WATER SOURCE HEAT PUMP

UNIT NO.	MANUFACTURER & MODEL NO.	AIR QUANTITY		COOLING CAPACITY								HEATING CAPACITY BTU/HR.	COP	ELECTRICAL				FILTER	OPER. WT. (LBS.)	REMARKS
		CFM	E.S.P.	TOTAL MBH	SENSIBLE MBH	EER	EWT (°F)	LWT (°F)	DP FT	FLOW RATE (GPM)	NO. OF ROWS			FLA	MCA	FUSE	VOLTAGE			
WSHP 1, WSHP 2, WSHP 3, WSHP 4	BOSCH FHPEC120	4,000	0.75"	120,500	93,100	13.2	76	86	14.5	30	3	158,000	4.4	–	21.9	30	460V. 3ø	(4)17¼X34½X1	1150	SEE NOTES BELOW.

NOTES
1. NEW UNIT ABOVE CEILING
2. PROVIDE ECONOMIZER
3. SMOKE DETECTOR
4. INTERLOCK WSHP 1 AND WSHP2 TO SHUTDOWN UPON DETECTION.
5. INTERLOCK WSHP 3 AND WSHP4 TO SHUTDOWN UPON DETECTION.
6. PROVIDE WSHP–3 AND WSHP–4 WITH CO2 SENSORS AND MOUNT IN SPACE AT 36" A.F.F.

EXHAUST FANS

UNIT NO.	MANUFACTURER & MODEL NO.	AIR QUANTITY			ELECTRICAL		OPER. WT. (LBS.)	ROOF OPENING	SERVICE	REMARKS
		CFM	FRPM	S.P. (IN.)	HP, [WATTS]	VOLTAGE				
PCU 1	ACCUREX XFPS–45–SHC–U–75	3,013	2,837	4.25	7.5	460V. 3ø	1,013	AS NOTED	TYPE 1 HOODS KITCHEN	ROOF MOUNTED UPBLAST GREASE FAN. VENTED GREASE TROUGH. UL762. INTERLOCK W/ MAU1. REFER TO KITCHEN VENTILATION DETAILS.
EF 1	ACCUREX XID–140–B	1,300	1,140	0.5	1/2	460V. 3ø	114	--	TYPE 2 HOOD	INLINE EXHAUST FAN. BACKDRAFT DAMPER. INTERLOCK W/ MAU1. REFER TO KITCHEN VENTILATION DETAILS.
EF 2, EF 3	GREENHECK SP–A250	215	1,000	0.375	[83]	120V. 1ø	24	--	RESTROOM	CEILING EXHAUST FAN. INTERLOCK WITH LIGHT SWITCH. PROVIDE SPEED CONTROLLER. PROVIDE BACKDRAFT DAMPER.

MAKE-UP AIR UNITS

UNIT NO.	MANUFACTURER & MODEL NO.	AIRFLOW CFM		EXT. S.P.	EVAP COOLER		ELECTRICAL				OPER. WT. (LBS.)	WINTER DESIGN (°F)	HEATING INPUT/OUTPUT (BTUH)	WEIGHT (LBS)	SERVING	REMARKS
		MIN	DESIGN		EAT	LAT	HP	FLA	FUSE	VOLTAGE						
MUA 1	CAPTIVE AIRE A3–D.500–G18	3,500	4,313	0.6"	90/64	71/64	3.0	4.3	–	460V. 3ø	1,413	33	246,666/226,933	1542	KITCHEN HOODS	100% OSA. DIRECT GAS–FIRED HEATING. EVAPORATIVE COOLER. 2" ALUMINUM FILTER. REMOTE CONTROL. INTERLOCK W/ PCU1

EQUIPMENT SCHEDULES 5

SYMBOL	ABBREVIATION	DESCRIPTION
	AD	ACCESS DOOR
	AFF	ABOVE FINISHED FLOOR
	AP	ACCESS PANEL
	CD	CEILING DIFFUSER
	CD.D.	CONDENSATE DRAIN
— D/L	DL	DOOR LOUVER
	EA	EXHAUST AIR
	EAR	EXHAUST AIR REGISTER
	SFD	SMOKE FIRE DAMPER
	FS	FLOOR SINK
	HW	HOT WATER
	OSA	OUTSIDE AIR
	POC	POINT OF CONNECTION
	RA	RETURN AIR
	RAR	RETURN AIR REGISTER
— RL —	RL	REFRIGERANT LIQUID
— RS —	RS	REFRIGERANT SUCTION
	SA	SUPPLY AIR
	SAR	SUPPLY AIR REGISTER
SD	SD	SMOKE DETECTOR
	SLD	SOUND LINED DUCTWORK
TZ	STAT	THERMOSTAT AND ZONE NO.
	T	THROAT
	TG	TRANSFER GRILLE
— U/C	UC	DOOR UNDERCUT
	VD	VOLUME DAMPER
	X	EXISTING
E	FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR	
M	FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR	
ME	FURNISHED BY MECHANICAL AND INSTALLED BY ELECTRICAL CONTRACTOR	
P	FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR	

CEILING DIFFUSER, RAR, AND EAR NOTATION
- NECK SIZE (IN DIA.)
- AIR QUANTITY (CFM)

LINEAR SUPPLY AIR REGISTER NOTATION
- NO. OF SLOT(S) WIDTH (IN.)
- AIR QUANTITY PER FEET (CFM)
- TOTAL LENGTH (FT.)

MECHANICAL LEGEND 1

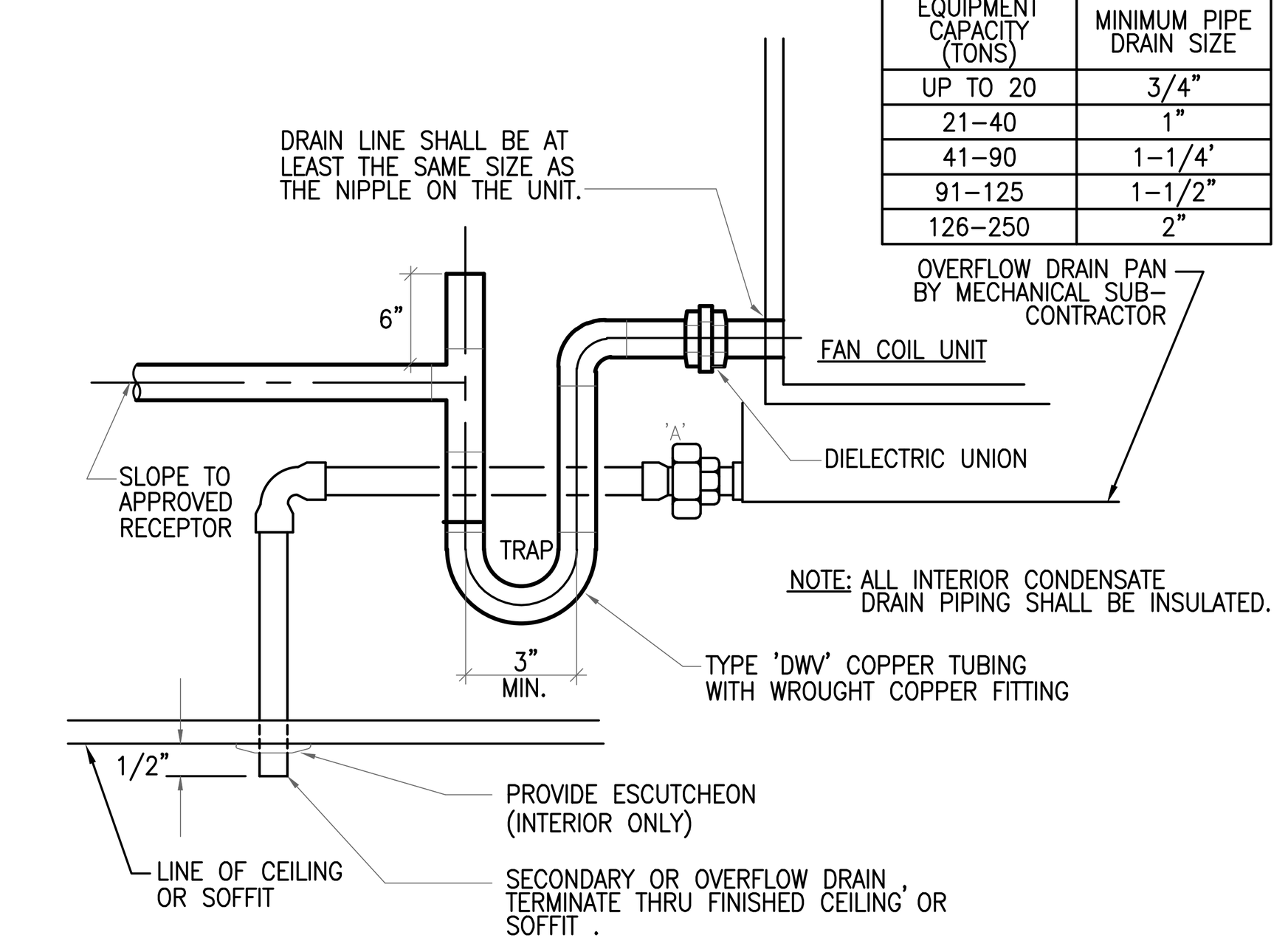
PIPING MATERIAL SCHEDULE:

PIPING	SIZE	MATERIAL	JOINT
CONDENSER WATER	1/2" - 2"	COPPER TYPE L	LEAD FREE SOLDER PRESSED MECH JOINT
	2-1/2" - 10"	SCH 40 BLK STL ASTM A53 A OR B	GROOVED, FLANGED, BUTT WELDED

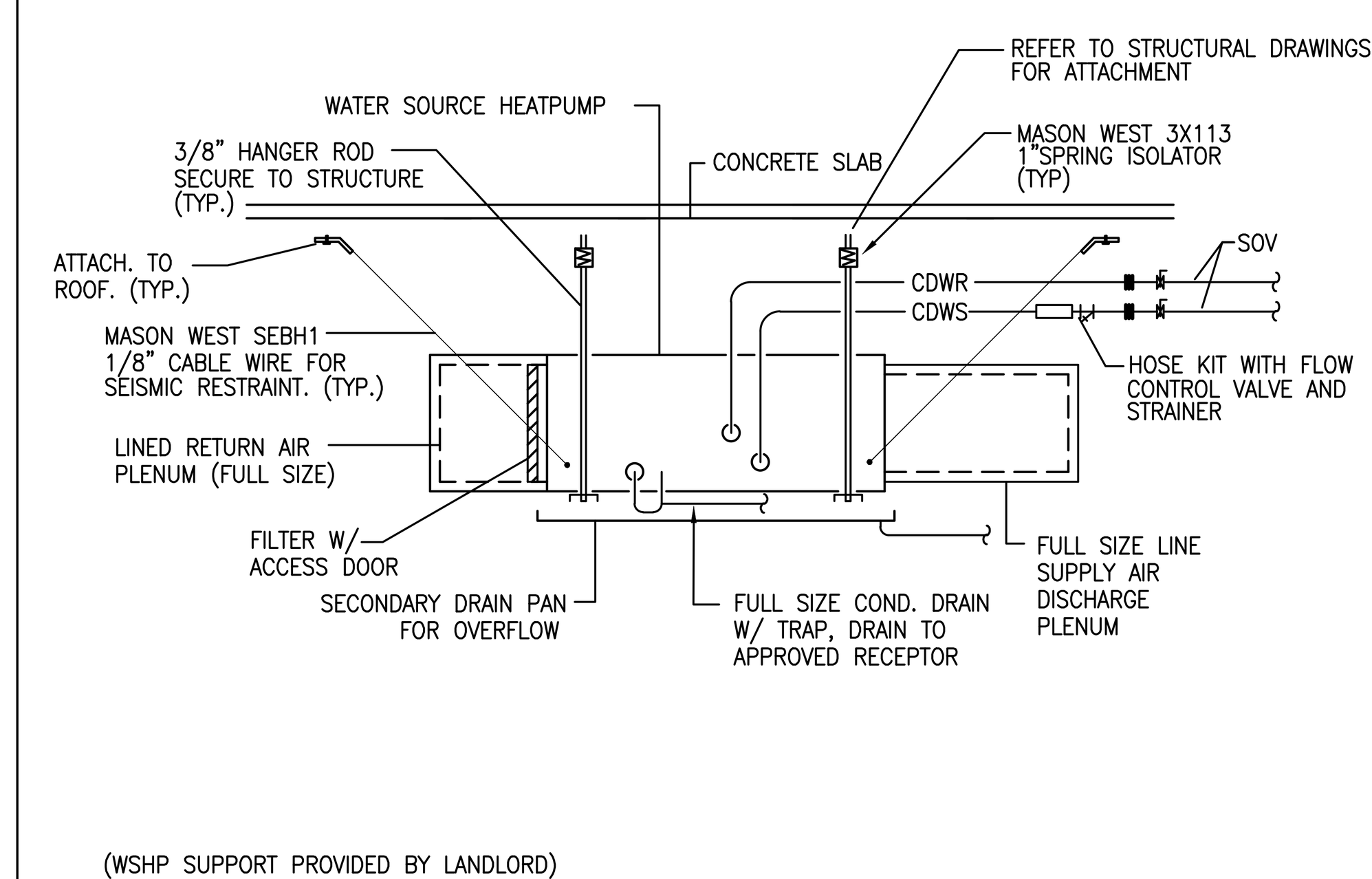
INSULATION:
CONDENSER WATER (61°-104°F): NONE

PIPING MATERIAL 9

MINIMUM CONDENSATE PIPE SIZE PER TABLE 310.3 (CMC 2016)	
EQUIPMENT CAPACITY (TONS)	MINIMUM PIPE DRAIN SIZE
UP TO 20	3/4"
21–40	1"
41–90	1–1/4"
91–125	1–1/2"
126–250	2"

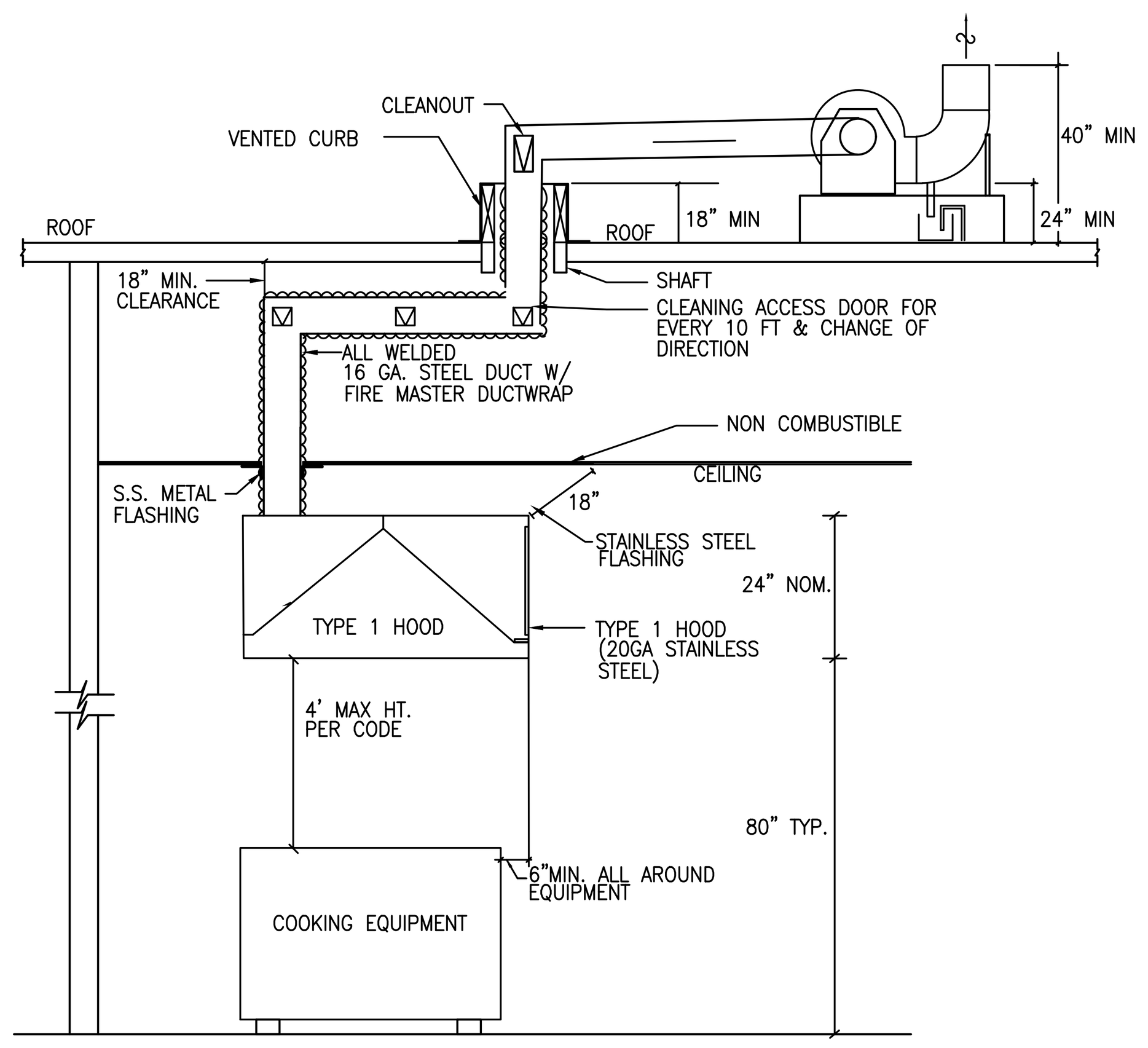


WSHP COND. DRAIN TRAP W/ OVER FLOW 6

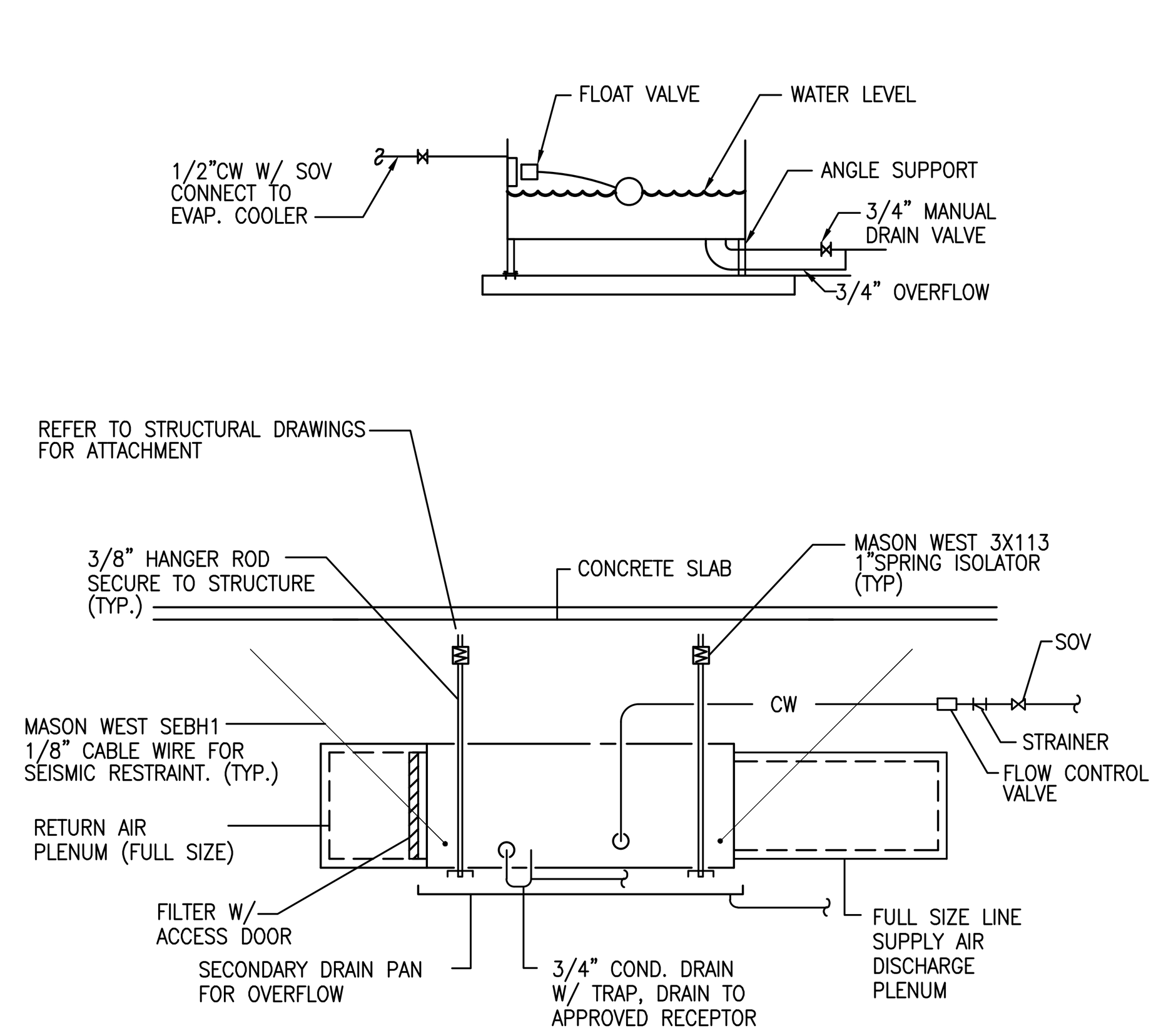


(WSHP SUPPORT PROVIDED BY LANDLORD)

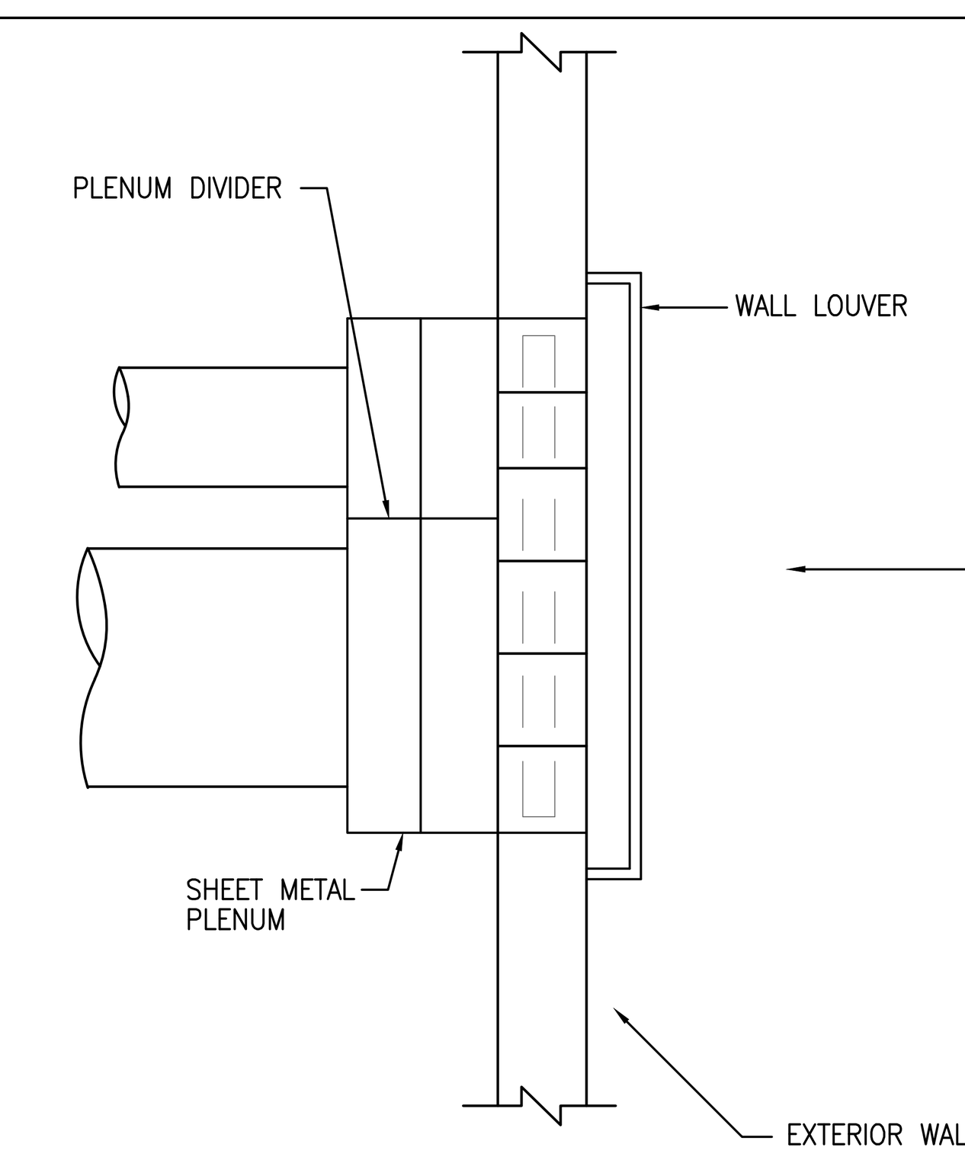
WATER SOURCE HEAT PUMP 2



TYPE I HOOD 12



MAKE UP AIR FAN 10

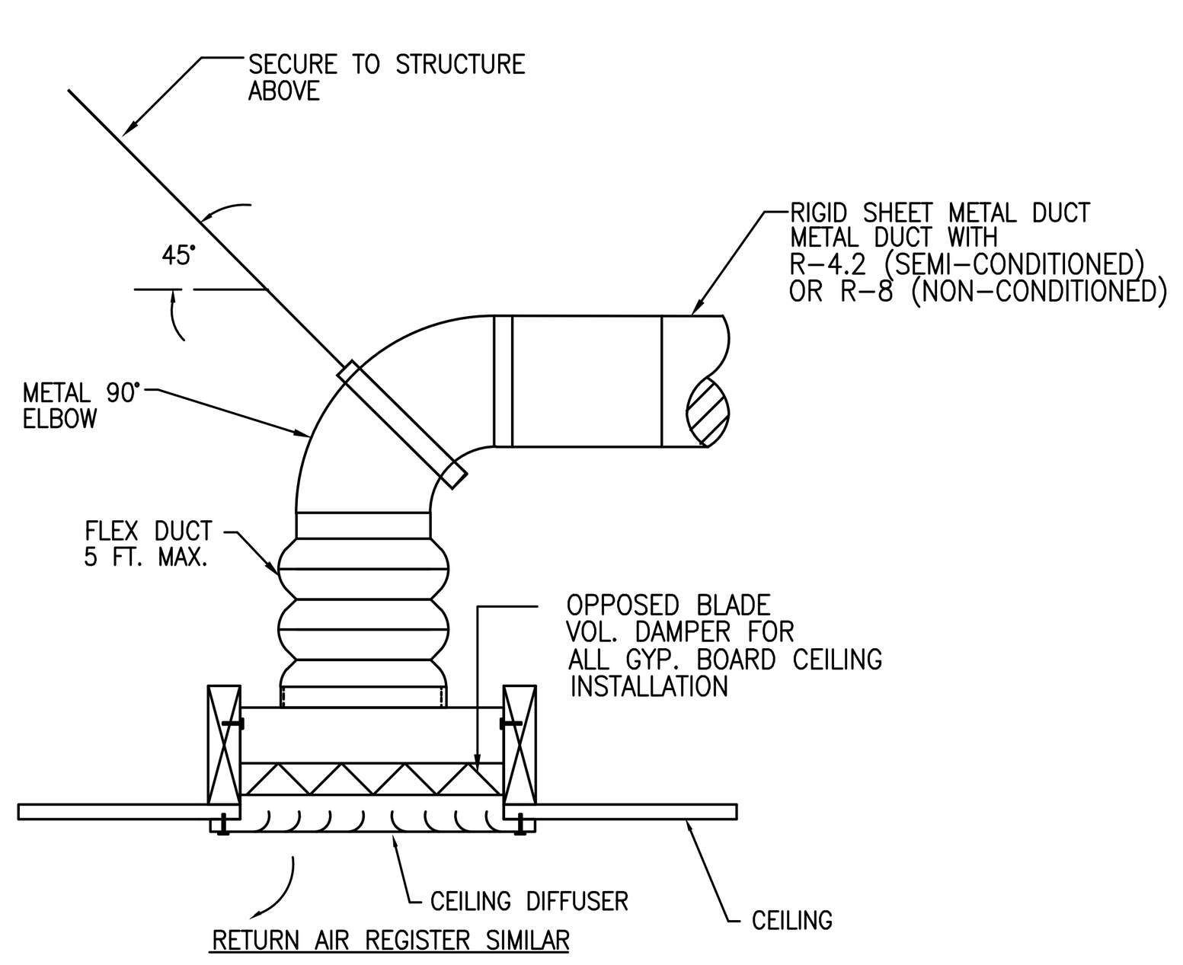


OUTSIDE AIR PLENUM DIVIDER 7

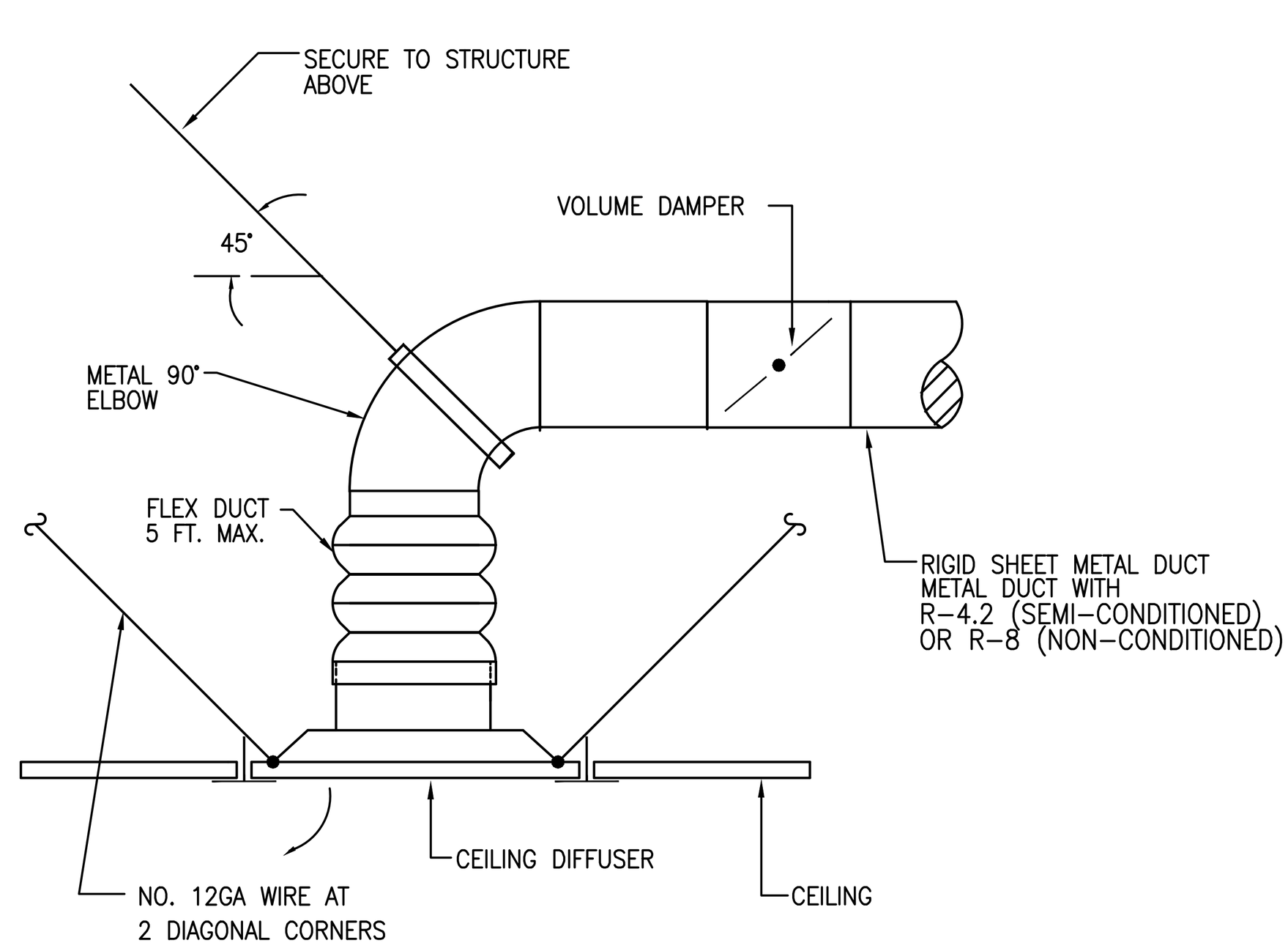
3

M-1.0:	HVAC NOTES, SCHEDULE, AND SPECIFICATIONS
M-1.1:	HVAC NOTES, SCHEDULE, AND SPECIFICATIONS
M-2.0:	HVAC PLAN
M-2.1:	ROOF PLAN
M-2.2:	HVAC PIPING PLAN
M-3.0:	KITCHEN DETAILS
M-3.1:	KITCHEN DETAILS
M-3.2:	KITCHEN DETAILS
M-3.3:	KITCHEN DETAILS
M-3.4:	KITCHEN DETAILS
M-4.0:	WASHINGTON ENERGY FORMS
M-4.1:	LOAD CALCULATIONS

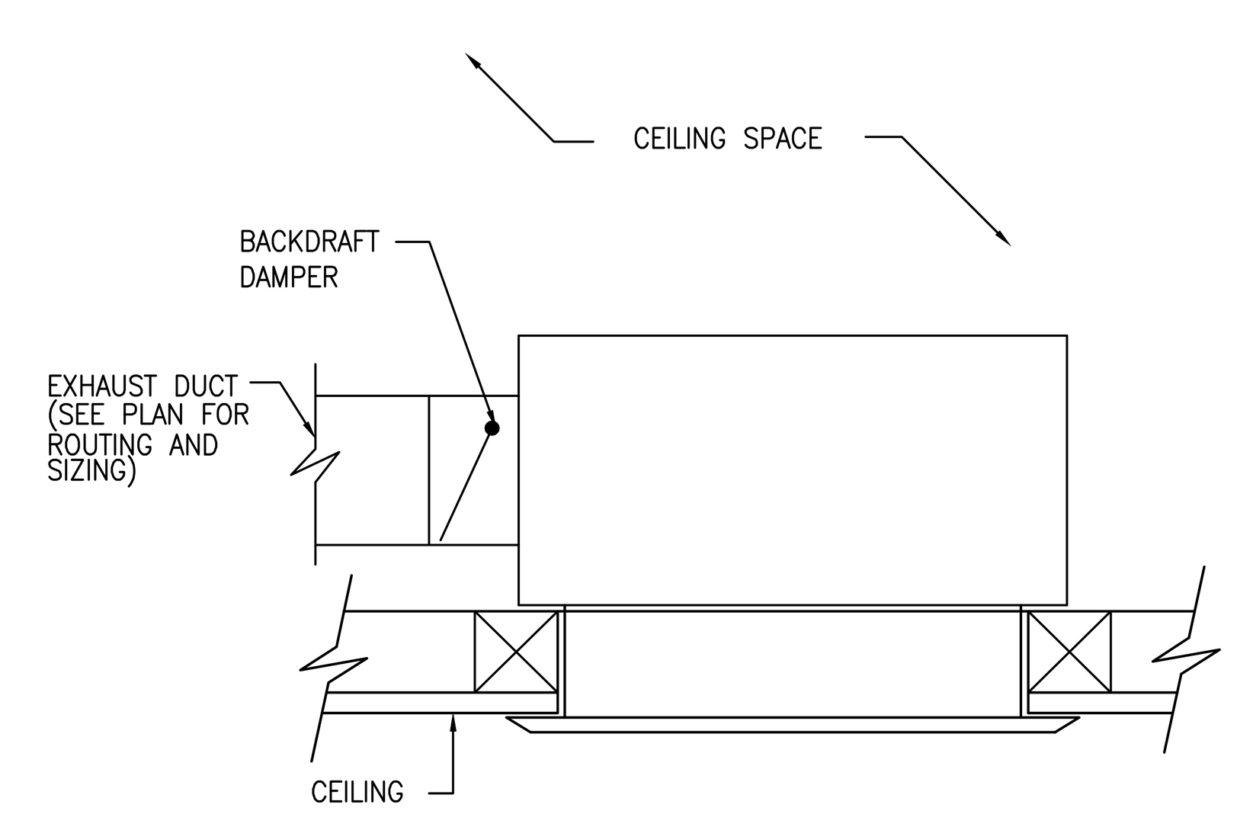
SHEET INDEX 4



HARD-LID CEILING DIFFUSER 13



T-BAR CEILING DIFFUSER 11



CEILING EXHAUST FAN 8

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RAYMOND K. PHUA STATE OF WASHINGTON 34558 REGISTERED PROFESSIONAL ENGINEER EXPIRES 05/13/2021

HVAC NOTES, SCHEDULE, AND SPECIFICATIONS

M-1.0

RPM #19–474 10/30/19

A. SCOPE
1. INSTALL NEW WATER SOURCE HEAT PUMPS, AIR DISTRIBUTION, EXHAUST FANS, AND CONTROLS.
2. METAL DUCTWORK, ELBOWS, AND ALL FITTINGS.
3. DIFFUSERS, REGISTERS, GRILLES.
4. DUCT INSULATION.
5. HVAC CONTROL SYSTEMS.
6. TESTING AND BALANCING.
7. PERMITS AND INSPECTIONS.

B. RELATED WORK SPECIFIED IN OTHER SECTIONS
1. DISCONNECT SWITCHES, & LINE VOLTAGE CONNECTIONS. (BY ELECTRICAL)
2. ALL LINE VOLTAGE WIRING AND CONDUIT. (BY ELECTRICAL)
3. CONDENSATE PIPING. (PLUMBING)

C. DRAWINGS
1. BECAUSE OF THE SMALL SCALE OF THESE DRAWINGS, IT IS NOT ALWAYS POSSIBLE TO INDICATE ALL OFFSET, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS BEFORE SUBMITTING HIS BID. NO ADDITIONAL COMPENSATION WILL BE MADE FOR EXTRA DUE TO CONTRACTOR'S FAILURE TO VISIT THE JOB SITE AND/OR FAILURE TO DETERMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING HIS BID.
2. ALL APPLIANCES DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY FASTENED IN PLACE.

D. CODE REQUIREMENTS
1. ALL WORK COVERED BY THIS SECTION OF THE SPECIFICATION SHALL CONFORM TO LATEST REQUIREMENTS OF THE NFPA AND LOCAL BODY HAVING JURISDICTION.

E. FEES, PERMITS, AND INSPECTIONS
1. CONTRACTOR MUST OBTAIN AND PAY FEES FOR PERMITS, LICENSES, INSPECTIONS, ETC., WHICH ARE REQUIRED BY ANY LEGALLY CONSTITUTED AUTHORITY.
2. THE CONTRACTOR SHALL NOT ALLOW OR CAUSE ANY OF HIS WORK TO BE COVERED UP OR CLOSED IN UNTIL IT HAS BEEN INSPECTED, TESTED, AND APPROVED BY ALL AUTHORITIES HAVING JURISDICTION. SHOULD ANY OF HIS WORK BE COVERED UP OR CLOSED IN BEFORE SUCH INSPECTION, HE SHOULD, AT HIS OWN EXPENSE, UNCOVER THE WORK TO THE SATISFACTION OF THE INSPECTION PARTY. ALL RELATED REPAIR WORK COST SHALL BE BORNE BY THIS CONTRACTOR.

F. SITE CONDITIONS
1. CONTRACTOR SHALL ACQUAINT HIMSELF WITH THE SITE CONDITIONS AND VERIFY IN FIELD THE EXACT LOCATIONS OF ALL UNDERGROUND AND ABOVE GROUND PIPING.
2. MECHANICAL, PLUMBING, AND ELECTRICAL ENGINEERING AND INSTALLATION SHALL COMPLY WITH THE 2015 IMC, 2015 IPC, AND 2015 IECC EDITION OF THE CODES.

G. PRODUCTS
1. HVAC CONTROLS: VENSTAR T4800 OR EQUIVALENT WITH 7-DAY PROGRAMMABLE AUTO-CHANGEOVER FEATURES. MOUNT THERMOSTATS BETWEEN 3 TO 4 FT. ABOVE FINISHED FLOOR.
2. RIGID DUCTWORK: PROVIDE GALVANIZED STEEL DUCT. TRANSVERSE JOINTS ON ALL SUPPLY DUCTS INSTALLED IN LOCATIONS WHERE AIR LEAKAGE WOULD BE NON-BENEFICIAL TO THE OCCUPIED AREA SHALL BE SEALED WITH 6 OZ. CANVAS SECURED IN PLACE WITH AN APPROVED LAGGING ADHESIVE, EC800 OR EQUAL DUCT SEALING COMPOUND OR DUCT TAPE.
3. FLEXIBLE DUCTWORK: THERMAFLEX M-KE OR APPROVED EQUAL AND SHALL CONFORM TO NFPA BULLETIN #90-A. FACTORY-MADE FLEXIBLE AIR DUCTS AND CONNECTORS SHALL BE NOT MORE THAN 5 FEET IN LENGTH AND SHALL NOT BE USED IN LIEU OF RIGID ELBOWS OR FITTINGS.
4. DUCT SUPPORTS AND HANGERS: RECTANGULAR DUCTS WITH A MAXIMUM SIDE NOT EXCEEDING 30" SHALL HAVE 1" WIDE 18 GAUGE METAL STRAPS. SUPPORT DUCT ON OPPOSITE SIDES WITH SHEET METAL SCREWS TO THE SIDES AND BOTTOM. ROUND DUCTS SHALL HAVE 1" WIDE STRAPS OF THE SAME GAUGE AS THE DUCTS. BRACE AND GUY TO PREVENT LATERAL AN HORIZONTAL MOVEMENT. VERTICAL DUCTS SHALL BE SUPPORTED BY GALVANIZED STEEL ANGLES AND SECURED TO THE DUCTS AND WALL SUPPORTS.
5. VOLUME DAMPERS: PROVIDE SINGLE BLADE VOLUME DAMPERS IN DUCTS CONSTRUCTED OF 22 GAUGE GALVANIZED STEEL FOR DUCTS SMALLER THAN 11 INCHES, 20 GAUGE FOR DUCTS SMALLER THAN 21 INCHES, AND 18 GAUGE FOR DUCTS LARGER THAN 21 INCHES. PROVIDE LOCKING HARDWARE AS REQUIRED. PROVIDE AND INSTALL ON ALL SUPPLY, RETURN, AND EXHAUST DUCTS AS SHOWN ON THE DRAWINGS.
6. FLEXIBLE CONNECTIONS: PROVIDE FLEXIBLE CONNECTIONS BETWEEN AIR MOVING EQUIPMENT AND DUCTWORK.
7. DUCT INSULATION: ALL CONCEALED DUCTS SHALL BE WRAPPED WITH FLEXIBLE GLASS FIBER INSULATION EQUIVALENT TO R-4.2 IN SEMI-CONDITIONED SPACES AND R-8 IN NON-CONDITIONED SPACES. INSULATION NOT REQUIRED ON LINED DUCTS AND DUCTS EXPOSED TO CONDITIONED SPACE. INSTALL INSULATION ONLY AFTER DUCTWORK HAS BEEN INSPECTED AND APPROVED.
8. DUCT OPENINGS: MECHANICAL CONTRACTOR SHALL COORDINATE LOCATION OF ALL DUCT PENETRATIONS OF STRUCTURE WITH GENERAL CONTRACTOR.
9. T-BAR CEILING SUPPLY DIFFUSERS: TITUS MODEL PSS (STEEL, PERFORATED, STAR PATTERN DEFLECTOR, BORDER TYPE 3 FOR T-BAR) OR EQUAL WITH STANDARD #26 WHITE FINISH.
10. T-BAR CEILING RETURN REGISTERS (DUCTED): TITUS MODEL PAR (STEEL, PERFORATED, BORDER TYPE 3 FOR T-BAR) OR EQUAL WITH STANDARD #26 WHITE FINISH.
11. DUCT DETECTORS: SYSTEM SENSOR D4120 4-WIRE PHOTOELECTRIC DUCT SMOKE DETECTOR OR SIMILAR. SMOKE DETECTION FOR THE DUCT SYSTEM WHERE REQUIRED BY THE MECHANICAL CODE SHALL BE DESIGNED AND INSTALLED PER THE REQUIREMENTS SET FORTH IN NFPA 72 2016 EDITION.

H. EQUIPMENT SUBMITTALS
EQUIPMENT SUBMITTALS FOR MECHANICAL EQUIPMENT SHALL BE SUBMITTED TO ARCHITECT AND ENGINEER FOR APPROVAL PRIOR TO ORDERING AND SHIPPING OF SUCH EQUIPMENT.

I. TESTING
1. AFTER COMPLETION OF WORK, TEST AND BALANCE HVAC SYSTEM TO CONFORM TO THE AIR VOLUME INDICATED ON THE DRAWINGS. PROVIDE ALL TESTING APPARATUS NECESSARY TO PERFORM ALL TESTS. WHERE REQUIRED, PROVIDE LARGER OR SMALLER PULLEYS FOR BELT-DRIVEN FANS AT NO ADDITIONAL COSTS TO OWNER.
2. THE CONTRACTOR SHALL PERFORM THE SPECIFIED TESTS AND BALANCE ALL QUANTITIES TO WITHIN 5% OF THE INDICATED VALUES. IF SYSTEM CANNOT OBTAIN SPECIFIED AIRFLOW, DESIGN ENGINEER SHALL BE NOTIFIED.

J. OPERATING INSTRUCTIONS
1. PREPARE THREE MANUALS WHICH INCLUDE:
   a. PART NUMBERS OF ALL REPLACEMENT PARTS.
   b. OILING AND LUBRICATION INSTRUCTIONS.
   c. AIR FLOW AND AIR BALANCE REPORTS.
2. A MAINTENANCE SCHEDULE WHICH SHALL LIST ALL REQUIRED MAINTENANCE ON ALL EQUIPMENT FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS.

K. GUARANTEE
1. THE CONTRACTOR SHALL GUARANTEE ALL WORK DONE HEREUNDER AGAINST FAILURE DUE TO DEFECTIVE MATERIALS AND/OR FAULTY WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE COMPLETED PROJECT BY THE OWNER. IF, DURING THIS PERIOD, ANY MATERIALS OR APPARATUS PROVE TO BE DEFECTIVE OR ANY PART OF THE SYSTEM FAIL TO FUNCTION PROPERLY, THE CONTRACTOR SHALL CORRECT THE DEFECTS WITHOUT EXPENSE TO THE OWNER. IF A CONTINUAL PROBLEM EXISTS, IT SHALL BE CORRECTED AND THE GUARANTEE SHALL COMMENCE WHEN COMPLETE.

NOTES 5

GREASE EXHAUST SYSTEM NOTES:

ALL TYPE I GREASE EXHAUST SYSTEMS SHALL BE CONSTRUCTED AND INSTALLED IN STRICT ACCORDANCE WITH CHAPTER 5 OF IMC.

HOODS WITH TWO EXHAUST NECKS SHALL BE INSTALLED OVER CORRECT COOKING EQUIPMENT. SEE FOOD SERVICE LAYOUT FOR CORRECT ORIENTATION OF HOOD.

GREASE DUCT SHALL BE CONSTRUCTED OF MINIMUM 16 GAUGE GALVANIZED STEEL WITH ALL JOINTS AND SEEMS WELDED ON THE EXTERNAL SURFACE OF THE DUCT. ALL DUCTS EXPOSED TO WEATHER SHALL BE PROTECTED FROM CORROSION.

GREASE HORIZONTAL DUCT SHALL BE SLOPED NOT LESS THAN 1/4" PER LINEAR FOOT TOWARDS THE HOOD OR APPROVED RESERVOIR WITH A MAXIMUM SINGLE RUN NOT TO EXCEED 75'. IF HORIZONTAL RUN DOES EXCEED 75', SLOPE DUCT 1"/FT.

GREASE DUCT SYSTEM SHALL NOT HAVE OPENINGS OTHER THAN THOSE REQUIRED FOR PROPER OPERATION AND MAINTENANCE OF THE SYSTEM.

CLEAN-OUTS AND ACCESS DOORS SHALL BE PROVIDED TO ALLOW FOR PROPER OPERATION AND MAINTENANCE. CLEAN-OUTS SHALL BE CONSTRUCTED OF STEEL, EQUAL TO THAT OF THE DUCT. DOOR SHALL BE EQUIPPED WITH A SUBSTANTIAL METHOD OF LATCHING SUFFICIENT TO HOLD THE DOOR TIGHTLY CLOSED AND CAN BE OPENED WITHOUT THE USE OF A TOOL.

CLEANOUTS SHALL BE PROVIDED AT ALL DUCT BRANCHES, ELBOWS, DUCT LOW POINTS AND A MAXIMUM OF 20' APART PER IMC 506.3.

GENERAL CONTRACTOR TO FULLY WRAP GREASE DUCT WITH UL LISTED, FIRE RATED DUCT WRAP TO COMPLY WITH THE BUILDING CODE. DUCT WRAP SHALL BE AT LEAST ONE-HOUR FIRE RESISTIVE RATED IN ALL BUILDINGS AND SHALL BE TWO-HOUR FIRE-RESISTIVE RATED IN TYPE 1 AND 2 FIRE-RESISTIVE BUILDINGS.

AIR VELOCITY WITHIN THE DUCT SHALL NOT EXCEED 2500 FPM.

EXHAUST DUCT OUTLET SHALL HAVE AN EXTENSION THROUGH THE ROOF OF AT LEAST 18" ABOVE THE ROOF SURFACE. FAN DISCHARGE SHALL BE AT LEAST 40" ABOVE ROOF SURFACE AND 10 FEET FROM ADJACENT PROPERTY LINE OR AIR INTAKE OPENING.

SEE KITCHEN DRAWINGS FOR ADDITIONAL SPECIFICATIONS AND CALCULATIONS.

THE VERICAL DISTANCE FROM LIP OF HOOD TO THE COOKING SURFACE SHALL BE NOT MORE THAN 4 FEET. THE ALLOWABLE DISTANCE BETWEEN THE LOWEST EDGE OF A GREASE FILTER AND THE COOKING SURFACE SHALL BE PER IMC 507.4.

METAL SHIELD (OR COLLAR) TO SEAL DUCT AT POINT OF PENETRATION OF CEILING.

HOODS LESS THAN 12" FROM THE CEILING OR WALL SHALL BE FLASHED SOLID (MIN. 22 GA. GALV. OR STAINLESS STEEL).

ALL CANOPY TYPE HOODS SHALL OVERHANG A MINIMUM OF 6" BEYOND THE COOKING SURFACE ON ALL OPEN SIDES.

THICKNESS OF HOOD SHALL BE MINIMUM 18 GAGE CARBON STEEL OR 20 GAGE STAINLESS STEEL PER IMC 507.2.3.

ALL SEAMS, JOINTS, AND PENETRATIONS OF THE HOOD ENCLOSURE THAT DIRECT AND CAPTURE GREASE-LADEN VAPORS AND EXHAUST GASES SHALL HAVE A LIQUID TIGHT CONTINUOUS EXTERNAL WELD TO THE LOWER OUTERMOST PERIMETER OF THE HOOD.

COMMERCIAL HOODS AND KITCHEN VENTILATION SHALL COMPLY WITH THE REQUIREMENTS OF IMC SECTIONS 506 THROUGH 510.

GREASE FILTERS SHALL BE INSTALLED AT AN ANGLE NOT LESS THAN 45° FROM HORIZONTAL.

LISTED GREASE HOOD ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THEIR LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

FIELD APPLIED OR FACTORY BUILT GREASE DUCT ENCLOSURE SHALL BE INSTALLED PER THE LATEST MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IN COMPLIANCE WITH TERMS OF ITS LISTING.

ALL END CUTS OR CUTS IN THE FOIL JACKET OF FIELD APPLIED GREASE DUCT ENCLOSURE SHALL BE SEALED PER THE MANUFACTURER'S RECOMMENDATIONS.

ALL INSTALLATIONS SHALL BE COMPLETELY ACCESSIBLE FOR VISUAL INSPECTION.

AT TIME OF INSPECTION, THE FIELD APPLIED OR FACTORY BUILT GREASE DUCT ENCLOSURE INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE AT THE JOB SITE.

ADDITIONAL ITEMS:

FIRE DEPARTMENT APPROVAL SHALL BE REQUIRED ON FIRE PROTECTION SYSTEM FOR GREASE HOODS AND DUCTS AS REQUIRED BY THE INTERNATIONAL MECHANICAL CODE AND AS REQUIRED BY THE FIRE CODE.

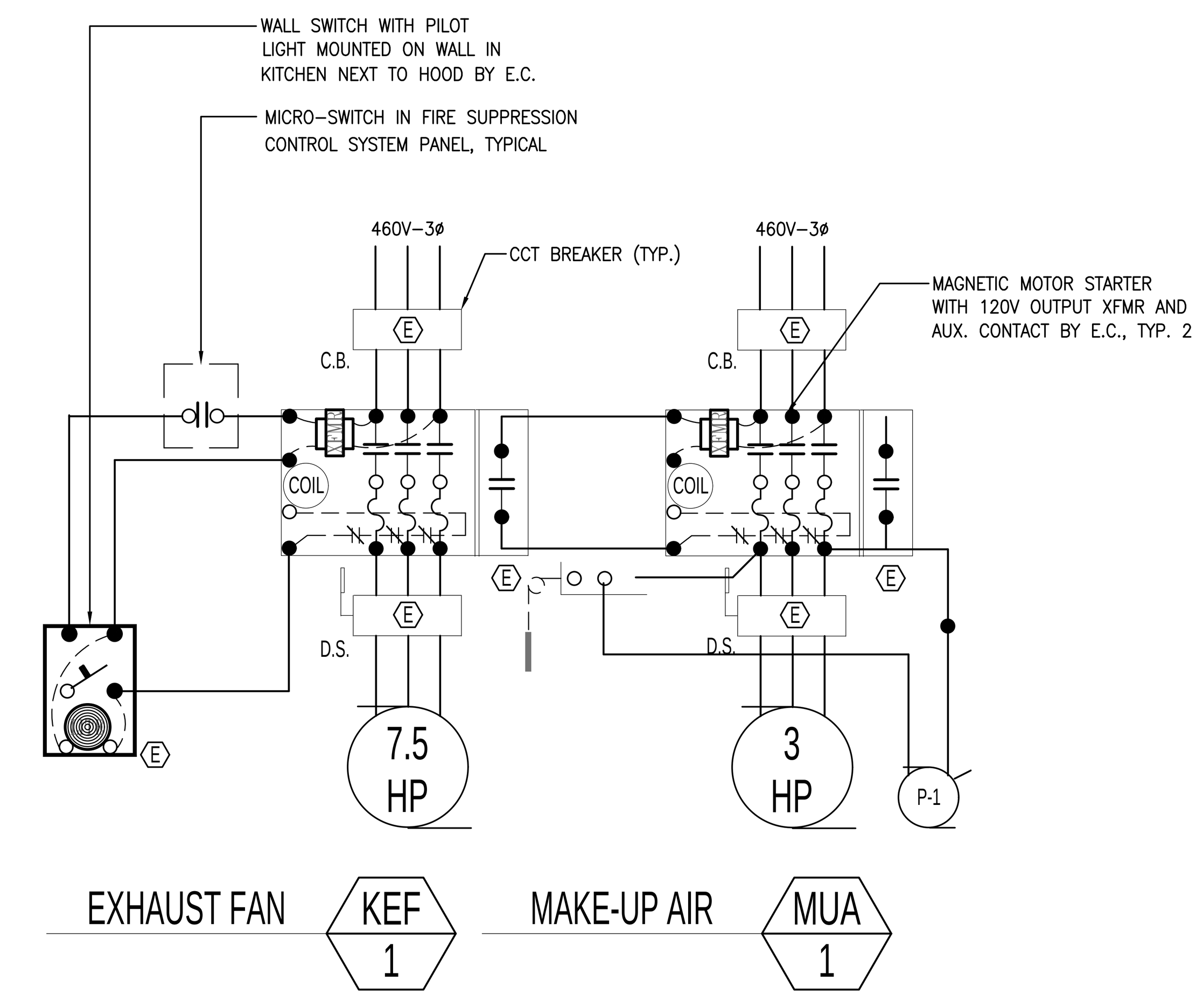
AL FIRE-EXTINGUISHING SYSTEMS SHALL BE INTERCONNECTED TO THE FUEL OR CURRENT SUPPLY SO THAT THE FUEL OR CURRENT IS AUTOMATICALLY SHUT OFF TO ALL EQUIPMENT UNDER THE HOOD WHEN THE SYSTEM IS ACTIVATED.

OWNER OF ESTABLISHMENT SHALL BE RESPONSIBLE FOR CLEANLINESS, MAINTENANCE, AND INSPECTION OF KITCHEN EXHAUST SYSTEM, FIRE PROTECTION, AND COOKING EQUIPMENT.

A DRAWING OF THE EXHAUST SYSTEM(S) INSTALLATION ALONG WITH A COPY OF OPERATING INSTRUCTIONS FOR SUBASSEMBLIES AND COMPONENTS USED IN THE EXHAUST SYSTEM(S), INCLUDING ELECTRICAL SCHEMATICS, SHALL BE MADE AVAILABLE ON THE PREMISES.

HOOD EXHAUST FAN SHALL CONTINUE TO OPERATE AFTER THE EXTINGUISHING SYSTEM HAS BEEN ACTIVATED, UNLESS FAN SHUTDOWN IS REQUIRED BY A LISTED COMPONENT OF THE VENTILATION SYSTEM.

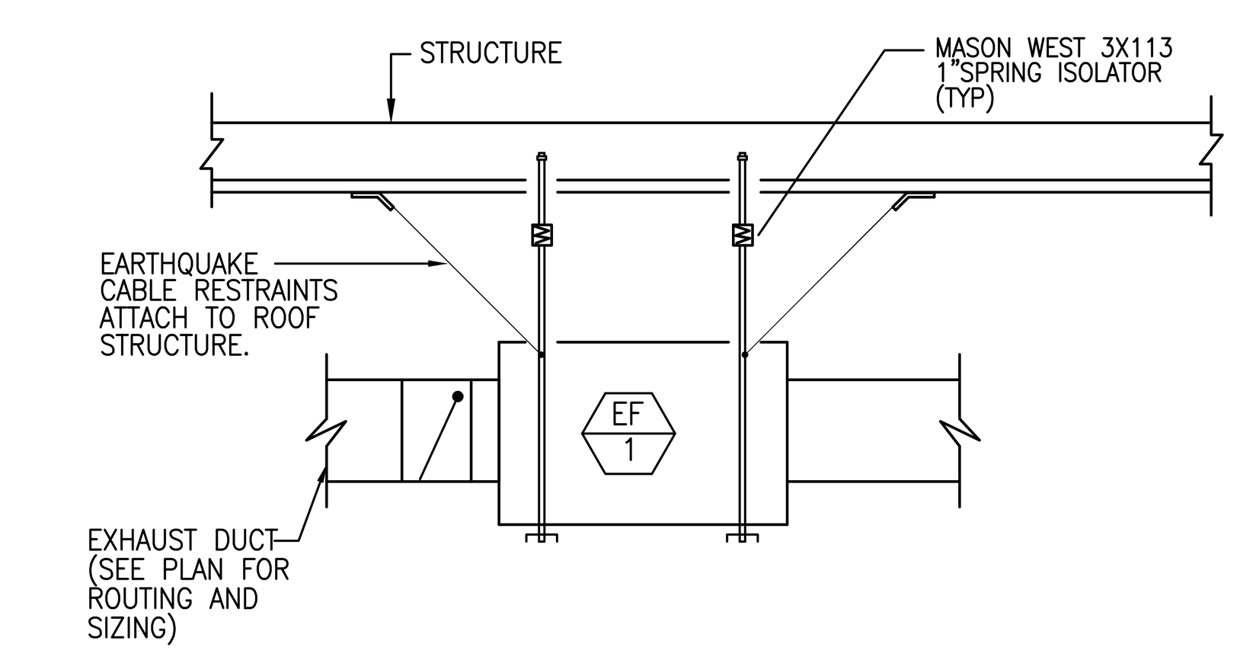
GREASE NOTES 4



NOTES:

THE EXHAUST FAN AND MAKE UP AIR SYSTEM SHALL BE CONNECTED BY AN ELECTRICAL INTERLOCK SWITCH.

KITCHEN HOOD WIRING DIAGRAM 1



INLINE EXHAUST FAN 2

NOT IN USE 3

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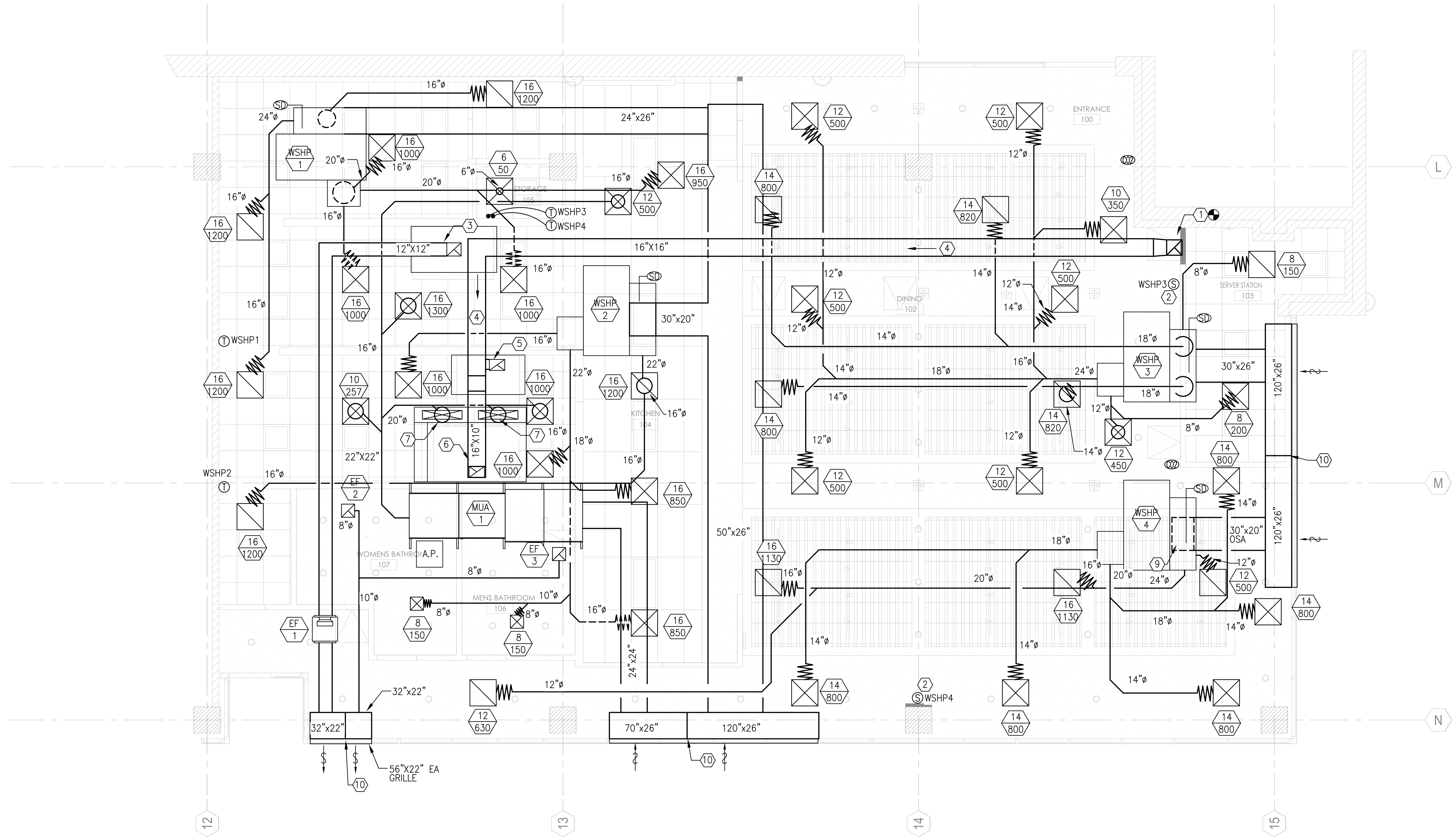
HVAC NOTES, SCHEDULE, AND SPECIFICATIONS

M-1.1

RPM #19-474 10/30/19



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KEYED NOTES

1. PROVIDE TRANSITION AND CONNECTION TO LANDLORD PROVIDED 14"X14" UL LISTED TYPE I GREASE EA DUCT UP THRU SHAFT TO ROOF. 3013 CFM, 2214 FPM.
2. INSTALL REMOTE TEMPERATURE SENSOR AND WIRE TO THERMOSTAT IN STORAGE ROOM. COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL REQUIRED WIRING.
3. 12"X12" EXHAUST DUCT TO TYPE 2 HOOD. PROVIDE CONNECTION TO HOOD COLLAR. 1300 CFM, 1300 FPM.
4. 16"X16" UL LISTED TYPE I GREASE EA DUCT SLOPED AT ¼" PER FOOT DOWN IN DIRECTION OF ARROW. 3013 CFM, 1695 FPM.
5. 12"X12" UL LISTED TYPE I GREASE EA DUCT SLOPED AT 1/4" PER FOOT DOWN TOWARDS HOOD. PROVIDE UL LISTED DAMPER AND SET AT 1535 CFM, 1535 FPM.
6. 16"X10" UL LISTED TYPE I GREASE EA DUCT SLOPED AT ¼" PER FOOT DOWN TOWARDS HOOD. PROVIDE UL LISTED DAMPER AND SET AT 1478 CFM. 1520 FPM.
7. 14"ø SA DUCT TO HOOD. PROVIDE VD AND SET AT 628CFM.
8. NOT IN USE.
9. CONNECT OSA DUCT TO BOTTOM OF RETURN PLENUM. BOTTOM OF OSA DUCT AT A MINIMUM OF 12'-3" A.F.F.
10. PROVIDE PLENUM DIVIDER. SEE DETAIL ON M-1.0.

GENERAL NOTES

1. EXISTING BUILDING INSULATION SHALL REMAIN.
2. GREASE EXHAUST DUCTWORK CLEANOUTS SHALL BE PROVIDED AT EVERY 10', AT EVERY CHANGE OF DIRECTION.
3. ALL EXHAUST OPENINGS SHALL BE 10' AWAY FROM ANY INTAKE OPENING.
4. ALL TYPE I EXHAUST DUCTWORK SHALL BE UL LISTED AND PROVIDED BY HOOD MANUFACTURER. FOLLOW MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
5. FOLLOW MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR DUCT CONNECTIONS.
6. PROVIDE SINGLE BLADE VOLUME DAMPERS IN DUCTS CONSTRUCTED OF 22 GAUGE GALVANIZED STEEL FOR DUCTS SMALLER THAN 11 INCHES, 20 GAUGE FOR DUCTS SMALLER THAN 21 INCHES, AND 18 GAUGE FOR DUCTS LARGER THAN 21 INCHES. PROVIDE AND INSTALL ON ALL SUPPLY DUCTS.

NORTH

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

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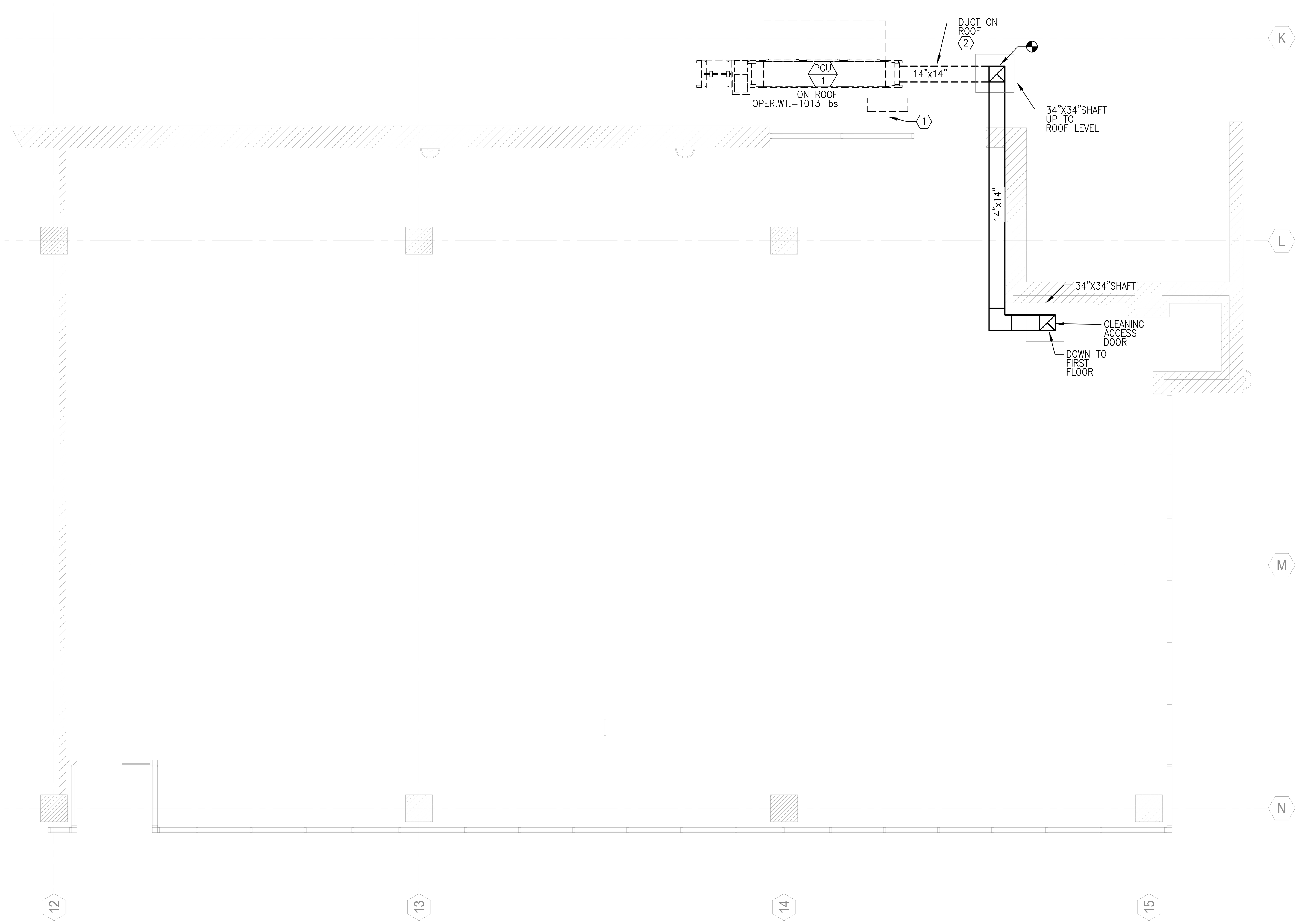
HVAC PLAN

M-2.0

RPM #19-474 10/30/19



KEYED NOTES

1. ACCUREX PROVIDED ANSUL SYSTEM. COORDINATE WITH FIRE SYSTEM INSTALLER FOR EXACT LOCATION. ON ROOF.
2. TENANT PROVIDED GREASE DUCT ON ROOF TO CONNECT TO 14"X14" LANDLORD PROVIDED GREASE DUCT IN SHAFT.

GENERAL NOTES

1. GREASE EXHAUST DUCT SHALL HAVE A CLEANING ACCESS DOOR FOR EVERY 10 FEET AND CHANGE OF DIRECTION.

LEVEL 2-HVAC PLAN

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

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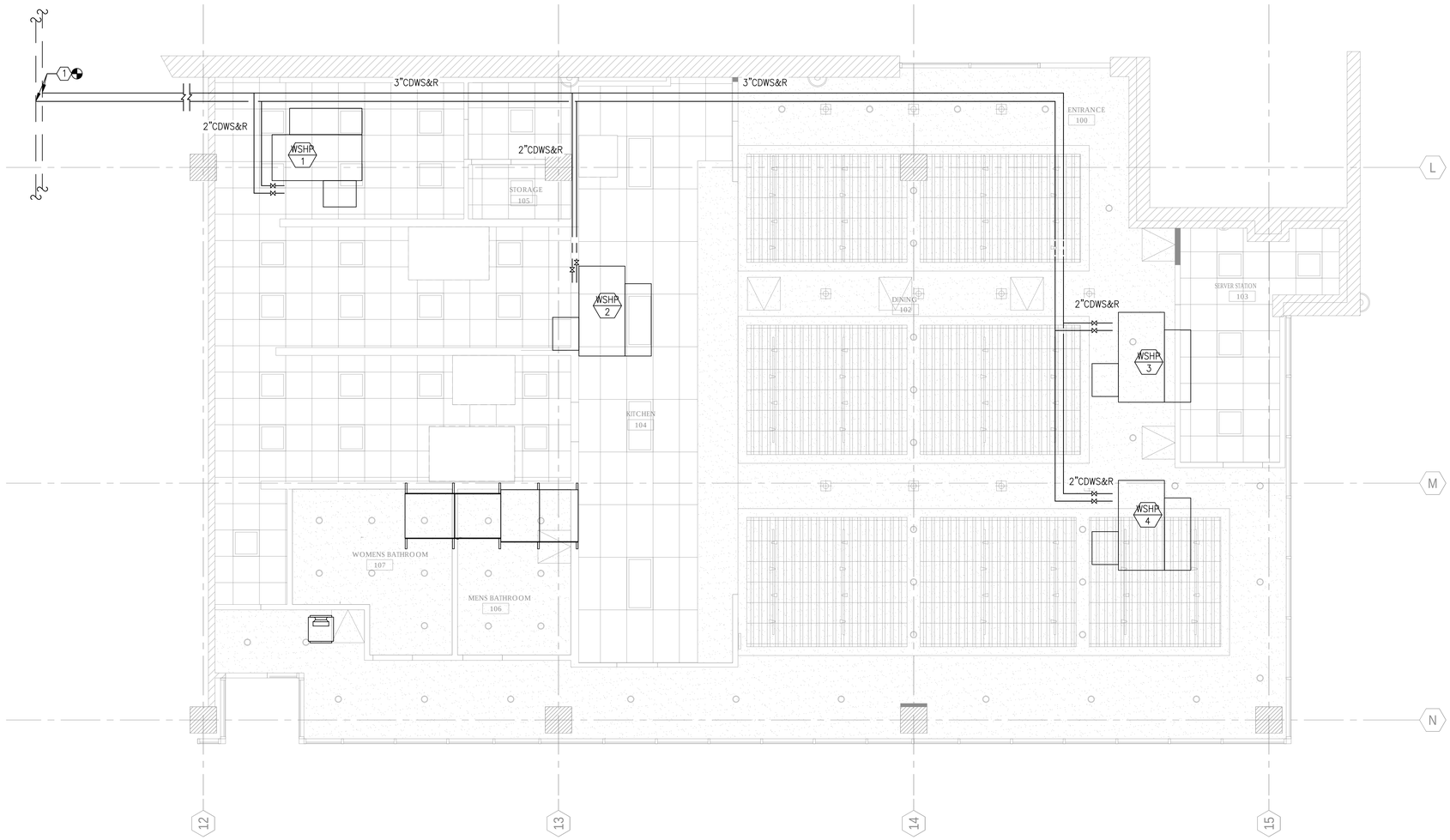
HVAC PLAN

M-2.1

RPM #19-474 10/30/19



KEYED NOTES

1. CONNECT 3"CDWS&R TO EXISTING 3" LINES. VERIFY IN FIELD EXACT LOCATION.

NORTH

LEVEL 1-HVAC PIPING PLAN

SCALE 1/4"=1'-0"

1

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05/13/2021

HVAC PIPING PLAN

M-2.2

RPM #19-474

10/30/19

HOOD INFORMATION – Job#4037100

HOOD NO.	TAG	MODEL	LENGTH	MAX. COOKING TEMP.	APPLIANCE DUTY	DESIGN CFM/Ft	TOTAL EXH. CFM	EXHAUST PLENUM RISER(S) WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.	TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG END TO END	ROW
1	RICE COOKERS	4224 VHB-ND	6' 6"	700 Deg.	N/A	200	1300	12"	13"	4"		1300	1200	-0.163"	0	430 SS 100%	ALONE	ALONE
2	FRYERS	3642 BD-2-6-PLT	5' 7"	600 Deg.	Heavy	275	1535	10"	14"	4"		1535	1579	-1.210"	0	430 SS Where Exposed	ALONE	ALONE
3	RANGE/NOODLE	5424 ND-2-PSP-F	7' 6"	450 Deg.	Medium	197	1478	10"	14"	4"		1478	1520	-0.558"	1256	430 SS Where Exposed	ALONE	ALONE

PATENT NUMBERS

AC-PSP (United States) - US Patent 7963830 B2
AC-PSP Wall (Canada) - CA Patent 2820509
AC-PSP Island (Canada) - CA Patent 2520330

HOOD INFORMATION

HOOD NO.	TAG	FILTER(S) TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	LIGHT(S) QTY.	TYPE	WIRE GUARD	UTILITY CABINET(S) LOCATION	SIZE	FIRE SYSTEM TYPE	FIRE SYSTEM SIZE	ELECTRICAL MODEL #	SWITCHES QUANTITY	FIRE SYSTEM PIPING	HOOD HANGING WGHT
1	RICE COOKERS						2	L55 Series E26	NO							NO	217 LBS.
2	FRYERS	Captrate Solo Filter	4	16"	16"	85% See Filter Spec.	0									YES	234 LBS.
3	RANGE/NOODLE	Captrate Solo Filter	5	20"	16"	85% See Filter Spec.	3	L55 Series E26	NO	Right	12"x54"x24"	Ansul R102	3.0/3.0			YES	512 LBS.

HOOD OPTIONS

HOOD NO.	TAG	OPTION
2	FRYERS	FIELD WRAPPER 36.00" High Front, Left, Right
		RIGHT QUARTER END PANEL 18" Top Width, 0" Bottom Width, 18" High 430 SS
		LEFT QUARTER END PANEL 18" Top Width, 0" Bottom Width, 18" High 430 SS
3	RANGE/NOODLE	BALANCE DAMPERS
		RISER SENSOR INSTALL 6IN PLEN

PERFORMATED SUPPLY PLENUM(S)

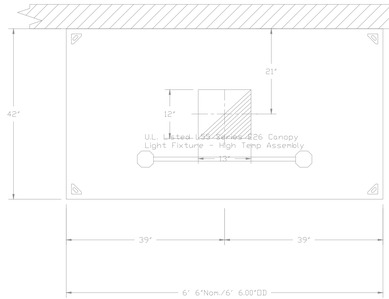
HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S) WIDTH	LENG.	DIA.	CFM	S.P.
3	RANGE/NOODLE	Front	102"	14"	6"	MUA	8"	36"		628	0.176"
						MUA	8"	36"		628	0.176"

Fire System Information – Job#4037100

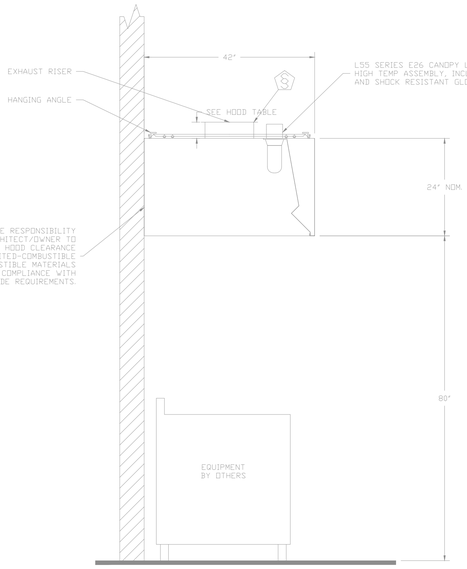
FIRE SYSTEM NO.	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION SYSTEM	LOCATION ON HOOD
1		Ansul R102	3.0/3.0	5	Fire Cabinet Right	Right

GAS VALVE(S)

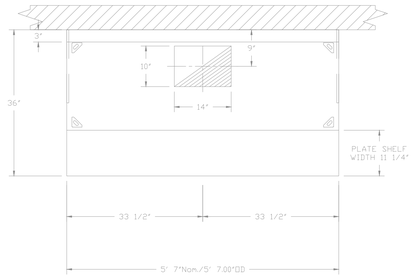
FIRE SYSTEM NO.	TAG	TYPE	SIZE	SUPPLIED BY
1		SC Electrical	2.000	CaptiveAire Systems



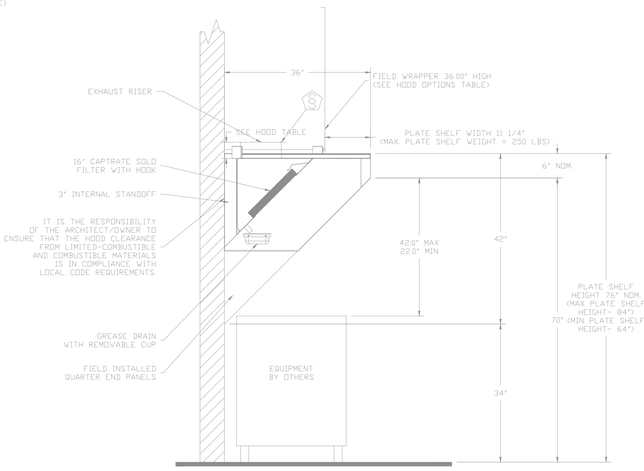
PLAN VIEW – Hood #1 (RICE COOKERS)
6' 6.00" LONG 4224VHB-ND



SECTION VIEW – MODEL 4224VHB-ND
HOOD – #1 (RICE COOKERS)



PLAN VIEW – Hood #2 (FRYERS)
5' 7.00" LONG 3642BD-2-6-PLT



SECTION VIEW – MODEL 3642BD-2-6-PLT
HOOD – #2 (FRYERS)

HOOD DRAWINGS

SCALE N.T.S. 1

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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DATE: 10/29/2019
DWG.#: 4037100
DRAWN BY: DAB
SCALE: 3/4" = 1'-0"
MASTER DRAWING
SHEET NO. 1

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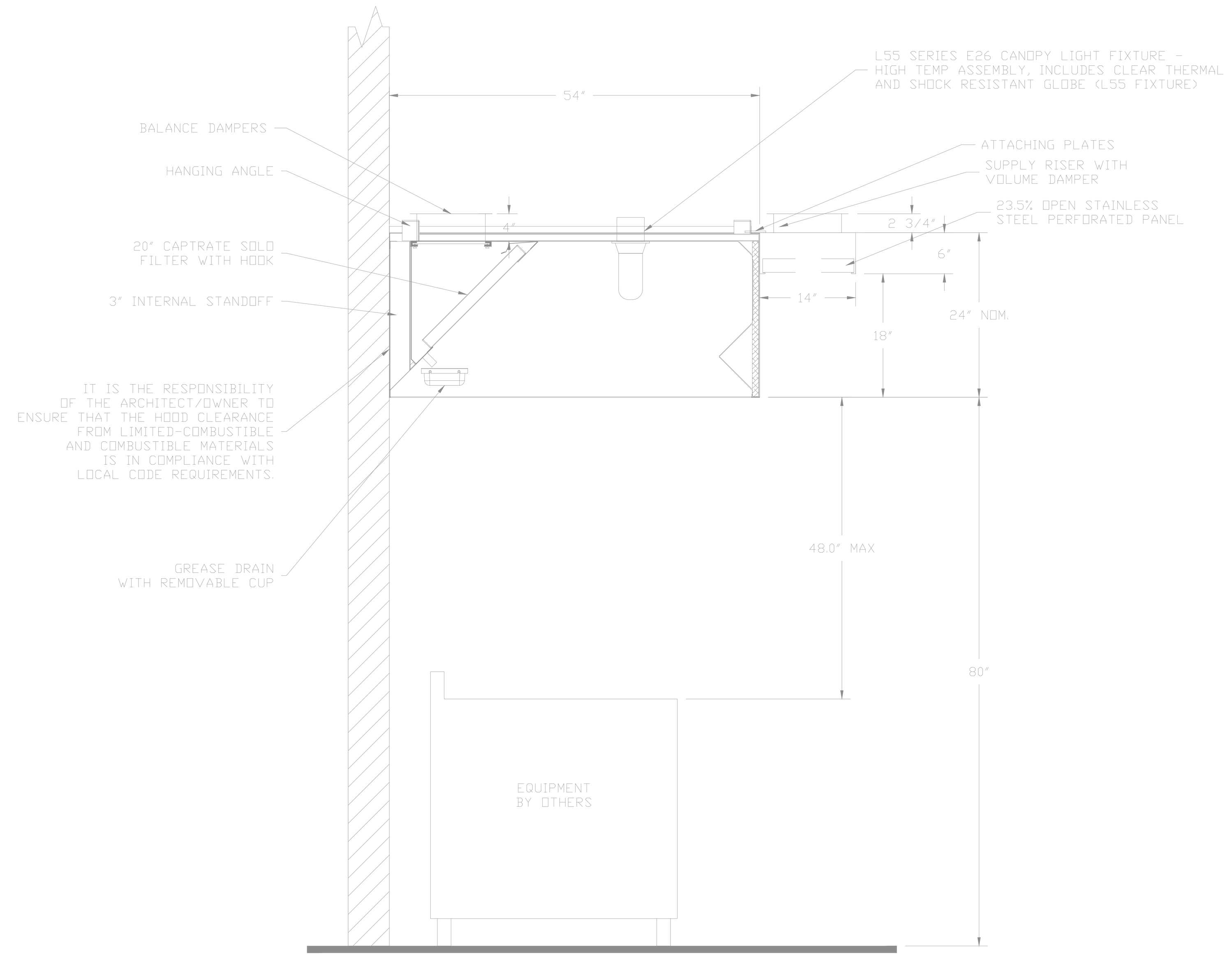
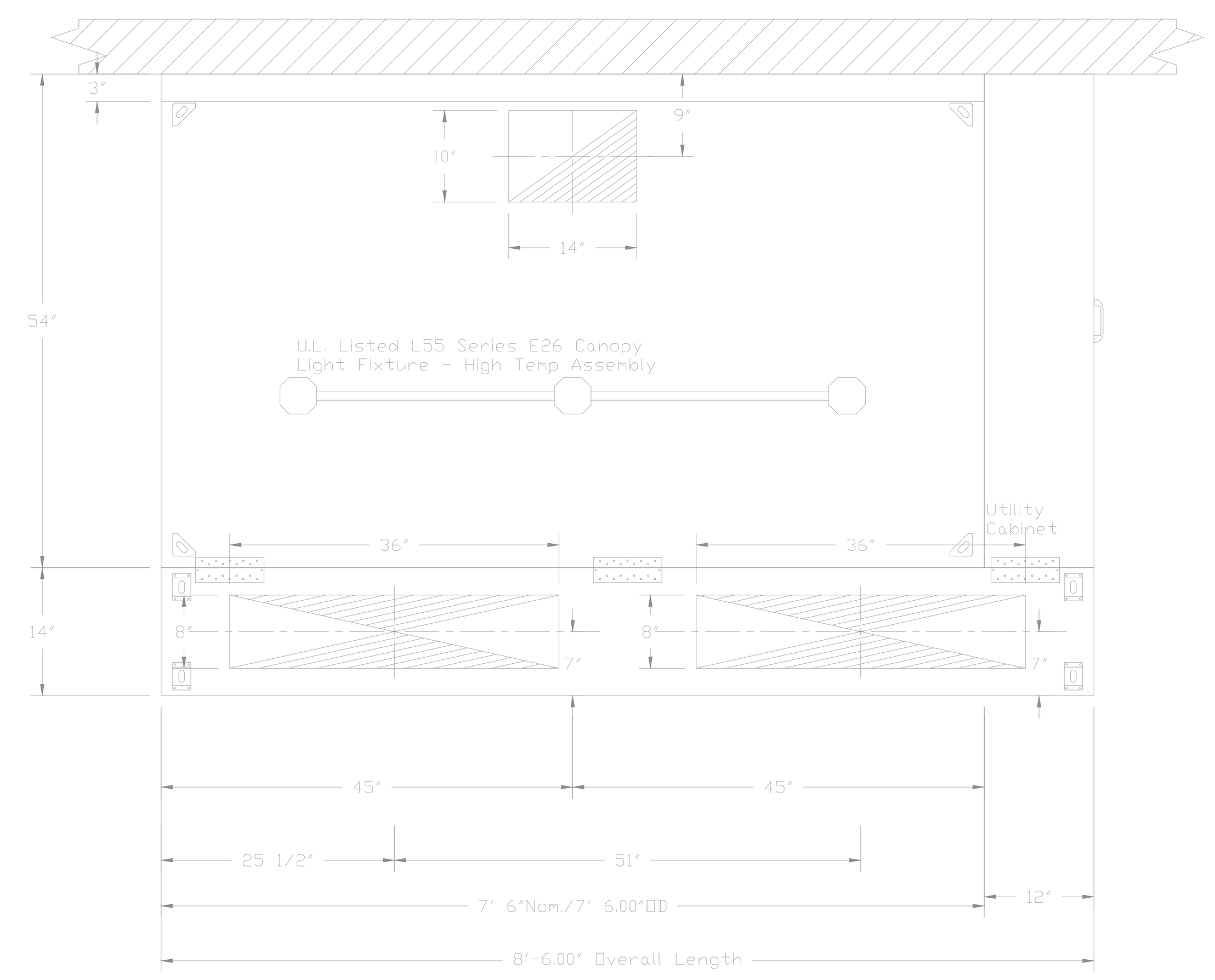
KITCHEN DETAILS

M-3.0

RPM #19-474
10/30/19



SECTION VIEW - MODEL 5424ND-2-PSP-F
HOOD - #3 (RANGE/NOODLE)



PLAN VIEW - Hood #3 (RANGE/NOODLE)
7' 6.00" LONG 5424ND-2-PSP-F

REVISIONS

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BELLEVUE, WA, 98007

DATE: 10/29/2019
DWG.#: 4037100
DRAWN BY: DAB
SCALE: 3/4" = 1'-0"
MASTER DRAWING
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It is the clients responsibility prior to or during construction to notify the architect in writing of any perceived errors or omissions in the plans and specifications of which a contractor thoroughly knowledgeable with the building codes and methods of construction should reasonably be aware. Written instructions addressing such perceived errors or omissions shall be received from the architect prior to the client or clients subcontractors proceeding with the work. The client will be responsible for any defects in construction if these procedures are not followed.

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KITCHEN DETAILS

HOOD DRAWINGS

SCALE N.T.S. 1

M-3.1

RPM #19-474 10/30/19

FAN #1 A3-D.500-G18 - HEATER (MUA-1)
1. DIRECT GAS FIRED HEATED MAKE UP AIR UNIT WITH 18" BLOWER AND 12" BURNER.
2. EVAP COOLER (LPD) & V-BANK WITH 2" TA-13 FILTERS-INDOOR
3. SIDE DISCHARGE - AIR FLOW RIGHT -> LEFT
4. COOLING INTERLOCK RELAY. 24VAC COIL. 120V CONTACTS. LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
5. MOTORIZED BACK DRAFT DAMPER 30" X 30" FOR SIZE 3 STANDARD & MODULAR HEATER UNITS W/EXTENDED SHAFT, STANDARD GALVANIZED CONSTRUCTION, 3/4" REAR FLANGE, LOW LEAKAGE, NFBUP-S ACTUATOR INCLUDED
6. LOW FIRE START. ALLOWS THE BURNER CIRCUIT TO ENERGIZE WHEN THE MODULATION CONTROL IS IN A LOW FIRE POSITION.
7. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
8. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC., 2.5" DIAMETER, 1/4" THREAD SIZE
9. "INSULATION" FOR V-BANK INTAKE OPTION.
10. COMMERCIAL SMOKE DETECTOR INTERLOCK (DETECTOR BY OTHERS)
11. INDOOR HANGING CRADLE FOR THE SIZE 3 DIRECT FIRED UNIT. 2 HSA200 HANGING ISOLATORS PER UNI-STRUT INCLUDED.
12. VAV (VARIABLE-AIR-VOLUME) WIRING PACKAGE FOR COMMERCIAL FANS. MANUAL SPEED CONTROL VARIABLE FREQUENCY DRIVE INCLUDED
13. MOUNT LOAD REACTOR IN FAN.
14. VFD FACTORY MOUNTED AND WIRED IN UNIT CONTROL VESTIBULE.

*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. 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 24" x 24"

SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 28°F. TEMP. RISE = 50°F.
BTUs CALCULATED OFF ACTUAL AIR DENSITY
OUTPUT BTUs AT ALTITUDE OF 0.0 ft. = 217044
INPUT BTUs AT ALTITUDE OF 0.0 ft. = 235917
OUTPUT BTUs AT ALTITUDE OF 263 ft. = 214989
INPUT BTUs AT ALTITUDE OF 263 ft. = 233684

MUA FAN INFORMATION - Job#4037100

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	MIN CFM	DESIGN CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	EVAP COOLER ENTERING DB TEMP.	EVAP COOLER ENTERING WB TEMP.	EVAP COOLER LEAVING DB TEMP.	EVAP COOLER LEAVING WB TEMP.	WEIGHT (LBS.)	SONES	BURNER EFFICIENCY(%)
1	MUA-1	A3-D.500-G18	G18-PB	A3-D.500	3500	4313	0.500	706	3.000	1.7280	3	460	4.3	90.0°F	64.0°F	70.0°F	64.0°F	1413	11.3	92

GAS FIRED MAKE-UP AIR UNIT(S)

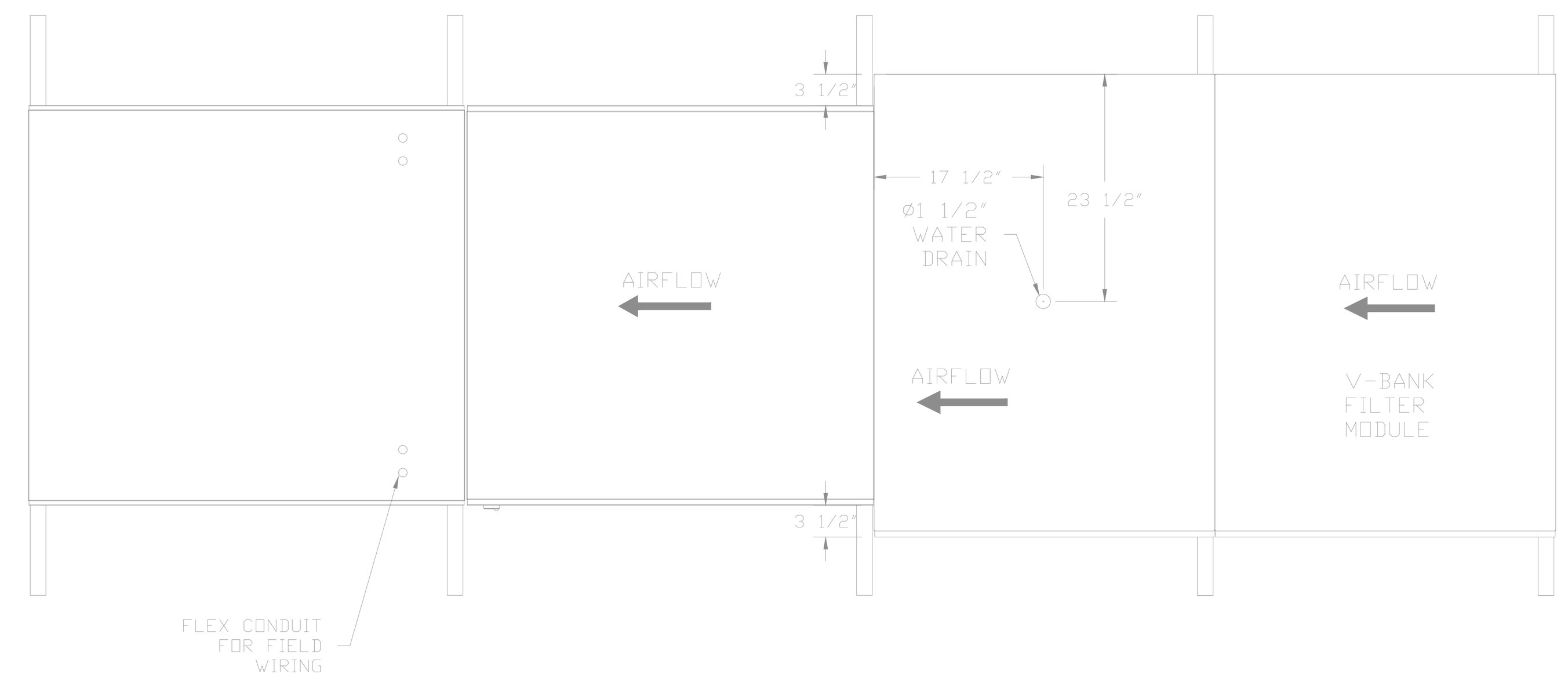
FAN UNIT NO.	TAG	INPUT BTUs	OUTPUT BTUs	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
1	MUA-1	246666	226933	50 deg F	7 in. w.c. - 14 in. w.c.	Natural

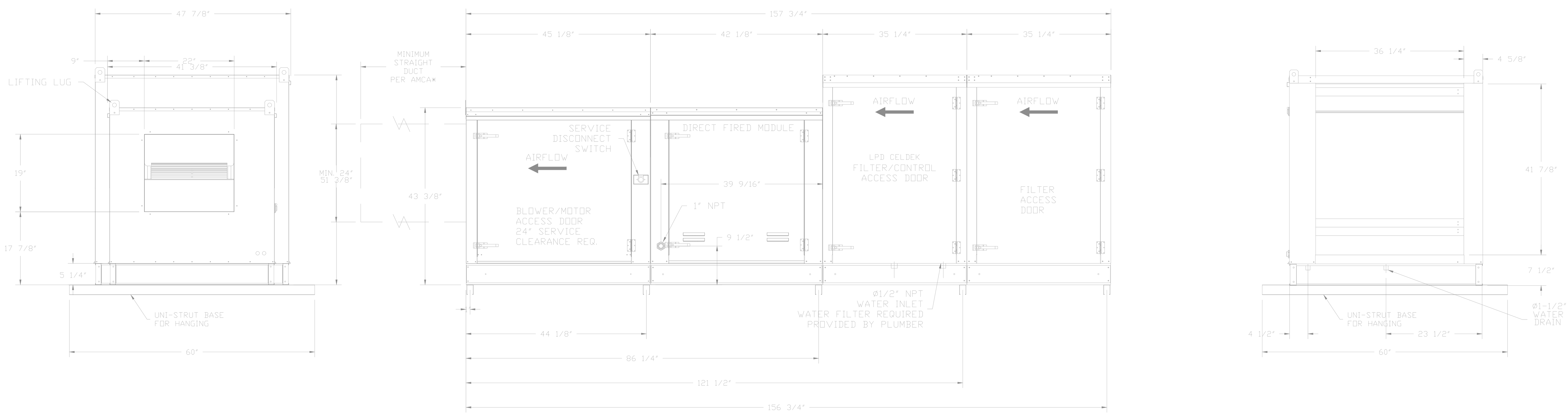
FAN OPTIONS

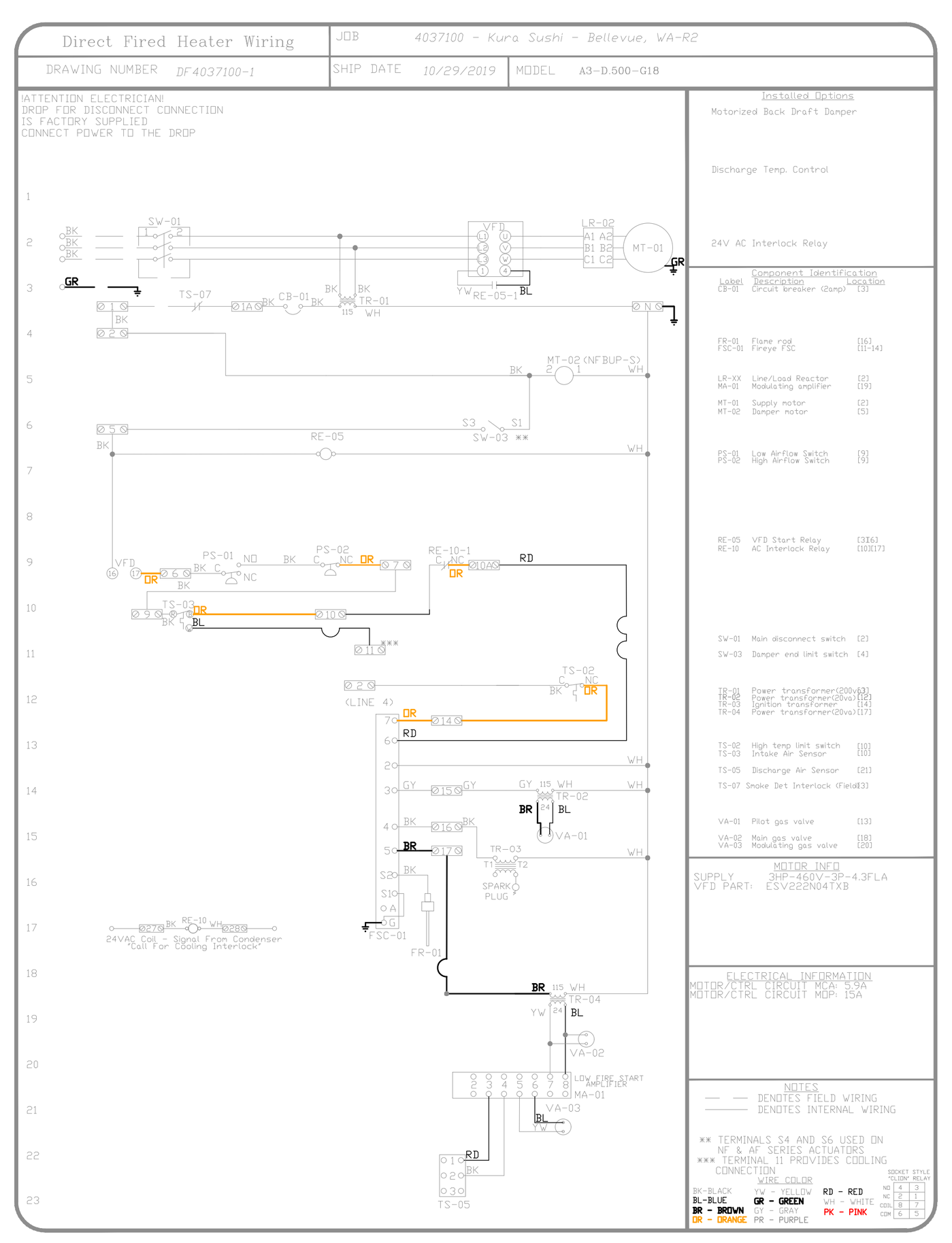
FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1	MUA-1	1 - AC Interlock Relay - 24VAC Coil
		1 - Motorized Backdraft Damper for A3-D Housing
		1 - Low Fire Start
		1 - Inlet Pressure Gauge, 0-35"
		1 - Manifold Pressure Gauge, -5 to 15" wc
		1 - Insulation Option for VBank filter section
		1 - Commercial Smoke Detector/Alarm Interlock (Supplied by Others)
		1 - DF 3 Indoor Hanging Option - Includes 2 HSA200 Hanging Spring Isolators per Uni-Strut
		1 - VAV Package w/ Manual Control (VFD Included)
		1 - Load Reactor Mounted in Fan
		1 - VFD factory mounted and wired in commercial control vestibule for tempered supply fan.

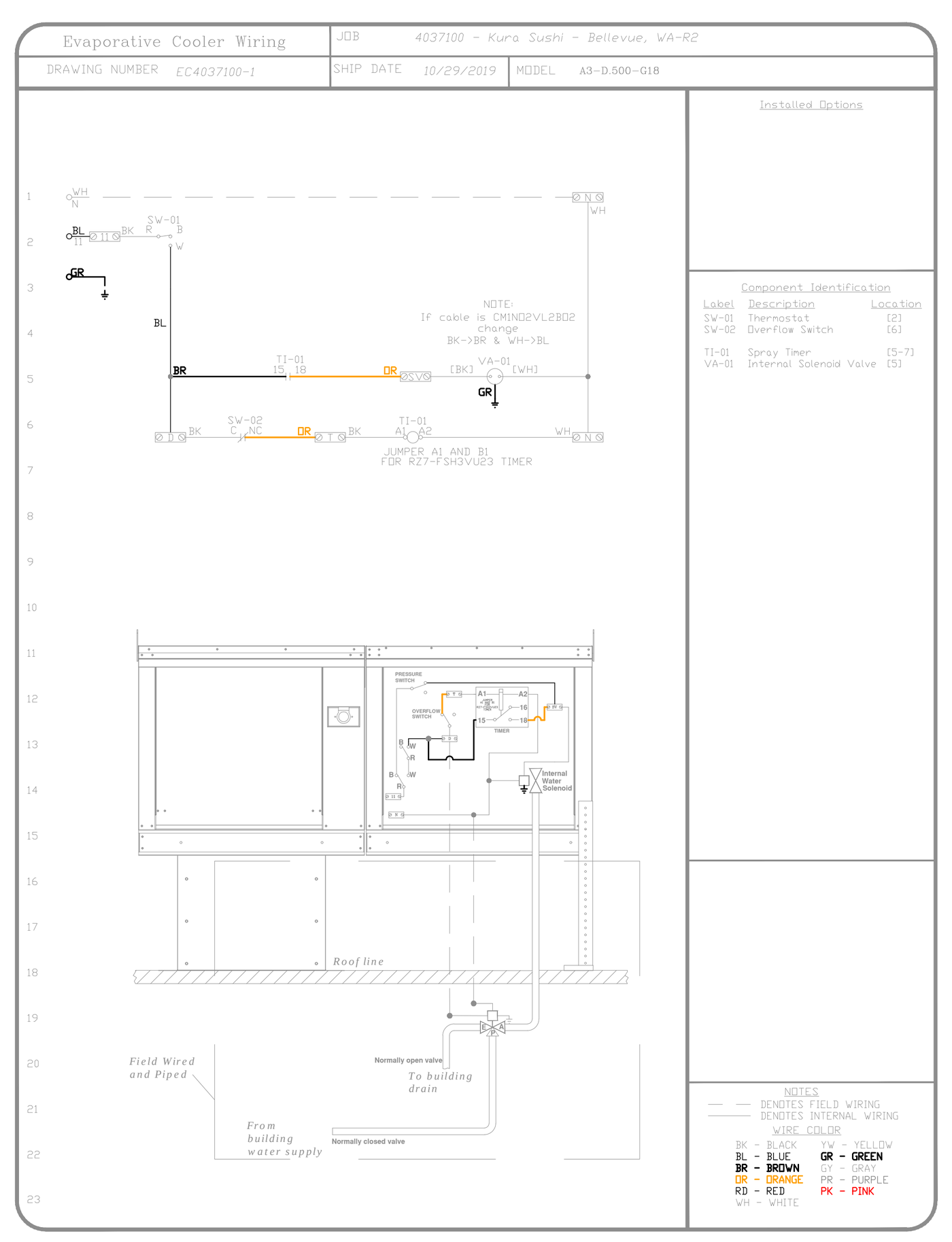
FAN ACCESSORIES

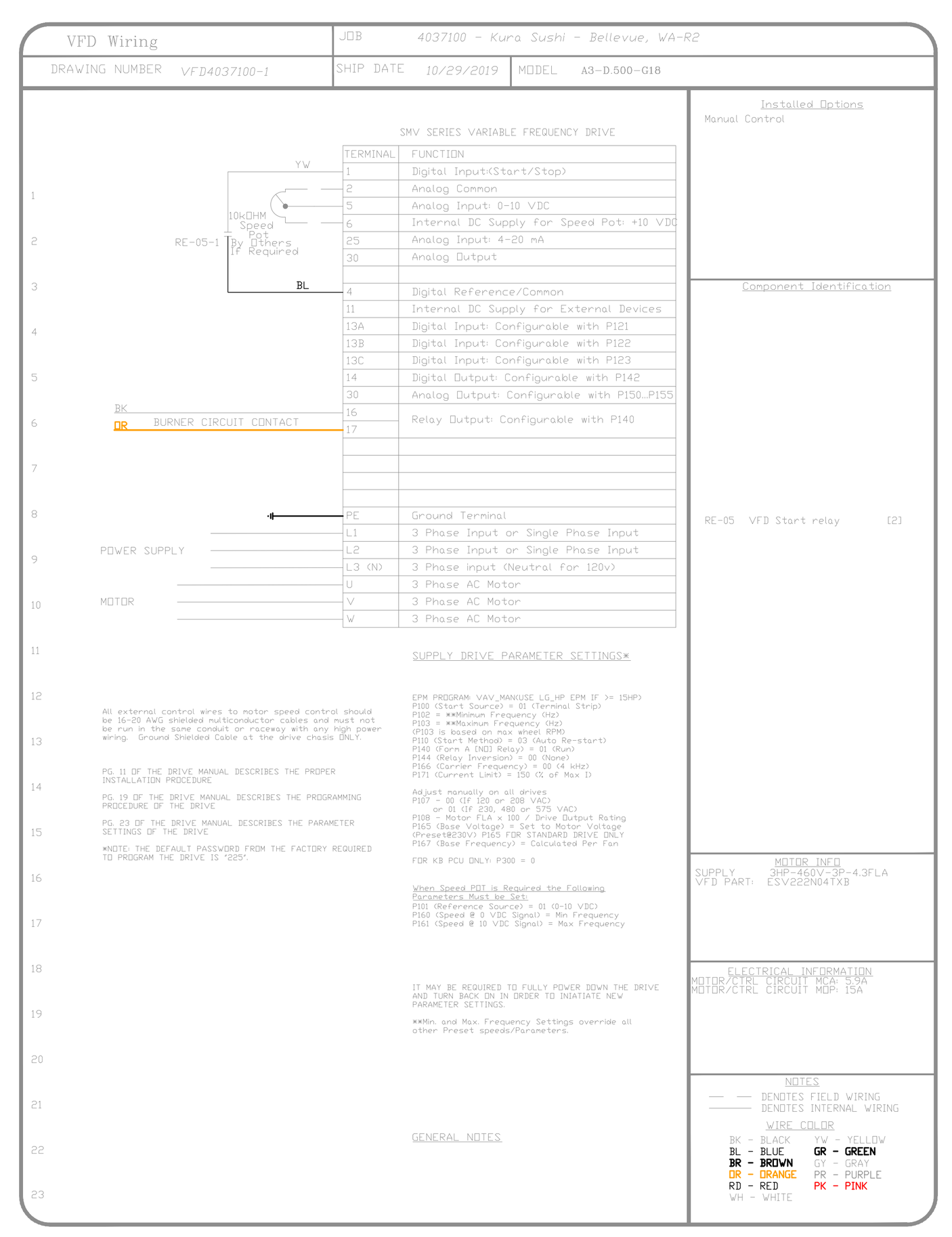
FAN UNIT NO.	TAG	EXHAUST			SUPPLY			
		GREASE CUP	GRAVITY DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	MUA-1				YES		YES	

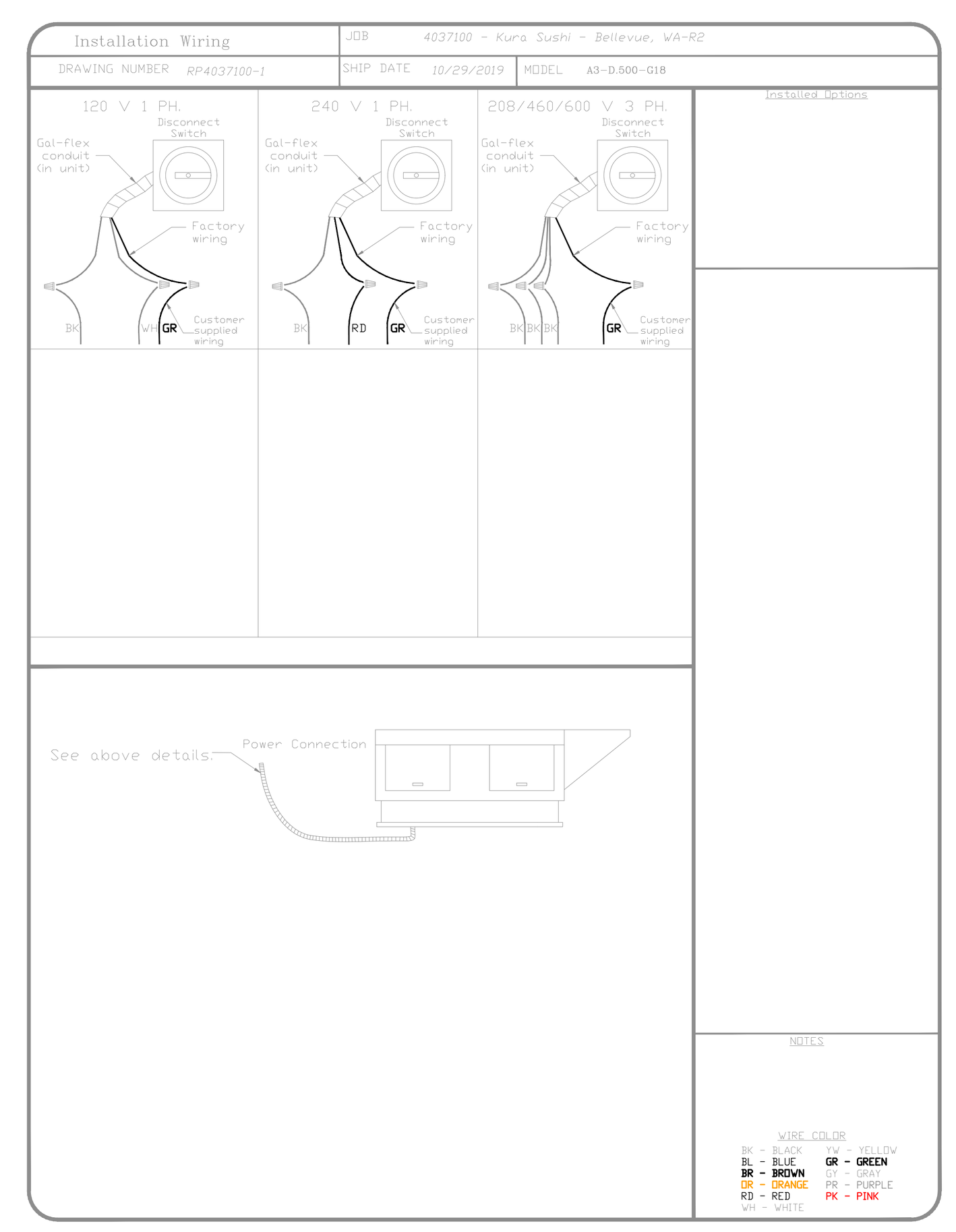












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MAKE UP AIR UNIT DRAWING

SCALE N.T.S. 1

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KITCHEN DETAILS

M-3.2

RPM #19-474 10/30/19

FILTERED POLLUTION CONTROL UNIT INFORMATION

MARK	MODEL	DIMENSIONS			UNIT ACCESS	CFM	ESP	NUMBER OF SECTIONS	TOTAL WEIGHT
		LENGTH	WIDTH	HEIGHT					
PCU-1	XFPS-45-SHC-U-75	182.25	24	36	RIGHT	3013	4.25	3	1013

FILTERED POLLUTION CONTROL UNIT - FAN INFORMATION

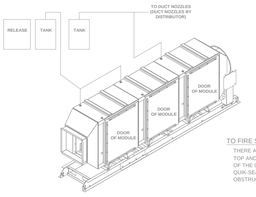
MODEL	SCROLL ROTATION	DISCHARGE POSITION	FRPM	OPERATING HP	MOTOR POSITION	MOTOR INFORMATION					
						HP	V/C/P	ENCL.	RPM	WINDINGS	FLA
XUEF-15	CCW	UB	2837	4.48	NA	7.5	460/60/3	ODP	1725	1	11

FILTERED POLLUTION CONTROL UNIT - FILTER INFORMATION

FILTER MODULE	FILTER INFO		
	QTY	FILTER TYPE	FILTER SIZE
STANDARD EFFICIENCY	4	MERV 8	24X24X2
HIGH EFFICIENCY	4	MERV 15	24X24X2
CARBON FILTER	10	ACTIVATED CARBON	24X24X2

PCU OPTIONS

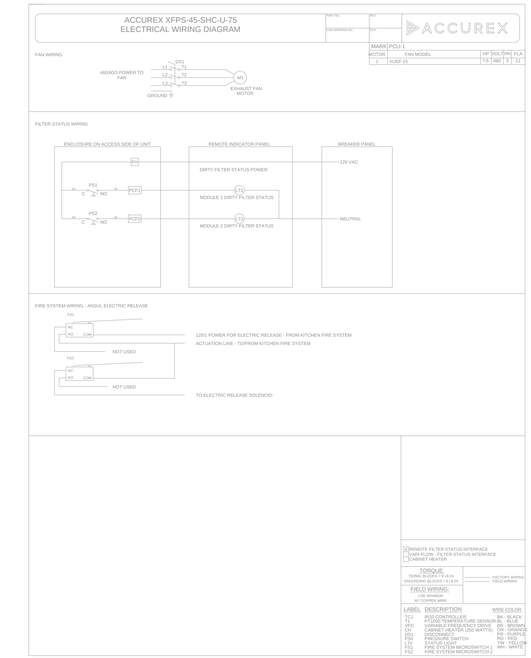
- 430 16 GAUGE STAINLESS STEEL FINISH FOR HIGH CORROSION RESISTANCE
- 12 GAUGE GALVANIZED RAILS
- UL 1978 LISTED FOR FACTORY BUILT GREASE DUCTS
- UL 762 LISTED EXHAUST FAN FOR RESTAURANT EXHAUST
- FACTORY PROVIDED INLET TRANSITION
- REMOTE FIRE CABINET (36IN X 24IN X 12IN)
- INDIVIDUAL MONITORING OF FILTER STAGES VIA INTERNAL SWITCHES
- REMOTE FILTER STATUS INDICATOR PANEL



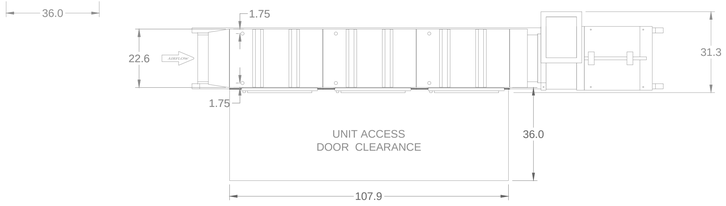
TO FIRE SYSTEM DISTRIBUTOR / FIRE SYSTEM INSTALLER:
THERE ARE FOUR QUIK-SEALS ON EACH MODULE. TWO ARE ON THE TOP AND TWO ARE ON THE BOTTOM. CONNECTION TO ONLY ONE OF THE QUIK-SEALS ON EACH MODULE IS REQUIRED. MULTIPLE QUIK-SEALS ARE PROVIDED FOR SITUATIONS WHERE THERE ARE OBSTRUCTIONS TO THE CONNECTION POINT.

TYPICAL DRAWING

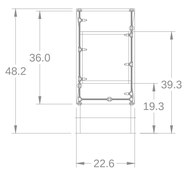
DO NOT INSTALL FIRE PIPING IN FRONT OF DOORS ON MODULE, MUST HAVE 36" CLEARANCE



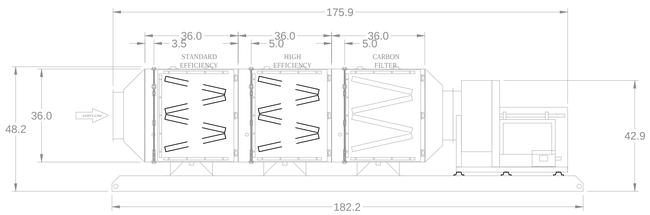
REMOTE CABINET



PLAN
MARK: PCU-1



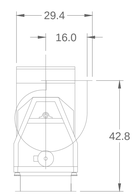
INLET VIEW



ELEVATION VIEW
MARK: PCU-1

FAN OUTLET

PCU INLET



FAN END VIEW

CONNECTIONS
MARK: PCU-1
NOT DRAWN TO SCALE

POLLUTION CONTROL UNIT

SCALE N.T.S. 1

PROJECT 10/29/2019

MARK

KURA SUSHI REVS

PCU-1

ACCUREX SOUTHERN CA & HAWAII
AMER.TILLMAN@ACCUREX.COM
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ADC Project No: 190092

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Principal: Craig Chinn
Project Manager: George Marshall

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Sheet Issue & Revision Log
ISSUE DATE 2018-11-30

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EXPIRES 05/13/2021

KITCHEN DETAILS

M-3.3

RPM #19-474

10/30/19

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1

Economizer Exceptions, cont. — MECH-ECONO

2015 Washington State Energy Code Compliance Forms for Commercial Buildings including R2 & R3 over 3 stories and all R1 Revised January 2017

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 12 of 20

Service Water Heating Permit Plans Checklist — SWH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 8 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 6 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1

Mechanical Summary — MECH-SUM

2015 Washington State Energy Code Compliance Forms for Commercial Buildings including R2 & R3 over 3 stories and all R1 — Revised January 2017

Project Information

Project Title:	KURA SUSHI, BELLEVUE, WA	Date 8/15/2019
Applicant Information. Provide contact information for individual who can respond to inquiries about compliance form information provided.		For Building Dept. Use
Company Name:	RPM Engineers, Inc.	
Company Address:	102 Discovery	
Applicant Name:	Raymond Phua	
Applicant Phone:	949-450-1229	

Project Description
Briefly describe mechanical systems in the text box provided

☐ Total Bldg Performance (TBP)
This path includes all mandatory provisions per C401.2 Option 2. MECH-SUM, MECH-CHK, and C407 Energy Analysis forms required.

☐ New Building ☐ Building Addition ☑ Tenant Improvement ☐ System Retrofit ☐ No System Changes

Mechanical includes (4) 10-Ton WSHP, (4) Type 1 kitchen hoods and associated exhaust fan and make up air fan, and restroom exhaust fan.

Design Load Calculations

☑ Load calculation summary ☐ MECH-LOAD-CALC Form
Provide design load calculations for all mechanical systems and equipment serving the building heating, cooling or ventilating needs. If a load calculation summary is provided with the permit documents that includes all applicable compliance information then the MECH-LOAD-CALC form is not required.

Mechanical Schedules

☑ Mechanical Plans ☐ MECH-EQ Forms (TBD)
Indicate location of equipment compliance information. If provided on plans then MECH-EQ forms are not required, however, include on plans all applicable compliance information listed in MECH-EQ tables.

Dedicated Outdoor Air System Requirements and High Efficiency VAV Alternate

☐ DOAS is required per C403.6 effective July 1, 2017 (office, retail, education, library and fire station occupancies)
All occupied, conditioned areas shall be served by a DOAS that delivers required ventilation air in a manner that does not require space conditioning fan operation. Space conditioning fans cycled off when no heating or cooling is required.
- ☐ Ventilation provided via natural ventilation per 2015 IMC in lieu of DOAS (C403.6, Exception 1)
- ☐ Ventilation and space conditioning provided by a HEVAV system per C403.7 in lieu of DOAS (C403.6, Exception 2)

☐ DOAS included in project, although not required (occupancy not office, retail, education, library or fire station)

☐ DOAS related allowances included in project:
- ☐ Prescriptive vertical fenestration maximum area allowance increased to 40% per C402.4.1.4 with 100% of conditioned floor area in building served by DOAS.
- ☐ Exception to air economizer per C403.3 Exception 1, include MECH-ECONO form.

Fan Power

☑ Project includes HVAC air distribution systems that provide heating and/or cooling
If yes, provide a MECH-FANSYS -SUM form.

☐ For one or more systems, the total fan motor nameplate hp of all fans in HVAC system exceeds 5hp.
If yes, provide a seperate MECH-FANSYS form for each HVAC system exceeding the 5 horsepower threshold. Refer to Section C403.2.11 and MECH-FANSYS-DOC for requirements and exceptions.

HVAC Hydronic Systems

☐ Hydronic chilled water ☑ Water-loop heat pump ☐ No hydronic systems
☐ Hydronic heating water ☐ Geothermal

C406 Additional Efficiency Options - Mechanical

☐ C406.2 More efficient HVAC equipment and fan systems
Requires 90% of heating and cooling capacity to be equipment listed in tables C403.2.3(1)-(9) or air-to-water heat pumps and heat recovery chillers. All equipment listed in tables C403.2.3(1)-(7) must be 15% more efficient than minimum requirements. All stand alone supply, return, and exhaust fans over 1hp must have FEQ ≥ 71 and must be selected within 10% of maximum total or static pressure.

☑ C406.6 Dedicated outdoor air system (DOAS)
Requires 90% of conditioned floor area to be served by a DOAS per C403.6 that delivers required ventilation air in a manner that does not require space conditioning fan operation.

☐ C406.7 Reduced energy in service water heating
Requires 90% of floor area be in occupancy types listed in C406.7.1 and that 60% of annual hot water energy use be provided by heat pump, waste heat recovery or solar water-heating systems.

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1

Mechanical Fan System Power Allowance — MECH-FANSYS-SUM

2015 Washington State Energy Code Compliance Forms for Commercial Buildings including R2 & R3 over 3 stories and all R1 — Revised January 2017

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

For Building Dept. Use

HVAC Air Distribution System Schedule
List all HVAC systems that have the capability to provide heating and/or cooling to the spaces they serve.

System or Primary Supply Fan ID	Speed Control (Note 1)	Description (Note 2)	System Total Nameplate HP (Note 3)	Fan Power Calculation Required (Note 4)
KEF-1	VAV	TYPE 1 HOOD EXHAUST FAN	5	No
WSHP-1	CV	SPACE HEATING AND COOLING	2	No
WSHP-2	CV	SPACE HEATING AND COOLING	2	No
WSHP-3	CV	SPACE HEATING AND COOLING	2	No
WSHP-4	CV	SPACE HEATING AND COOLING	2	No

Note 1 - Constant Volume (CV), Variable Air Volume (VAV), or Hospital/Lab CV system that qualifies for VAV budget per C403.2.11.1 Exception 1. Single zone VAV systems shall comply as CV.
Note 2 - Describe system type and list all fans (or groups of fans) associated with the delivery and removal of conditioned air by the system. Include all supply, return/relief, exhaust and exhaust hoods (>1 hp), make-up air, dedicated outside air (DOAS), booster fans, and series fan-powered terminals. VAV parallel fan-powered terminals and economizer relief fans do not need to be included if the fans do not operate at peak conditions.
Note 3 - Enter the total nameplate hp of all fans associated with the delivery and removal of conditioned air by the system.
Note 4 - This form automatically identifies whether a MECH-FANSYS form is required to demonstrate compliance with the fan power allowance (Yes), or this information is not required because the system has a combined total nameplate motor hp that is 5 hp or less (No)

MECH-FANSYS Forms
A MECH-FANSYS form shall be provided for each system with total nameplate hp greater than 5 hp. Select (Add Fan System Form) to generate an additional form. Added forms can be deleted with button in cell E32 of the added form.

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 13 of 20

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 10 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 7 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1

Mechanical Summary, pg. 2 — MECH-SUM

2015 Washington State Energy Code Compliance Forms for Commercial Buildings including R2 & R3 over 3 stories and all R1 — Revised January 2017

Service Water Heating Systems

Equipment Type (s)
☑ Hot water heating tank(s) ☐ Instantaneous ☐ No service water systems
☐ Dedicated boiler ☐ Heat exchange from space heat boiler or central hot water/steam
Distribution Type (s)
☐ Circulation System ☐ On-demand

Commissioning

Commissioning is required for:
☑ Mechanical systems per C408.2 ☑ Service water heating systems per C408.4
If required, commissioning shall be performed for all applicable systems regardless of individual equipment capacity.
Exceptions to commissioning requirements:
☐ Total output capacity of all mechanical space conditioning systems in the building do not exceed 240,000 Btu/h cooling or 300,000 Btu/h heating. Mechanical systems commissioning not required.
☐ Capacity of largest service water heating system in building does not exceed 200,000 Btu/h. Service water heating systems commissioning not required.

Low Energy and Semi-Heated Spaces (Note 6 and 7)

Space Type	Location in Plan(s)	Space(s) Served	Area Served, square feet	Heating Capacity, Btu/h (Note 4)	Cooling Capacity, Btu/h (Note 5)	Peak Space Conditioning Capacity, Btu/h-sf	Compliance Check	Notes

Note 4 - Provide total installed heating output capacity of systems serving Low Energy or Semi-Heated space(s) in btuh.
Note 5 - Provide total installed cooling capacity of system serving Low Energy space(s) in Btu/h. Not allowed for semi-heated spaces. Enter 0 if no cooling.
*Note 6 - Refer to Section C402.1.1 Low Energy Building. Intalled peak space conditioning capacity, heating or cooling, may not exceed 3.4 Btu/h*sf.*
*Note 7 - Refer to Section C402.1.1.1 and Semi-Heated Space definition in Chapter 2. Total heating output capacity may not exceed 8 Btu/h*sf. Only systems without electric resistance heating and no cooling are eligible for the wall insulation exception under semi-heated.*

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1

Economizer Exceptions — MECH-ECONO

2015 Washington State Energy Code Compliance Forms for Commercial Buildings including R2 & R3 over 3 stories and all R1 Revised January 2017

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

For Building Dept. Use

All cooling systems shall be configured to provide air economizer operation, regardless of system capacity, for new construction and mechanical system alterations. Various exceptions to this requirement are available. Identify all systems that an economizer exception will be applied to and additional information as noted below.

Economizer Exception Summary

Refer to Section C403.3 for descriptions of economizer provisions and exceptions. For alterations refer to Section C503.4 and Table C503.4.

ECONOMIZER EXCEPTIONS - NEW CONSTRUCTION AND ADDITIONS

Exp 1 *Cooling equipment serving spaces that are provided with a dedicated outdoor air system (DOAS) per C403.6.* Spaces served shall have year-round design cooling loads from lights and equipment less than 5 watts per square foot. — System ID / Lighting + Equipment Loads (W/sf)

Exp 2 *Single zone unitary or package systems with dehumidification* that affect other systems such that air economizer would increase energy consumption. — System ID

Exp 3 *High efficiency single zone unitary or packaged systems.* Equipment cooling efficiency shall be better than the WSEC required minimum efficiency by at least 64% in Climate Zone 4C and 59% in Climate Zone 5B per Table C403.3. — System ID

Exp 4 *Equipment that provides hydronic chilled water for chilled beams and chilled ceiling systems* that is served by a water economizer system per C403.3.4 in lieu of air economizer. — System ID

Exp 5 *Water-source heat pumps with heat recovery.* Heat pump efficiency shall be 15% better than WSEC required minimum efficiency. Provide at minimum 60% air economizer. Energy recovery to preheat OSA shall have at least 50% effectiveness. Additional system requirements apply. — System ID

Exp 6 *Cooling equipment serving Group R occupancies.* Per unit limit is less than 20,000 Btu/h cooling capacity for equipment installed outdoors or in a mech room adjacent to the outdoors. For cooling equipment installed in other locations the unit limit is less than 54,000 Btu/h. Efficiency shall be 15% better than WSEC required minimum efficiency. — System ID / Equipment Location / Cooling Capacity (Btu/h)

Exp 7 *Variable refrigerant flow (VRF) systems with energy recovery.* Outdoor unit shall be a reverse-cycle heat pump with variable speed compressor(s) and condenser fan(s). Outdoor unit cooling capacity shall be not less than 65,000 Btu/h. Energy recovery to preheat outdoor air shall have at least 50% rated effectiveness. System shall be capable of providing simultaneous heating and cooling by tranferring recovered energy from zone(s) in cooling mode to other zone(s) that are in heating mode. — Outdoor Unit System ID / Cooling Capacity (Btu/h)

Exp 8 *Cooling equipment serving Controlled Plant Growth Environments.* Equipment cooling efficiency shall be better than WSEC required minimum efficiency by at least 20%. Not eligible: unitary and applied heat pumps. — System ID / SEER, EER, & IEER

Exp 9 *Cooling equipment with energy recovery.* Spaces served shall have year-round design cooling loads from lights and equipment greater than 5 watts per square foot. Energy recovery system shall utilize recovered energy for on-site space heating or preheating of service hot water. Provide calculations to the code official that demonstrate the amount of recovered energy used for on-site heating purposes is equivalent to the annual energy that would be saved by the cooling system with air economizer per C403.3. — System ID / Lighting + Equipment Loads (W/sf)

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 11 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 9 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

2015 Washington State Energy Code Compliance Forms for Commercial, R2 and R3 over 3 stories and all R1 - Page 5 of 20

Mechanical Permit Plans Checklist — MECH-CHK

Project Title: KURA SUSHI, BELLEVUE, WA — Date 8/15/2019

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ADC Project No: 190092

Project Contact: George Marshall
Email: gmarshall@adcollaborative.com
Principal: Craig Chinn
Project Manager: George Marshall

Client

Company: KURA SUSHI USA, INC.
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Fax No. 949.748.1786

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266 116TH AVE. NE
BELLEVUE, WA 98004

Sheet Issue & Revision Log
ISSUE DATE 2018-11-30

It is the clients responsibility prior to or during construction to notify the architect in writing of any perceived errors or omissions in the plans and specifications of which a contractor thoroughly knowledgeable with the building codes and methods of construction should reasonably be aware. Written instructions addressing such perceived errors or omissions shall be received from the architect prior to the client or clients subcontractors proceeding with the work. The client will be responsible for any defects in construction if these procedures are not followed.

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Irvine, Ca. 92618
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e-mail: annyd@rpmpe.com

RAYMOND K. PHUA
34558
EXPIRES 05/13/2021

WASHINGTON ENERGY FORMS

M-4.0

RPM #19-474 10/30/19

Space Design Load Summary for Kura Sushi WSHP

Project Name: Kura Sushi Bellevue
Prepared by: RPM Engineers, Inc.
08/29/2019
04:45PM

TABLE 1.1.A Component Loads For Space "Dining" In Zone "Zone 1"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 84.5 °F / 64.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 23.0 °F / 19.2 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	1368 ft²	34642	-	1368 ft²	-	-
Wall Transmission	2727 ft²	4115	-	2727 ft²	5813	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	1368 ft²	3412	-	1368 ft²	24432	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1964 ft²	0	-	1964 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1964 W	6701	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2946 W	10052	-	0	0	-
People	131	36661	35352	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	86613	36234	-	30246	0

TABLE 1.1.B Envelope Loads For Space "Dining" In Zone "Zone 1"

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(ft²)	(BTU/(hr·ft²·°F))	Coeff.	(BTU/hr)	(BTU/hr)	(BTU/hr)
W EXPOSURE						
WALL	656	0.045	-	1749	-	1398
WINDOW 1	984	0.380	0.300	2454	26666	17574
S EXPOSURE						
WALL	431	0.045	-	837	-	919
WINDOW 1	384	0.380	0.300	958	7976	6858
E EXPOSURE						
WALL	1640	0.045	-	1530	-	3496

Space Design Load Summary for Kura Sushi WSHP

Project Name: Kura Sushi Bellevue
Prepared by: RPM Engineers, Inc.
08/29/2019
04:45PM

TABLE 2.1.A Component Loads For Space "Kitchen" In Zone "Zone 2"

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1700 COOLING OA DB / WB 82.2 °F / 64.4 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 23.0 °F / 19.2 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	468 ft²	14259	-	468 ft²	-	-
Wall Transmission	1092 ft²	1626	-	1092 ft²	2328	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	468 ft²	868	-	468 ft²	8358	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1964 ft²	0	-	1964 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1964 W	6701	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2946 W	10052	-	0	0	-
People	131	36661	35352	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	70167	35352	-	10686	0

TABLE 2.1.B Envelope Loads For Space "Kitchen" In Zone "Zone 2"

				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(ft²)	(BTU/(hr·ft²·°F))	Coeff.	(BTU/hr)	(BTU/hr)	(BTU/hr)
W EXPOSURE						
WALL	312	0.045	-	906	-	665
WINDOW 1	468	0.380	0.300	868	14259	8358
E EXPOSURE						
WALL	780	0.045	-	720	-	1663

Air System Design Load Summary for Kura Sushi WSHP

Project Name: Kura Sushi Bellevue
Prepared by: RPM Engineers, Inc.
08/29/2019
04:45PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 84.5 °F / 64.8 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 23.0 °F / 19.2 °F		
		Sensible	Latent		Sensible	Latent
ZONE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	1836 ft²	47296	-	1836 ft²	-	-
Wall Transmission	3819 ft²	5775	-	3819 ft²	8141	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	1836 ft²	4579	-	1836 ft²	32791	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	3977 ft²	0	-	3977 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	3977 W	13569	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2946 W	10052	-	0	0	-
People	265	74236	71586	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	155509	71586	-	40932	0
Zone Conditioning	-	152354	71586	-	39857	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	6736 CFM	1008	-	2587 CFM	-470	-
Ventilation Load	2364 CFM	20155	-23058	908 CFM	44398	0
Supply Fan Load	6736 CFM	0	-	2587 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	173518	48528	-	83785	0
Central Cooling Coil	-	173518	48536	-	0	0
Preheat Coil	-	0	-	-	0	-
Terminal Reheat Coils	-	0	-	-	83663	-
>> Total Conditioning	-	173518	48536	-	83663	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Zone Design Load Summary for Kura Sushi WSHP

Project Name: Kura Sushi Bellevue
Prepared by: RPM Engineers, Inc.
08/29/2019
04:45PM

Zone 1	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 84.5 °F / 64.8 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 23.0 °F / 19.2 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
ZONE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	1368 ft²	34642	-	1368 ft²	-	-
Wall Transmission	2727 ft²	4115	-	2727 ft²	5813	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	1368 ft²	3412	-	1368 ft²	24432	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	2013 ft²	0	-	2013 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2013 W	6868	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	134	37576	36234	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	86613	36234	-	30246	0

Zone 2	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1700 COOLING OA DB / WB 82.2 °F / 64.4 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 23.0 °F / 19.2 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
ZONE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	468 ft²	14259	-	468 ft²	-	-
Wall Transmission	1092 ft²	1626	-	1092 ft²	2328	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	468 ft²	868	-	468 ft²	8358	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1964 ft²	0	-	1964 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1964 W	6701	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2946 W	10052	-	0	0	-
People	131	36661	35352	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	70167	35352	-	10686	0

Air System Sizing Summary for Kura Sushi WSHP

Project Name: Kura Sushi Bellevue
Prepared by: RPM Engineers, Inc.
08/29/2019
04:45PM

Air System Information

Air System Name: Kura Sushi WSHP
Equipment Class: CW AHU
Air System Type: VAV
Number of zones: 2
Floor Area: 3977.0 ft²
Location: Seattle IAP, Washington

Sizing Calculation Information

Calculation Months: Jan to Dec
Sizing Data: Calculated
Zone CFM Sizing: Peak zone sensible load
Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load: 18.5 Tons
Total coil load: 222.1 MBH
Sensible coil load: 173.5 MBH
Coil CFM at Jul 1600: 6736 CFM
Max block CFM at Jul 1700: 7370 CFM
Sum of peak zone CFM: 7377 CFM
Sensible heat ratio: 0.781
CFM/Ton: 364.0
ft²/Ton: 214.9
BTU/(hr·ft²): 55.8
Water flow @ 10.0 °F rise: 44.43 gpm
Load occurs at: Jul 1600
OA DB / WB: 84.5 / 64.8 °F
Entering DB / WB: 79.2 / 65.1 °F
Leaving DB / WB: 55.0 / 53.7 °F
Coil ADP: 52.3 °F
Bypass Factor: 0.100
Resulting RH: 56 %
Design supply temp.: 55.0 °F
Zone T-stat Check: 2 of 2 OK
Max zone temperature deviation: 0.0 °F

Preheat Coil Sizing Data

No heating coil loads occurred during this calculation.

Supply Fan Sizing Data

Actual max CFM at Jul 1700: 7370 CFM
Standard CFM: 7251 CFM
Actual max CFM/ft²: 1.85 CFM/ft²
Fan motor BHP: 0.00 BHP
Fan motor kW: 0.00 kW
Fan static: 0.00 in wg

Return Fan Sizing Data

Actual max CFM at Jul 1700: 7370 CFM
Standard CFM: 7251 CFM
Actual max CFM/ft²: 1.85 CFM/ft²
Fan motor BHP: 0.40 BHP
Fan motor kW: 0.32 kW
Fan static: 0.20 in wg

Outdoor Ventilation Air Data

Design airflow CFM: 2587 CFM
CFM/ft²: 0.65 CFM/ft²
CFM/person: 9.76 CFM/person

Zone Sizing Summary for Kura Sushi WSHP

Project Name: Kura Sushi Bellevue
Prepared by: RPM Engineers, Inc.
08/29/2019
04:45PM

Air System Information

Air System Name: Kura Sushi WSHP
Equipment Class: CW AHU
Air System Type: VAV
Number of zones: 2
Floor Area: 3977.0 ft²
Location: Seattle IAP, Washington

Sizing Calculation Information

Calculation Months: Jan to Dec
Sizing Data: Calculated
Zone CFM Sizing: Peak zone sensible load
Space CFM Sizing: Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
Zone 1	4076	1369	2.02	58.2	5.82	0.0	0.00	0
Zone 2	3302	1218	1.68	51.8	5.18	0.0	0.00	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
Zone 1	86.6	Aug 1600	30.2	2013.0
Zone 2	70.2	Jun 1700	10.7	1964.0

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
Dining	1	86.6	Aug 1600	4076	30.2	2013.0	2.02
Zone 2							
Kitchen	1	70.2	Jun 1700	3302	10.7	1964.0	1.68

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05/13/2021

LOAD CALCULATIONS

M-4.1

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