATOR AND CONDENSING UNIT, PIPING, AND START UP. CONDENSING UNIT TO GO ON ROOF.



HVAC PLAN

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

AIR DEVICES SCHEDULE									
MARK	MFR.*	MODEL*	MOUNTING	SERVICE	THROW	FACE SIZE	MATERIAL	FINISH	REMARKS
A	PRICE	*	CEILING	SUPPLY	8"	24X24	STEEL	WHITE	WITH BUTTERFLY DAMPER
* SELECT MODEL TO MATCH STYLE OF EXISTING GRILLS.									

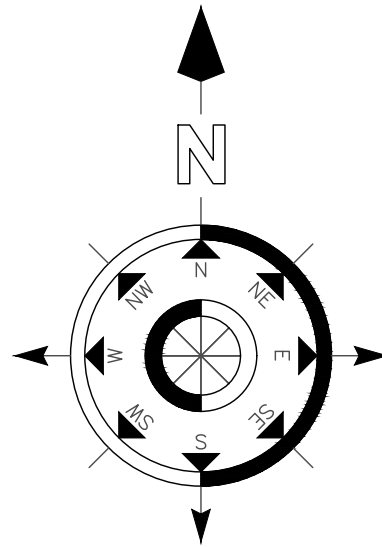
AIR BALANCE CALCULATION (CFM)				
SOURCE	INTAKE	EXHAUST	NET	NET %
KEF-1		3466	-3466	
BR EF		200	-200	
EF-2		400	-400	
MUA	2772		2772	
RTU-1	800		800	
RTU-2	500		500	
TOTAL	4,072	-4,066	6	0%

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DO NOT SCALE THIS DRAWING.
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REVISIONS:	DATE:
ADDED PREP SINK, RELOCATED HAND SINK	3/25/2020
REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

THE PROFESSIONAL ENGINEER'S SEAL ON THIS DRAWING HAS BEEN AFFIXED IN ACCORDANCE WITH THE REQUIREMENTS OF STATE REGULATIONS. IN AFFIXING THIS SEAL THE ENGINEER TAKES RESPONSIBILITY FOR THE WORK SHOWN ON THIS DRAWING ONLY, AND HEREBY DISCLAIMS ANY AND ALL RESPONSIBILITY FOR OTHER PROJECT DRAWINGS NOT DIRECTLY BEARING THIS SEAL.



RCRBD
Record Set
TC
12/01/2020



Mark Timberlake, P.E.
PE-0049319

DEC. 01, 2020



HVAC PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487

DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

M100

Building:
System Tag/Name:
Operating Condition Description:
Units (select from pull-down list)

HYPNO-CHICK RESTAURANT

JP

Inputs for System

Name	Units	System
Floor area served by system	As	sf
Population of area served by system (including diversity)	Ps	P
Design primary supply fan airflow rate	Vpsd	cfm
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf
OA req'd per person for system area (Weighted average)	Rps	cfm/p

System
660
46
2,400
0.18
7.5

Inputs for Potentially Critical Zones

Zone Name	enter name	enter name
Zone Tag	enter tag	enter tag
Space type	Restaurant dining rooms	Office space
Floor Area of zone	Az	sf
Design population of zone	Pz	P
Design total supply to zone (primary plus local recirculated)	Vdzd	cfm
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?		
Local recirc. air % representative of ave system return air	Er	%

Potentially Critical Zones
660
46.2
2,400
0
1.00
1.00

Inputs for Operating Condition Analyzed

Percent of total design airflow rate at conditioned analyzed	Ds	%	100%	100%	100%
Air distribution type at conditioned analyzed			CS	CS	CS
Zone air distribution effectiveness at conditioned analyzed	Ez		1.00	1.00	1.00
Primary air fraction of supply air at conditioned analyzed	Ep				

Ventilation System Efficiency	Ev	1.00
Outdoor air intake required for system	Vot	cfm
Outdoor air per unit floor area	Vot/As	cfm/sf
Outdoor air per person served by system (including diversity)	Vot/Ps	cfm/p
Outdoor air as a % of design primary supply air	Ypd	cfm

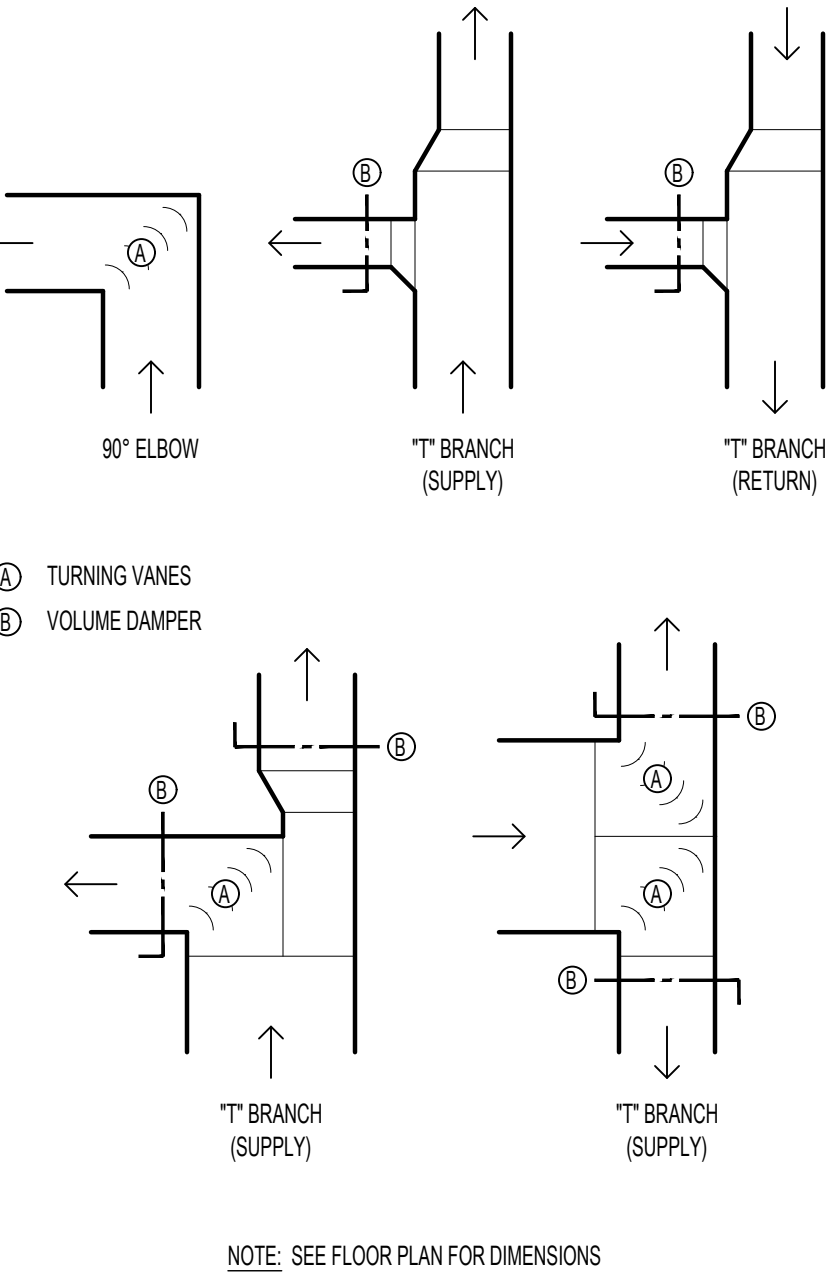
465	19%
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Results

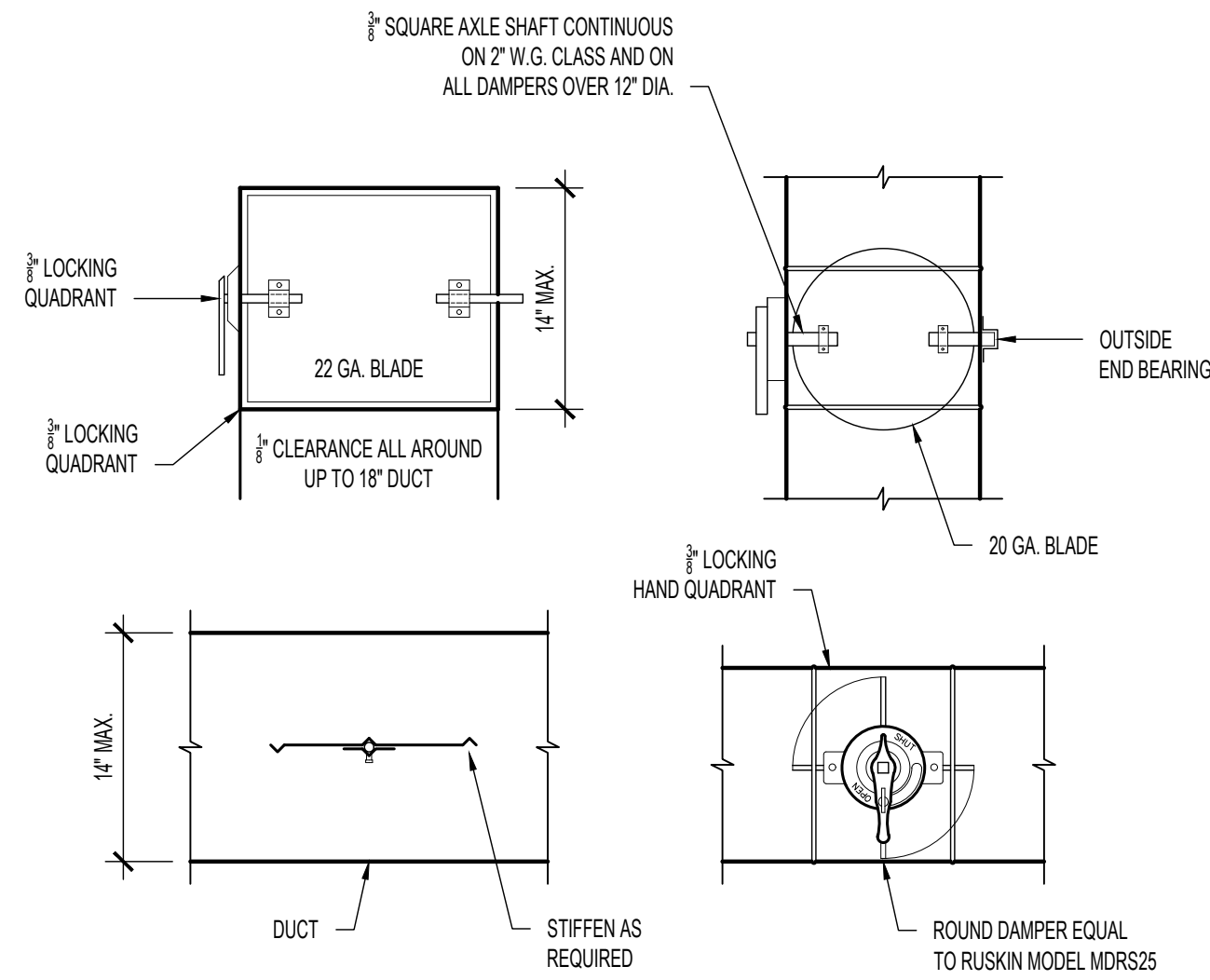
1.00
465
0.71
10.1
19%

100%	100%	100%
CS	CS	CS
1.00	1.00	1.00

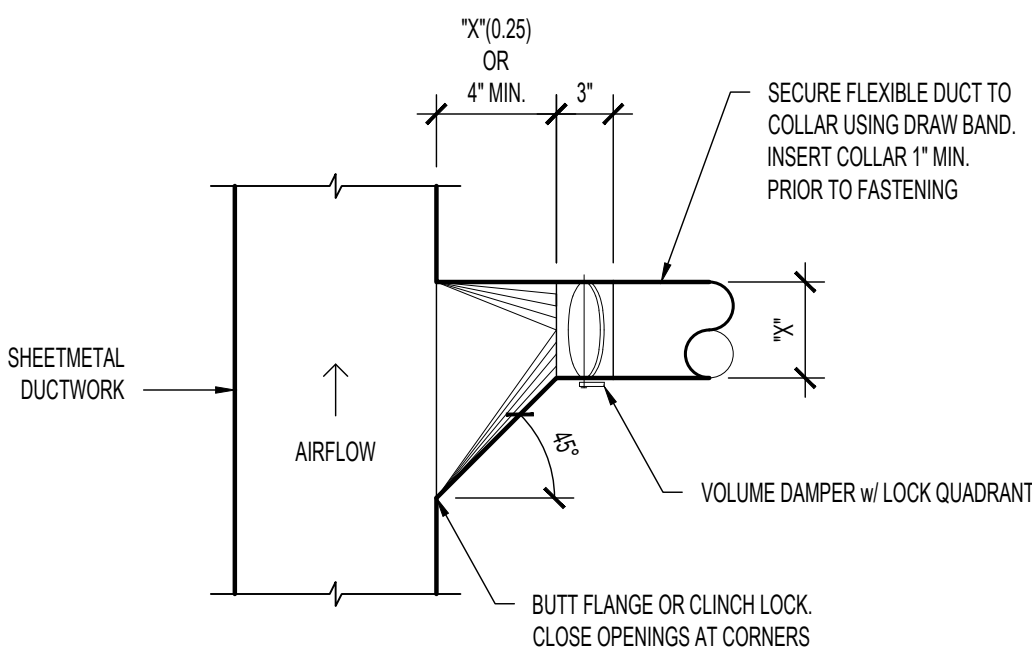
DIFFUSER NECK SIZING SCHEDULE	
MAX CFM	NECK SIZE
90	6" DIA
200	8" DIA
350	10" DIA
500	12" DIA



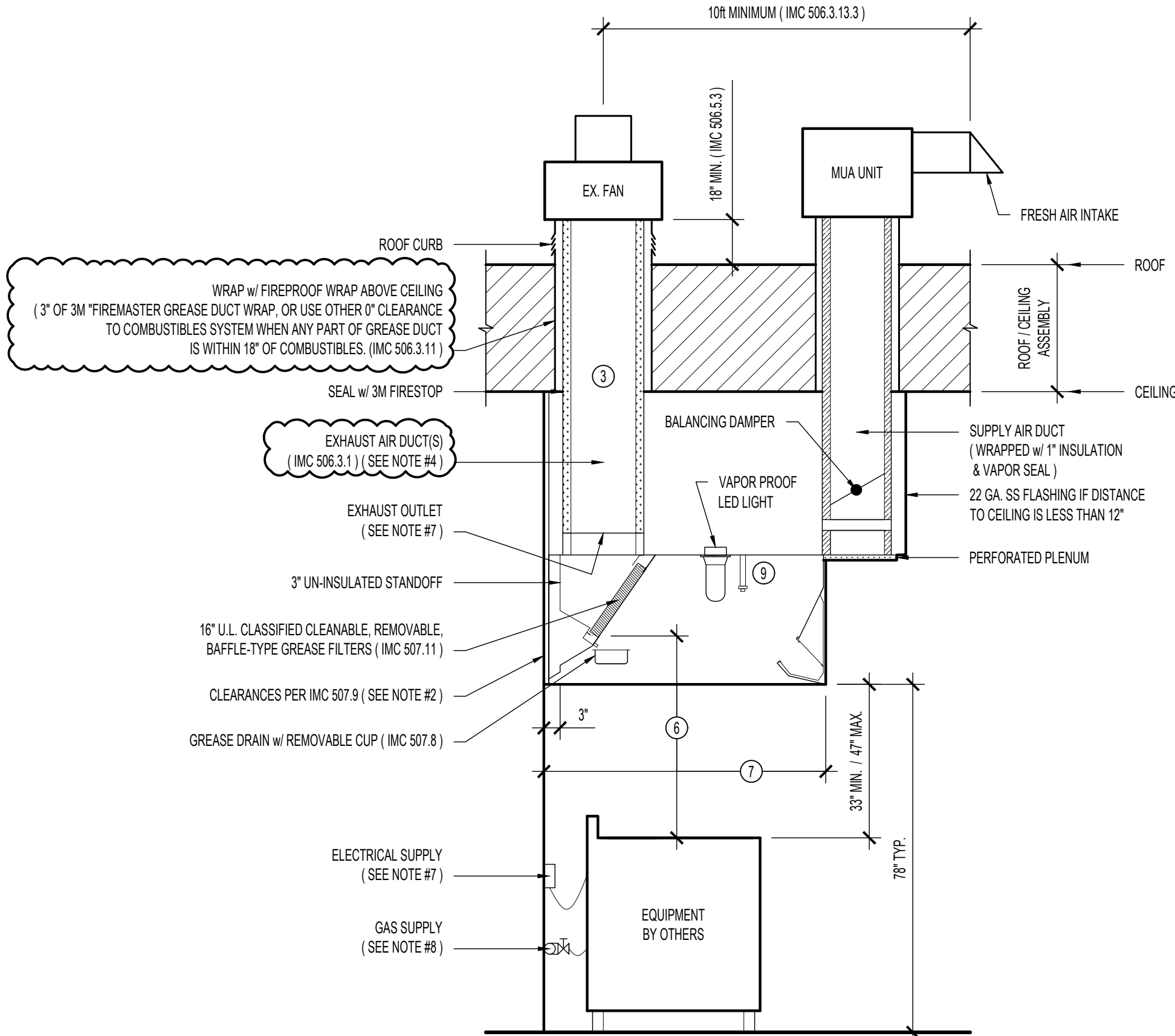
DUCTWORK FITTINGS DETAIL



RECTANGULAR & ROUND VOLUME DAMPERS



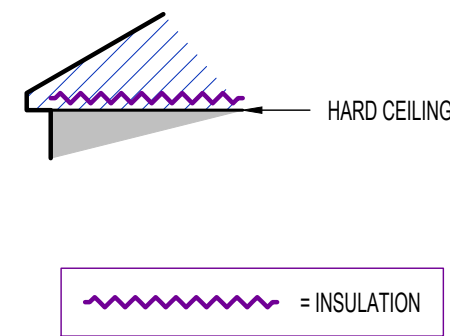
45° TAKEOFF DETAIL



TYPICAL CLASS 1 KITCHEN HOOD DETAIL

NOTES

- 24" MIN. IF NON-EXPOSED OR EXPOSED FLAME BURNERS. 40" MIN IF CHARCOAL OR CHARBROIL TYPE FLAME.
- THE SPECIFIED HOODS ARE RATED & UL LISTED FOR 0" CLEARANCE TO COMBUSTIBLES WHEN SUPPLIED WITH THE FACTORY INSTALLED 3" STANDOFFS.
- MIN. AIR VELOCITY - 500 < FPM < 2500. (IMC 506.3.4). HORIZONTAL PORTIONS OF GREASE DUCT TO SLOPE 2%, AND BE PROVIDED WITH ONE (12 X 12 MIN. SIZE) CLEAN OUT SPACE NOT MORE THAN 20' APART. (IMC 506.3.8&9).
- WELDED 18 GA SS OR 14 GA CARBON STEEL, 18" CLEARANCE TO COMBUSTIBLES, OR 6" CLEARANCE IF COMBUSTIBLES PROTECTED WITH 1-HR RATED MATERIAL (IMC 506.3.11), OR UL LISTED 0" CLEARANCE TO COMBUSTIBLES SYSTEM (IMC 506.7).
- 1 EXHAUST OUTLET PER 12' SECTION OF HOOD. (IMC 507.15).
- HOOD TO EXTEND 6" MIN. PAST COOKING SURFACE ON ALL SIDES. (IMC 507.15).
- ALL ELECTRICAL EQUIPMENT UNDER HOOD SHALL BE FED FROM SHUNT-TRIP CIRCUIT BREAKERS WHICH SHALL BE CONNECTED TO THE HOOD FIRE SUPPRESSION SYSTEM TO SHUT DOWN CIRCUITS ON FIRE INDICATION.
- ALL GAS FIRED EQUIPMENT UNDER HOOD SHALL BE FED FROM A MAIN THAT IS CONTROLLED BY A MASTER GAS SOLENOID VALVE, WHICH IS CONTROLLED BY THE HOOD FIRE SUPPRESSION SYSTEM TO SHUT DOWN THE GAS LINE ON FIRE INDICATION.
- FIRE SUPPRESSION SYSTEM, WITH CONTROLS TO SHUT DOWN GAS AND ELECTRICAL TO EQUIPMENT UNDER HOOD. FIRE SUPPRESSION CONTROL DRAWINGS MUST BE SUBMITTED BY THE FIRE SUPPRESSION CONTRACTOR AND APPROVED BY LOCAL CODE ENFORCEMENT PRIOR TO HOOD INSTALLATION.
- THIS DRAWING SHOWS GENERAL DESIGN REQUIREMENTS ONLY SEALED HOOD SHOP DRAWINGS TO BE APPROVED BY LOCAL CODE ENFORCEMENT PRIOR TO HOOD INSTALLATION.



DUCTWORK INSIDE THERMAL ENVELOPE INSULATION SCHEDULE					DUCTWORK OUTSIDE THERMAL ENVELOPE INSULATION SCHEDULE				
TYPE OF DUCTWORK	INSULATION				TYPE OF DUCTWORK	INSULATION			
	1/2" LINER	1" LINER	1 1/2" WRAP	2" WRAP		1/2" LINER	1" LINER	1 1/2" WRAP	2" WRAP
RECTANGULAR SUPPLY		X			RECTANGULAR SUPPLY		X	X	
RECTANGULAR RETURN		X			RECTANGULAR RETURN		X	X	
RECTANGULAR EXHAUST					RECTANGULAR EXHAUST			X	
RECTANGULAR OUTSIDE AIR				X	RECTANGULAR OUTSIDE AIR				
ROUND SUPPLY			X		ROUND SUPPLY				X
ROUND RETURN					ROUND RETURN				X
ROUND EXHAUST					ROUND EXHAUST			X	
ROUND OUTSIDE AIR				X	ROUND OUTSIDE AIR				
SPIRAL SUPPLY					SPIRAL SUPPLY				X
SPIRAL RETURN					SPIRAL RETURN				X
SPIRAL EXHAUST					SPIRAL EXHAUST			X	
SPIRAL OUTSIDE AIR				X	SPIRAL OUTSIDE AIR				

TYP. DUCT INSULATION DETAIL

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REVISIONS:	DATE:
ADDED PREP SINK, RELOCATED HAND SINK	3/25/2020
REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

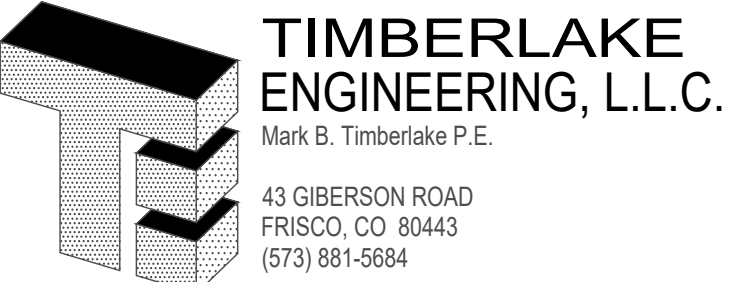
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12/01/2020



Mark Timberlake, P.E.
PE-0049319

DEC. 01, 2020



HVAC DETAILS

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487		
DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

MD100

HOOD INFORMATION – JOB#4410517

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	ROW
1	KH-L	5424 EX-2	ECON-AIR	8' 8"	600 DEG	I	HEAVY	200	1733			4"	14"	1733	1621	-0.431"	430 SS WHERE EXPOSED	LEFT	ALONE
2	KH-R	5424 EX-2	ECON-AIR	8' 8"	600 DEG	I	HEAVY	200	1733			4"	14"	1733	1621	-0.431"	430 SS WHERE EXPOSED	RIGHT	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)					LIGHT(S)				CABINET(S)				FIRE SYSTEM PIPING	HOOD HANGING WEIGHT	
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL			SWITCHES
												TYPE	SIZE	MODEL #			QUANTITY
1	KH-L	SS BAFFLE WITH HANDLES	6	16"	16"	30%	4	L55 SERIES E26	NO	WALL MNT	12"x54"x24"	ANSUL R102	3.0/3.0/3.0	SC-311110FP	1 LIGHT 1 FAN	YES	364 LBS
2	KH-R	SS BAFFLE WITH HANDLES	6	16"	16"	30%	4	L55 SERIES E26	NO							YES	363 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH-L	BACKSPLASH 100.00" HIGH X 216.00" LONG 430 SS VERTICAL.
		LEFT SIDESPLASH 100.00" HIGH X 72.00" LONG 430 SS VERTICAL.
		LEFT END STANDOFF (FINISHED) 1" WIDE 54" LONG INSULATED.
		RISER SENSOR INSTALL 3IN DBL.
		LEFT WALL AS END PANEL.
2	KH-R	RIGHT SIDESPLASH 100.00" HIGH X 72.00" LONG 430 SS VERTICAL.
		RIGHT END STANDOFF (FINISHED) 1" WIDE 54" LONG INSULATED.
		RISER SENSOR INSTALL 3IN DBL.
		RIGHT WALL AS END PANEL.

GREASE DUCT & CHIMNEY SPECIFICATIONS:

PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.

PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".

DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT

' - "

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED

APPROVED WITH NO EXCEPTION TAKEN

REVISE AND RESUBMIT

SIGNATURE

YOUR TITLE

☐

☐

☐

PATENT NUMBERS

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

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REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

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12/01/2020

Mark Timberlake, P.E.
PE-0049319

DEC. 01, 2020

TIMBERLAKE ENGINEERING, L.L.C.

Mark B. Timberlake P.E.

43 GIBERSON ROAD
FRISCO, CO 80443
(573) 881-5684

HOOD PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487

DATE: 01-12-2020

DRAWN BY: MBT

PROJECT NO: 19001

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

SHEET NO.

H100

NOTE: DESIGN AND MODEL NUMBERS ARE BASED ON CAPTIVEAIRE AS MANUFACTURER.

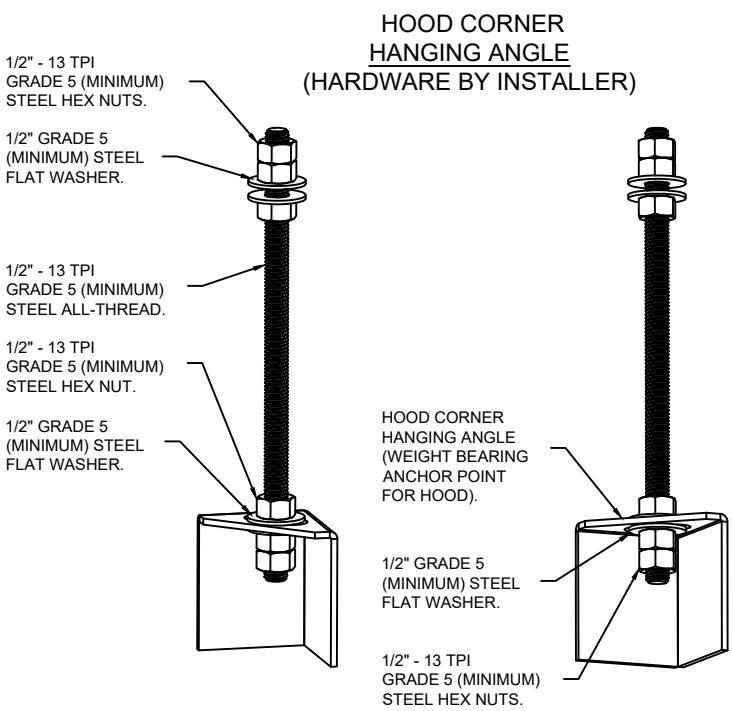
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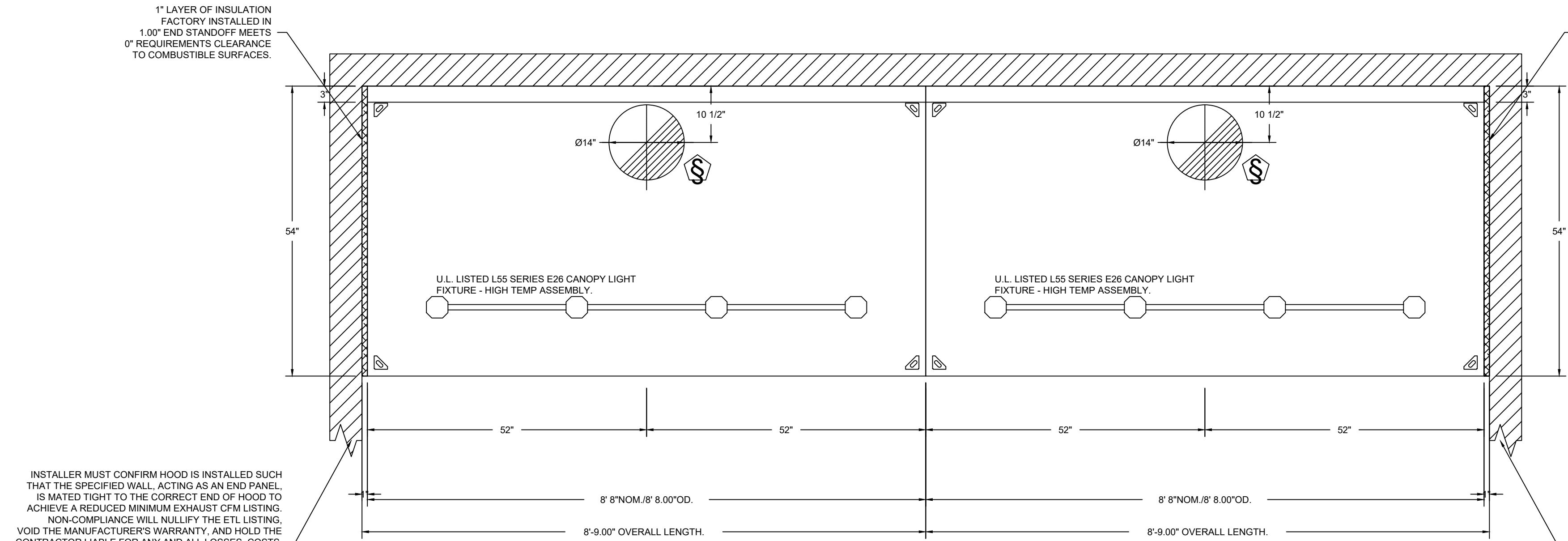
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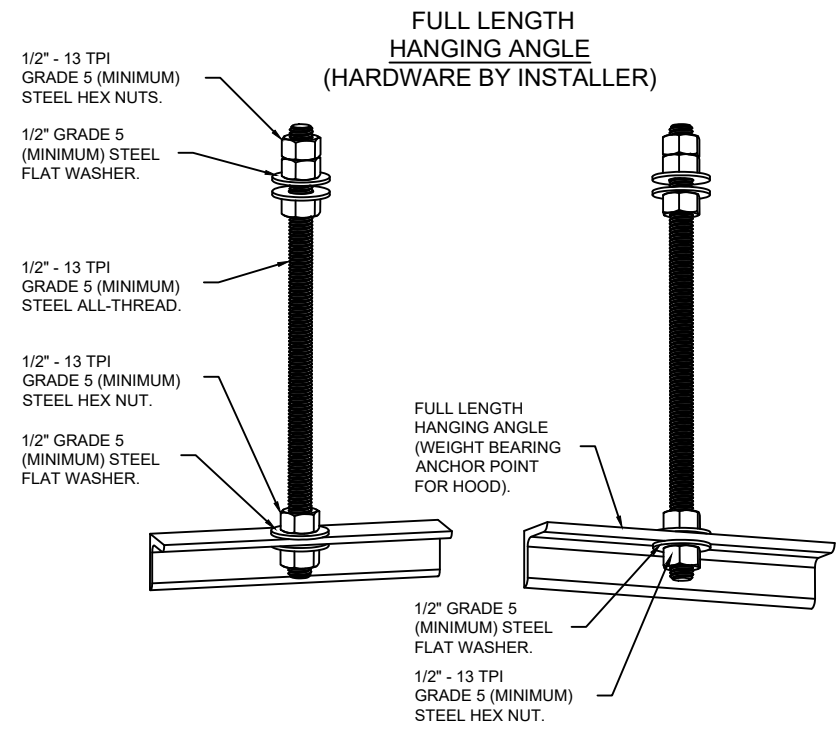
ASSEMBLY INSTRUCTIONS

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 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.



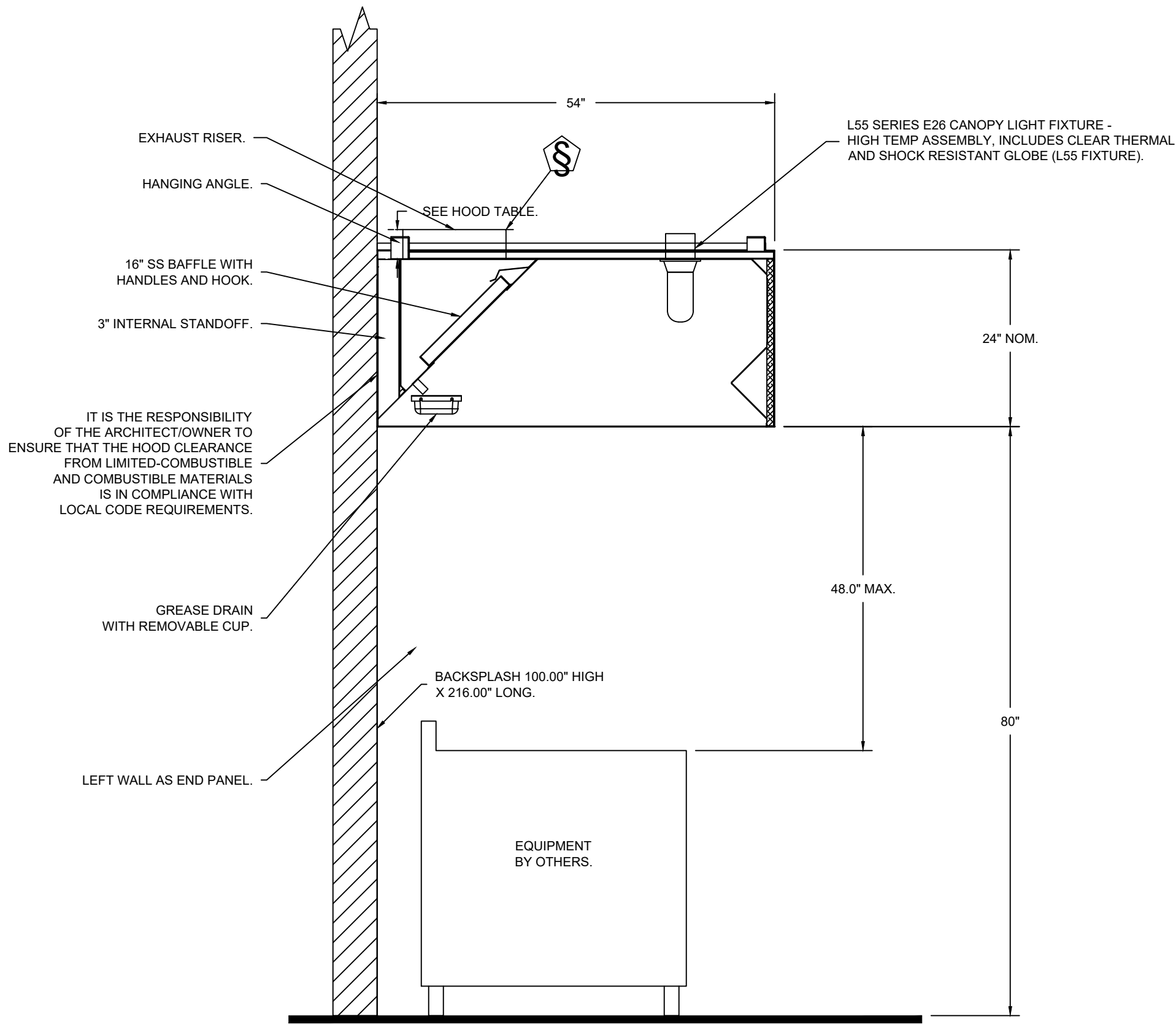
PLAN VIEW - HOOD #1 (KH-L)
8' 8.00" LONG 5424EX-2

PLAN VIEW - HOOD #2 (KH-R)
8' 8.00" LONG 5424EX-2

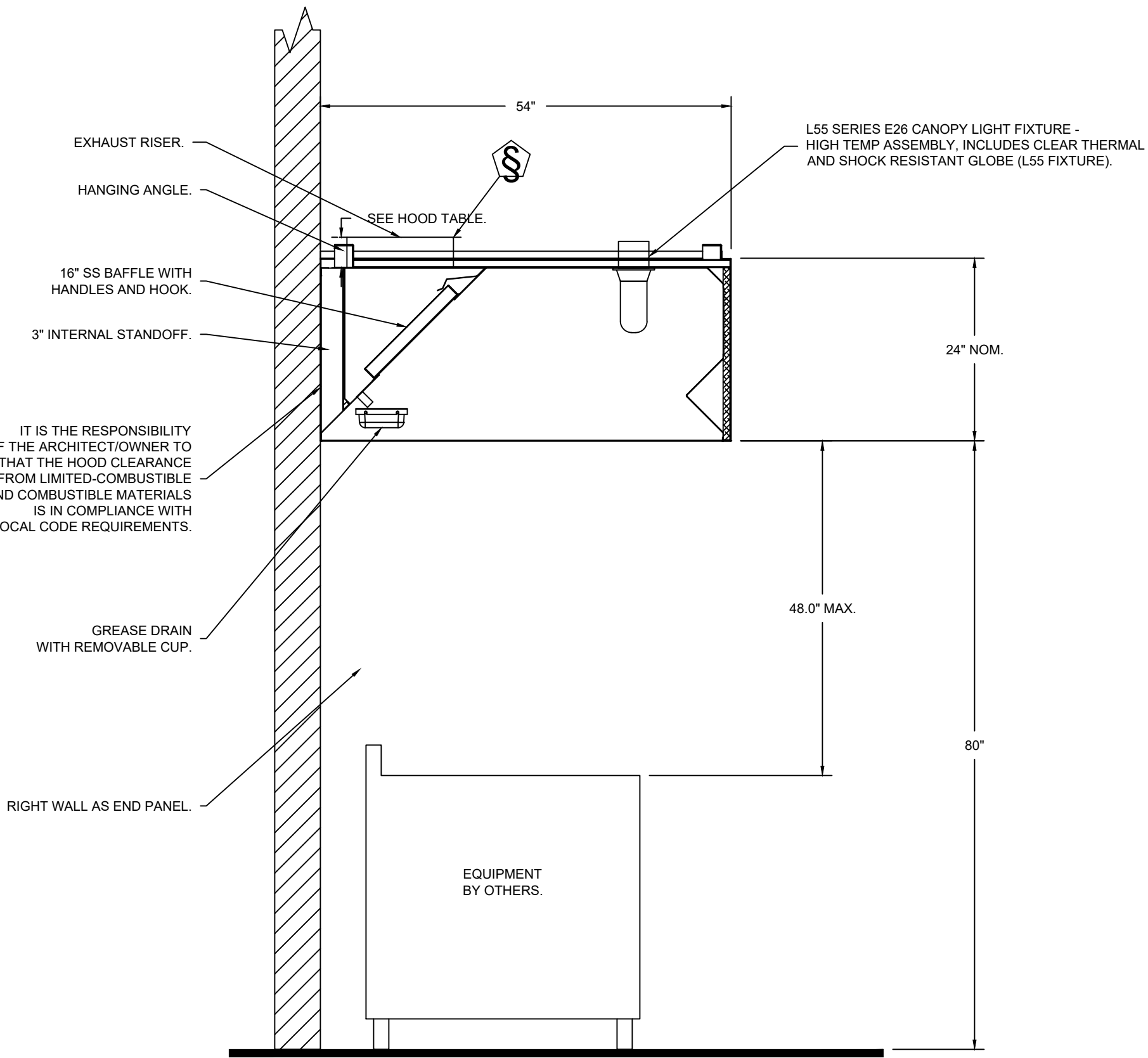


ASSEMBLY INSTRUCTIONS

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.



SECTION VIEW - MODEL 5424EX-2
HOOD - #1 (KH-L)



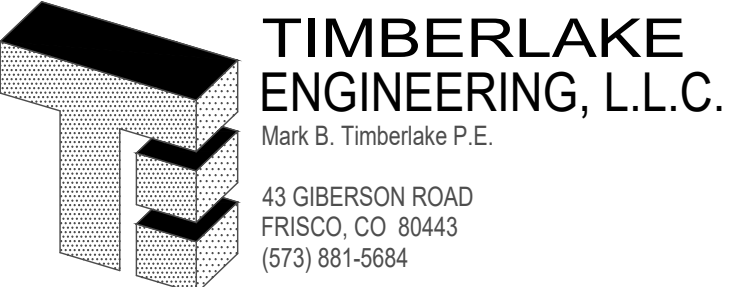
SECTION VIEW - MODEL 5424EX-2
HOOD - #2 (KH-R)

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HOOD PLAN

HYPNO-CHIC RESTAURANT

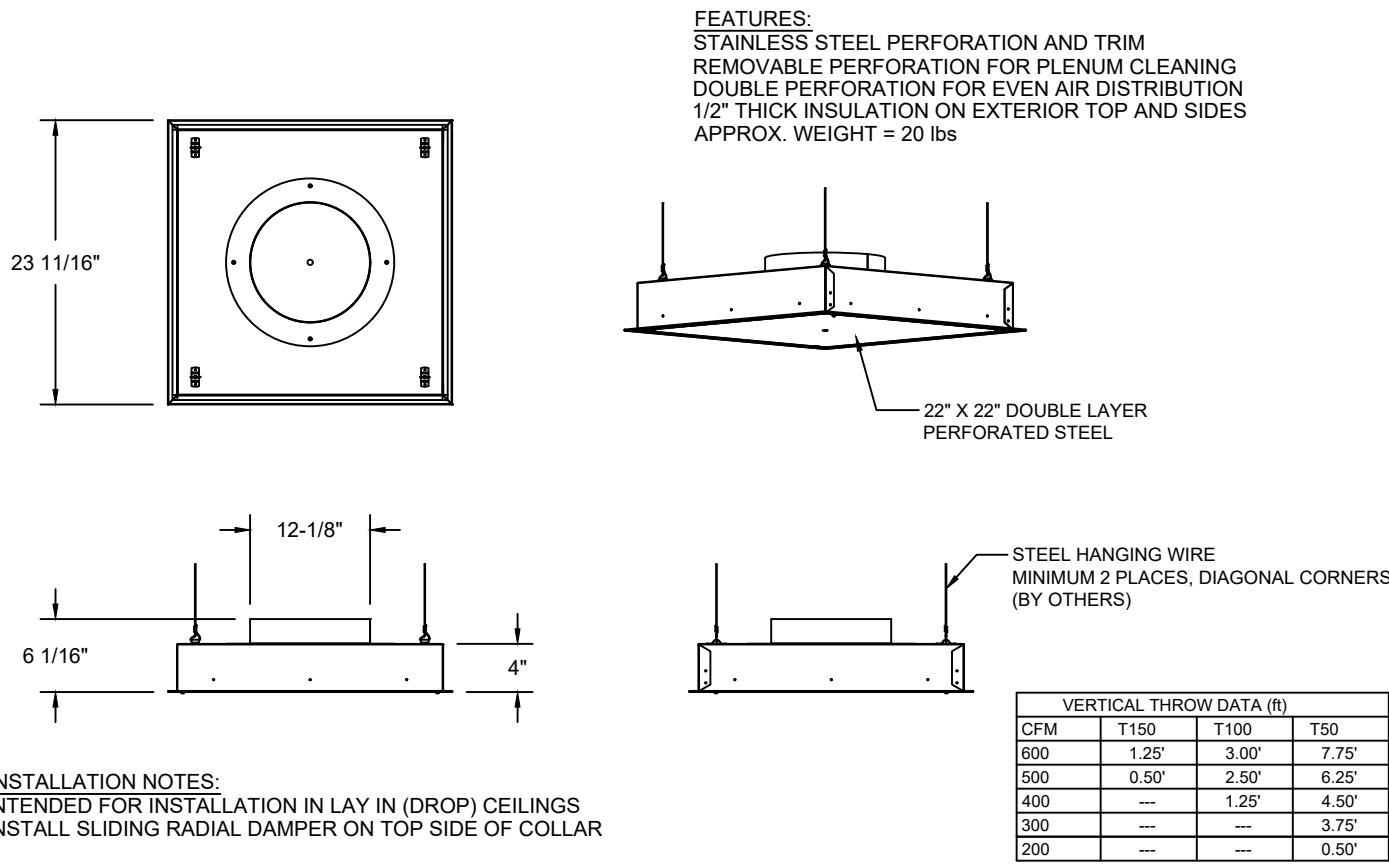
255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487

DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

H101

NOTE: DESIGN AND MODEL NUMBERS ARE BASED ON CAPTIVEAIRE AS MANUFACTURER.

QTY 5-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER (DI-PSP)



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REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

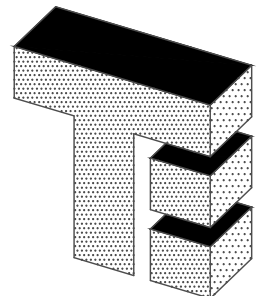
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PE-0049319

DEC. 01, 2020



**TIMBERLAKE
ENGINEERING, L.L.C.**
Mark B. Timberlake P.E.
43 GIBERSON ROAD
FRISCO, CO 80443
(573) 881-5684

HOOD PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487

DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

H102

NOTE: DESIGN AND MODEL NUMBERS ARE BASED ON CAPTIVEAIRE AS MANUFACTURER.

FIRE SYSTEM INFORMATION – JOB#4410517

FIRE SYSTEM NO	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		ANSUL R102	3.0/3.0/3.0	30	WALL UTILITY CABINET LEFT	N/A

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		MECHANICAL	2.000	CAPTIVEAIRE SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - 43-15733 AIR CYLINDER ASSEMBLY - AIR CYLINDER AND TUBING FOR MECHANICAL GAS VALVES (ANSUL PART #15733).	1	0
		0 - 0 - 439861 LARGE BLOWOFF CAP, METAL, TO FIT NEW LASER-ETCHED ANSUL NOZZLES, A0024201.	16	0
		0 - 0 - TANK STRAP TANK STRAP - USED FOR ANSUL TANKS.	3	0
		0 - 0 - UCTANKBRACKET TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS.	3	0
		1 - 1 - AT - 3.0 TANK(#1B) - 3.0 GALLON SS TANK (FOR USE WITH AUTOMAN RELEASE, ACTUATOR, OR SS ENCLOSURE (UL/ULC)) MACOLA # 01-429862.	3	0
		3 - 3 - ANS-OEM REGULATED RELEASE - ANSUL REGULATED MECHANICAL RELEASE/BRACKET ASSEMBLY, OEM, R-102, CARTRIDGE DETECTION INCLUDED, ANSUL PART # 79493.	1	0
		3 - 3 - AP - AE ENCLOSURE - STAINLESS STEEL ENCLOSURE ASSEMBLY (UL), ANSUL PART # 429870; MACOLA # 01-429870.	1	0
		5 - 5 - LIQ-3.0 AGENT - ANSULEX LOW PH WET CHEMICAL AGENT, 3 GALLON (UL) 79372.	0	3
		9 - 9 - DT-CART DOUBLE TANK NITROGEN CARTRIDGE.	0	1
		10 - 10 - TLINK LINK - TEST LINK (1 TEST LINK) ANSUL PART # 24916, MACOLA # 20-24916.	0	1
		11 - 11 - MICRO-SDA MICROSWITCH KIT- INCLUDES 2 SWITCHES AND MOUNTING HARDWARE. SINGLE DUAL ELECTRIC SWITCH, ONE STANDARD SWITCH, ONE ALARM DUTY SWITCH ANSUL PART # 437155, MACOLA # 08-437155.	1	0
		12 - 12 - HOSE HOSE - RUBBER HOSE.	2	0
		14 - 14 - 419336 NOZZLE - 1W NOZZLE, DUCT/APPLIANCE (REPLACES ANSUL PART# 419347, CAS PART# 419336) A0001266.	2	0
		16 - 16 - 419335 NOZZLE - 1N NOZZLE, PLENUM/APPLIANCE (REPLACES ANSUL PART# 419346, CAS PART# 419335) A0001265.	3	0
		19 - 19 - 419338 NOZZLE - 3N NOZZLE, APPLIANCE (REPLACES ANSUL PART# 419349, CAS PART# 419338) A0001268.	3	0
		21 - 21 - 419339 NOZZLE - 230 NOZZLE, APPLIANCE (REPLACES ANSUL PART# 419350, CAS PART# 419339) A0001269.	6	0
		24 - 24 - 419341 NOZZLE - 260 NOZZLE, APPLIANCE (REPLACES ANSUL PART# 419352, CAS PART# 419341) A0001271.	2	0
		25 - 25 - 418569 NOZZLE ADAPTOR - SWIVEL NOZZLE ADAPTOR (REPLACES CAS PART # 418569) A0001274.	6	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL).	16	0
		27 - 27 - QPSA-1/2 PULLEY SEAL - 1/2" HOOD SEAL (UL) ANSUL PART # 423253, MACOLA # 32-79768.	5	0
		28 - 28 - S-DET DETECTOR - SERIES (SCISSOR LINKAGE) ANSUL PART # 435547/435548 (OLD # 417369/434480); MACOLA # 05-417369.	7	0
		29 - 29 - ANS-360FL FUSIBLE LINK - 360DEG F, R-102 AND PIRANHA, ANSUL PART # 439088.	2	0
		30 - 30 - ANS-500FL FUSIBLE LINK - 500DEG F, R-102 AND PIRANHA, ANSUL PART # 439232.	5	0
		34 - 34 - RPS-A REMOTE PULL STATION - RED COMPOSITE (WITHOUT WIRE ROPE) 434618 (OLD MACOLA #06-4835).	1	0
		35 - 35 - PE-LT PULLEY ELBOW - LOW TEMP, PULLEY ELBOW, SET SCREW TYPE ANSUL PART # 415670, MACOLA # 11-415671.	3	10
		36 - 36 - PE-HT PULLEY ELBOW - HIGH TEMP PULLEY ELBOW, COMPRESSION TYPE, ANSUL PART # 423251, MACOLA # 10-45771.	4	0

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PE-0049319

DEC. 01, 2020

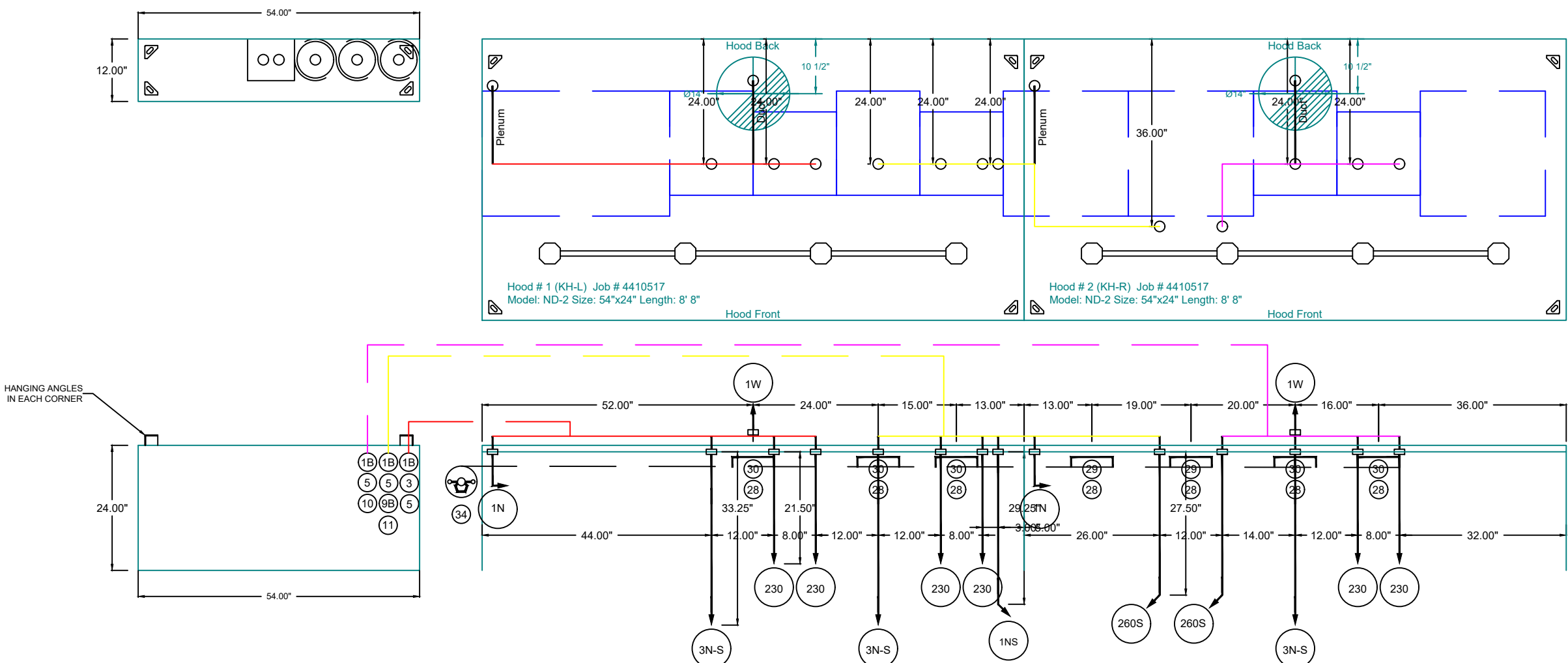


HOOD PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487		
DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

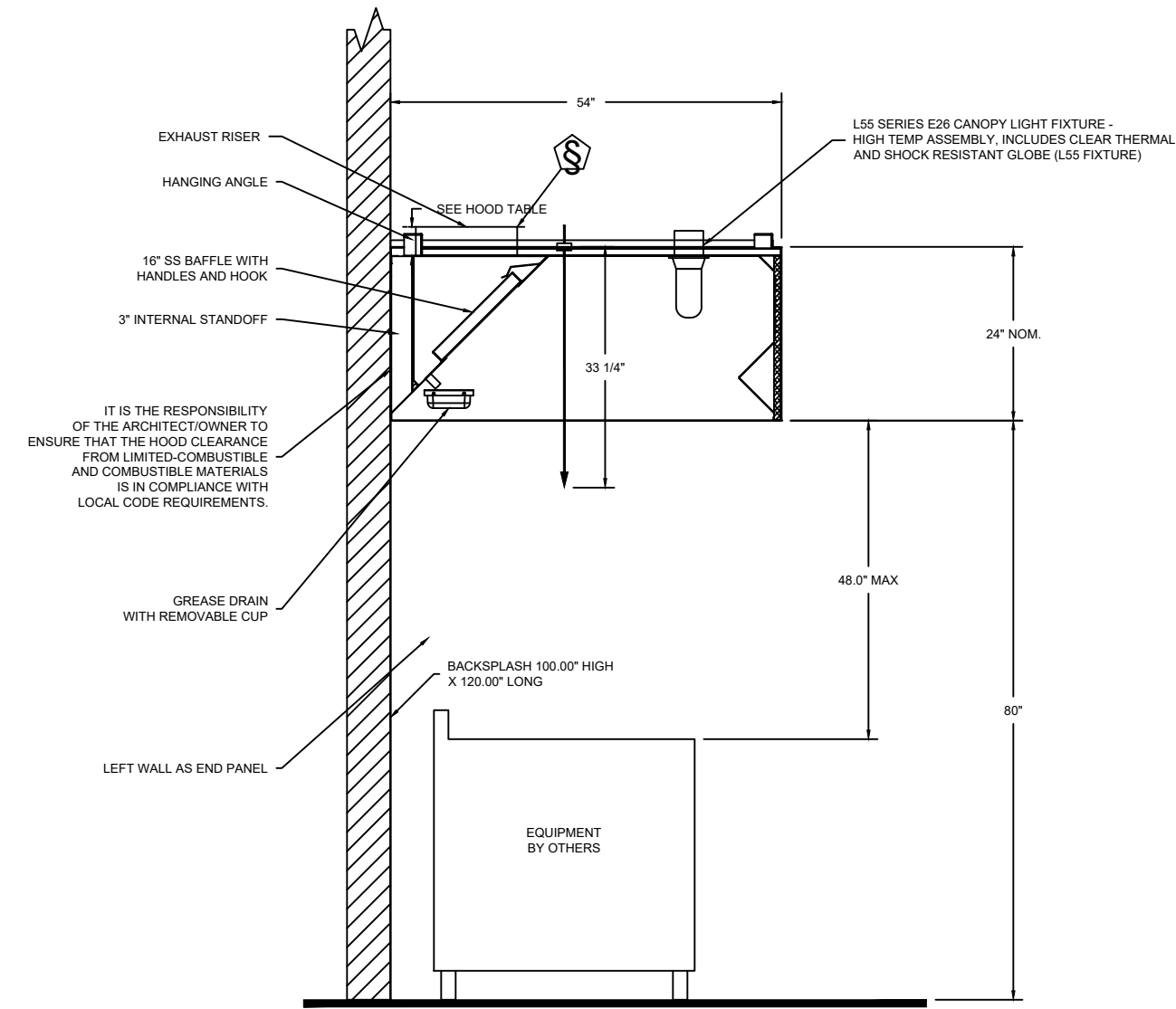
H103



HANGING ANGLES
IN EACH CORNER

24.00"

54.00"

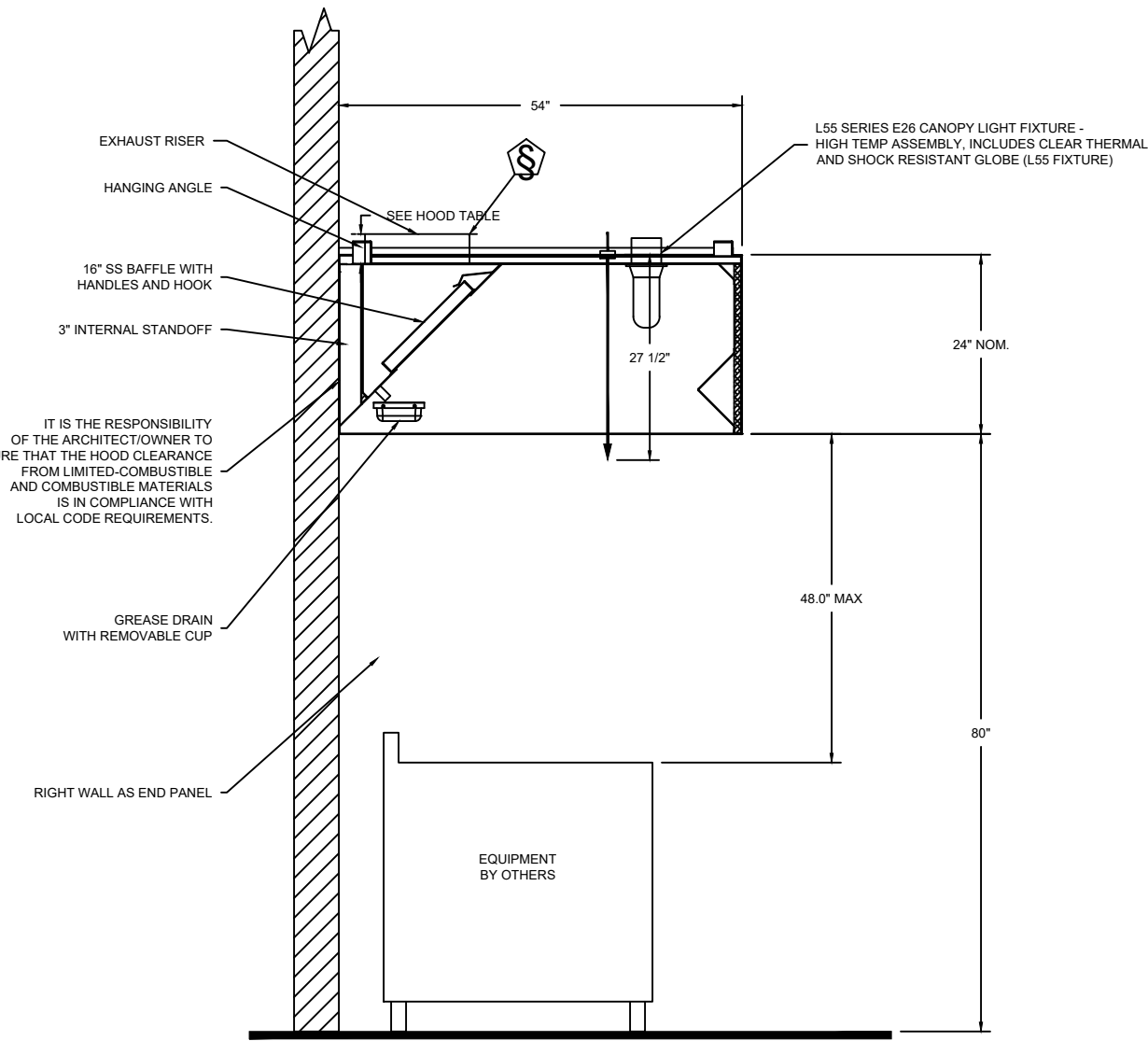


SECTION VIEW - MODEL 5424EX-2
HOOD - #1

DUCT NOZZLE AND
PLENUM SPRAY BAR LOCATION

JOB #: 4410517.
JOB NAME: HYPNO CHIC - FRISCO, CO R5.

SYSTEM SIZE: ANSUL-3.0/3.0/3.0-WC. TOTAL FP REQUIRED: 30.
HOOD # 1 8' 8.00" LONG x 54" WIDE x 24" HIGH.
RISER # 1 SIZE: 0" x 0".
HOOD # 2 8' 8.00" LONG x 54" WIDE x 24" HIGH.
RISER # 1 SIZE: 0" x 0".



SECTION VIEW - MODEL 5424EX-2
HOOD - #2

DUCT NOZZLE AND
PLENUM SPRAY BAR LOCATION

- NOTES
- FIELD PIPE DROPS AS SHOWN
 - SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
 - RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
 - MAXIMUM 9 ELBOWS IN SUPPLY LINE.
 - MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE COVERING A RANGE, FRYER, OR WOK TO REFLECT GENERAL PIPING REQUIREMENTS.
 - IF APPLICABLE, PRE-PIPED CHARBROILER 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 U.L. 300 REQUIREMENTS

Job #: 4410517
Job Name: Hypno Chic - Frisco, CO R5

System Size: ANSUL-3.0/3.0/3.0-WC. Total FP required: 30
Hood # 1 8' 8.00" Long x 54" Wide x 24" High
Riser # 1 Size: 14" Dia.
Hood # 2 8' 8.00" Long x 54" Wide x 24" High
Riser # 1 Size: 14" Dia.
Hood # 2 Metal Blow-Off Caps included.

LEGEND - FIRE CABINET ANSUL SYSTEM

- 1A 1.5 GALLON TANK
- 1B 3 GALLON TANK
- 2 OEM AUTOMAN RELEASE
- 3 OEM REGULATED RELEASE
- 4 OEM REGULATED ACTUATOR
- 5 ANSULEX LIQUID AGENT (3 GAL.)
- 6 ANSULEX LIQUID AGENT (1.5 GAL.)
- 7 CARTRIDGE (101-20)
- 8 CARTRIDGE (101-10)
- 9 CARTRIDGE (101-30)
- 9A CARTRIDGE (LT-A-101-30)
- 9B DOUBLE TANK CARTRIDGE
- 10 TEST LINK
- 11 DOUBLE MICROSWITCH
- 12 HOSE ASSEMBLY
- 1100 DUCT NOZZLE (430913)
- 2W DUCT NOZZLE (419337)
- 1W NOZZLE ASSEMBLY (419336)
- 1F NOZZLE ASSEMBLY (419333)
- 1N NOZZLE ASSEMBLY (419335)
- 12N NOZZLE ASSEMBLY (419334)
- 3N NOZZLE ASSEMBLY (419338)
- 245 NOZZLE ASSEMBLY (419340)
- 230 NOZZLE ASSEMBLY (419339)
- 2120 NOZZLE ASSEMBLY (419343)
- 290 NOZZLE ASSEMBLY (419342)
- 290 NOZZLE ASSEMBLY (419341)
- 28 DETECTOR BRACKET
- 29 LOW TEMP FUSIBLE LINK
- 30 HIGH TEMP FUSIBLE LINK
- MGV MECHANICAL GAS VALVE
- EGV ELECTRICAL GAS VALVE
- 34 REMOTE MANUAL PULL STATION
- S SWIVEL ADAPTOR

- NOTES
- FIELD PIPE DROPS AS SHOWN
 - SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
 - RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
 - MAXIMUM 9 ELBOWS IN SUPPLY LINE
 - MINIMUM 72 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE COVERING A RANGE, FRYER, OR WOK TO REFLECT GENERAL PIPING REQUIREMENTS.
 - IF APPLICABLE, PRE-PIPED CHARBROILER DROPS ARE SHIPPED LOOSE.
 - FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

SPECIFICATIONS

THE RESTAURANT FIRE SUPPRESSION SYSTEM SHALL BE THE PRE-ENGINEERED TYPE WITH A FIXED NOZZLE AGENT DISTRIBUTION NETWORK. IT SHALL BE LISTED WITH UNDERWRITERS LABORATORIES, INC. (UL)

THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND ACTUATION WITH LOCAL OR REMOTE MANUAL ACTUATION. ACCESSORIES SHALL BE AVAILABLE FOR MECHANICAL OR ELECTRICAL GAS LINE SHUT-OFF APPLICATIONS.

THE EXTINGUISHING AGENT SHALL BE A POTASSIUM CARBONATE, POTASSIUM ACETATE-BASED FORMULATION DESIGNED FOR FLAME KNOCKDOWN AND SECUREMENT OF GREASE RELATED FIRES. IT SHALL BE AVAILABLE IN PLASTIC CONTAINERS WITH INSTRUCTIONS FOR LIQUID AGENT HANDLING AND USAGE.

THE REGULATED RELEASE MECHANISM SHALL BE COMPATIBLE WITH A FUSIBLE LINK DETECTION SYSTEM. THE FUSIBLE LINK SHALL BE SELECTED AND INSTALLED ACCORDING TO THE OPERATING TEMPERATURE IN THE VENTILATING SYSTEM. THE FUSIBLE LINK SHALL BE SUPPORTED BY A DETECTOR BRACKET/ LINKAGE ASSEMBLY.

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REVISIONS:	DATE:
ADDED PREP SINK, RELOCATED HAND SINK	3/25/2020
REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

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RCRBD
Record Set
TC
12/01/2020



Mark Timberlake, P.E.
PE-0049319

DEC. 01, 2020



HOOD PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487

DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

H104

NOTE: DESIGN AND MODEL NUMBERS ARE BASED ON CAPTIVEAIRE AS MANUFACTURER.

EXHAUST FAN INFORMATION – JOB#4410517

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF	1	EA-USBI18DD-RM	ECON-AIR	3466	1.750	1545	ODP,PREMIUM	3.000	1.6760	3	208	9.5	1777 FPM	421	25

MUA FAN INFORMATION – JOB#4410517

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	MCA	MOCP	EVAP FLOW RATE (Gal/Hr)	EVAP COOLER ENTERING DB TEMP	EVAP COOLER ENTERING WB TEMP	EVAP COOLER LEAVING DB TEMP	EVAP COOLER LEAVING WB TEMP	WEIGHT (LBS)	SONES
2	KMAU	1	EA1-D.250-G10	G10	A1-D.250	1000	2772	0.500	1542	ODP	2.000	1.8710	3	208	5.7	7.2A	15A	4.3	90.0°F	60.0°F	71.0°F	60.0°F	699	33

*Evap Flow Rate is variable based on water pressure.

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(%)
2	KMAU	185191	170376	74°F	7 IN. W.C. - 14 IN. W.C.	NATURAL	92

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF	1	BI18 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 20" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER.
		1	UTILITY SET GREASE CUP.
		1	BI18 - 24" DISCHARGE EXTENSION.
		1	BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE.
		1	BI18 - INLET CONNECTION STANDARD 20" FLANGED GREASE DUCT.
		1	UTILITY SET - SPRING VIBRATION ISOLATORS - BI18 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE.
2	KMAU	1	MOTORIZED BACKDRAFT DAMPER FOR A1-D HOUSING.
		1	LOW FIRE START.
		1	INLET PRESSURE GAUGE, 0-35".
		1	MANIFOLD PRESSURE GAUGE, -5 TO 15" WC.
		1	IBT/MUA EVAP INTERLOCK.
		1	FREEZE PROTECTION DRAIN KIT FOR EVAPORATIVE COOLERS.
		1	SEPARATE 120V WIRING PACKAGE (REQUIRED AND USED ONLY FOR DCV OR PREWIRE WITH VFD) - THREE PHASE ONLY.

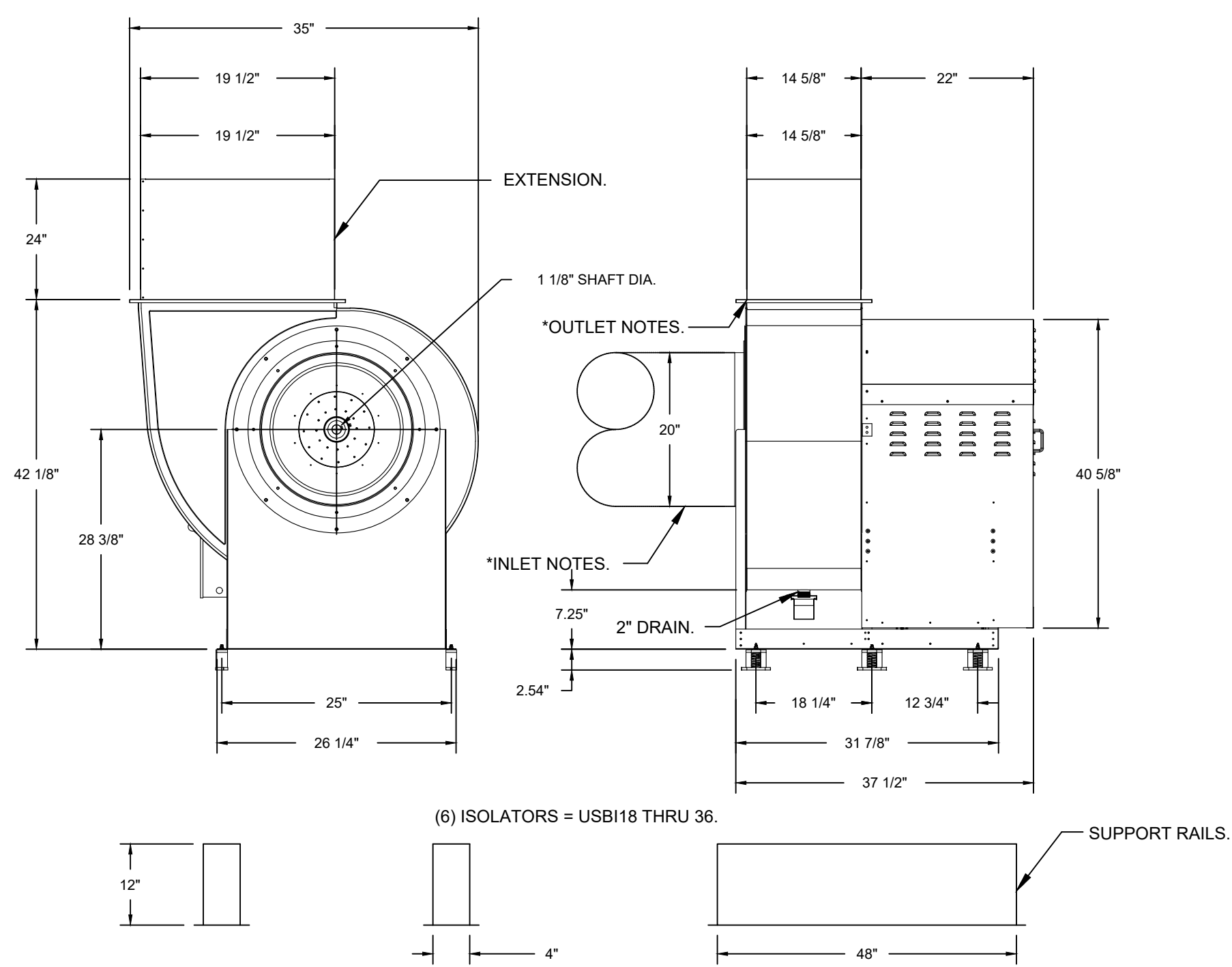
FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF	YES						
2	KMAU						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF	48 LBS	RAIL	4.000"W X 48.000"L X 12.000"H RIGHT COMES AS A SET OF 2.
2	# 2	KMAU	75 LBS	CURB	21.000"W X 71.000"L X 20.000"H RIGHT INSULATED.
	# 2			RAIL	4.000"W X 4.000"L X 36.000"H RIGHT.

FAN #1 EA-USBI18DD-RM - EXHAUST FAN (KEF)

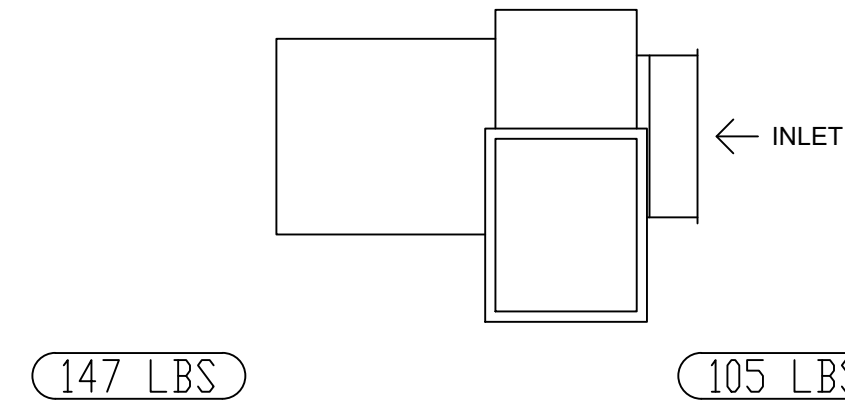


* INLET/OUTLET NOTES:
LENGTH OF THE STRAIGHT DUCT ON THE INLET AND OUTLET TO BE 3 TIMES THE EQUIVALENT DUCT DIAMETER BEFORE CONNECTING TO ANY FITTINGS SUCH AS ELBOWS TO AVOID SYSTEM EFFECT.

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.

UNIT PLAN VIEW CORNER WEIGHTS:
93 LBS 76 LBS 147 LBS 105 LBS

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



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

BI18 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 20" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER. UTILITY SET GREASE CUP. BI18 - 24" DISCHARGE EXTENSION. BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE. BI18 - INLET CONNECTION STANDARD 20" FLANGED GREASE DUCT. UTILITY SET - SPRING VIBRATION ISOLATORS - BI18 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE.

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REVISIONS:	DATE:
ADDED PREP SINK, RELOCATED HAND SINK	3/25/2020
REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

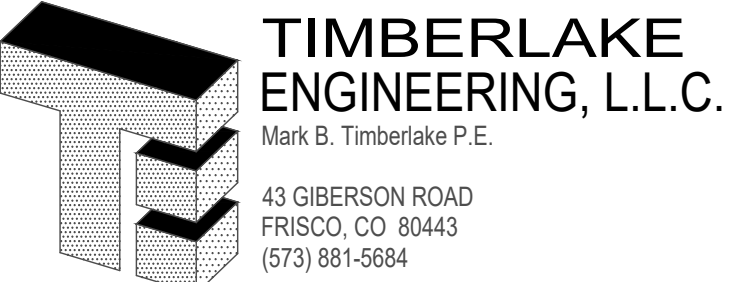
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Mark Timberlake, P.E.
PE-0049319

DEC. 01, 2020



HOOD PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487

DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

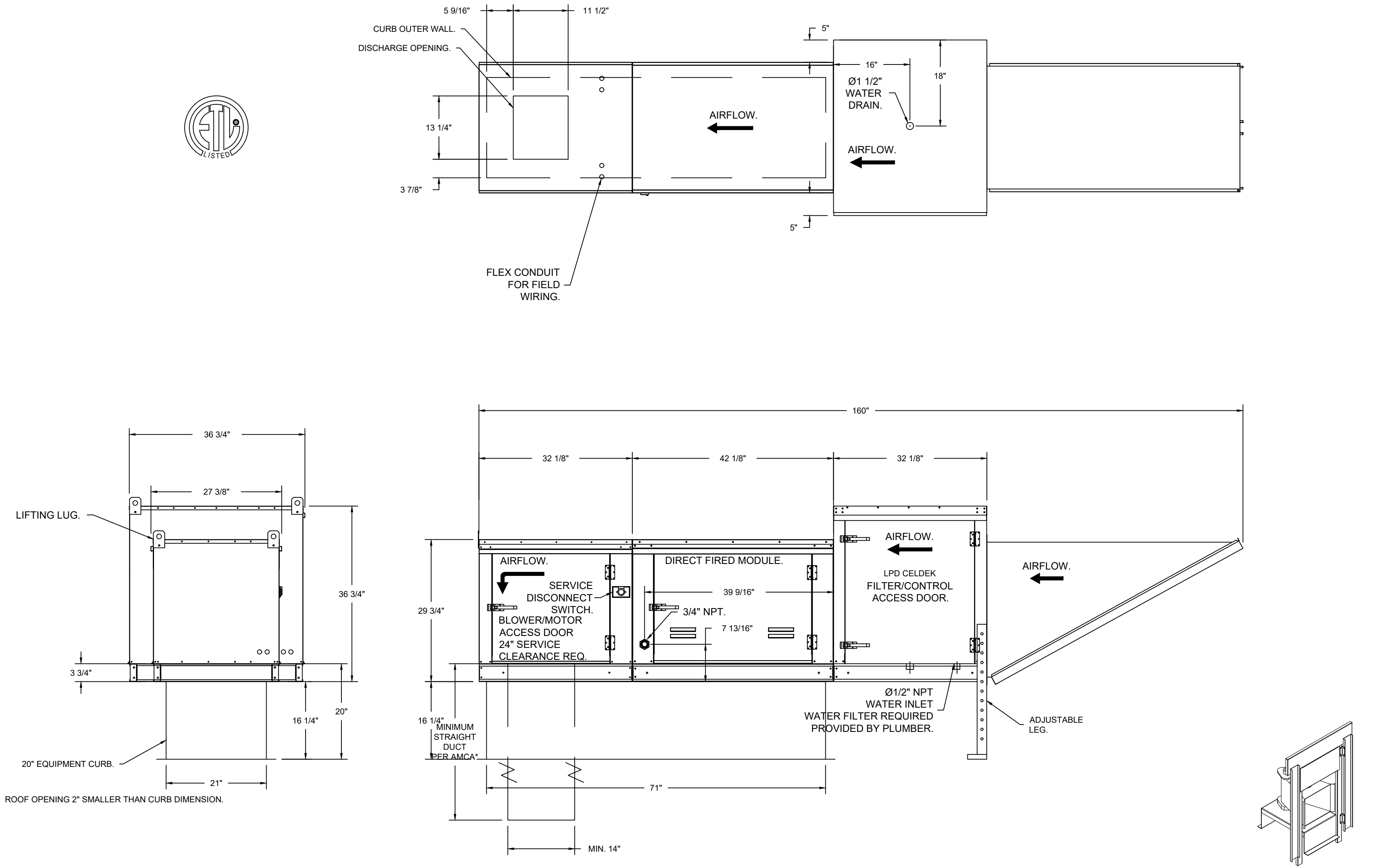
H105

NOTE: DESIGN AND MODEL NUMBERS ARE BASED ON CAPTIVEAIRE AS MANUFACTURER.

FAN #2 EA1-D-250-G10 - HEATER (KMAU)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 10" BLOWER.
2. EVAP COOLER (LPD CELDEK) - WINTAKE HOOD W/ EZ FILTERS.
3. DOWN DISCHARGE - AIR FLOW RIGHT - LEFT.
4. MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/ EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE. TFB120S ACTUATOR INCLUDED.
5. LOW FIRE START: ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
6. GAS PRESSURE GAUGE, 0-35" 2.5" DIAMETER, 1/4" THREAD SIZE.
7. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE.
8. LAYER CONTROL FOR IBT EVAP.
9. FREEZE PROTECTION DRAIN CONTROL KIT FOR EVAPORATIVE COOLERS. INCLUDES 3-WAY WATER SOLENOID VALVE 8316G064 (SHIPPED LOOSE), PRESSURE SWITCH INSTALLED UPSTREAM OF 2-WAY SOLENOID IN UNIT, BRASS TEE, 2 NPT HALF INCH NIPPLES, AND TWO STAGE THERMOSTAT T678A1361. FIELD WIRING REQUIRED BY OTHERS FOR 3-WAY VALVE. FOR BOTH CELDEK AND STANDARD V-BANK TYPE CONFIGURATIONS.
10. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION MUST BE SELECTED WHEN MOUNTING VFD IN PREWIRED 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.

*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 = 1°F. TEMP. RISE = 74°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY.
OUTPUT BTUs AT ALTITUDE OF 0.0 FT. = 210146.
INPUT BTUs AT ALTITUDE OF 0.0 FT. = 238203.
OUTPUT BTUs AT ALTITUDE OF 6802 FT. = 170376.
INPUT BTUs AT ALTITUDE OF 6802 FT. = 185191.



DIRECT FIRED (DF) PROFILE PLATE ASSEMBLY

DESCRIPTION:
DIRECT FIRED BURNERS SHALL HAVE PATENTED (US PATENT NO. US60292382), 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 OF UNITS ARE DESIGNED FOR DEMAND CONTROL VENTILATION (DCV) REQUIREMENTS.

CERTIFICATIONS:
ALL PROFILE PLATE ASSEMBLIES SHALL BE INCLUDED IN THE DF UNITS ETL LISTING AND COMPLY WITH COMBINED SAFETY STANDARDS ANSI Z83.4 AND CSA 5.7 (NON-RECIRCULATING DF HEATERS) AND ANSI Z83.16 (RECIRCULATING DF HEATERS).

GENERAL CONSTRUCTION:
-PROFILE PLATES SHALL BE FORMED FROM 300 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.

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REVISED HOOD, EF, GREASE DUCT AND NOTES	12/01/2020

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Mark Timberlake, P.E.
PE-0049319
DEC. 01, 2020



HOOD PLAN

HYPNO-CHIC RESTAURANT

255 ANGLER'S DRIVE, SUITE A, STEAMBOAT SPRINGS, CO 80487		
DATE:	01-12-2020	SHEET NO.
DRAWN BY:	MBT	
PROJECT NO:	19001	
SCALE:	1/4"=1'-0"	

H106

NOTE: DESIGN AND MODEL NUMBERS ARE BASED ON CAPTIVEAIRE AS MANUFACTURER.



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Centennial, CO 80111
Phone 720.570.0981, Fax 919.227.5999
Email: Reg42@captiveaire.com

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SUBMITTAL

Customer Approval to Manufacture:

Approved with No Exception Taken ☐

Approved as Noted ☐

Revise and Resubmit ☐

Signature: _____

Title: _____

Date: _____

HOOD INFORMATION - Job#4410517

HOOD NO	TAG	MODEL	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/Ft	TOTAL EXH CFM	EXHAUST PLENUM							HOOD CONSTRUCTION	HOOD CONFIG	
									RISER(S)								END TO END	ROW
									WIDTH	LENG	HEIGHT	DIA	CFM	VEL	SP			
1	KH-L	5424 EX-2	8' 8"	600 Deg	I	Heavy	200	1733			4'	14'	1733	1621	-0.431'	430 SS Where Exposed	LEFT	ALONE
2	KH-R	5424 EX-2	8' 8"	600 Deg	I	Heavy	200	1733			4'	14'	1733	1621	-0.431'	430 SS Where Exposed	RIGHT	ALONE

**RCRBD
Record Set
TC
12/01/2020**

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)						FIRE SYS PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL	SWITCHES		
												TYPE	SIZE	MODEL #	QUANTITY		
1	KH-L	SS Baffle with Handles	6	16"	16"	30%	4	L55 Series E26	NO	Wall Mnt	12"x54"x24"	Ansul R102	3.0/3.0/3.0	SC-311110FP	1 Light 1 Fan	YES	374 LBS
2	KH-R	SS Baffle with Handles	6	16"	16"	30%	4	L55 Series E26	NO							YES	363 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KH-L	BACKSPLASH 100.00' High X 120.00' Long 430 SS Vertical
		LEFT SIDESPLASH 100.00' High X 72.00' Long 430 SS Vertical
		LEFT END STANDOFF (FINISHED) 1' Wide 54' Long Insulated
		STRUCTURAL FRONT PANEL
		RISER SENSOR INSTALL 3IN DBL
2	KH-R	LEFT WALL AS END PANEL
		RIGHT SIDESPLASH 100.00' High X 72.00' Long 430 SS Vertical
		RIGHT END STANDOFF (FINISHED) 1' Wide 54' Long Insulated
		RISER SENSOR INSTALL 3IN DBL
		RIGHT WALL AS END PANEL



CAPTIVEAIRE

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 1	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"



GREASE DUCT & CHIMNEY SPECIFICATIONS:

PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.

PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12". DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

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CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT

___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

Approved as Noted ☐
Approved with NO Exception Taken ☐
Revise and Resubmit ☐
SIGNATURE _____
Your Title _____ Date _____

PATENT NUMBERS

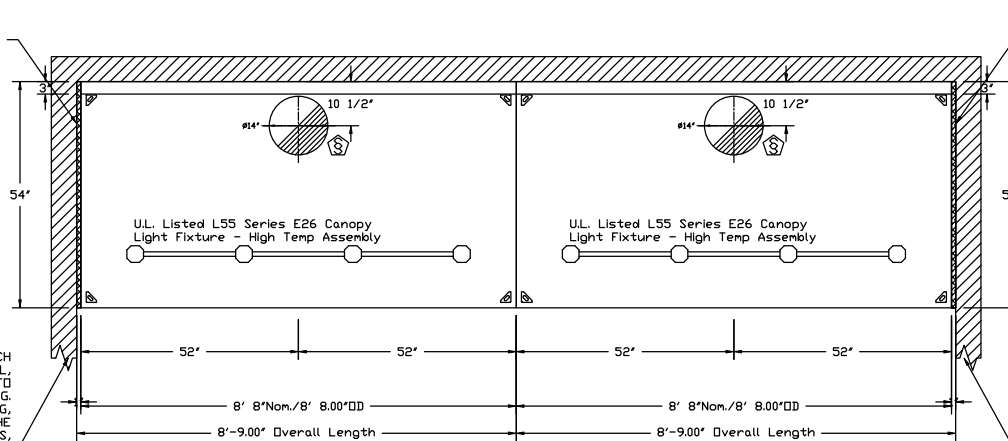
Exhaust Hoods ND-2/BD-2/SND-2 (Canada) - CA Patent 2520435 C



CAPTIVEAIRE

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 2	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

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



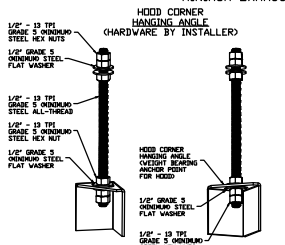
1" LAYER OF INSULATION
 FACTORY INSTALLED IN
 1.00" END STANDOFF MEETS
 0" REQUIREMENTS CLEARANCE
 TO COMBUSTIBLE SURFACES.

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-COMPLIANCE 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.

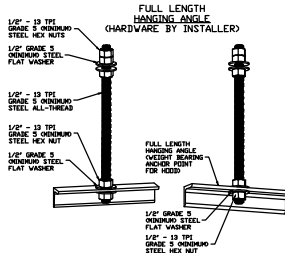
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PLAN VIEW - Hood #1 (KH-L)
 8' 8.00" LONG 5424EX-2

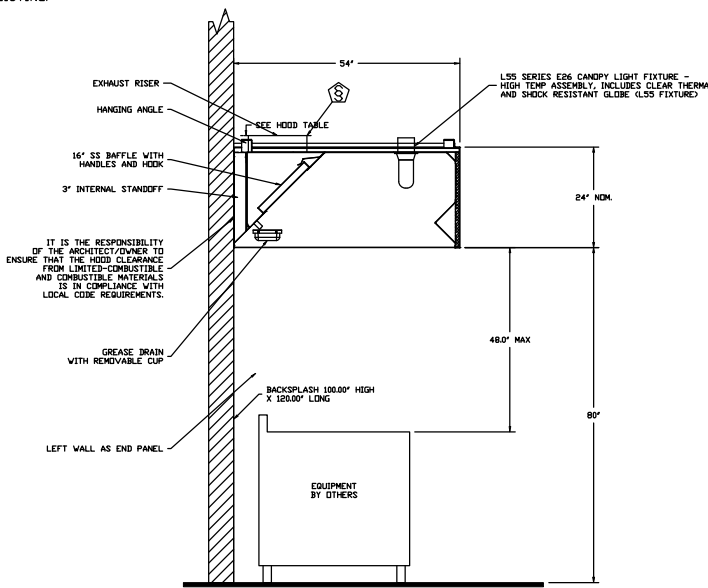
PLAN VIEW - Hood #2 (KH-R)
 8' 8.00" LONG 5424EX-2



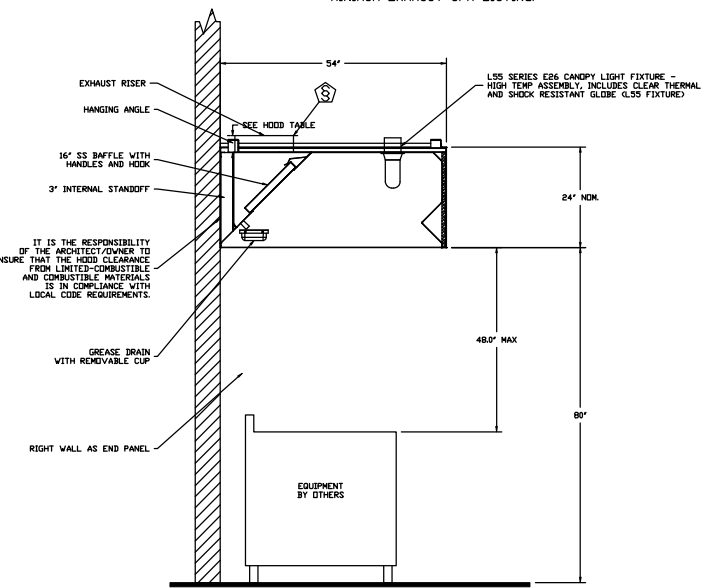
ASSEMBLY INSTRUCTIONS
 HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD, SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN MUST USE DOUBLED HEX NUT CONFIGURATION BENEATH 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
 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.



SECTION VIEW - MODEL 5424EX-2
 HOOD - #1 (KH-L)



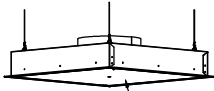
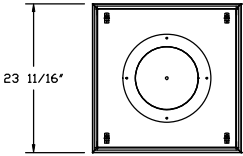
SECTION VIEW - MODEL 5424EX-2
 HOOD - #2 (KH-R)



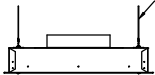
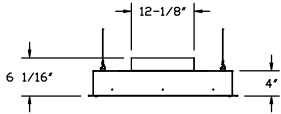
JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 1410517
DWG # 3	DRAWN BY sean.duric
REV.	SCALE 1/4" = 1'-0"

QTY 5-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER
(DI-PSP)

FEATURES:
STAINLESS STEEL PERFORATION AND TRIM
REMOVABLE PERFORATION FOR PLENUM CLEANING
DOUBLE PERFORATION FOR EVEN AIR DISTRIBUTION
1/2" THICK INSULATION ON EXTERIOR TOP AND SIDES
APPROX. WEIGHT = 20 lbs



22" X 22" DOUBLE LAYER
PERFORATED STEEL



STEEL HANGING WIRE
MINIMUM 2 PLACES, DIAGONAL CORNERS
(BY OTHERS)

VERTICAL THROW DATA (FT)			
CFM	T150	T100	T50
600	1.25'	3.00'	7.75'
500	0.50'	2.50'	6.25'
400	---	1.25'	4.50'
300	---	---	3.75'
200	---	---	0.50'

INSTALLATION NOTES:
INTENDED FOR INSTALLATION IN LAY IN (DROP) CEILINGS
INSTALL SLIDING RADIAL DAMPER ON TOP SIDE OF COLLAR

RCRBD
Record Set
TC
12/01/2020



CAPTIVEAIRE

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 4	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

Fire System Information - Job#4410517

FIRE SYSTEM NO	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		Ansul R102	3.0/3.0/3.0	30	Wall Utility Cabinet Left	N/A

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		Mechanical	2.000	CaptiveAir Systems

Fire System Parts List Key

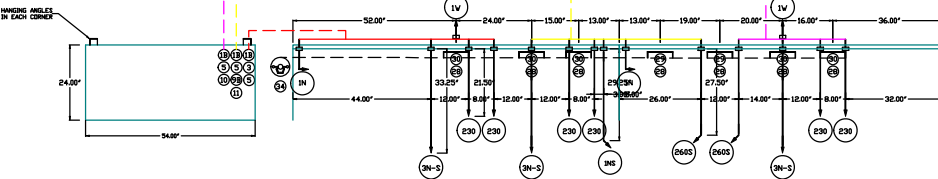
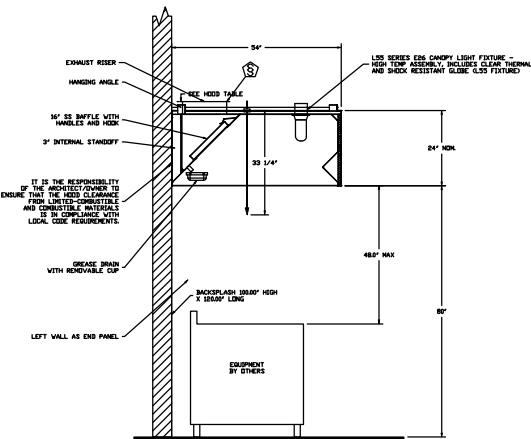
FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - 43-15733 AIR CYLINDER ASSEMBLY - Air Cylinder and Tubing for Mechanical Gas Valves (Ansul Part #15733)	1	0
		0 - 0 - 439861 Large BLOWOFF CAP, Metal, to fit New Laser-etched ANSUL Nozzles, A0024201	16	0
		0 - 0 - Tank Strap Tank Strap - used for ANSUL Tanks	3	0
		0 - 0 - UCTANKBRACKET Tank Bracket for fire system tank installation in utility cabinets	3	0
		1 - 1 - AT - 3.0 TANK(H1B) - 3.0 Gallon SS Tank (for use with Automan Release, Actuator, or SS Enclosure (UL/ULC)) Macola # 01-429862	3	0
		3 - 3 - ANS-DEM REGULATED RELEASE - Ansul Regulated Mechanical Release/Bracket Assembly, DEM, R-102, Cartridge Detection Included, Ansul Part # 79493	1	0
		3 - 3 - AP - AE ENCLOSURE - Stainless Steel Enclosure Assembly (UL), Ansul Part # 429870; Macola # 01-429870	1	0
		5 - 5 - LIQ-3.0 AGENT - Ansulox Low PH Wet Chemical Agent, 3 Gallon (UL) 79372	0	3
		9 - 9 - DT-CART Double Tank Nitrogen Cartridge	0	1
		10 - 10 - TLINK LINK - Test Link (1 test link) Ansul Part # 24916, Macola # 20-24916	0	1
		11 - 11 - MICRO-SDA MICROSWITCH KIT- Includes 2 switches and Mounting Hardware. Single Dual Electric Switch, One Standard Switch, One Alarm Duty Switch Ansul Part # 437155, Macola # 08-437155	1	0
		12 - 12 - HOSE HOSE - Rubber Hose	2	0
		14 - 14 - 419336 NOZZLE - 1W Nozzle, Duct/Appliance (Replaces ANSUL Part# 419347, CAS Part# 419336) A0001266	2	0
		16 - 16 - 419335 NOZZLE - 1N Nozzle, Plenum/Appliance (Replaces ANSUL Part# 419346, CAS Part# 419335) A0001265	3	0
		19 - 19 - 419338 NOZZLE - 3N Nozzle, Appliance (Replaces ANSUL Part# 419349, CAS Part# 419338) A0001268	3	0
		21 - 21 - 419339 NOZZLE - 230 Nozzle, Appliance (Replaces ANSUL Part# 419350, CAS Part# 419339) A0001269	6	0
		24 - 24 - 419341 NOZZLE - 260 Nozzle, Appliance (Replaces ANSUL Part# 419352, CAS Part# 419341) A0001271	2	0
		25 - 25 - 418569 NOZZLE ADAPTOR - Swivel Nozzle Adaptor (Replaces CAS Part # 418569) A0001274	6	0
		26 - 26 - QSA-3/8 QUIK SEAL - 3/8" (UL)	16	0
		27 - 27 - QPSA-1/2 PULLEY SEAL - 1/2" Hood Seal (UL) Ansul Part # 423253, Macola # 32-79768	5	0
		28 - 28 - S-DET DETECTOR - Series (Scissor Linkage) Ansul Part # 435547/435548 (Old # 417369/434480); Macola # 05-417369	7	0
		29 - 29 - ANS-360FL FUSIBLE LINK - 360deg F, R-102 and PIRANHA, Ansul Part # 439088	2	0
		30 - 30 - ANS-500FL FUSIBLE LINK - 500deg F, R-102 and PIRANHA, Ansul Part # 439232	5	0
		34 - 34 - RPS-A REMOTE PULL STATION - Red composite (without wire rope) 434618 (Old Macola #06-4835)	1	0
		35 - 35 - PE-LT PULLEY ELBOW - Low Temp. Pulley Elbow, Set Screw Type Ansul Part # 415670, Macola # 11-415671	3	10
		36 - 36 - PE-HT PULLEY ELBOW - High Temp Pulley Elbow, Compression Type, Ansul Part # 423251, Macola # 10-45771	4	0

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12/01/2020**

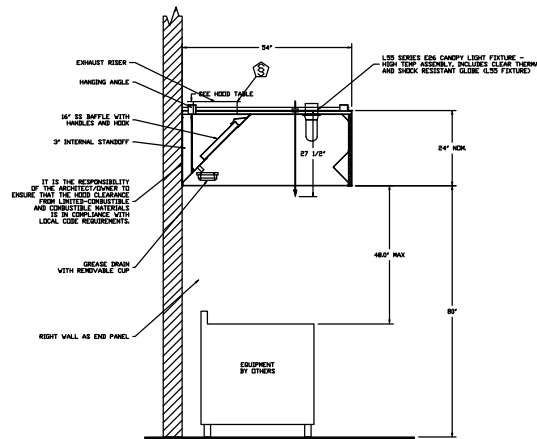


CAPTIVEAIR

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 5	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

[illegible]

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



SECTION VIEW - MODEL 5424EX-2
HOOD - #2

DUCT NOZZLE AND
PLENUM SPRAY BAR LOCATION

DUCT NOZZLE AND
PLENUM SPRAY BAR LOCATION

NOTES

- FIELD PIPE DRUMS AS SHOWN
- SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY C
- LOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SLEEVING,
- SALAMANDERS, ETC.
- MINIMUM 12 INCHES OF AGENT LINE FROM TANK TO FIRST NOZZLE
- COVERING A RANGE, FRYER, OR WOK TO REJECT GENERAL PIPING REQUIREMENTS
- LOCATE, PROVED CHARBOLLER DROPS, AND 1/2 INCH OF THE HOOD.
- FACTORY FIFTING EXCEEDS A MAXIMUM OF 6" ABOVE THE
- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE
- SIZE, NOT THE OVERALL APPLIANCE SIZE.

SPECIFICATIONS

THE RESTAURANT FIRE SUPPRESSION SYSTEM SHALL BE THE PRE-ENGINEERED TYPE WITH A FIXED NOZZLE AGENT DISTRIBUTION NETWORK. IT SHALL BE LISTED WITH UNDERWRITERS LABORATORIES, INC. (UL)

THE SYSTEM SHALL BE CAPABLE OF AUTOMATIC DETECTION AND ACTUATION WITH LOCAL OR REMOTE MANUAL ACTUATION. ACCESSORIES SHALL BE AVAILABLE FOR MECHANICAL OR ELECTRICAL GAS LINE SHUT-OFF APPLICATIONS.

THE EXTINGUISHING AGENT SHALL BE A POTASSIUM CARBONATE, POTASSIUM ACETATE-BASED FORMULATION DESIGNED FOR FLAME KNOCKDOWN AND SECUREMENT OF GREASE RELATED FIRES. IT SHALL BE AVAILABLE IN PLASTIC CONTAINERS WITH INSTRUCTIONS FOR LIQUID AGENT HANDLING AND USAGE.

THE REGULATED RELEASE MECHANISM SHALL BE COMPATIBLE WITH A FUSIBLE LINK DETECTION SYSTEM. THE FUSIBLE LINK SHALL BE SELECTED AND INSTALLED TO ACCORDANCE TO THE OPERATING TEMPERATURE THE VENTILATING SYSTEM. THE FUSIBLE LINK SHALL BE SUPPORTED BY A DETECTOR BRACKET/ LINKAGE ASSEMBLY.

THE REGULATED RELEASE MECHANISM SHALL BE COMPATIBLE WITH A FUSIBLE LINK DETECTION SYSTEM. THE FUSIBLE LINK SHALL BE SELECTED AND INSTALLED ACCORDING TO THE OPERATING TEMPERATURE IN THE VENTILATING SYSTEM. THE FUSIBLE LINK SHALL BE SUPPORTED BY A DETECTOR BRACKET/ LINKAGE ASSEMBLY.

NOTES

- FIRE PIPE DRIPS AS SHOWN
- SLEEVING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS
- REMOVABLE NOZZLES IF FLOW PATTERN IS BLOCKED BY SLEEVING, SALAMANDERS, ETC.
- MAXIMUM 9 ELBOWS IN SUPPLY LINE
- MINIMUM 12 INCHES OF AGENT FROM TANK TO FIRST NOZZLE
- COVERING A RANGE, FRYER, OR WOK TO REFLECT GENERAL PIPING REQUIREMENTS
- IF APPLICABLE, PRE-PRIED CHAURRIOLER 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

Job #: 4410517
Job Name: Hypno Chic - Frisco, CO R5

System Size: ANSUL-3.0/3.0/3.0-WC Total FP required: 30
Hood # 1 8' 8.00" Long x 54" Wide x 24" High
Riser # 1 Size: 14" Dia.
Hood # 1 Metal Blow-Off Caps included.
Hood # 2 8' 8.00" Long x 54" Wide x 24" High
Riser # 1 Size: 14" Dia.
Hood # 2 Metal Blow-Off Caps included.

LEGEND - FIRE CABINET ANSUL SYSTEM

- [illegible]



CAPTIVE AIRE

JOB Hypno Chic - Frisco, CO R5

LOCATION STEAMBOAT SPRINGS, CO, 80487

<i>DATE</i>	6/24/2020
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DWG # 6

REV.

JQB # 22 of 4410517

DRAWN BY sean.duric

SCALE 3/16" = 1'-

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 "F"	DIM "G"	MOUNTING ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#1	MECHANICAL	2"	N/A	0 PSI (0 IN.W.C.)	10 PSI (277 IN.W.C.)	4,616,000 BTU/HR	2,995,256 BTU/HR	6-11/16"	5-7/8"	7-1/4"	7-13-16"	15-1/8"	13-3/16"	HORIZONTAL	28-55610	4417K68	MGVA2

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

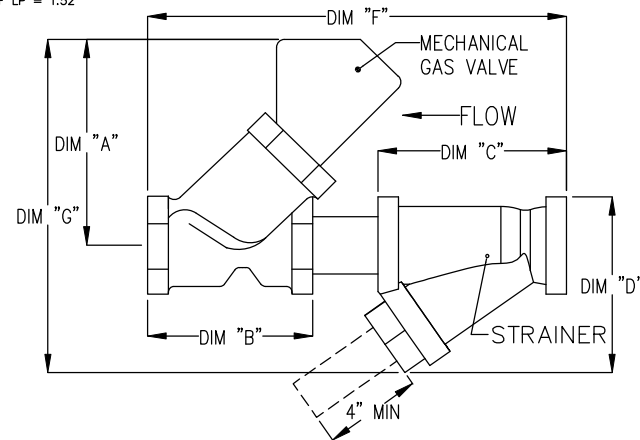
CALCULATIONS

TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP

$$\text{NEW BTU/HR} = (\text{BTU/HR AT 1 IN.W.C. PRESSURE DROP}) \times \text{NEW PRESSURE DROP}^{0.5}$$

 TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY

$$\text{NEW BTU/HR} = (\text{BTU/HR AT 0.64}) \times (0.64 / \text{NEW SPECIFIC GRAVITY})^{0.5}$$



CAPTIVEAIR

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 7	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

EXHAUST FAN INFORMATION - Job#4410517

FAN UNIT NO	TAG	FAN UNIT MODEL #	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF	EA-USBI18DD-RM	3466	1.750	1545	ODP,PREMIUM	3.000	1.6760	3	208	9.5	1777 FPM	421	25

MUA FAN INFORMATION - Job#4410517

FAN UNIT NO	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP	RPM	MOTOR ENCL	HP	BHP	Ø	VOLT	FLA	MCA	MOCP	EVAP FLOW RATE (Gal/Hr)	EVAP COOLER ENTERING DB TEMP	EVAP COOLER ENTERING WB TEMP	EVAP COOLER LEAVING DB TEMP	EVAP COOLER LEAVING WB TEMP	WEIGHT (LBS)	SONES
2	KMAU	EA1-D.250-G10	G10	A1-D.250	1000	2772	0.500	1542	ODP	2.000	1.8710	3	208	5.9	7.4A	15A	4.3	90.0°F	60.0°F	71.0°F	60.0°F	707	33

*Evap Flow Rate is variable based on water pressure.

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(%)
2	KMAU	185191	170376	74 deg F	7 in. w.c. - 14 in. w.c.	Natural	92

FAN OPTIONS

FAN UNIT NO	TAG	OPTION (Qty - Descr)
1	KEF	1 - BI18 - Inlet Service Duct Connection. Used to connect to standard 20' Grease Duct or Field Welded Duct. Includes (2) 7' risers bolted to standard Inlet riser.
		1 - Utility Set Grease Cup
		1 - BI18 - 24' Discharge Extension.
		1 - BI - Discharge Orientation Vertical Upper Left - CW Inlet Side.
		1 - BI18 - Inlet Connection Standard 20' Flanged Grease Duct.
		1 - Utility Set - Spring Vibration Isolators - BI18 / Equivalent Sized Utility Set - Indoor/Outdoor use.
2	KMAU	1 - Motorized Backdraft Damper for A1-D Housing
		1 - Low Fire Start
		1 - Inlet Pressure Gauge, 0-35'
		1 - Manifold Pressure Gauge, -5 to 15' wc
		1 - IBT/MUA Evap Interlock
		1 - Freeze Protection Drain Kit for Evaporative Coolers
		1 - Separate 120V Wiring Package (Required and used only for DCV or Prewire with VFD) - Three Phase Only

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF	YES						
2	KMAU						YES	

CURB ASSEMBLIES

NO	ON FAN	TAG	WEIGHT	ITEM	SIZE
1	# 1	KEF	48 LBS	Rail	4.000"W x 48.000"L x 12.000"H Right Comes as a set of 2.
2	# 2	KMAU	75 LBS	Curb	21.000"W x 71.000"L x 20.000"H Right Insulated
	# 2			Rail	4.000"W x 4.000"L x 36.000"H Right

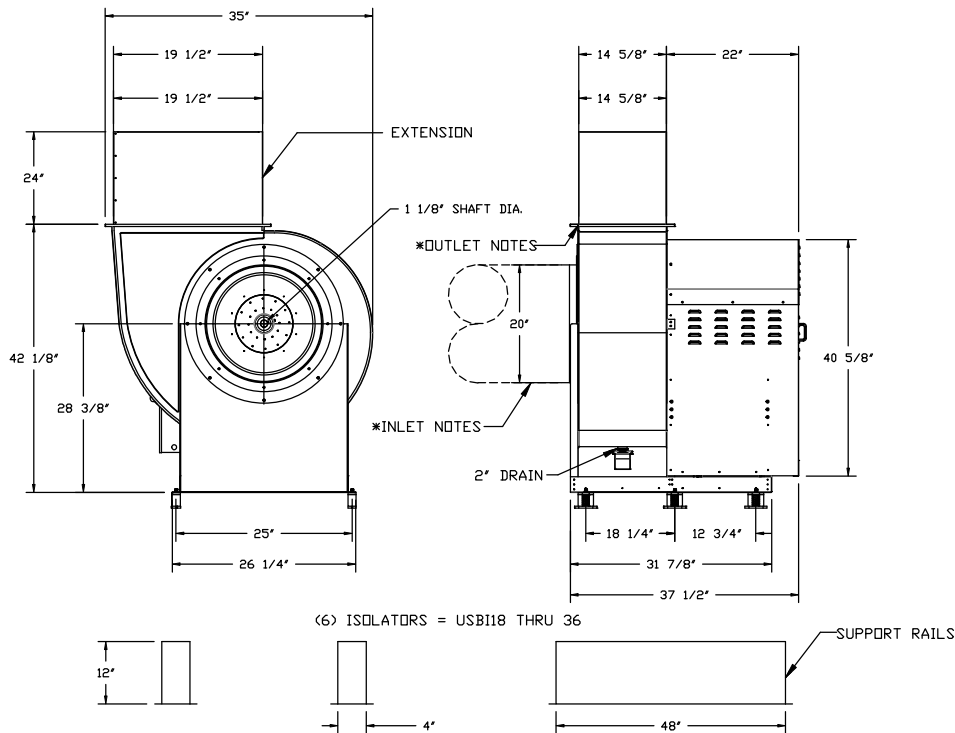
RCRBD
Record Set
TC
12/01/2020



CAPTIVEAIR

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 8	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

FAN #1 EA-USBI18DD-RM - EXHAUST FAN (KEF)



(6) ISOLATORS = USBI18 THRU 36

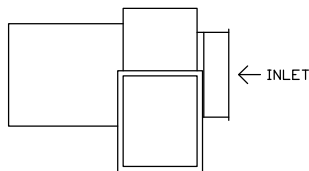
NORMAL TEMPERATURE TEST DIRECT DRIVE EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 350°F (176°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

UNIT PLAN VIEW CORNER WEIGHTS:

93 LBS

76 LBS

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



147 LBS

105 LBS

FEATURES:

- ROOF MOUNTED FANS
- UL705
- UL762 AND ULC-S645 (RESTAURANT MODEL)
- HIGH HEAT OPERATION DIRECT DRIVE 350°F (176°C)
- HIGH HEAT OPERATION BELT DRIVE 350°F (176°C)
- HEAT SLINGER
- WEATHERPROOF DISCONNECT
- GREASE CLASSIFICATION TESTING
- 2\"/>

OPTIONS

BI18 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 20\"/>



CAPTIVEAIRE

RCRBD
Record Set
TC
12/01/2020

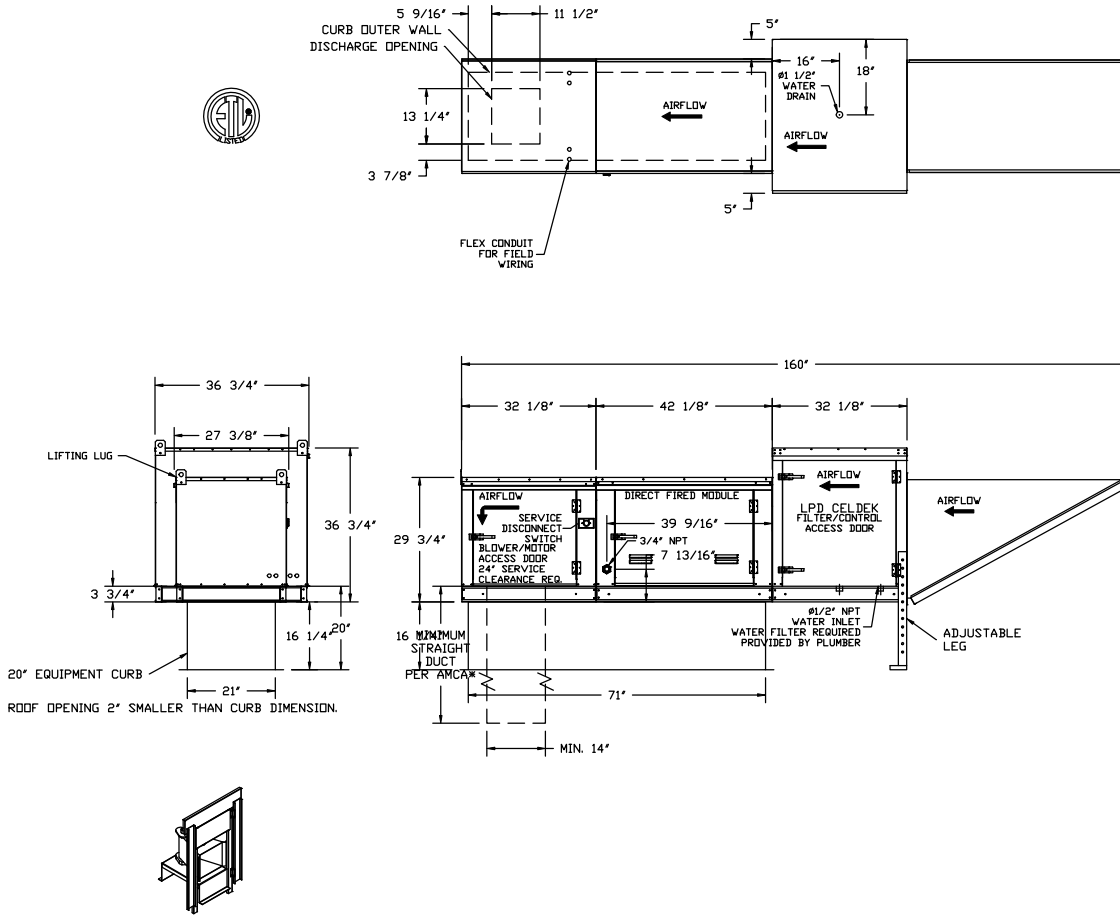
JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 9	DRAWN BY sean.duric
REV.	SCALE 3/8\"/>

- FAN #2 EA1-D250-G10 - HEATER (KMAU)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 10' BLOWER
2. EVAP COOLER (LPD CELDEK) - W/INTAKE HOOD W/EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT -> LEFT
4. MOTORIZED BACK DRAFT DAMPER 16" X 18" FOR SIZE 1 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, TFB120S ACTUATOR INCLUDED
5. LOW FIRE START: ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
6. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
7. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE
8. LAYER CONTROL FOR 1BT EVAP
9. FREEZE PROTECTION DRAIN CONTROL KIT FOR EVAPORATIVE COOLERS. INCLUDES 3-WAY WATER SOLENOID VALVE 8316G064 (SHIPPED LOOSE), PRESSURE SWITCH INSTALLED UPSTREAM OF 2WAY SOLENOID IN UNIT, BRASS TEE, 2 NPT HALF INCH NIPPLES, AND TWO STAGE THERMOSTAT T678A1361. FIELD WIRING REQUIRED BY OTHERS FOR 3-WAY VALVE, FOR BOTH CELDEK AND STANDARD V-BANK TYPE CONFIGURATIONS.
10. SEPARATE 120VAC WIRING PACKAGE FOR MAKE-UP AIR UNITS. OPTION 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.

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 IN 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 = 1°F. TEMP. RISE = 74°F.
BTUS CALCULATED OFF ACTUAL AIR DENSITY
OUTPUT BTUS AT ALTITUDE OF 0.0 ft. = 219146
INPUT BTUS AT ALTITUDE OF 0.0 ft. = 238203
OUTPUT BTUS AT ALTITUDE OF 6802 ft. = 170376
INPUT BTUS AT ALTITUDE OF 6802 ft. = 185191



Direct Fired Gas Profile Plate Assembly
Specifications:
Direct fired burners shall have patented GE Patent No. US4670280, self-adjusting profile plates designed to ensure proper air velocity and pressure drop across the burner. Profile plates shall be designed to allow proper combustion by allowing for proper air flow. The radius of turn of burner profile (G10) and slope of burner profile (G10). Burner First and Second air shall be configured with the burner located downstream of the burner. The arrangement shall ensure a consistent air flow, regardless of inlet air temperature.
Installation:
Spring-loaded burner profile plates are engineered to automatically react to the momentum of a fresh air stream, without the need for any motor or actuators to mechanically adjust them. With this feature, all BF units are designed for demand control ventilation (DCV) requirements.
Certification:
All profile plate assemblies shall be included in the BF unit's ETL listing and comply with combined safety standards ANSI Z59.4 and CSA 2.2 (non-ventilating BF heaters) and ANSI Z59.4 (recirculating BF heaters).
General Construction:
-Profile plates shall be formed from G60 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.



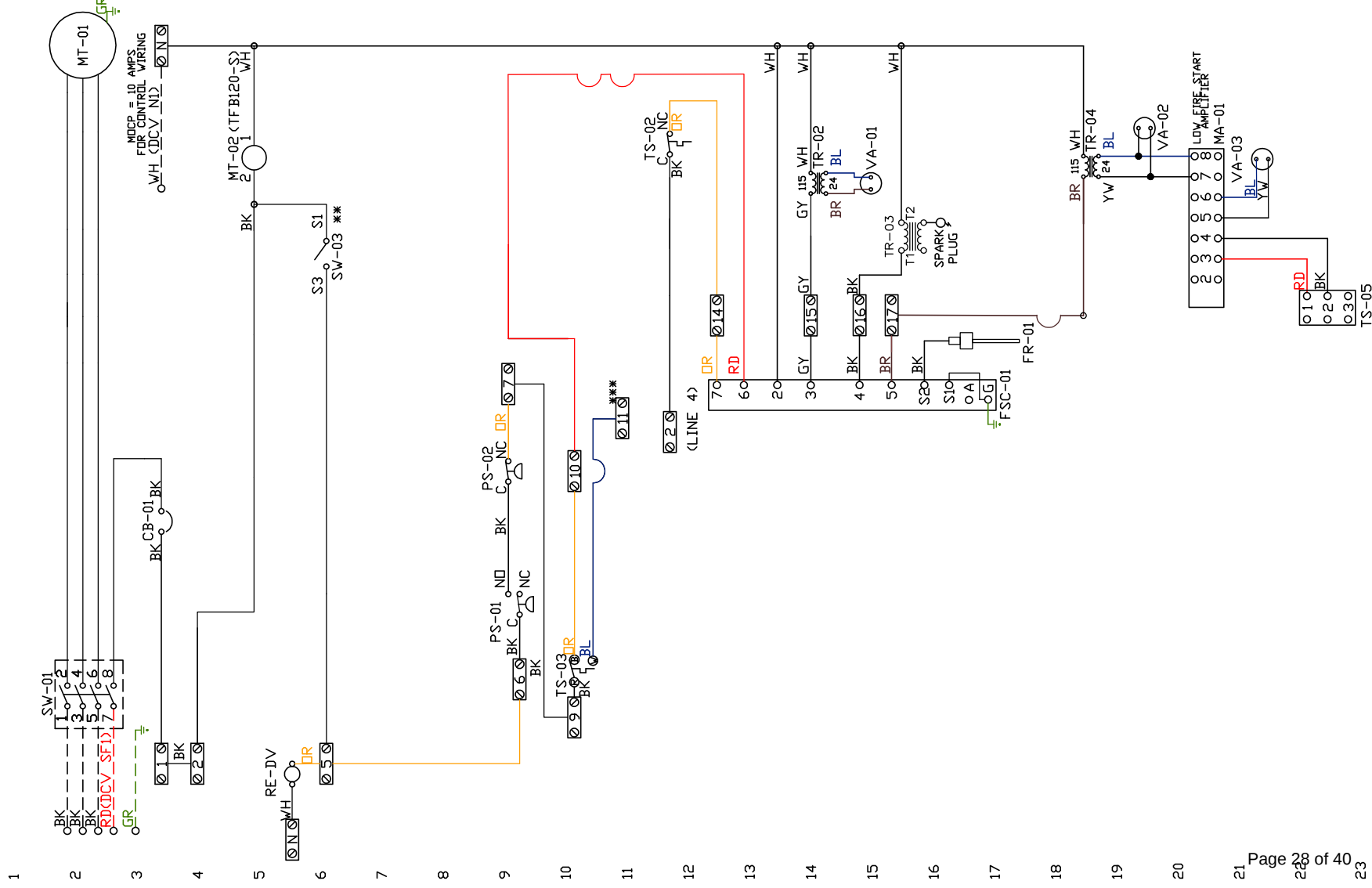
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JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 10	DRAWN BY sean.duric
REV.	SCALE 1/4" = 1'-0"

N WIRE TO IL1A AND IL1B IN DCV (D3&D7 IN EMSPLUS)

YW QD30 YW C II NO RE-DV-1

RD QD70 RD



Installed Options		
Motorized Back Draft Damper		
Discharge Temp. Control		
DCV Wiring		
Label	Component Identification	Location
CB-01	Circuit breaker (2amp)	[13]
FR-01	Flare rod	[16]
FSC-01	Fireye FSC	[11-14]
MA-01	Modulating amplifier	[19]
MT-01	Supply motor	[2]
MT-02	Damper motor	[5]
PS-01	Low Airflow Switch	[9]
PS-02	High Airflow Switch	[9]
RE-IV	DCV Relay	[115]
SV-01	Main disconnect switch	[2]
SV-03	Damper end limit switch	[4]
TR-02	Power transformer(200v)	[12]
TR-03	Ignition transformer	[4]
TR-04	Power transformer(200v)	[17]
TS-02	High temp limit switch	[10]
TS-03	Intake Air Sensor	[10]
TS-05	Discharge Air Sensor	[21]
VA-01	Pilot gas valve	[13]
VA-02	Main gas valve	[18]
VA-03	Modulating gas valve	[20]
SUPPLY	MOTOR INFO 2HP-208V-3P-5.9FLA	
ELECTRICAL INFORMATION		
MOTOR CIRCUIT MCA: 7.4A		
CONTROL CIRCUIT MCA: 2.0A		
MOTOR CIRCUIT MOP: 15A		
CONTROL CIRCUIT MOP: 15A		

ELECTRICAL INFORMATION	
MOTOR CIRCUIT	MCA: 7.4A
CONTROL CIRCUIT	MCA: 2.0A
MOTOR CIRCUIT	MOP: 15A
CONTROL CIRCUIT	MOP: 15A

NOTES

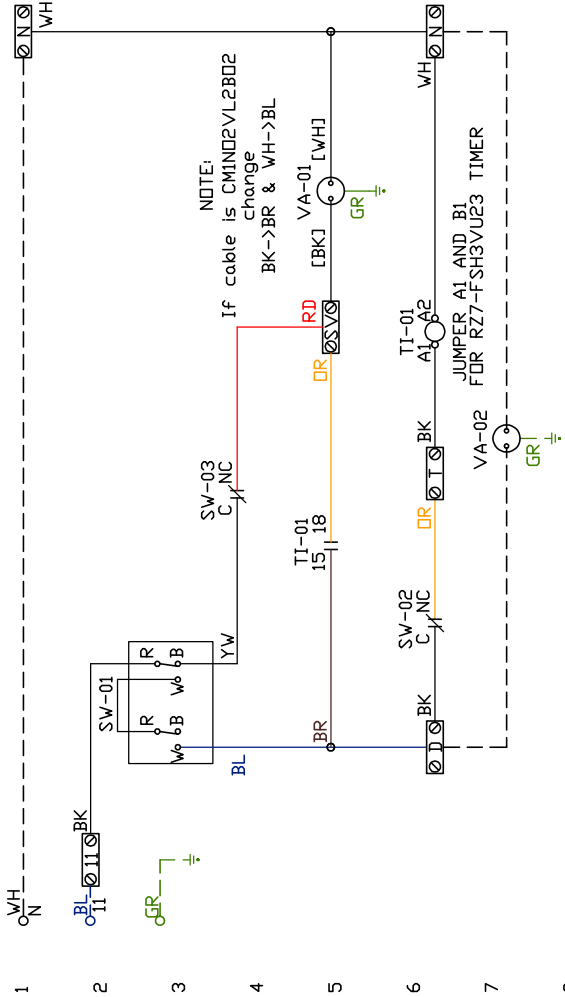
--- DENOTES FIELD WIRING

--- DENOTES INTERNAL WIRING

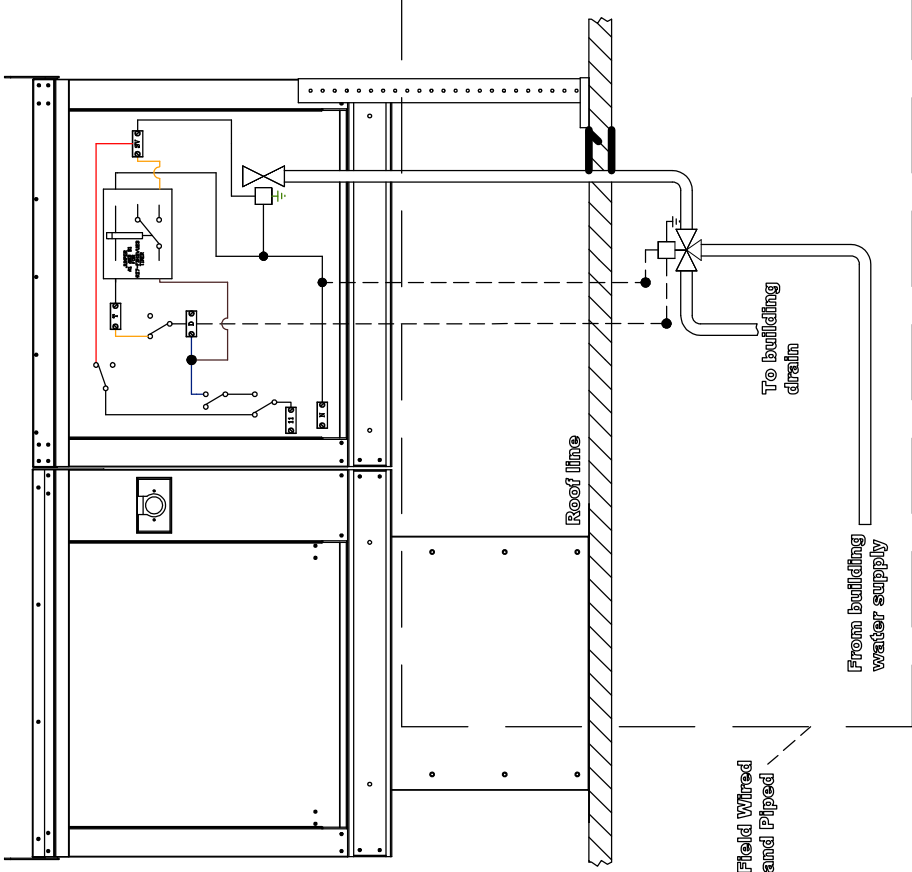
12/0

[illegible]

Installed Options



POINT-TO-POINT SUMMARY OF DRAIN CONNECTION



Label	Description	Location
SW-01	Thermostat	[2]
SW-02	Overflow Switch	[6]
SW-03	Pressure Switch	[3]
TI-01	Spray Timer	[5-7]
VA-01	Internal Solenoid Valve	[5]
VA-02	3-Way Solenoid Valve	[7]

Wire Color	Denotes
BK	BLACK
BL	BLUE
BR	BROWN
DR	DRANGE
RD	RED
WH	WHITE
YW	YELLOW
GR	GREEN
GY	GRAY
PR	PURPLE
PNK	PINK

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01/2020

Installation Wiring

JOB 4410517 - Hypno...

DRAWING NUMBER RP4410517-2

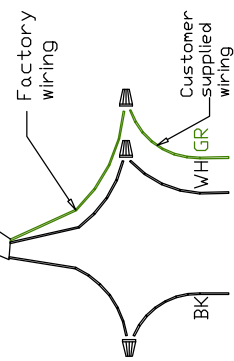
SHIP DATE 6/24/2020

MODEL EA1-D.250-G10

120 V 1 PH.

Disconnect Switch

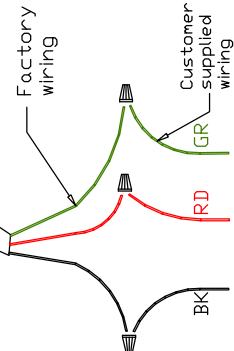
Gal-flex conduit (in unit)



240 V 1 PH.

Disconnect Switch

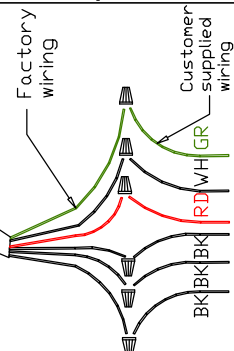
Gal-flex conduit (in unit)



208/460/600 V 3 PH.

Disconnect Switch

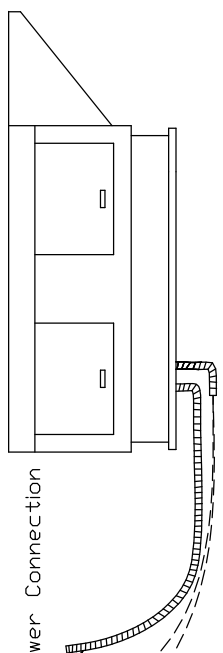
Gal-flex conduit (in unit)



DCV Connections

Power Connection

See above details:
D3 IN HEATER TO IL1A IN DCV
D7 IN HEATER TO IL1B IN DCV
WIRE TO D033 DCV
D078



NOTES

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12/6/2020

WIRE COLOR
BK - BLACK
BL - BLUE
BR - BROWN
OR - ORANGE
RD - RED
WH - WHITE
YV - YELLOW
GRN - GREEN
W - WHITE
GRY - GRAY
PUR - PURPLE
PK - PINK

ELECTRICAL PACKAGE – Job#4410517

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED					
				LOCATION	QUANTITY		FAN TAG	TYPE	Ø	HP	VOLT	FLA
1		SC-311110FP	Wall Utility Cabinet Left	12 - Wall Utility Cab. on Left End	1 Light	Smart Controls Thermostatic Control	KEF	Exhaust	3	3.000	208	9.5
				Hood # 1	1 Fan		KMAU	Supply	3	2.000	208	5.9

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TC
12/01/2020

JOB NO
4410517

MODEL NUMBER
SC-311110FP

JOB NAME
Hypno Chic - Frisco, CO R5

DRAWN BY
INSTALL
DATE
6/24/2020
DWG NO
ECP #1-1

DESCRIPTION OF OPERATION:
3 Phase w/ control for 1 Exhaust Fan, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Fans on in Fire.
Thermostatically Controlled. Room temperature sensor shipped loose for field installation. INVERTER 3 PHASE
MOTOR REQUIRED FOR USE WITH VFD.

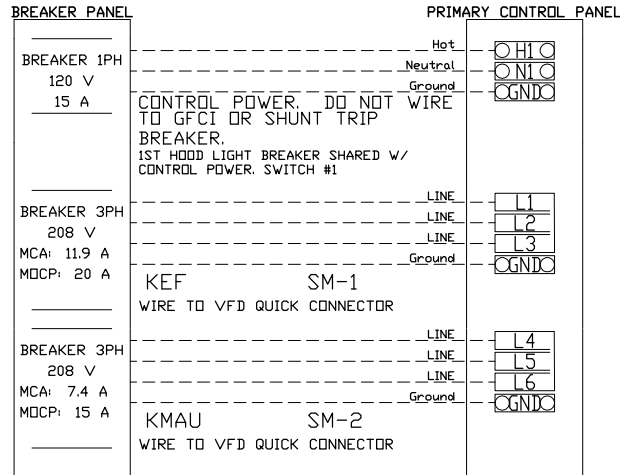
Record Set
TC

2/01/2020

BREAKER PANEL TO PRIMARY CONTROL PANEL

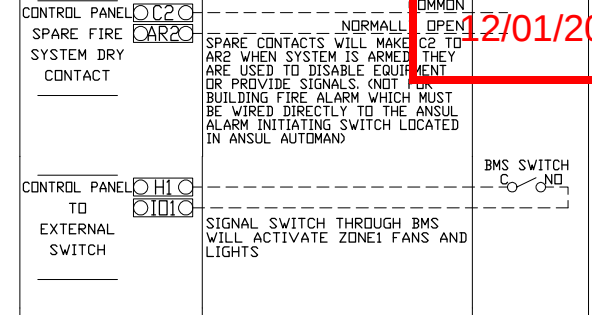
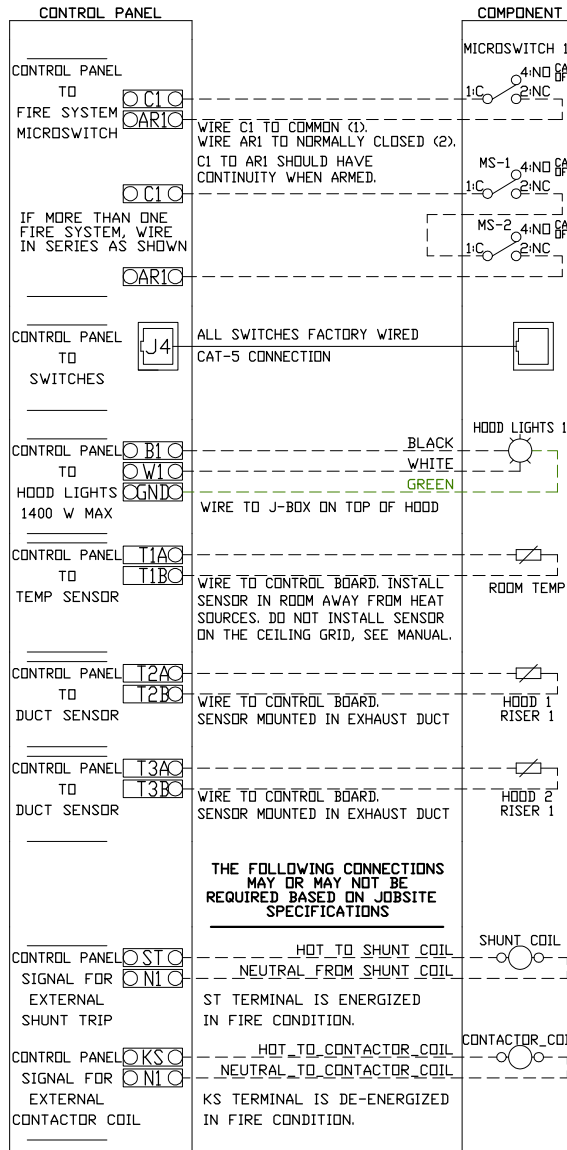
Responsibility: Electrician

BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED



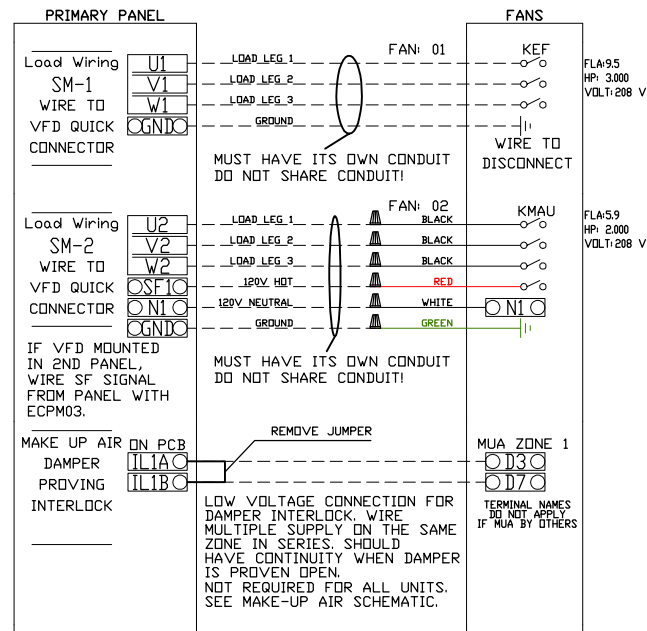
CONTROL PANEL TO ACCESSORY ITEMS

Responsibility: Electrician



CONTROL PANEL TO FANS

Responsibility: Electrician



DWG NO ECP #1-2

DuctWork #1 Parts – Job#4410517

Tag	Part #	CFM	SP	Weight	Velocity	QTY	Description
P1	EDW1445DWASY-3Z-S	1733	-0.0438	23.75	1621.12	1	Double Wall Duct – 14" Inner 45 Duct – 3 Layers Zero Clearance – 20" Stainless Steel Outer Shell.
P2	EDW1445DWASY-3Z-S	1733	-0.0625	23.75	1621.12	1	Double Wall Duct – 14" Inner 45 Duct – 3 Layers Zero Clearance – 20" Stainless Steel Outer Shell.
P3 Assembled w/P4	EDW1447DWAJDTP-3Z-S	1733	-0.014	108.83	1621.12	1	Double Wall Adjustable Duct Transition Plate – 14" Inner Duct – 3 Layers Zero Clearance – 20" Stainless Steel Outer Shell. Min Length = 11' / Max Length = 48.5' / Adjustment = 30.5' / Adjustable Section May Need To Be Cut.
P4 Assembled w/P3,P5	EDW23514TPDB	1733	0	14.65	1621.12	1	Includes single and double wall "V" Clamps. Duct to Curb Transition Down Turn, 23.50" Curb to 14" Duct, 16 GA Aluminized. Not For Use With Exhaust Fans.
P5 Assembled w/P4	EDW14RISER	1733	-0.002	2.25	1621.12	1	Single Wall Duct Riser for Welded Hoods, 14" Dia Duct. Stainless Steel.
P6	EDW1407LT	1733	-0.0025	3.63	1621.12	1	Single Wall Duct 14" diameter, 7' long, flange at both ends. Stainless Steel.
P7	EDW1415AJDKIT	1733	-0.0025	14.25	1621.12	1	Single Wall Duct Adjustable, 14" diameter, 14.50" long, flange at one end With a 14" Adjustable Collar – Stainless Steel.
P8	EDW14VESU18			22.58		1	Duct Vertical Support Kit, 14" Duct, 18" Clearance To Combustibles. Parts are Zinc Coated. Hardware Kit #3 Used On DWXXVESU & DWXXVESU18.
P9 Assembled w/P33	EDW14TEASY	1733	-0.095	15.95	1621.12	1	Single Wall Duct Tee, 14" Duct, Assembly.
P10	EDW1404CID	1733	-0.002	2.45	1621.12	1	Single Wall Duct Off Set Collar – 14" diameter duct – 1/4" Pitch.
P11	EDW1435LT	1733	-0.0137	16.34	1621.12	1	Single Wall Duct 14" diameter, 35" long, flange at both ends. Stainless Steel.
P12	EDW1448AJDKIT	1733	-0.0093	26.62	1621.12	1	Single Wall Duct Adjustable, 14" diameter, 47.5" long, flange at one end With a 14" Adjustable Collar – Stainless Steel.
P13	EDW14SUBRASY			2.96		1	Duct Support Bracket Kit, 14" Duct, Used for Hanging Duct. 12 GA Steel, Clear Zinc Coating. – 2 Rings, 4 Brackets, & Hardware Bag 2.
P14	EDW1418ADPEC	1733	-0.036	7.50	1621.12	1	Single Wall Duct Adapter, 14" Duct Dia to 18" Duct Dia, Eccentric Assembly.
P15	EDW18TEASY	3466	-0.375	22.75	1961.35	1	Single Wall Duct Tee, 18" Duct, Assembly.
P16	EDW1418ADP	1733	-0.036	7.50	1621.12	1	Single Wall Duct Adapter, 14" Duct Dia to 18" Duct Dia, Assembly.
P17	EDW1404CID	1733	-0.002	2.45	1621.12	1	Single Wall Duct Off Set Collar – 14" diameter duct – 1/4" Pitch.
P18 Assembled w/P19	EDW14RISER	1733	-0.002	2.25	1621.12	1	Single Wall Duct Riser for Welded Hoods, 14" Dia Duct. Stainless Steel.
P19 Assembled w/P18,P20	EDW23514TPDB	1733	0	14.65	1621.12	1	Duct to Curb Transition Down Turn, 23.50" Curb to 14" Duct, 16 GA Aluminized. Not For Use With Exhaust Fans.
P20 Assembled w/P19	EDW1447DWAJDTP-3Z-S	1733	-0.014	108.83	1621.12	1	Double Wall Adjustable Duct Transition Plate – 14" Inner Duct – 3 Layers Zero Clearance – 20" Stainless Steel Outer Shell. Min Length = 11' / Max Length = 48.5' / Adjustment = 30.5' / Adjustable Section May Need To Be Cut.
P21	EDW1445DWASY-3Z-S	1733	-0.0625	23.75	1621.12	1	Includes single and double wall "V" Clamps. Double Wall Duct – 14" Inner 45 Duct – 3 Layers Zero Clearance – 20" Stainless Steel Outer Shell.
P22	EDW1445DWASY-3Z-S	1733	-0.0438	23.75	1621.12	1	Double Wall Duct – 14" Inner 45 Duct – 3 Layers Zero Clearance – 20" Stainless Steel Outer Shell.
P23 Assembled w/P32	EDW18TEASY	3466	-0.435	22.75	1961.35	1	Single Wall Duct Tee, 18" Duct, Assembly.
P24	EDW1835LT	3466	-0.0115	21.00	1961.35	1	Single Wall Duct 18" diameter, 35" long, flange at both ends. Stainless Steel.
P25	EDW1848AJDKIT	3466	-0.0115	34.16	1961.35	1	Single Wall Duct Adjustable, 18" diameter, 47.5" long, flange at one end With a 18" Adjustable Collar – Stainless Steel.
P26 Assembled w/P29	EDW18TEASY	3466	-0.01	22.75	1961.35	1	Single Wall Duct Tee, 18" Duct, Assembly.
P27	EDW1804CID	3466	-0.001	3.12	1961.35	1	Single Wall Duct Off Set Collar – 18" diameter duct – 1/4" Pitch.
P28	EDW1820ADPEC	3466	-0.007	13.20	1961.35	1	Single Wall Duct Adapter, 18" Duct Dia to 20" Duct Dia, Eccentric Assembly.
System at P28		3466	-1.5653				
P29 Assembled w/P26 □=T	EDW1819ADKIT			5.55		1	Duct Access Door with handle & Grease Dam, for 18" duct use 19" door. Stainless Steel.
P30	EDW18SUBRASY			3.38		1	Duct Support Bracket Kit, 18" Duct, Used for Hanging Duct. 12 GA Steel, Clear Zinc Coating. – 2 Rings, 4 Brackets, & Hardware Bag 2.
P31	EDW18SUBRASY			3.38		1	Duct Support Bracket Kit, 18" Duct, Used for Hanging Duct. 12 GA Steel, Clear Zinc Coating. – 2 Rings, 4 Brackets, & Hardware Bag 2.
P32 Assembled w/P23 □=T	EDW1819ADKIT			5.55		1	Duct Access Door with handle & Grease Dam, for 18" duct use 19" door. Stainless Steel.
P33 Assembled w/P9 □=T	EDW1415ADKIT			3.72		1	Duct Access Door with Handle & Grease Dam, for 14" duct use 15" door. Stainless Steel.
	EDW20DWRISER-3Z-S			9.60		1	Double Wall Riser Cover – Used On 14" Inner Riser, 4' long – 3 Layers Zero Clearance – 20" Stainless Steel Outer Riser Shell Assembly. Includes Insulation & Single V Clamps For Inner & Outer Connections.
	EDW20DWRISER-3Z-S			9.60		1	Double Wall Riser Cover – Used On 14" Inner Riser, 4' long – 3 Layers Zero Clearance – 20" Stainless Steel Outer Riser Shell Assembly. Includes Insulation & Single V Clamps For Inner & Outer Connections.

**RCRBD
Record Set
TC
12/01/2020**



CAPTIVEAIR

JOB Hypno Chic – Frisco, CO R5	
LOCATION Steamboat Springs, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 18	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

DuctWork #1 Parts - Job#4410517

Tag	Part #	CFM	SP	Weight	Velocity	QTY	Description
	3M-2000PLUS			0.80		8	Duct - 3M Fire Barrier 2000 Plus Silicone - Used as sealant to Seal Duct Joints.
	EDW14CLASY			1.06		10	Duct "V" Clamp With new design 14 Ga Brackets, 14" Duct, Assembly.
	EDW14DWCLASY-3Z-S			6.54		2	Duct - 14" Duct - 20" Double "V" Clamp - 3Z Insulation & Single "V" Clamp Included - Zero Clearance.
	EDW18CLASY			1.30		10	Duct "V" Clamp With new design 14 Ga Brackets, 18" Duct, Assembly.
	EDW20CLASY			1.41		1	Duct "V" Clamp With new design 14 Ga Brackets, 20" Duct, Assembly.
Total Weight				693.69			

SINGLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

DUCT DIAMETER	HORIZONTAL SUPPORT (ft)	VERTICAL WALL SUPPORT (ft)	VERTICAL CURB SUPPORT (ft)
5"	10'	10'	24'
6"	10'	10'	24'
7"	10'	10'	24'
8"	10'	10'	24'
10"	10'	10'	24'
12"	10'	10'	24'
14"	10'	10'	24'
16"	10'	10'	24'
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'
24"	10'	10'	24'

RCRBD
Record Set
TC
12/01/2020



CAPTIVEAIRE

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 19	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

DOUBLE WALL FACTORY BUILT DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.

HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (ft)
5"	7'
6"	7'
7"	7'
8"	7'
10"	7'
12"	7'
14"	7'
16"	7'
18"	5'
20"	5'
22"	5'
24"	5'
26"	5'
28"	5'
30"	5'
32"	5'
34"	5'
36"	5'

VERTICAL			
TYPE	WALL SUPPORT (ft)	CURB SUPPORT (ft)	FLOOR SUPPORT (ft)
2R & 2R HT (5'-16')	20'	24'	24'
2R (18')	18'	24'	24'
3R & 3Z (5'-24')	10'	24'	24'
3Z (26' -36')	10'	20'	20'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

RCRBD
Record Set
TC
12/01/2020

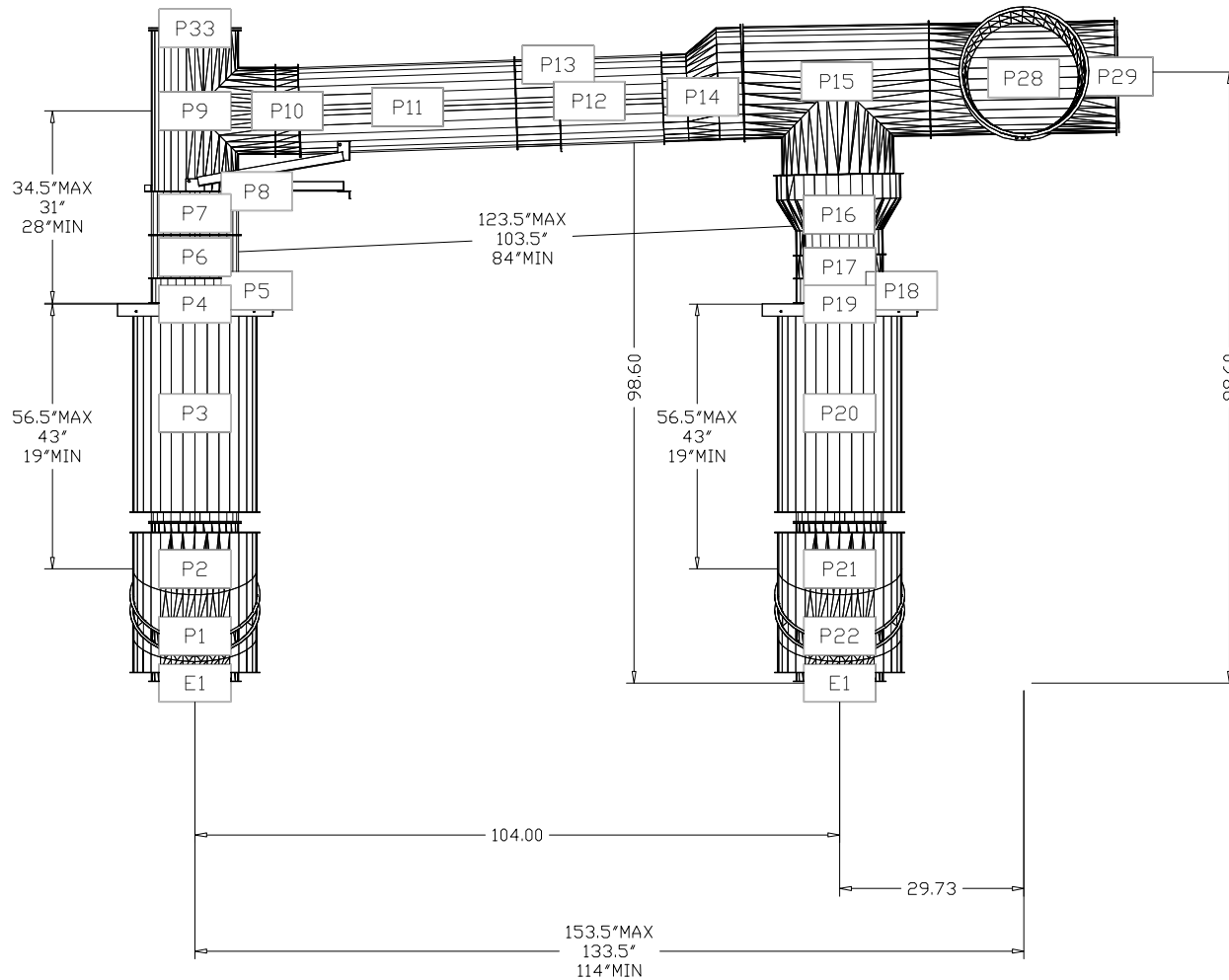


CAPTIVEAIRE

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 20	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

DuctWork #1 Front View

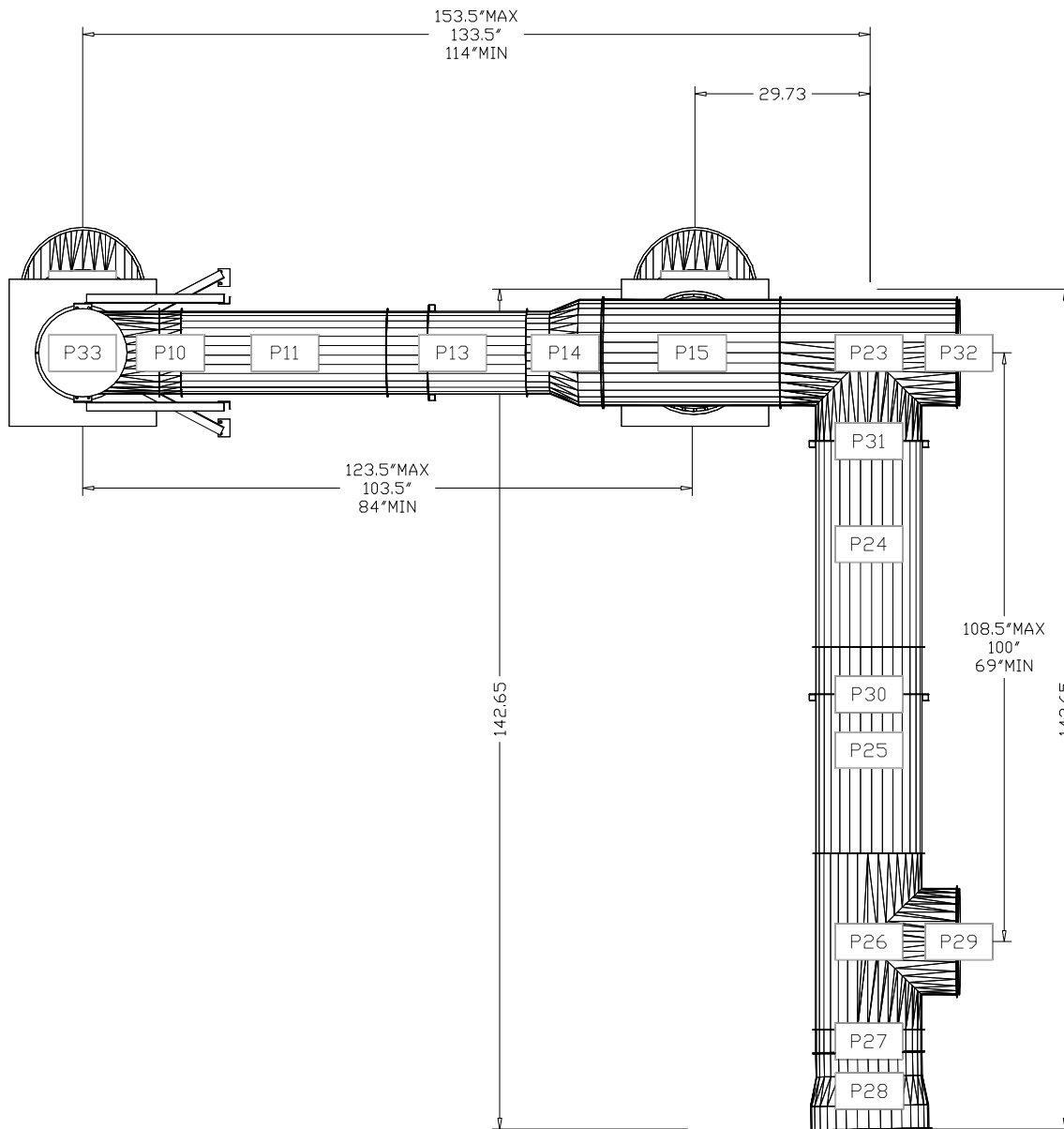
RCRBD
Record Set
TC
12/01/2020



CAPTIVEAIRE

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 21	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"

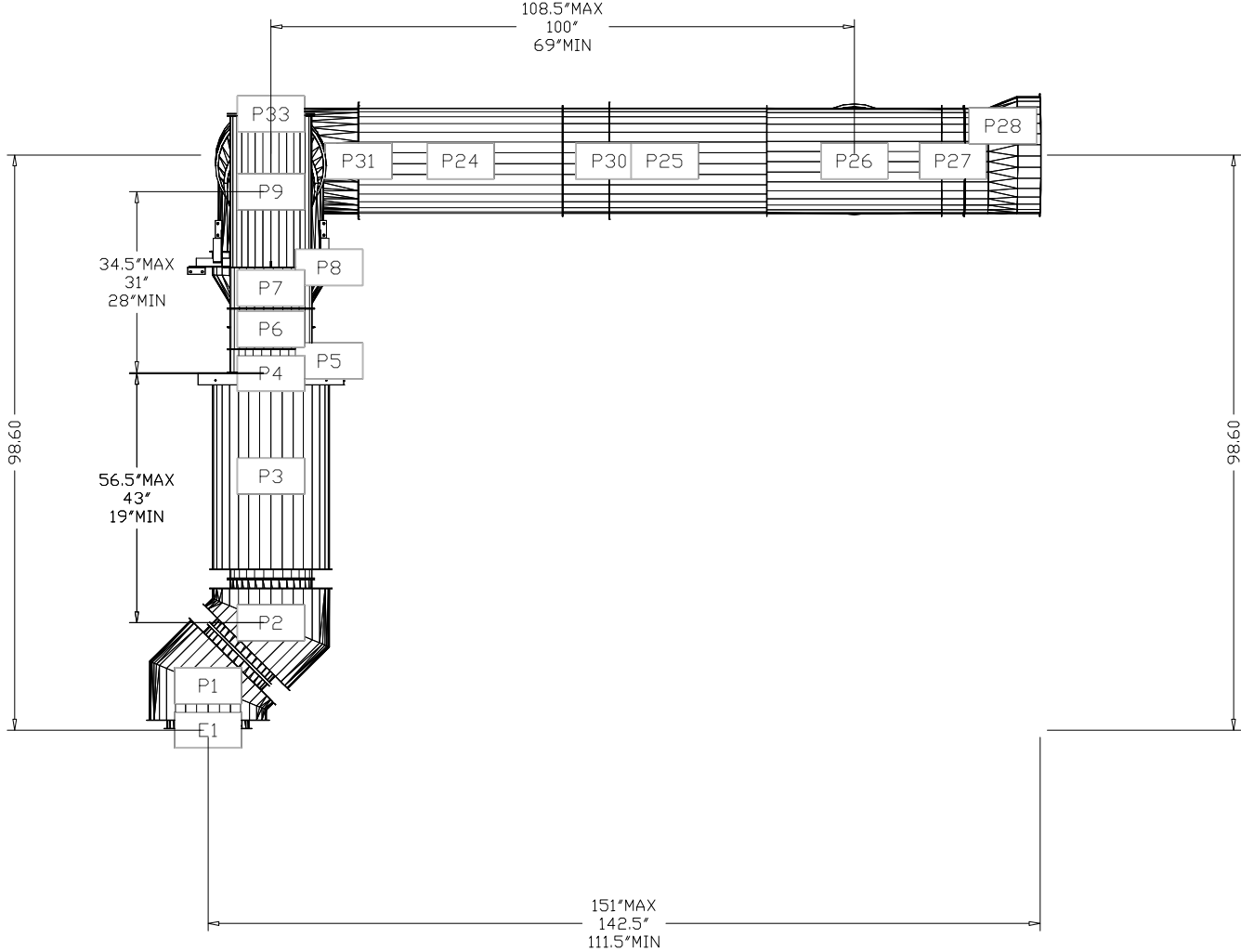
DuctWork #1 Top View



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Record Set
TC
12/01/2020

DuctWork #1 Side View

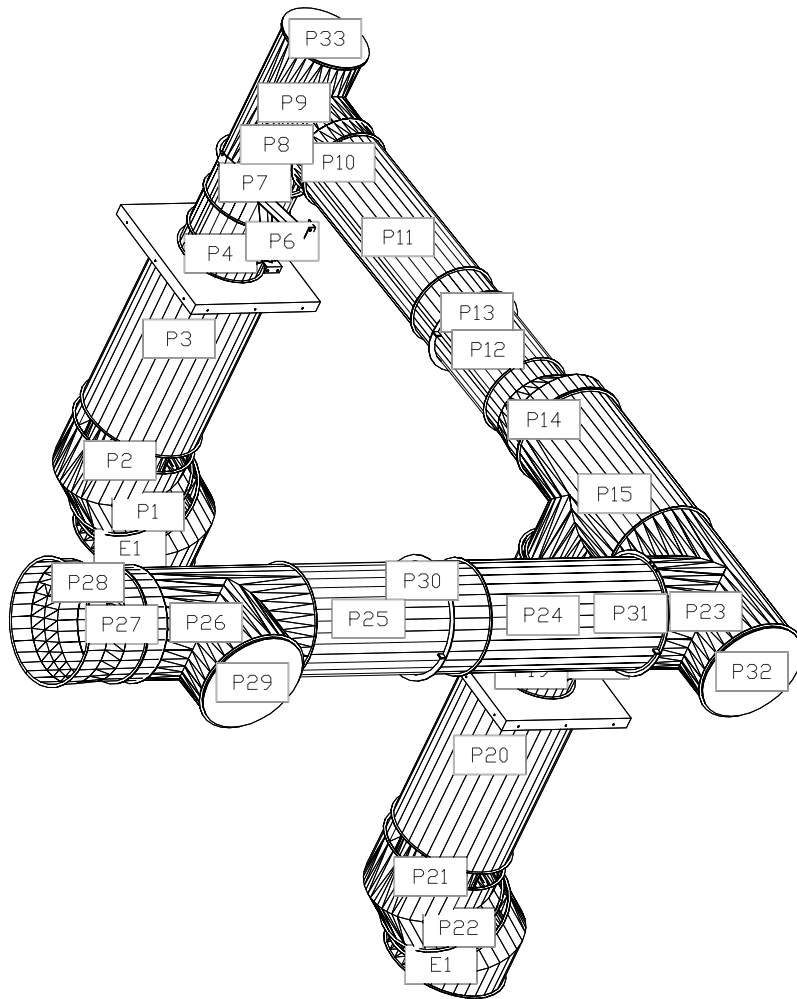
RCRBD
Record Set
TC
12/01/2020







JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 23	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"



CAPTIVEAIR

JOB Hypno Chic - Frisco, CO R5	
LOCATION STEAMBOAT SPRINGS, CO, 80487	
DATE 6/24/2020	JOB # 4410517
DWG # 24	DRAWN BY sean.duric
REV.	SCALE 3/8" = 1'-0"