



AIR CONDITIONING SYMBOLS AND ABBREVIATIONS

SYMBOLS	ABBR	DESCRIPTION	ABBR/SYMBOL	DESCRIPTION	ABBR/SYMBOL	DESCRIPTION
	F.D.	AUTOMATIC FIRE DAMPER	GA	GAUGE	WB	WATER BULB
	C.S.F.D.	COMBINATION SMOKE FIRE DAMPER	AC	AIR CONDITIONING	WG	WATER GAGE
	APV	AIR PROPORTIONING VANE	B.H.P	BREAK HORSEPOWER		PERFORATED RETURN REGISTER
	F.C.	FLEXIBLE DUCT CONNECTION	B.O.D	BOTTOM OF DUCT ELEVATION		PERFORATED SUPPLY DIFFUSER
	TH	THROAT AND SIZE	O.C	ON CENTER		SUPPLY DIFFUSER
	TV	TURNING VANES	COMP.	COMPRESSOR		RETURN REGISTER
	MVD OR VD	MANUAL VOLUME DAMPER WITH INDIVIDUAL BLADE QUADRANTS	COND.	CONDENSER (ING)		CEILING EXHAUST REGISTER
		DUCT SIZE NOTATION FIRST DIMENSION IS FOR NEAR SIDE	DB	DRY BULB		ROOF EXHAUST FAN
	OBD	OPPOSED BLADE DAMPER	DISH.	DISCHARGE		EXIST. SUPPLY DIFFUSER
	PBD	PARALLEL BLADE DAMPER	FT.IN	SQUARE FEET CUBIC INCH		EXIST RETURN REGISTER
	-MO	-MOTOR OPERATED	OPNG	OPENING		EXIST. MANUAL VOLUME DAMPE
	-HO	-HAND OPERATED (QUADRANT)	FPM	FEET PER MINUTE		EXIST. SMOKE DETECTOR
	BFT	BOTTOM FLAT TRANSITION	HP	HORSEPOWER		NEW SUPPLY/ RETURN/ EXHAUST/ MAKE-UP/ GREASE/ OSA AIR DUC
	TFT	TOP FLAT TRANSITION	INSUL	INSULATE INSULATION		EXISTING SUPPLY/ RETURN/ EXHAU MAKE-UP/ GREASE/ OSA AIR DUC
	LINE	PLENUM OR DUCT LINER	MBH	THOUSAND BTU PER HOUR		DUCT (ROUND)
	FLEX	FLEXIBLE DUCT	NIC	NOT IN CONTRACT		DUCT (RECTANGULAR)
		EXHAUST DUCT SECTION	CD	CEILING DIFFUSER		HATCH (WORK TO BE REMOVED)
		RETURN DUCT SECTION	CR	CEILING REGISTER		CUBIC FEET / MINUTE (CFM)
		SUPPLY DUCT SECTION	CG	CEILING GRILLE		DIFERENCE BETWEEN
	EXH	EXHAUST	TR	TOP REGISTER		RELOCATED
	OSA	OUTSIDE AIR FLOW	BR	BOTTOM REGISTER		EXISTING
	RA	RETURN AIR	RH	RELATIVE HUMIDITY		NEW
	SA	SUPPLY AIR	REQ'D	REQUIRED		EXISTING
	UC	UNDERCUT DOOR	S.P	STATIC PRESSURE		(MZD) MOTORIZED ZONE DAMPE
	D.LVR	DOOR LOUVER WITH CROSS	T.S	TIP SPEED		SUPPLY AIR DUCT UP
	TR	TRANSFER AIR FLOW	TYP	TYPICAL FOR		RETURN AIR DUCT UP
	P.O.C	POINT OF CONNECTION		THERMOSTAT		EXHAUST AIR DUCT UP
		POINT OF DISCONNECTION		BY ELECTRICAL CONTRACTOR		SUPPLY AIR DUCT DOWN
		DIAMETER OR ROUND		BY MECHANICAL CONTRACTOR		RETURN AIR DUCT DOWN
	S.D.	DUCT SMOKE DETECTOR		SENSOR		EQUIPMENT DESIGNATION
	B.D.D.	BACKDRAFT DAMPER		CARBON MONOXIDE SENSOR		FLEXIBLE CONNECTION
	UTR	UP THRU ROOF		DEMAND CONTROL VENTILATION SENSOR		OUTLET VELOCITY (FPM)
		ROUND SUPPLY DIFFUSER		WALL LINEAR FLOWBAR		CEILING LINEAR FLOWBAR
		(E) ROUND SUPPLY DIFFUSER		(E) WALL LINEAR FLOWBAR		(E) CEILING LINEAR FLOW
				INLINE FAN (BELT DRIVEN)		INLINE FAN (DIRECT DRIV

DUCT SIZING CHART

SIZING C (LOW-PRESSURE PLASTWORK)

CFM	ROUND DUCT (INCHES)	RECTANGULAR DUCT (INCHES) W IS DUCT WIDTH					
		W x 4	W x 6	W x 8	W x 10	W x 12	W x 14
UP TO 75	6	8	6	X	X	X	X
76 TO 125	7	10	8	X	X	X	X
126 TO 175	8	16	10	8	X	X	X
176 TO 275	9	X	12	10	X	X	X
276 TO 375	10	X	16	12	10	X	X
376 TO 600	12	X	X	16	12	X	X
601 TO 850	14	X	X	22	16	14	X
851 TO 1250	16	X	X	30	24	18	16
1251 TO 1800	18	X	X	40	28	24	18
1801 TO 2400	20	X	X	X	36	28	24
2401 TO 2900	22	X	X	X	46	36	30
2901 TO 3800	24	X	X	X	X	46	36

NEW SPLIT SYSTEM UNIT SCHEDULE																													
TYPE	SERVICE	LOCATION	MANUFACT. AND MODEL	HEATING CAPACITY BTU/HR	COOLING CAPACITY BTU/HR	INDOOR FAN								COMPRESSOR								WEIGHT LBS	EER	SEER	TONS	MCA	MOCP	OSA	REMARKS
						FAN				ELECTRIC DATA				COMP		FAN		ELEC. DATA											
OUTDOOR				COP HSPF	OUTPUT	TH	SH	CFM	ESP	RPM	HP	V	PH	HZ	UNIT FLA	(1)	(2)	(1)	(2)	V	PH HZ	UNIT FLA							
OOR	SEE PLANS	CEILING	CARRIER FV4CNB006 -L00	—	—	—	—	2,000	0.5"	—	3/4	230	1	60	6.8	—	—	—	—	—	—	—	207	—	5	8.5	15	500	PROVIDE ISOLATOR HANGER, CEC OCST SMART T'STAT, SECONDARY PAN & DUCT SMOKE DETECTOR IN SUPPLY PLENUM. SEE ADDITIONAL NOTES BELOW.
OOR	SEE PLANS	ROOF	CARRIER 25HHA460 -A003	3.7 8.2	56,640	59,470	47,150	—	—	—	—	—	—	—	—	25.5	—	1.45	—	230	1 60	26.95	288	11.0 14.0	—	33.4	50	—	---

NOTES: 1.) VERIFY POWER REQUIREMENTS BEFORE ORDERING UNITS 2.) AN AIR FILTER WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 13 SHALL BE INSTALLED IN THE MECHANICAL SYSTEM FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY. 3.) PROVIDE LITTLE GIANT MODEL SCS-5 CONDENSATE OVER FLOW SAFETY SWITCH FOR ALL FAN COILS. 4.) INTERLOCK FAN SECTION OF FC-1 WITH EF-1 AND EC-1.

ROOF TOP UNIT SCHEDULE																													
E	LOCATION	MANUFACT. AND MODEL	HEATING CAPACITY BTU/HR	HSPF	COOLING CAPACITY BTU/HR	INDOOR FAN							COMPRESSOR							UNIT FLA	WEIGHT LBS	EER	SEER	MCA	MOCP	TON	REMARKS		
						FAN			ELECTRIC DATA				COMP		FAN			ELEC. DATA	POWER EXHAUST										
			CFM	ESP	RPM	BHP	V	PH	HZ	UNIT FLA	RLA		FLA			V	PH	HZ	FLA	HP									
											(1)	(2)	(1)	(2)	(3)														
	ROOF	CARRIER 50VTC24	22,500	8.0 3.7	22,810	17,260	750	0.5"	--	--	230	1	60	3.8	13.5	-	0.6	-	-	230	1 60	-	-	17.9	381	12.0 14.5	21.3 30	2	PROVIDE OCST CEC SMART T'STAT FACTORY ROOF CURB.

NOTE: 1.) VERIFY POWER REQUIREMENTS BEFORE ORDERING UNITS 2.) AN AIR FILTER WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 13 SHALL BE INSTALLED IN THE MECHANICAL SYSTEM FOR OUTSIDE AND RETURN AIR PRIOR TO OCCUPANCY

NEW EXHAUST FAN / MAKE-UP FAN & AIR DOOR SCHEDULE													
SERVICE	LOCATION	MANUFACTURER AND MODEL	FAN DATA				MOTOR DATA				WEIGHT LBS	REMARKS	
			CFM	E.S.P. IN.W.G.	R.P.M.	DRIVE	HP	WATT	VOLTS	PHASE			
FOOD # 1 TYPE 1)	ROOF	NEW CAPTIVE_AIRE EA-USBI15BD-RM	2300	2.0"	1584	BELT/DIRECT	2	-	230	1	60	333	INTERLOCK WITH MAU-1 AND FAN SECTION OF FC-1. PROVIDE GREASE THROUGH, VENTED ROOF CURB (18" HIGH MINIMUM) AND DISCHARGE EXTENSION (WHERE REQUIRED).
STROOM	CEILING	NEW GREENHECK SP-A90-130-VG	100	0.375"	887	DIRECT	-	29	120	1	60	10	PROVIDE BACK DRAFT DAMPER. INTERLOCK WITH OCCUPANCY SENSOR.
FOOD # 1	ROOF	FRIGIKING FS 450	1975	0.5"	1903	DIRECT	1/2	-	240	1	60	215	INTERLOCK WITH EF-1 AND FC-1. PROVIDE PLATFORM, PUMP, FLOAT VALVE, AND MERV 13 FILTER.
RY DOOR	ABOVE DOOR	NEW MARS STD236-1U*	1379	--	--	DIRECT	1/2	-	120	1	60	60	WITH (1) DOOR MOUNTED MICRO SWITCH.

***** VERIFY POWER REQUIREMENTS BEFORE ORDERING UNITS *****

CONDENSATE WASTE SIZING			
EQUIPMENT CAPACITY IN		MINIMUM CONDENSATE PIPE DIAMETER	
frigeration	(kW)	Inches	(mm)
20	(Up to 70.34)	3/4"	(20)
40	(73.85 – 140.67)	1"	(25)
90	(144.19 – 316.6)	1-1/4"	(32)
125	(320.03 – 439.6)	1-1/2"	(40)
250	(443.12 – 879.2)	2"	(90)

THE SIZE OF CONDENSATE WASTE PIPES MAY BE FOR ONE UNIT OR A COMBINATION OF UNITS, OR AS RECOMMENDED BY THE MANUFACTURER. THE CAPACITY OF WASTE PIPES ASSUMES A $\frac{1}{8}$ INCH PFR FOOT (10.5 mm/m) OR ONE PERCENT SLOPE, WITH THE PIPE RUNNING THREE-QUARTERS

CONTROL LEGEND

THIS PROJECT SHALL COMPLY WITH 2017 IABC, IAMC, IAPC, NEC, CGBC, ALONG WITH THE T-24 ENERGY STANDARDS.

APPLICABLE CODES

11. *What is the primary purpose of the following statement?*

SCOPE OF PROJECT

APPLICABLE CODES

APPENDIX CODES

CITY APPROVAL STAMP SECTION

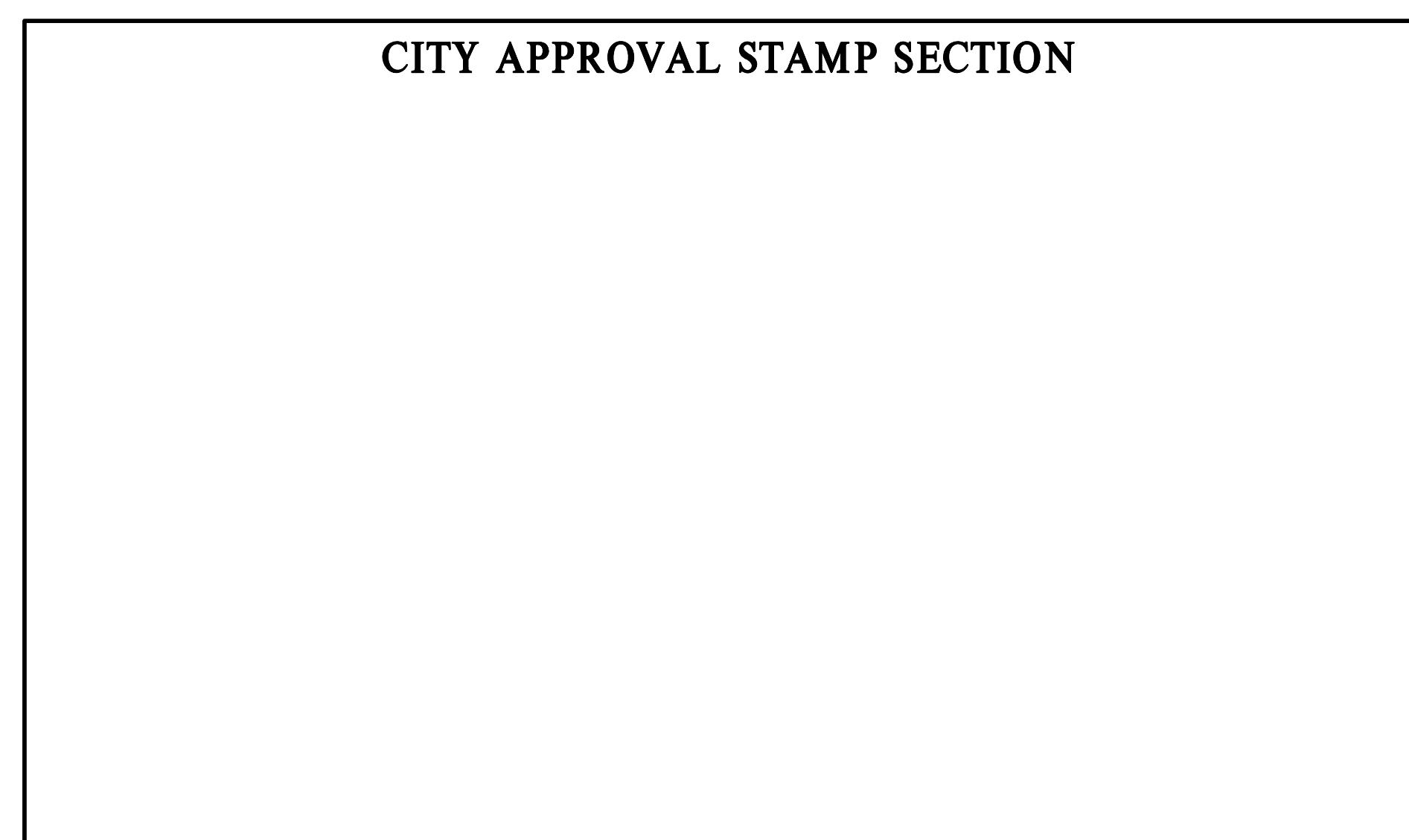
THIS PROJECT SHALL COMPLY WITH 2017 LABC, LAMC, LAPC, NEC, CGBC ALONG WITH THE T-24 ENERGY STANDARDS

DUCT SMOKE DETECTOR SCHEDULE

DUCT SMOKE DETECTOR SCHEDULE				
MANUFACTURE & MODEL	VELOCITY		POWER	REMARKS
	MIN.	MAX.		
SYSTEM SENSOR INNOVAIR FLEX D4120	100	4,000	24 VAC / DC OR	CSEM LISTING 3242 1653-02

OR APPROVED EQUAL

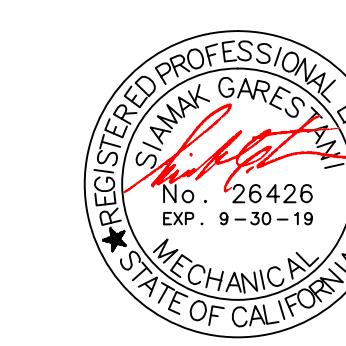
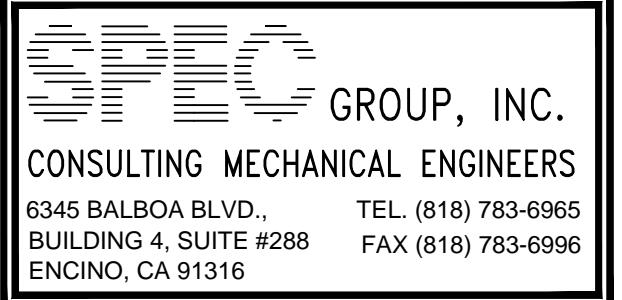
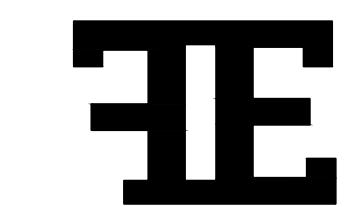
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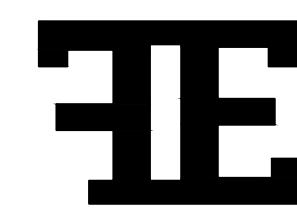
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HVAC LEGEND NOTES, & SCHEDULES

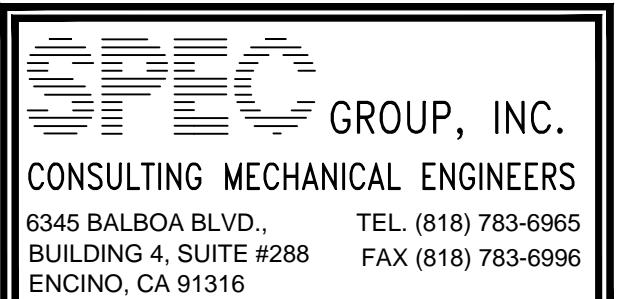


MANDATORY MEASUREMENTS (NOT ALL MAY APPLY)	
ADMINISTRATIVE REQUIREMENTS	
A.	K. DIRECT DIGITAL CONTROLS TO THE ZONE SHALL BE PROVIDED AS SPECIFIED BY TABLE 120.2-A FOR DDC APPLICATIONS AND QUALIFICATIONS FOR NEWLY CONSTRUCTED BUILDINGS, ADDITIONS, OR ALTERATIONS. SEC. 120.2 (J)
B.	L. HOTEL/MOTEL GUEST ROOM THERMOSTATS SHALL HAVE NUMERIC TEMPERATURE SET POINTS IN °F AND °C AND SET POINT STOPS ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL SUCH THAT GUEST ROOM OCCUPANTS CANNOT ADJUST THE SETPOINT MORE THAN ±5 °F (±3 °C). SEC. 120.2 (C)
C.	M. THE THERMOSTATIC CONTROLS FOR HVAC SYSTEMS SHALL MEET THE FOLLOWING REQUIREMENTS AS APPLICABLE: <ul style="list-style-type: none"> a. EACH SPACE CONDITIONING ZONE SHALL BE CONTROLLED BY THE INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE AND MEETS THE APPLICABLE REQUIREMENTS OF SECTION (B). b. EACH THERMOSTATIC CONTROL REQUIRED BY SECTION (A) SHALL BE CAPABLE OF BEING SET LOCALLY OR REMOTELY BY ADJUSTMENT OR SELECTION OF SENSORS TO CONTROL: <ul style="list-style-type: none"> 1. COMFORT HEATING DOWN 55 °F OR LOWER, COMFORT COOLING UP TO 85 °F OR LOWER. 2. BOTH HEATING AND COOLING, THE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5 °F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM. SEC. 120.2 (A) & (B)
D.	N. OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL BE INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE UPON FAN SHUTDOWN. SEC. 120.2 (F)
E.	O. SPACE CONDITIONING SYSTEMS WITH DDC ZONE CONTROLS SHALL HAVE OPTIMUM START/STOP CONTROLS. MINIMUM CONTROLS SHOULD FUNCTION THE DIFFERENCE BETWEEN SPACE TEMPERATURE(S) AND OCCUPIED SET POINT(S), THE OUTDOOR AIR TEMPERATURE(S), AND THE AMOUNT OF THE TIME PRIOR TO THE SCHEDULE OCCUPANCY. SEC. 120.2 (K)
F.	P. ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLUMENS, INCLUDING, BUT NOT LIMITED TO, BUILDING CAVITIES, MECHANICAL CLOSETS, AIR-HANDLER BOXES AND SUPPORT PLATFORMS USED AS DUCTS OR PLUMENS, SHALL BE INSTALLED, SEALED AND INSULATED TO MEET THE REQUIREMENTS OF THE 2016 CALIFORNIA MECHANICAL CODE AND ANSI/SMACNA -06.2006 HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE. SUPPLY-AIR DUCTS CONVEYING HEATED OR COOLED AIR SHALL BE INSULATED IN A MINIMUM INSTALLED LEVEL OF R-4.2 (R-8 IN UNCONDITIONED SPACE), UNLESS DUCTS ARE IN CONDITIONED PLACES. SEC. 10-103 (B) 2, 3 & 4
MANDATORY MEASURES	
A.	Q. MANUFACTURED PENETRATION PRODUCTS AND EXTERIOR DOORS SHALL: <ul style="list-style-type: none"> 1. HAVE A CLEARLY VISIBLE TEMPORARY LABEL MEETING THE REQUIREMENTS OF SEC. 10-111 (g) 1, NOT TO BE REMOVED BEFORE INSPECTION BY THE ENFORCEMENT AGENCY, LISTING THE CERTIFIED U-FACTOR, THE SOLAR HEAT GAINS COEFFICIENT (SHGC) AND VISUAL TRANSMITTANCE (VT) CERTIFYING THAT THE AIR LEAKAGE REQUIREMENTS OF SEC. 116 (g) 1 ARE MET FOR EACH PRODUCT LINE; AND 2. HAVE A PERMANENT LABEL MEETING THE REQUIREMENTS OF SEC. 10-111 (A) 2 IF THE PRODUCT IS RATED USING NFRC PROCEDURES. SEC. 110.6 (A)
B.	R. FIELD-FABRICATED PENETRATION AND FIELD-FABRICATED EXTERIOR DOORS SHALL BE CAULKED BETWEEN THE PENETRATION PRODUCTS OR EXTERIOR DOOR AND THE BUILDING, AND SHALL BE WEATHER STRIPPED. EXCEPTION: UNFRAMED GLASS DOORS AND FIRE DOORS. SEC. 110.6 (B)
C.	S. JOINTS, PENETRATIONS AND OTHER OPENINGS IN THE BUILDING ENVELOPE THAT ARE POTENTIAL SOURCES OF AIR LEAKAGE SHALL BE CAULKED, GASKETED, WEATHER STRIPPED OR OTHERWISE SEALED TO LIMIT INFILTRATION AND EXFILTRATION. SEC. 110.7
D.	T. ALL INSULATING MATERIAL SHALL BE INSTALLED IN COMPLIANCE WITH THE FLAME SPREAD RATING AND SMOKE DENSITY REQUIREMENTS OF THE CBC SEC. 110.8 (C)
E.	U. NO MECHANICAL EQUIPMENT NOR PLUMBING VENTS SHALL BE LOCATED WITHIN THE DESIGNED "SOLAR ZONE" AREAS SEC. 110.10 (B) 1-B
F.	V. ANY ROOFING PRODUCT USED AS A COOL ROOF SHALL BE CERTIFIED AND LABELED IN ACCORDANCE WITH THE REQUIREMENTS OF SEC. 10-113 BY THE COOL ROOF RATING COUNCIL (CRC) AND MEET CONDITIONS SET IN SEC. 110.8 (I) SEC. 110.8 (I)
G.	W. ALL UNITARY SYSTEMS NOT CONTROLLED BY EMCs SHALL HAVE SETBACK THERMOSTATS; CAPABLE TO PROGRAM TEMPERATURE SETPOINTS FOR AT LEAST FOUR PERIODS WITHIN 24 HR PERIOD. SEC. 110.2 (2) (C)
H.	X. HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEATERS SHALL HAVE CONTROLS: <ul style="list-style-type: none"> 1. THAT PREVENT SUPPLEMENTARY HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE; AND 2. CUT-ON TEMPERATURE FOR COMPRESSION HEATING IS HIGHER THAN THE CUT-ON TEMPERATURE FOR SUPPLEMENTARY HEATING, CUT-OFF TEMPERATURE COMPRESSION HEATING IS HIGHER THAN THE CUT-OFF TEMPERATURE FOR SUPPLEMENTARY HEATING. SEC. 110.2 (B)
I.	Y. THE LESSER OF THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY SEC. 120.1 (B) 2, OR THREE COMPLETE AIR CHANGES SHALL BE SUPPLIED TO THE ENTIRE BUILDING DURING THE ONE-HOUR PERIOD IMMEDIATELY BEFORE THE BUILDING IS NORMALLY OCCUPIED. SEC. 120.1 (C) 2
J.	Z. ALL MECHANICAL VENTILATION AND SPACE-CONDITIONING SYSTEMS SHALL BE INSTALLED WITH DUCTWORK, DAMPERS, AND CONTROLS, TO ALLOW OUTSIDE AIR AIR RATES TO BE OPERATED AT THE LARGER OF (1) THE MINIMUM LEVELS SPECIFIED IN SECTION 120.1 (B) OR (2) THE RATE REQUIRED FOR MAKE-UP OF EXHAUST SYSTEMS THAT ARE REQUIRED FOR AN EXEMPT OR CONCESSION PROCESS FOR CONTROL OF ORDERS, OR FOR THE REMOVAL OF CONTAMINANTS WITHIN THE SPACE. ALL VARIABLE AIR SPACE-CONDITIONING SYSTEMS SHALL INCLUDE CONTROLS TO MAINTAIN MEASURED OUTSIDE AIR VENTILATION RATES WITHIN 10 PERCENT IF THE REQUIRED OUTSIDE AIR VENTILATION RATE AT BOTH AND REDUCED SUPPLY AIRFLOW CONDITIONS. SEC. 120.1 (E)

GENERAL NOTES	
DUCTWORK	
1.	1. INSTALLATION OF DUCTWORK SHALL BE COORDINATED WITH OTHER TRADES. DUCTS INSTALLED IN LOCATIONS WHERE THEY ARE SUBJECT TO PHYSICAL DAMAGE SHALL BE PROTECTED BY SUITABLE GUARDS.
2.	2. DUCTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 6 OF THE 2017 CITY OF LOS ANGELES MECHANICAL CODE & SMACNA-2006 OR UL 181 (EXCEPT FOR GREASE DUCT).
3.	3. DUCT SUPPORTS AND ANCHORAGE SHALL COMPLY WITH 2017 LAMC CHAPTER 6.
4.	4. MANUAL VOLUME DAMPERS TO BE INSTALLED IN ALL BRANCH TAKE-OFFS. ALL DAMPERS TO HAVE LOCKING QUADRANTS.
5.	5. DUCT SIZES SHOWN ARE NET SIZES REQUIRED. LINED DUCTS SHALL BE INCREASED IN SIZE TO ACCOMMODATE LINING WITHOUT LOSS OF AREA.
6.	6. DUCT VELOCITY AND PRESSURE DIFFERENTIAL SHALL BE VERIFIED FOR EACH DUCT. SMOKE DETECTOR LOCATION IN ACCORDANCE WITH UL LISTING. DUCT SMOKE DETECTORS SHALL BE MAGNETIC TESTED TO THE LISTED SPECIFICATIONS IN THE PRESENCE OF THE CITY BUILDING INSPECTOR PRIOR TO FINAL APPROVAL.
7.	7. ACCESS TO INSPECT, SERVICE, REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION TO ALL EQUIPMENT SHALL BE PROVIDED, UNLESS OTHERWISE SPECIFIED, NOT LESS THAN 30 INCHES OF WORKING SPACE AND PLATEFORM SHALL BE PROVIDED.
8.	8. TOILET ROOMS WITHOUT WINDOWS OR WINDOW AREA LESS THAN 5% OF TOILET FLOOR AREA SHALL HAVE A MECHANICALLY OPERATED EXHAUST SYSTEM CAPABLE OF PROVIDING A MINIMUM EXHAUST RATES PER 2017 LAMC. TOILET EXHAUST DUCTS SHALL BE DIRECTLY CONNECTED TO THE OUTSIDE AND SHALL BE OF SMOOTH, NON-ABSORBENT AND NON-COMBUSTIBLE SURFACE MATERIAL.
9.	9. ALL OSA INTAKES MUST BE 10 FEET MINIMUM AWAY FROM ALL PLUMBING OR APPLIANCE VENTS (OR 3'-0" MINIMUM BELOW APPLIANCE VENTS). OSA INLETS SHALL BE COVERED WITH SCREEN HAVING 1/4" OPENING.
10.	10. ENVIRONMENTAL EXHAUST, SUCH AS BATHROOM, DRYER VENT, ETC. SHALL TERMINATE AT LEAST 3 FEET FROM PROPERTY LINE, ANY OPERABLE WINDOW, AND 10 FEET AWAY FROM ANY FRESH AIR INTAKE, PRODUCT CONVEYING EXHAUST, SUCH AS GARAGE VENTILATION, COMMERCIAL KITCHEN, HOT, ETC. SHALL TERMINATE AT LEAST 10 FEET FROM PROPERTY LINE, OPENINGS INTO THE BUILDING, FRESH AIR INTAKE OPENING, ABOVE ADJOINING GRADE, AND 3 FEET FROM EXTERIOR WALL, ROOF, OR GUTTER.
11.	11. ALL PENETRATIONS IN FIRE WALLS, FLOOR-AND ROOF-CEILING ASSEMBLIES REQUIRING PROTECTED OPENING SHALL BE FIRE-STOPPED. PROVIDE FIRE STOPPING SPECIFICATIONS INCLUDING MANUFACTURER AND REPORT OF APPROVED TESTING AGENCY. PER SECTION 713, LABC.
12.	12. ALL PENETRATIONS OR OPENINGS IN CONSTRUCTION ASSEMBLIES FOR PIPING, HEATING, VENTILATING OR EXHAUST DUCTS SHALL BE SEALED, LINED, INSULATED OR OTHERWISE TREATED TO MAINTAIN THE REQUIRED RATINGS.
13.	13. ALL RIGID DUCTS, PIPES, AND APPLIANCE VENTS LOCATED IN SOUND ASSEMBLIES SHALL BE ISOLATED FROM THE BUILDING CONSTRUCTION BY MEANS OF RESILIENT SLEEVES, MOUNTS, OR MINIMUM 1/4" THICK APPROVED RESILIENT MATERIAL. (EXCEPTION: GAS PIPING NEED NOT BE LINED).
14.	14. CLOTHES DRYER & TOILET EXHAUST DUCTS MUST BE OF METAL. ALL GAS FIRE HEATING EQUIPMENT SHALL BE "ID" (PILOT-LESS) TYPE.
15.	15. PROVIDE A 6" CLEARANCE ON FRONT, SIDES AND BACK OF THE FURNACE OR BY MANUFACTURES SPECIFICATIONS.
16.	16. SEAL THE CEILING MOUNTED EXHAUST FAN HOUSING TO THE CEILING MEMBRANE. USE UL APPROVED FIRE STOPPING SEALANT.
17.	17. THIS PROJECT SHALL COMPLY WITH 2017 LABC, LAMC, LAPC, NEC, CGBC ALONG WITH THE T-24 ENERGY STANDARDS.
18.	18. WHEN MORE THAN ONE HEATING, COOLING, VENTILATING OR REFRIGERATING SYSTEM IS INSTALLED ON THE ROOF OF A BUILDING OR WITHIN A BUILDING, IT SHALL BE PERMANENTLY IDENTIFIED AS TO THE AREA OR SPACE SERVED BY THE EQUIPMENT.
19.	19. AIR BALANCE SHALL BE PERFORMED BY A CERTIFIED (NEBB) OR (AABC) AIR BALANCE PROFESSIONAL TO THE SPECIFICATIONS STATED ON THE PLANS. A COPY OF THE CERTIFIED REPORT SHALL BE PRESENTED TO THE CITY OF LOS ANGELES BUILDING INSPECTOR PRIOR TO THE FINAL APPROVAL.
20.	20. GUARDS SHALL BE PROVIDED WHERE APPLIANCES, EQUIPMENT, FANS, FLOOR HATCH OPENINGS OR OTHER COMPONENTS THAT REQUIRE SERVICE ARE LOCATED WITHIN 10 FEET OF AN EDGE OR OPEN SIDE IS LOCATED MORE THAN 30 INCHES ABOVE THE FLOOR, ROOF, OR GRADE BELOW. CBC 1015.3 AND 1015.6
21.	21. WHERE RETURN AIR PLENUM IS USED AS PART OF THE SYSTEM; PROVIDE FOLLOWING: RETURN AIR BOOT FOR PRIVATE OFFICES, CONFERENCE ROOMS, AND ALL AREAS THAT HAVE FULL HEIGHT WALLS, DUCT CONDUITS, DUCTING, INSULATION, AIR CABLES, WIRES, AND EQUIPMENT INSTALLED IN RETURN AIR PLENUM SHALL COMPLY WITH BUILDING CODE, MECHANICAL CODE, AND FIRE CODE REQUIREMENTS.
22.	22. ALL EXHAUST PIPES IN RETURN AIR PLENUM SHALL BE NEGATIVE PRESSURE OR ENCLOSED TO PREVENT LEAKAGE IN TO RETURN AIR PLENUM.
23.	23. PROVIDE TEST AND BALANCE REPORT PERFORMED BY CERTIFIED INDEPENDENT TEST AND BALANCE CONTRACTOR.
24.	24. CONTRACTORS TO INSTALL TEMPORARY EXHAUST SYSTEM TO VENTILATE CONSTRUCTION SITE AND KEEP SITE UNDER SLIGHT NEGATIVE PRESSURE DURING ALL HOURS OF CONSTRUCTION, EVEN IF AFTER NORMAL BUSINESS HOURS.
25.	25. CONTRACTORS TO INSTALL TEMPORARY BARRIERS TO PROTECT ADJACENT SPACES FROM DUST, PARTICULATES, VAPORS AND NOISE. WHERE TEMPORARY BARRIERS ARE INSTALLED ALWAYS MAINTAIN FIRE EXITS AND EXIST WAYS.
26.	26. WHERE RETURN AIR PLENUM IS USED AS PART OF THE SYSTEM; PROVIDE FOLLOWING: RETURN AIR BOOT FOR PRIVATE OFFICES, CONFERENCE ROOMS, AND ALL AREAS THAT HAVE FULL HEIGHT WALLS, DUCT CONDUITS, DUCTING, INSULATION, AIR CABLES, WIRES, AND EQUIPMENT INSTALLED IN RETURN AIR PLENUM SHALL COMPLY WITH BUILDING CODE, MECHANICAL CODE, AND FIRE CODE REQUIREMENTS.
27.	27. ALL EXHAUST PIPES IN RETURN AIR PLENUM SHALL BE NEGATIVE PRESSURE OR ENCLOSED TO PREVENT LEAKAGE IN TO RETURN AIR PLENUM.
28.	28. PROVIDE TEST AND BALANCE REPORT PERFORMED BY CERTIFIED INDEPENDENT TEST AND BALANCE CONTRACTOR.
29.	29. EXISTING EQUIPMENT: <ul style="list-style-type: none"> 1. PRESSURE WASH INDOOR AND OUTDOOR COILS AFTER ALL DUST PRODUCING CONSTRUCTION WORK IS COMPLETED. 2. FURNISH AND INSTALL NEW DRIVE BELT. 3. CLEAN CONDENSATE PAN AND DRAIN LINES. 4. CHECK AND RECORD ALL CURRENTS DRAWN BY MOTORS AND COMPRESSORS AND ALL OPERATING PRESSURES. 5. FULL DIAGNOSTIC CHECK OF ALL EQUIPMENT AND REPORT ANY DEFICIENCIES. 6. LUBRICATE ALL BEARINGS. 7. FURNISH AND INSTALL NEW 2" AIR FILTERS. 8. ALL UNUSED DUCTWORK AND EQUIPMENT SHALL BE REMOVED FROM SITE.
30.	30. KITCHEN NOTES: <ul style="list-style-type: none"> 1. DUCTS AND PLUMENS SERVING A TYPE I HOOD SHALL BE CONSTRUCTED OF NOT LESS THAN 0.055" (NO. 16 MANUFACTURER'S STANDARD GAGE) STEEL OR STAINLESS STEEL. ALL DUCTS TO COMPLY WITH THE 2017 LABC AND MECHANICAL CODE. ALL JOINTS AND SEAMS SHALL BE MADE A CONTINUOUS LIQUID-TIGHT WELD OR BRAZE ON THE EXTERIOR SURFACE OF THE DUCT. ALL DUCTS EXPOSED TO THE EXTERIOR ATMOSPHERE AND SUBJECT TO CORROSION SHALL BE PROTECTED BY GALVANIZATION, NON CORROSIVE PAINTS OR WATERPROOF INSULATION. DUCTWORK SHALL SLOPE NOT LESS THAN 1/4" PER LINEAL FOOT TOWARD THE HOOD. CLEAN-OUTS SHALL BE EQUIPPED WITH TIGHT-FITTING 16 GAGE DOORS OPERABLE WITHOUT THE USE OF A TOOL. A TWO HOUR FIRE RESISTANT ENCLOSURE AROUND THE DUCTWORK IS REQUIRED. THIS ENCLOSURE SHALL BE SEPARATED FROM THE DUCT BY AT LEAST 3" AND NOT MORE THAN 12". AIR VELOCITY SHALL BE AT FROM THE DUCT BY AT LEAST 3" AND NOT MORE THAN 12". AIR VELOCITY SHALL BE AT LEAST 1500 AND NOT TO EXCEED 2500 FEET PER MINUTE. (PROVIDE CLEAN-OUTS ON KITCHEN EXHAUST DUCTS AT EVERY CHANGE OF DIRECTION AND NO FARTHER THAN 15 FEET APART). 2017 LAMC. 2. PROVIDE APPROVED FIRE EXTINGUISHING SYSTEM WITH AUTO GAS SHUT-OFF AND MANUAL RESET. 3. PROVIDE APPROVED FIRE SPRINKLER FOR GREASE DUCT SYSTEM PER NFPA 13 AND 2017 LAMC REQUIREMENTS. 4. PROVIDE AT LEAST ONE PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 10BC FOR KITCHEN AREA. 5. AIR BALANCE REPORT REQUIRED FOR HVAC AND GREASE DUCT SYSTEMS PRIOR TO FINAL INSPECTION. 6. A GREASE DUCT SERVING A TYPE I HOOD WHICH PENETRATES A CEILING, WALL, OR FLOOR SHALL BE ENCLOSED IN A DUCT ENCLOSURE. FROM POINT OF PENETRATION, A DUCT MAY ONLY PENETRATE EXTERIOR WALLS AT LOCATIONS WHERE UNPROTECTED OPENINGS ARE PERMITTED BY THE BUILDING CODE. DUCT ENCLOSURES SHALL BE CONSTRUCTED AS THE BUILDING CODE REQUIRES. SHAFTE ENCLOSURES TO BE CONSTRUCTED DUCT ENCLOSURES SHALL BE AT LEAST ONE-HOUR FIRE RESISTIVE CONSTRUCTION IN ALL BUILDINGS AND SHALL BE OF TWO-HOUR FIRE-RESISTIVE BUILDINGS. THE DUCT ENCLOSURE SHALL BE SEALED AROUND THE DUCT AT THE POINT OF PENETRATION AND VENTED TO THE EXTERIOR THROUGH WEATHER-PROTECTED OPENINGS. THE ENCLOSURE SHALL BE SEPARATED FROM THE DUCT BY AT LEAST THREE (3) INCHES (76 mm) AND NOT MORE THAN TWELVE (12) INCHES (305 mm) AND SHALL SERVE A SINGLE GREASE EXHAUST DUCT SYSTEM. (2017 LAMC)
31.	31. SHEET NAME
32.	32. HVAC NOTES
33.	33. SHEET NUMBER
34.	34. M-1.1



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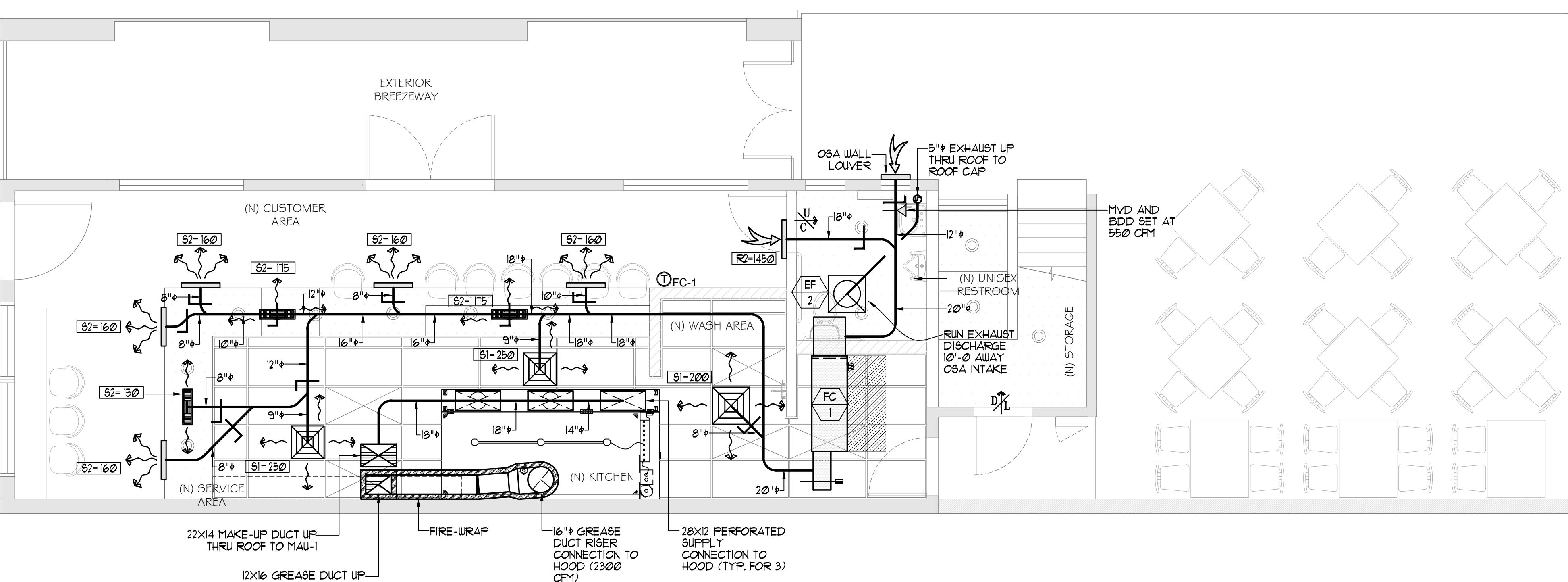
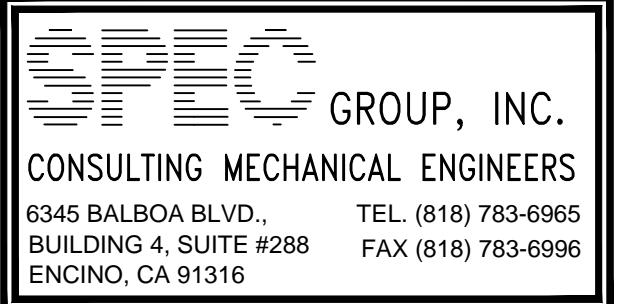
TYPE 1 HOOD NOTES						
1. FIELD-APPLIED OR FACTORY BUILT GREASE DUCT ENCLOSURE SHALL BE LISTED IN ACCORDANCE WITH ASTM E2336 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IN COMPLIANCE WITH THE TERMS OF ITS LISTING.						
2. ALL END CUTS IN THE FOIL JACKET OF FIELD APPLIED GREASE DUCT ENCLOSURE SHALL BE SEALED PER THE MANUFACTURER'S RECOMMENDATIONS.						
3. ALL INSTALLATIONS SHALL BE COMPLETELY ACCESSIBLE FOR VISUAL INSPECTION PRIOR TO SETTING THE HOOD IN PLACE.						
4. AT TIME OF INSPECTION, THE FIELD APPLIED OR FACTORY BUILT GREASE DUCT ENCLOSURE INSTALLATION INSTRUCTIONS SHALL BE MADE AVAILABLE AT THE JOB SITE.						
5. UPON ACTIVATION OF ANY FIRE-EXTINGUISHING SYSTEM FOR A COOKING OPERATION, ALL SOURCE OF FUEL AND ELECTRIC POWER THAT PRODUCES HEAT TO ALL EQUIPMENT REQUIRING PROTECTION BY THAT SYSTEM SHALL AUTOMATICALLY SHUT OFF.						
6. HOODS SHALL BE SECURED IN PLACE BY NONCOMBUSTIBLE SUPPORTS CAPABLE OF SUPPORTING THE WEIGHT OF THE HOOD PLUS 800 POUNDS.						
7. ALL SEAMS, JOINTS, AND PENETRATIONS OF THE HOOD ENCLOSURE THAT DIRECT CAPTURE GREASE-LADEN VAPORS AND EXHAUST GASES SHALL HAVE A LIQUID TIGHT CONTINUOUS EXTERNAL WELD TO THE LOWER OUTERMOST PERIMETER OF THE HOOD.						
8. ALL SEAMS, JOINTS, PENETRATIONS, AND DUCT-TO-HOOD COLLAR CONNECTIONS SHALL HAVE LIQUID-TIGHT CONTINUOUS EXTERNAL WELD. EXCEPTION: UL-1978 LISTED GREASE DUCTS.						
9. UL-1978 LISTED GREASE DUCTS SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THE LISTINGS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.						
10. A HOOD EXHAUST FAN SHALL CONTINUE TO OPERATE AFTER THE EXTINGUISHING SYSTEM HAS BEEN ACTIVATED, UNLESS THE FAN SHUTDOWN IS REQUIRED BY A LISTED COMPONENT OF THE VENTILATION SYSTEM OR BY THE DESIGN OF THE EXTINGUISHING SYSTEM.						
11. MOVEMENT OF COOKING APPLIANCES WITH CASTERS SHALL BE LIMITED BY A RESTRAINING DEVICE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.						
12. 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 SCHEMATIC, SHALL BE AVAILABLE ON PREMISES.						
13. PRIOR TO THE USE OR CONCEALMENT OF A PORTION OF A GREASE DUCT SYSTEM, A LEAKAGE TEST SHALL BE PERFORMED TO DETERMINE THAT ALL WELDED JOINTS AND SEAMS ARE LIQUID TIGHT.						
14. PERFORMANCE, CAPTURE AND CONTAINMENT TEST SHALL BE PERFORMED UPON INSTALLATION BEFORE FINAL TEST DATA AND PERFORMANCE TEST RESULTS SHALL BE DISPLAYED AND BE AVAILABLE UPON REQUEST.						
15. TYPE 1 HOODS SHALL BEAR A LABEL INDICATING THE EXHAUST FLOW RATE IN CUBIC FEET PER MINUTE PER LINEAL FOOT.						
16. FIRE DEPARTMENT APPROVAL SHALL BE REQUIRED ON THE FIRE PROTECTION SYSTEMS FOR GREASE HOODS AND DUCTS AS REQUIRED BY SECTION 513 OF THE MECHANICAL CODE AND AS REQUIRED BY THE FIRE CODE.						
17. ALL 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.						
18. OWNER OF ESTABLISHMENT SHALL BE RESPONSIBLE FOR CLEANLINESS, MAINTENANCE, AND INSPECTION OF KITCHEN EXHAUST SYSTEM, FIRE PROTECTION, AND COOKING EQUIPMENT.						
19. DUCT SYSTEM SHOULD BE INSTALLED SO GREASE CANNOT BE POCKETED. THE SYSTEM SHALL SLOPE NOT LESS THAN 1/4" PER FOOT TOWARD THE HOOD OR TOWARD THE GREASE RESERVOIR. (WHERE HORIZONTAL DUCTS EXCEED 75' IN LENGTH THE SLOPE SHALL BE MINIMUM 1 PER FOOT.)						
20. DUCTS AT EXTERIOR LOCATION SHALL BE PROTECTED ON THE EXTERIOR BY PAINT OR OTHER SUITABLE WEATHER-PROTECTIVE COATING OR BE CONSTRUCTED OF STAINLESS STEEL.						
21. IF INSTALLING A CEILING INDICATE THE ACTUAL DISTANCE BETWEEN THE TOP OF THE HOOD AND THE BOTTOM OF THE CEILING.						
A. IF THE DISTANCE BETWEEN THE CEILING AND THE HOOD IS MORE THAN 18" EXTEND LIMITED COMBUSTIBLE OR NONCOMBUSTIBLE CEILING MATERIALS 18" BEYOND OUTER EDGE OF THE DUCT.						
B. IF THE DISTANCE BETWEEN THE CEILING AND THE HOOD IS BETWEEN 3" AND 18", EXTEND LIMITED COMBUSTIBLE OR NONCOMBUSTIBLE CEILING MATERIALS 18" BEYOND OUTER EDGE OF THE HOOD.						
C. IF THE DISTANCE IS LESS THAN 3 OR HOOD PENETRATES THE CEILING LINE, EXTEND LIMITED COMBUSTIBLE OR NONCOMBUSTIBLE CEILING MATERIALS 18" BEYOND OUTER EDGE OF HOOD AND COMPLY WITH ONE OF THE FOLLOWING:						
a) IF A RATED ENCLOSURE IS NOT REQUIRED, THE HOOD SHALL HAVE A CLEARANCE OF AT LEAST 3" FROM LIMITED COMBUSTIBLE MATERIALS, AND MATERIALS WITHIN 3" OF THE HOOD MUST BE NONCOMBUSTIBLE.						
b) IF A RATED ENCLOSURE IS REQUIRED, PROVIDE A CONTINUOUS RATED ENCLOSURE FROM THE PENETRATION OF THE FIRE RATED CEILING WITH CLEARANCE FROM THE HOOD TO THE INTERIOR SURFACE OF THE ENCLOSURE NOT LESS THAN 6".						

KITCHEN NOTES						
1. AN AIR BALANCE AND VENTILATION REPORT SHALL BE PROVIDED TO THE BUILDING INSPECTOR AT THE TIME OF FINAL INSPECTION.						
2. A PERFORMANCE TEST OF THE INSTALLATION OF THE VENTILATION SYSTEM FOR HEAT-PROCESSING EQUIPMENT IS REQUIRED TO VERIFY THE RATE OF AIR FLOW AND PROPER OPERATION, PER 2017 LAMC.						
3. ALL DEEP FAT FRYERS SHALL BE INSTALLED WITH AT LEAST 16" SPACE BETWEEN THE FRYER AND FLAMES FROM ADJACENT EQUIPMENT THIS MAY BE REDUCE WITH AN 8" HIGH COMPLYING BAFFLE, PER CMC 515.1.1.3.						
4. AUTOMATIC SHUTOFF OF THE AIR-HANDLING UNITS SHALL OCCUR AT A MAXIMUM OF TEN (10) SECONDS AFTER THE DUCT SMOKE DETECTORS ARE IN ALARM.						
5. PROVIDE REMOTE TEST / RESET STATIONS FOR EACH DUCT DETECTOR AT THE HVAC UNITS THAT IS NOT ACCESSIBLE FROM THE ROOF. THE REMOTE TEST / RESET STATIONS SHALL BE LOCATED ON THE WALLS OR LOW CEILING DIRECTLY BELOW THE LOCATIONS OF THE DUCT SMOKE DETECTORS. LABEL THE REMOTE TEST / RESET STATIONS FOR SMOKE DETECTION AND THE HVAC UNITS IDENTIFICATION NUMBERS.						
6. THE FIRE ALARM CONTRACTOR SHALL CONNECT THE DUCT SMOKE DETECTORS AT THE AIR HANDLING UNITS TO THE EXISTING FIRE ALARM MONITORING SYSTEM AND SUPERVISE BOTH SUPERVISORY ALARM AND TROUBLE CONDITIONS OF THE DUCT SMOKE DETECTORS.						
7. ALL EQUIPMENT UNDER THE HOOD SHALL BE LISTED/ APPROVED BY LA CITY ACCEPTED THIRD PARTY OR BY THE LOS ANGELES MECHANICAL TEST LAB.						

DIFFUSER, REGISTER AND GRILLE SCHEDULE						
TAG	SYMBOL	MANUFACTURE AND MODEL	DUCT SIZE	POSITION	CFM RANGE	REMARKS
S2 CFM		TITUS 300RS	6X6		0-75	
			8X6		76-100	
			10X6 OR 8X8		101-125	
			12X6		126-150	
			14X6		151-175	
			12X8 OR 10X10		176-225	
			18X6		226-250	
			20X6		251-275	
			22X6		276-300	
			18X8 OR 12X12		301-350	
			18X10 OR 14X14		351-425	
			18X12		426-525	
			24X10		526-575	
			24X12		576-725	
			30X12		726-900	
			36X12		901-1100	
R2 CFM		TITUS 350RL	6X6		0-75	
			8X6		76-100	
			10X6 OR 8X8		101-125	
			12X6		126-150	
			14X6		151-175	
			12X8 OR 10X10		176-225	
			18X6		226-250	
			20X6		251-275	
			22X6		276-300	
			24X6 OR 12X12		301-350	
			30X6 OR 18X10		351-425	
			14X14 OR 18X12		426-525	
			30X8 OR 24X10		526-575	
			2X6, 18X14, 16X16		576-625	
			24X12 OR 18X16		626-725	
			18X18		726-825	
			24X14		826-850	
			30X12		851-900	
			24X16		901-975	
			20X20		976-1025	
			36X12		1026-1100	
			30X16 OR 24X20		1101-1225	
			22X22		1126-1250	
			42X12 OR 36X14		1251-1275	
			24X22		1276-1350	
			30X18		1351-1400	
			48X12 OR 24X24		1401-1500	
			36X18		1501-1675	
			36X20 OR 30X24		1676-1875	
			42X18		1876-1975	
			28X28		1976-2050	
			42X20 OR 30X28		2051-2200	



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HVAC 1ST FLOOR PLAN

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

NOTES

- A. ALL APPLIANCES AND PLUMBING VENTS AND DISCHARGE OUTLET OF EXHAUST FAN SHALL BE AT LEAST 10" IN HORIZONTAL DIRECTION OR 3" ABOVE THE OSA INTAKES FOR HVAC UNITS.
- B. PROVIDE MANUAL VOLUME DAMPERS FOR ALL SUPPLY, RETURN & MAKE-UP TAKE-OFFS.
- C. PROVIDE FIRE WRAP TO ALL "GREASE" DUCTS.
- D. ALL EXPOSED SHEET METAL DUCT TO BE LINED EXCEPT GREASE DUCT.
- E. 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.
- F. ALL CONCEALED DUCT WORK SHALL BE INSULATED WITH R-42 (MIN).
- G. ACCESS PANELS/ CLEAN CUTS SHALL BE PROVIDED PER 510 OF THE 2011 IACM. EVERY FLOOR VERTICALLY AND 12' OF HORIZONTAL RUN AND CHANGE OF DIRECTION.
- H. MAXIMUM ACCESS PANEL HEIGHT FROM FINISHED FLOOR SHALL BE 12'-0": OTHERWISE PROVIDE PERMANENT PLATFORM OR CATWALK FOR SERVICE/ CLEANING.
- I. ALL GREASE DUCT ACCESS PANELS SHALL BE ACCESSIBLE WITH SIGN STATING "ACCESS PANEL - DO NOT OBSTRUCT".
- J. DUCT SYSTEMS SHOULD BE INSTALLED SO GREASE CANNOT BE POKETED. THE SYSTEM SHALL SLOPE NOT LESS THAN 1/4" PER FOOT TOWARD AN APPROVED GREASE RESERVOIR. (WHERE HORIZONTAL DUCTS EXCEED 15' IN LENGTH, THE SLOPE SHALL BE NOT LESS THAN 1" PER LINEAL FOOT).
- K. SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR FOR HEATING, COOLING, OR EVAPORATIVE COOLING DUCTS SYSTEMS CONSTRUCTED OF METAL SHALL COMPLY WITH SMACNA-2008 HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE OR 101.
- L. ALL COOKING EQUIPMENT SHALL BE APPROVED BASED ON ONE OF THE FOLLOWING CRITERIA:
 1. LISTINGS BY A TESTING LABORATORY.
 2. TEST DATA ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
- M. THIS CONTRACTOR TO VISIT THE SITE PRIOR TO FINALIZING HIS BID AND VERIFY IF INSTALLATION OF RECTANGULAR DUCT IS REQUIRED FOR ANY PORTION OF THE JOB AND SUBMIT BIDS TO COVER ALL COST.
- N. AN AIR BALANCE REPORT SHALL BE SUBMITTED PRIOR TO FINAL INSPECTION FOR ALL HVAC SYSTEMS.
- O. THE PROJECT INVOLVES VERY TIGHT CEILING CLEARANCE ABOVE THE T-BAR CEILING SYSTEMS. THERE ARE EXISTING DUCTWORK, PIPES, BEAMS, AND CONDUITS OVERHEAD. THIS CONTRACTOR SHALL DO A DETAILED INVESTIGATION TO DETERMINE ALL OBSTRUCTIONS IN THE FIELD AND SHALL PRODUCE SHOP DRAWINGS FOR DUCT LAYOUTS AND EQUIPMENT LAYOUTS - WITH ADJUSTMENTS THAT SUIT FIELD CONDITIONS AND TO AVOID CONFLICTS WITH PROPOSED CEILING HEIGHTS - AT NO ADDED COSTS TO OWNER. FAILURE TO DO PROPER FIELD INVESTIGATION AND DUE DILIGENCE WILL NOT JUSTIFY CHANGE ORDERS.
- P. PROVIDE BEAM BOX WHERE REQUIRED FOR SUPPLY, RETURN, AND ENVIRONMENTAL EXHAUST (NOT APPLICABLE FOR GREASE DUCT APPLICATIONS).
- Q. EXPOSED GREASE DUCT/ HOOD SYSTEMS SERVING A TYPE -I HOOD SHALL HAVE A CLEARANCE FROM UNPROTECTED COMBUSTIBLE CONSTRUCTION OF AT LEAST 18 INCHES. CLEARANCE MAY BE REDUCED TO NOT LESS THAN 3 INCHES WHEN COMBUSTIBLE CONSTRUCTION IS PROTECTED WITH MATERIAL REQUIRED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION.

PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

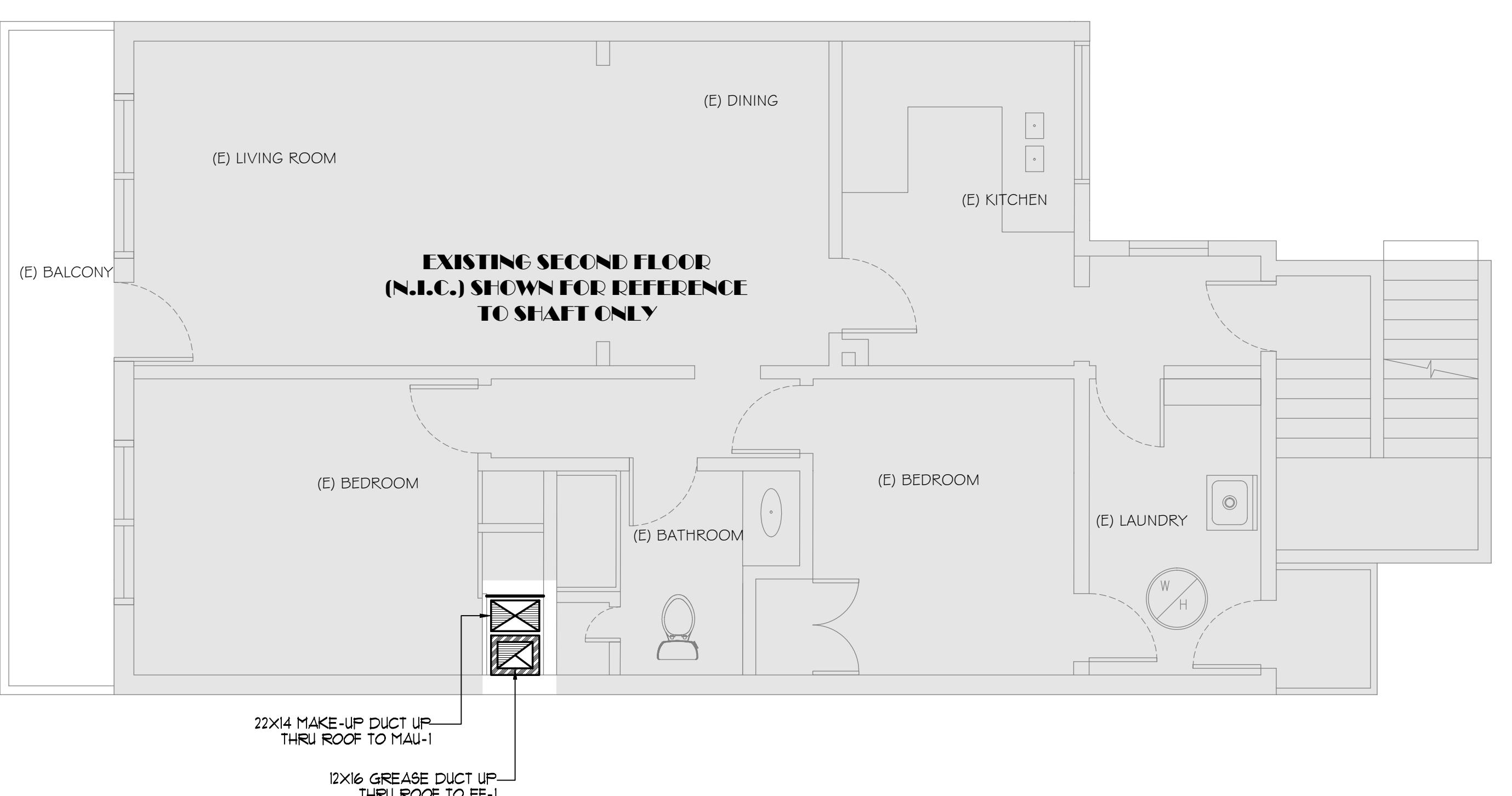
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7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

SHEET NAME

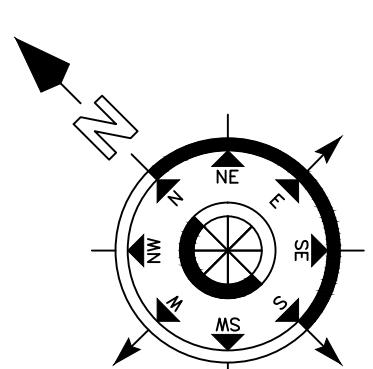
HVAC 1ST & 2ND FLOOR PLAN

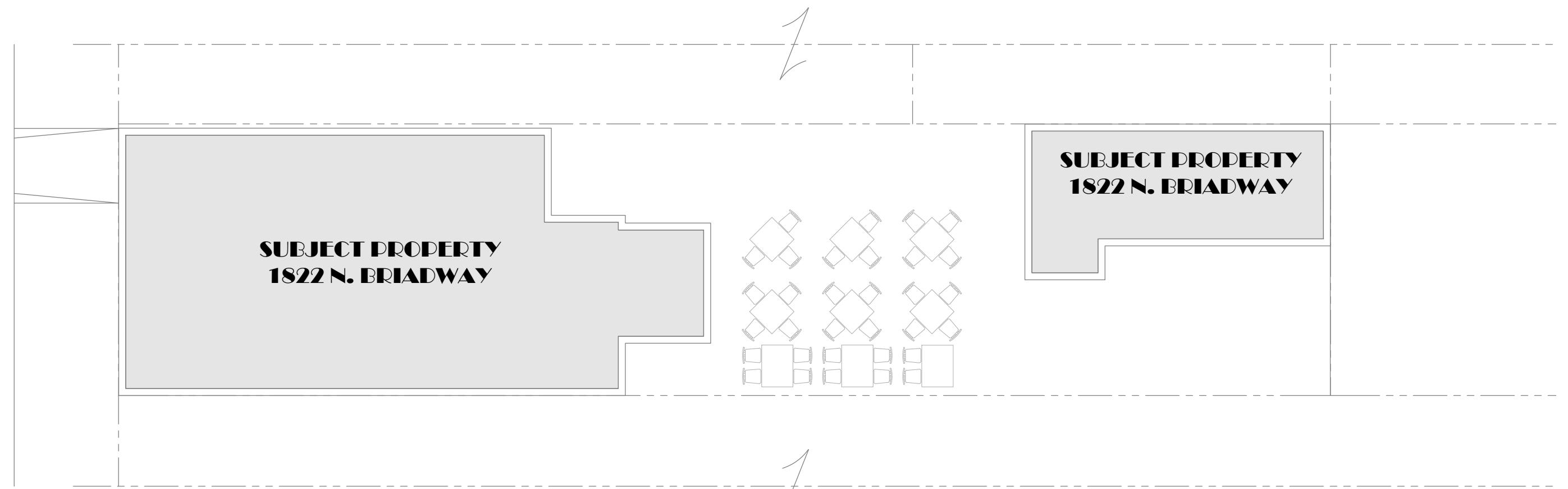
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HVAC 2ND FLOOR PLAN





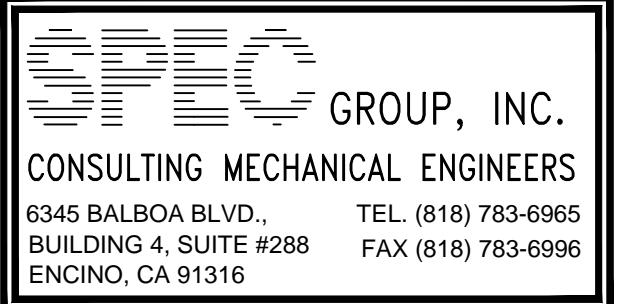
SITE PLAN (KEY PLAN)

SCALE:
N.T.S.

ROOF NOTES

- A. ALL APPLIANCES AND PLUMBING VENTS AND DISCHARGE OUTLET OF EXHAUST FAN SHALL BE AT LEAST 10' IN HORIZONTAL DIRECTION OR 3' ABOVE THE OSA INTAKES FOR HVAC UNITS.
- B. EACH PLUMBING VENT SHALL TERMINATE NOT LESS THAN TEN (10) FEET FROM, OR NOT LESS THAN THREE (3) FEET ABOVE, ANY OPENABLE WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT, OR NOT LESS THAN THREE (3) FEET IN EVERY DIRECTION FROM ANY LOT LINE, ALLEY AND STREET EXCEPTED, CPC SECTION 2062.
- C. ROOFTOP TERMINATIONS SHALL BE ARRANGED WITH OR PROVIDED WITH THE FOLLOWING:
 1. NOT LESS THAN 10 FEET OF CLEARANCE FROM THE OUTLET TO ADJACENT BUILDINGS, PROPERTY LINES, AND AIR INTAKES, WHERE SPACE LIMITATIONS ABSOLUTELY PREVENT A 10 FOOT HORIZONTAL SEPARATION FROM AN AIR INTAKE, A VERTICAL SEPARATION SHALL BE PERMITTED, WITH THE EXHAUST OUTLET BEING NOT LESS THAN 3 FEET ABOVE AN AIR INTAKE LOCATED WITHIN 10 FEET HORIZONTALLY.
 2. THE EXHAUST FLOW DIRECTLY UP AND AWAY FROM THE SURFACE OF THE ROOF AND NOT LESS THAN 40 INCHES ABOVE ROOF SURFACE, LAMC SECTION 5102.1
- D. GUARDS SHALL BE PROVIDED WHERE APPLIANCES, EQUIPMENT, FANS, ROOF HATCH OPENINGS OR OTHER COMPONENTS THAT REQUIRE SERVICE ARE LOCATED WITHIN 10 FEET OF A EDGE OR OPEN SIDE IS LOCATED MORE THAN 30 INCHES ABOVE THE FLOOR, ROOF, OR GRADE BELOW. CBC 1015.3 AND 1015.6

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PROJECT INFORMATION

GAMBOGE

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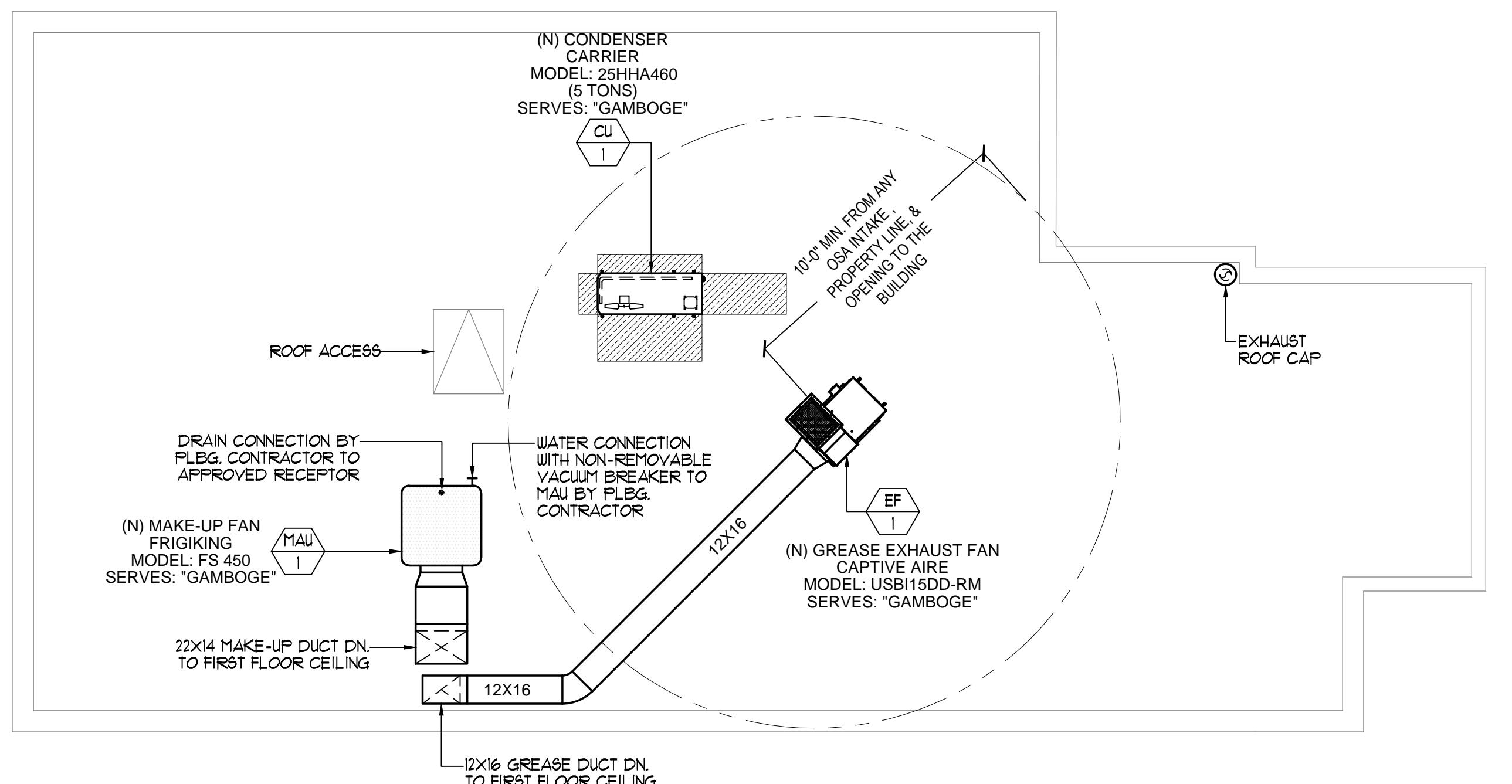
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7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

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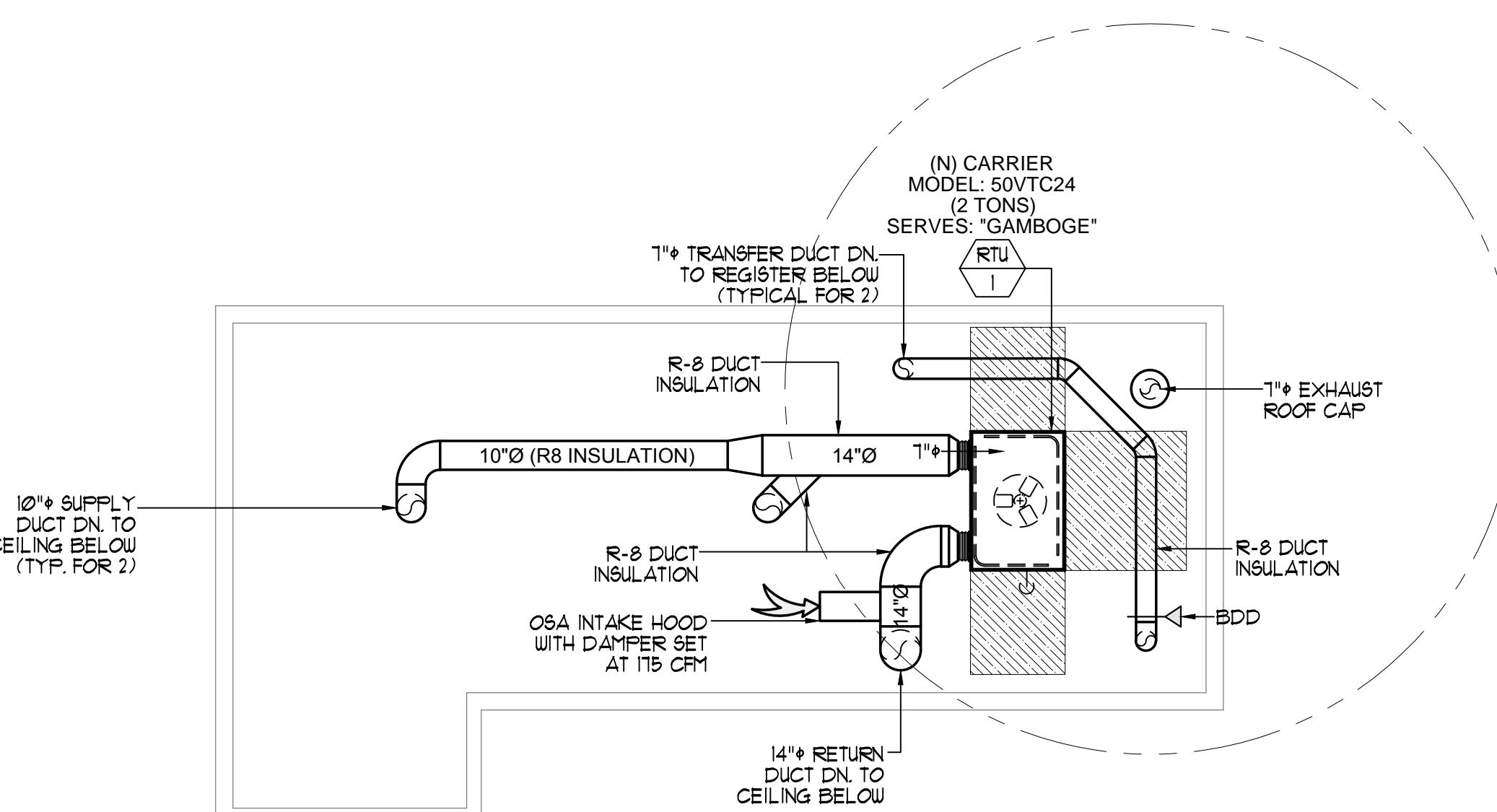
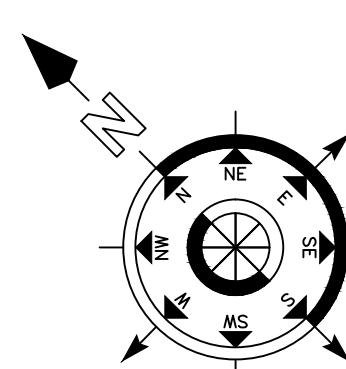
HVAC ROOF
PLAN

SHEET NUMBER

M-2.1

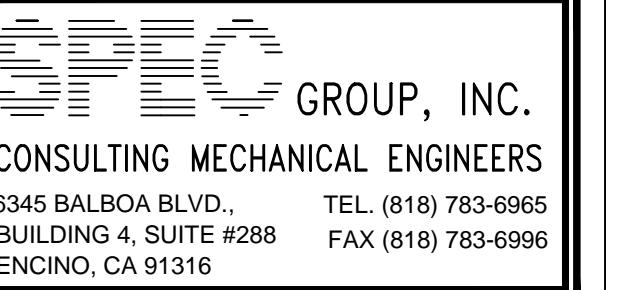


HVAC ROOF PLAN

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



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PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
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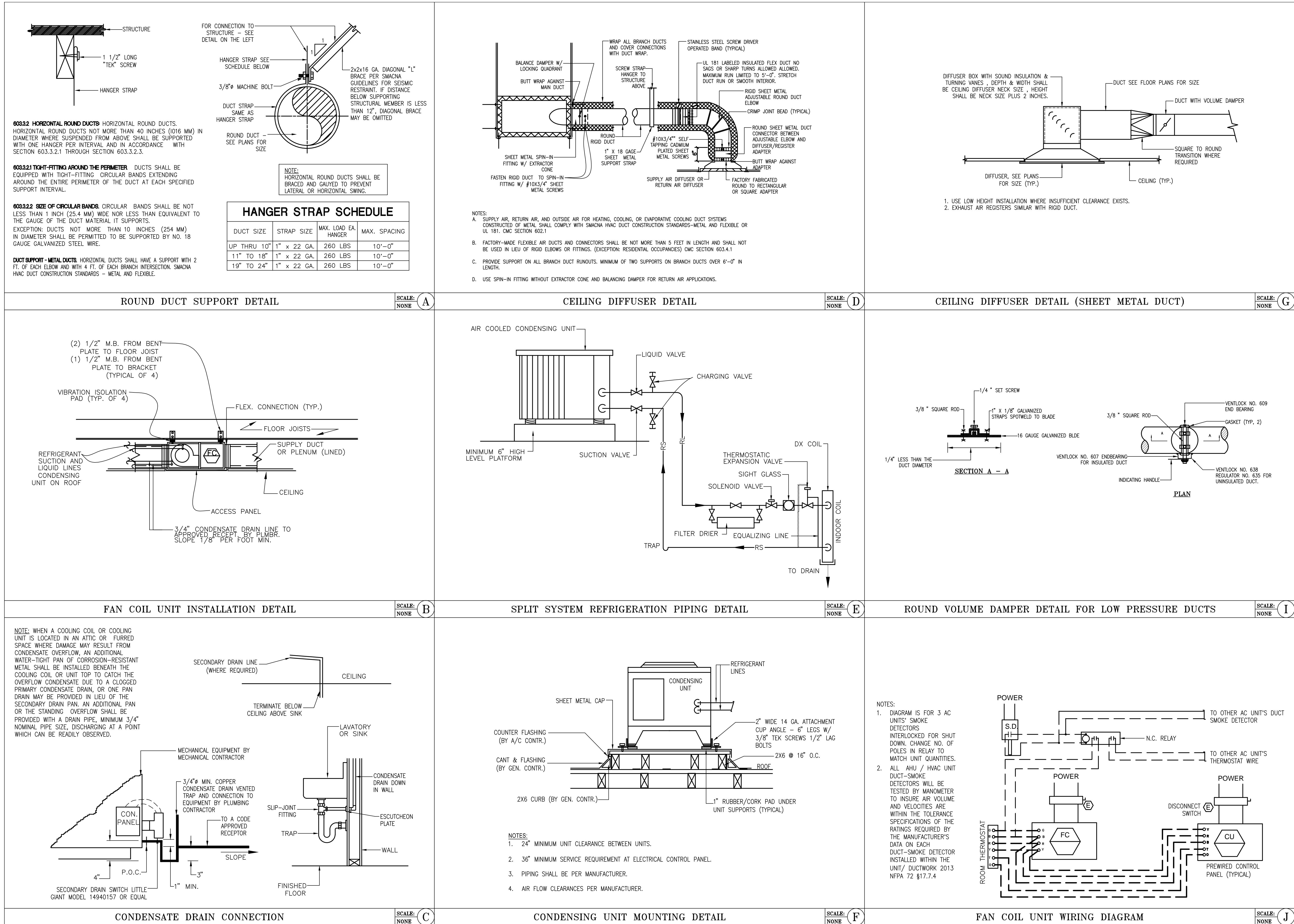
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7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

SHEET NAME

HVAC DETAILS

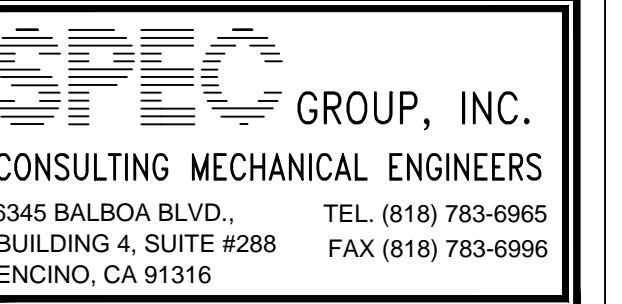
SHEET NUMBER

M-3.0





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PROJECT INFORMATION

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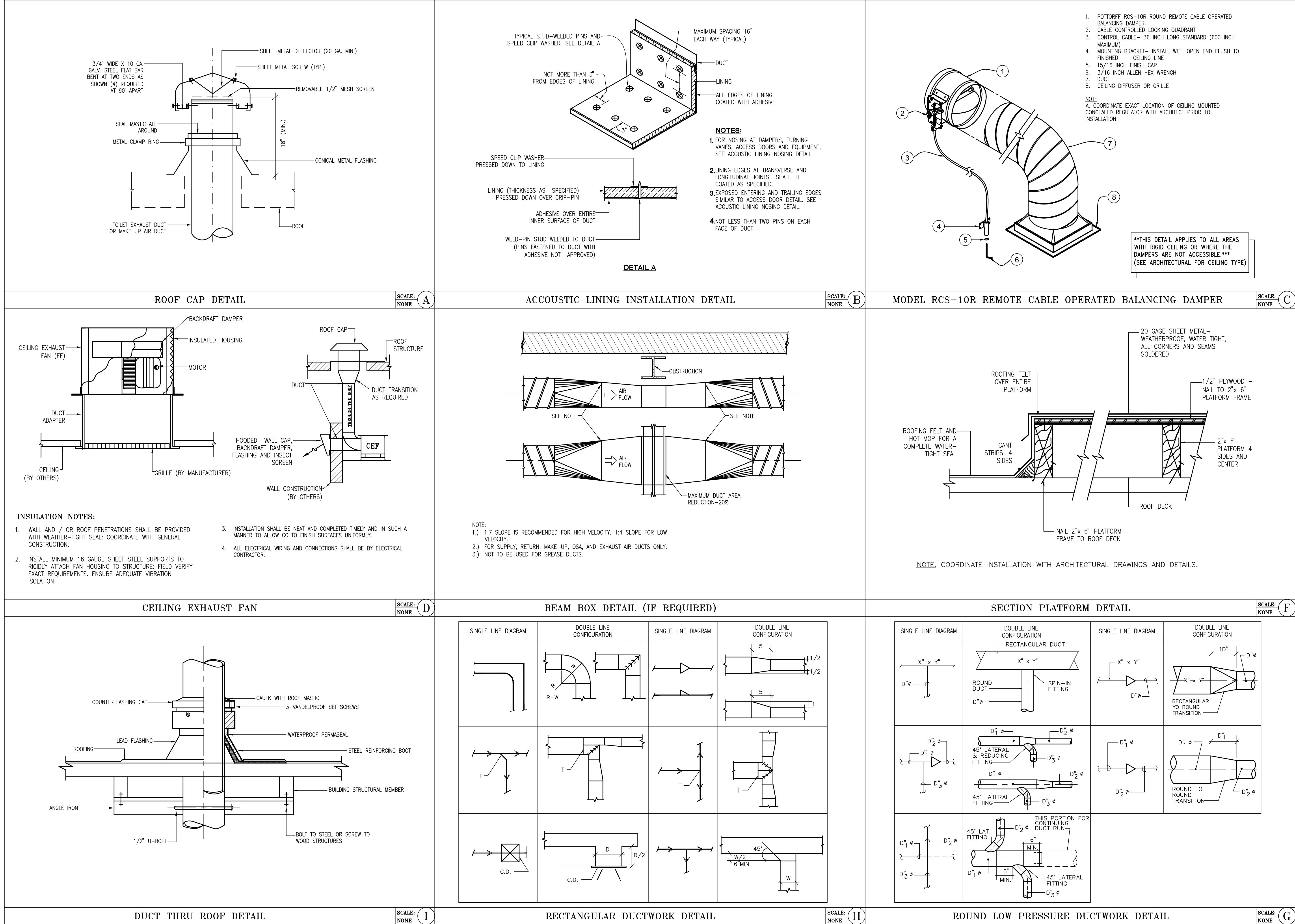
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7/24/2019	BLDG. SUBMITTAL

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HVAC DETAILS

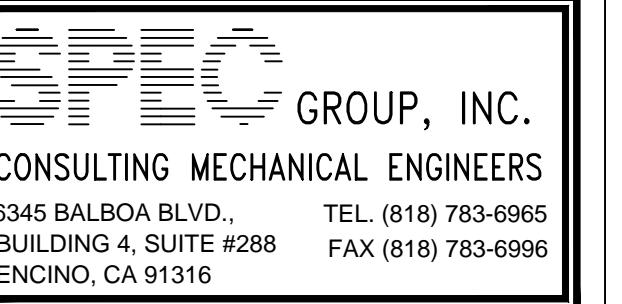
SHEET NUMBER

M-3.1





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PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

8/19/2019	BLDG. RE-SUBMITTAL
7/24/2019	BLDG. SUBMITTAL

SHEET NAME

HVAC DETAILS

SHEET NUMBER

M-3.2

ROOFTOP UNIT CONDENSATE DRAIN TRAP DETAIL
SCALE: A

NOTE: 1. SEE MANUFACTURER'S SPECIFICATIONS.
EXTERNAL TRAP MAY BE PROHIBITED.
SEE PLUMBING DWGS. FOR CONDENSATE DRAIN LINES AND TIE-INS.

PACKAGED UNIT ROOF CURB DETAIL
SCALE: B

PROPER STRUCTURAL SUPPORT FOR ROOF CURB BY GENERAL CONTRACTOR
SEE ROOF CURB DETAIL ON THIS SHEET
GENERAL CONTRACTOR SHALL PROVIDE ROOF CRICKETS AS REQUIRED (TYPICAL)
ARCHITECT SHALL COORDINATE REQUIRED STRUCTURAL FRAMING AND FRAMED OPENINGS
SFM APPROVED SMOKE DETECTOR PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR, ALL ELECTRICAL WIRING BY ELECTRICAL CONTRACTOR, (1) ON SUPPLY AIR PLENUM ONLY.
ROOF OPENINGS AND FRAMING BY GENERAL CONTRACTOR
ROOF MEMBRANE BY ROOFING CONTRACTOR
4X PERIMETER FRAMING BY GENERAL CONTRACTOR
FACTORY ROOF CURB BY GENERAL CONTRACTOR/MECHANICAL CONTRACTOR
CANT STRIP BY ROOFING CONTRACTOR
OUTSIDE AIR INTAKE HOOD W/MVD
CONDENSATE DRAIN CONNECTION BY PLBG. CONTRACTOR
BURGLAR BARS BY GENERAL CONTRACTOR (IF REQUIRED)
SHEET METAL AIR PLENUM (LINED)

ROOFTOP UNIT WIRING DIAGRAM
SCALE: C

NOTES:
1. ALL EXTERIOR MOUNTED DUCT DETECTORS SHALL BE RATED AT 150 DEGREES F. OR HIGHER AND BE MOUNTED IN A NEMA RATED ENCLOSURE OF 3-R OR HIGHER.
2. ALL ROOFTOP EQUIPMENT REQUIRES EXTERNAL DISCONNECTS.

LOW VOLTAGE WIRING & CONDUITS TO OTHER UNITS BY ELECT. CONTRACTOR
DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT FURNISHED AND INSTALLED BY MECHANICAL WIRING BY ELECTRICAL CONTRACTOR.
POWER
CIRCUIT BREAKER
DISCONNECT SWITCH BY
FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR
FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR
A/C UNIT
WALL THERMOSTAT WITH GUARD
TO OTHER AC UNIT'S THERMOSTAT WIRE
TO FAN'S CONTROL PANEL OF RTU
TO OTHER AC UNIT'S DUCT SMOKE DETECTOR (SUPPLY DUCT)
ELECTRICAL CONTRACTOR TO ADD MORE RELAYS AS REQUIRED
N.C. RELAY
NOTES:
DIAGRAM IS FOR 3 AC UNITS' SMOKE DETECTORS INTERLOCKED FOR GLOBAL SHUT DOWN. CHANGE NO. OF POLES IN RELAY TO MATCH UNIT QUANTITIES.

PACKAGED ROOFTOP UNIT ELEVATION DETAIL
SCALE: D

SHEET METAL OR FLEXIBLE DUCT AS SPECIFIED
R=D
LATERAL TAP
MAIN DUCT
AIR FLOW
NOTE:
USE FOR SYMBOL WHERE BRANCH DUCT IS ROUND FROM ROUND MAIN AND BRANCH DUCT AIR QUANTITY IS 50% OR LESS OF TOTAL AIR FLOW.

DUCT SUPPORT ON ROOF
SCALE: E

PLAN: L1 = 1.5 BRANCH DUCT DIAMETER
SQUARE DUCT DIMENSION DxD
ELEVATION: 1" MIN. (TYP.)

DUCT SUPPORT ON ROOF
SCALE: F

AIR FLOW
SHEET METAL OR FLEXIBLE DUCT AS SPECIFIED
ROUND VOLUME DAMPER SEE DETAIL
CONICAL TAP
MAIN DUCT
AIR FLOW
NOTES:
1. USE FOR SYMBOL WHERE BRANCH DUCT AIR QUANTITY IS LESS THAN 25% OF THE TOTAL AIR FLOW.
2. DEPTH OF MAIN DUCT MUST BE 2" LARGER THAN CONICAL DIAMETER.

CIRCULAR DUCT LATERAL TAP WITH VOLUME DAMPER
SCALE: G

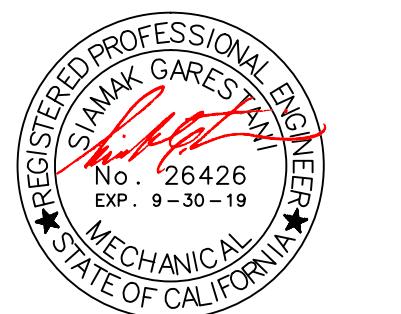
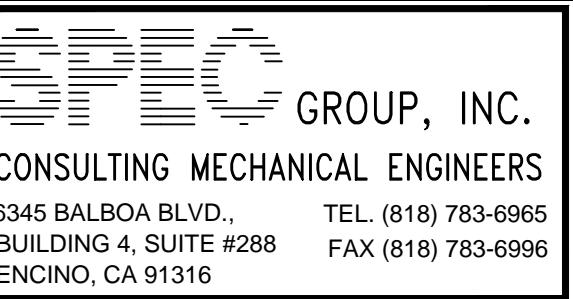
RECTANGULAR DUCT SQUARE TO ROUND TAP
SCALE: H

CIRCULAR DUCT CONICAL TAP WITH VOLUME DAMPER
SCALE: I

8/19/2019 2:43:33 PM



327 E 2ND ST. #222 LOS ANGELES, CALIFORNIA 90012



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

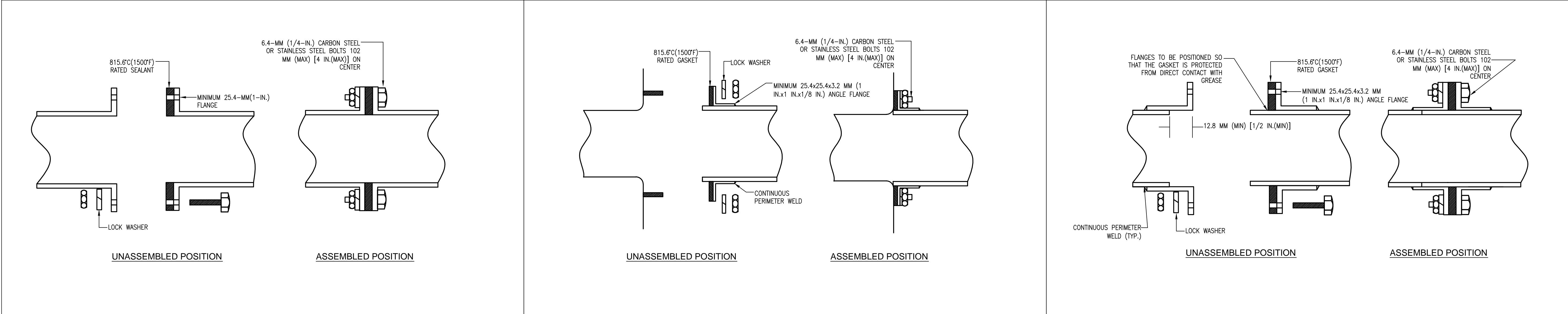
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7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

SHEET NAME

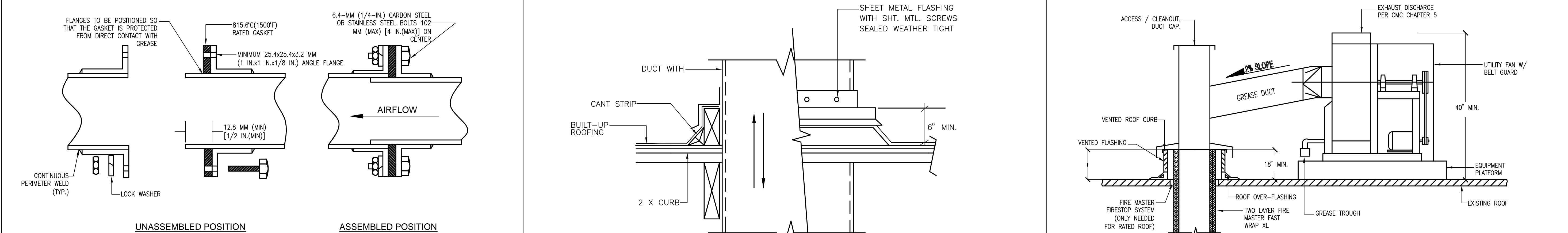
HVAC DETAILS

SHEET NUMBER

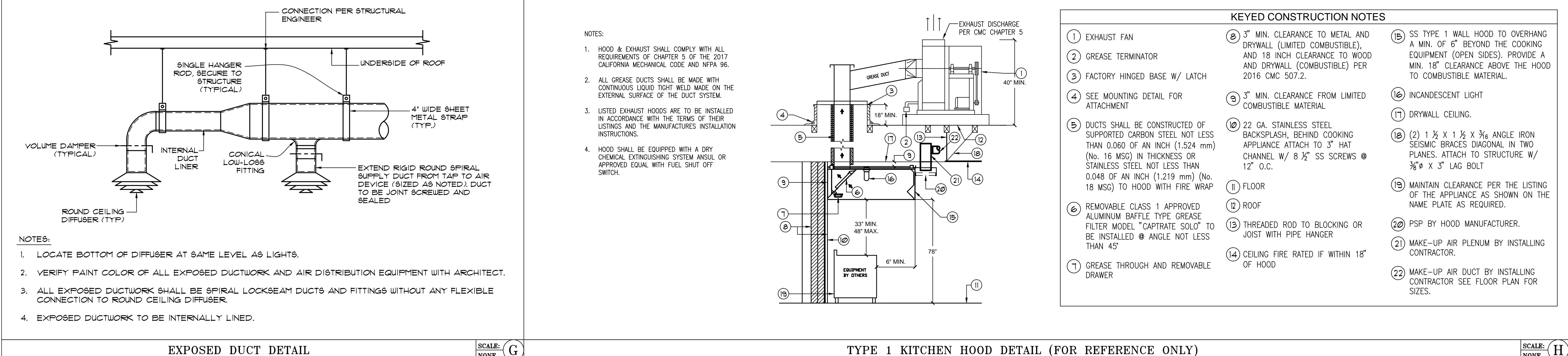
M-3.3



TYPICAL SECTION OF DUCT-TO-FAN CONNECTION_SEALANT METHOD A **TYPICAL SECTION OF DUCT-TO-FAN CONNECTION_DIRECT TO FAN INLET CONE METHOD** B **TYPICAL SECTION OF DUCT-TO-FAN CONNECTION_BUTT JOINT METHOD** C



TYPICAL SECTION OF DUCT-TO-FAN CONNECTION_OVERLAPPING METHOD D **DUCT THRU ROOF DETAIL** E **ROOF MOUNTED UTILITY FAN DETAIL** F



A. THERMAL CERAMICS FIREMASTER FASTWRAP XL IS TESTED TO ASTM E2336 AND UL LISTED PER HNKTC18 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES AND TO PROVIDE A 1- OR 2- HOUR ENCLOSURE THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH ASTM E 814 (U 1479). ICC-ES APPROVAL PER REPORT ESR 2213 OR ESR 2832.

B. COMPLIANT TO THE FOLLOWING CODES: NFPA 96 INTERNATIONAL MECHANICAL CODES, UNIFORM MECHANICAL CODE, CALIFORNIA MECHANICAL CODE

C. INSULATION APPLIED IN TWO LAYERS WITH TIGHT COMPRESSION JOINT ON BOTH LAYERS AT ALL JOINTS.

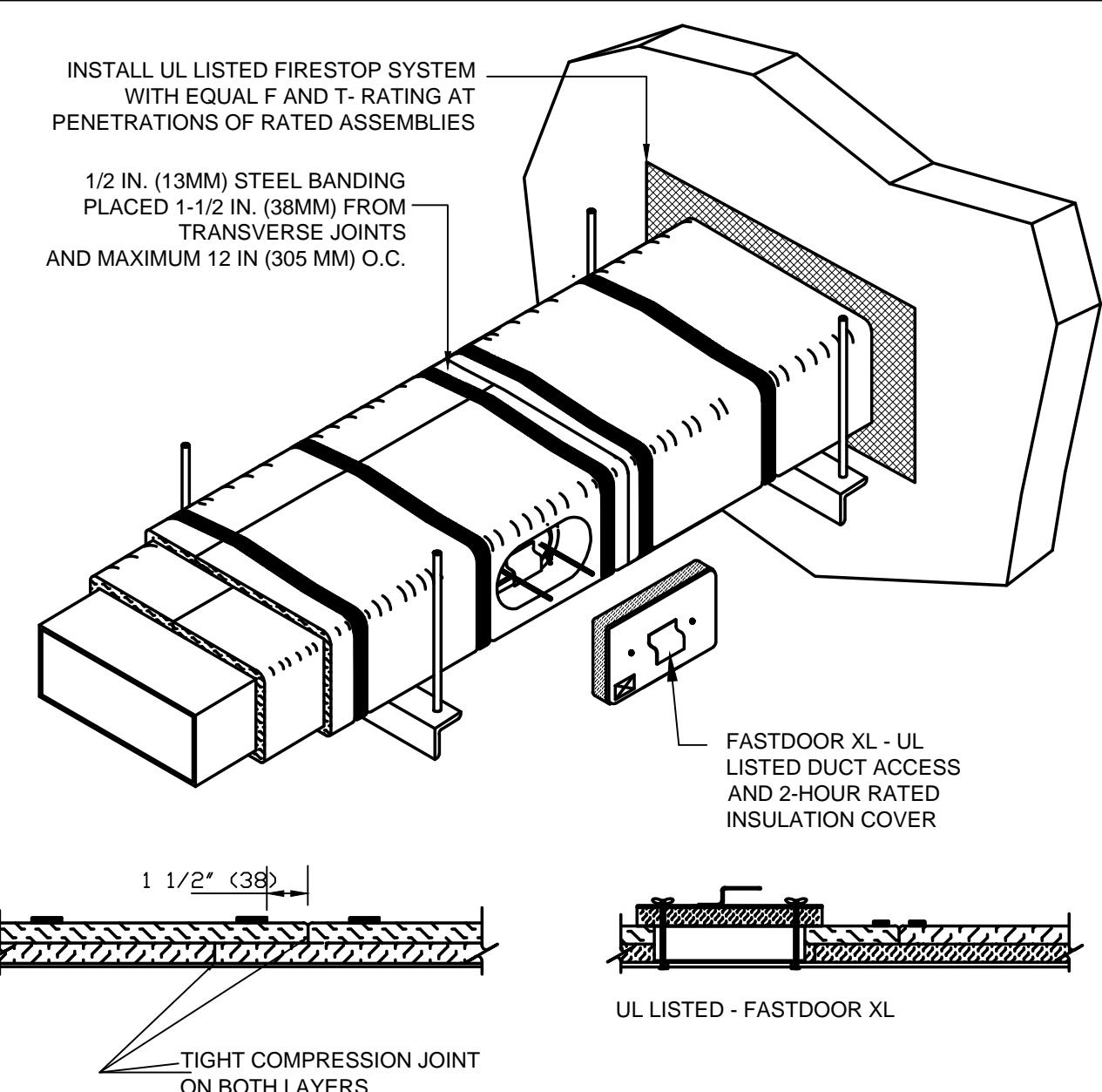
D. MINIMUM 16 GAUGE CARBON STEEL (OR 18 GAGE STAINLESS STEEL) RECTANGULAR OR ROUND GREASE EXHAUST DUCT

E. INSTALL UL LISTED AND LIQUID TIGHT THERMAL CERAMICS FASTDOOR XL ACCESS DOORS AT ALL CHANGES IN DIRECTION AND AT MINIMUM EVERY 12 FT ON HORIZONTAL RUNS. EVERY FLOOR PER 510 OF THE 2017 LAMC.

F. SUPPORT HANGER SYSTEMS DO NOT NEED TO BE WRAPPED PROVIDED THE HANGER RODS ARE MINIMUM OF 3/8 IN. DIAMETER AND SUPPORTS ARE MINIMUM 2 X 2 X 1/8 IN. STEEL ANGLE OR SMACNA EQUIVALENT SUPPORT SYSTEM.

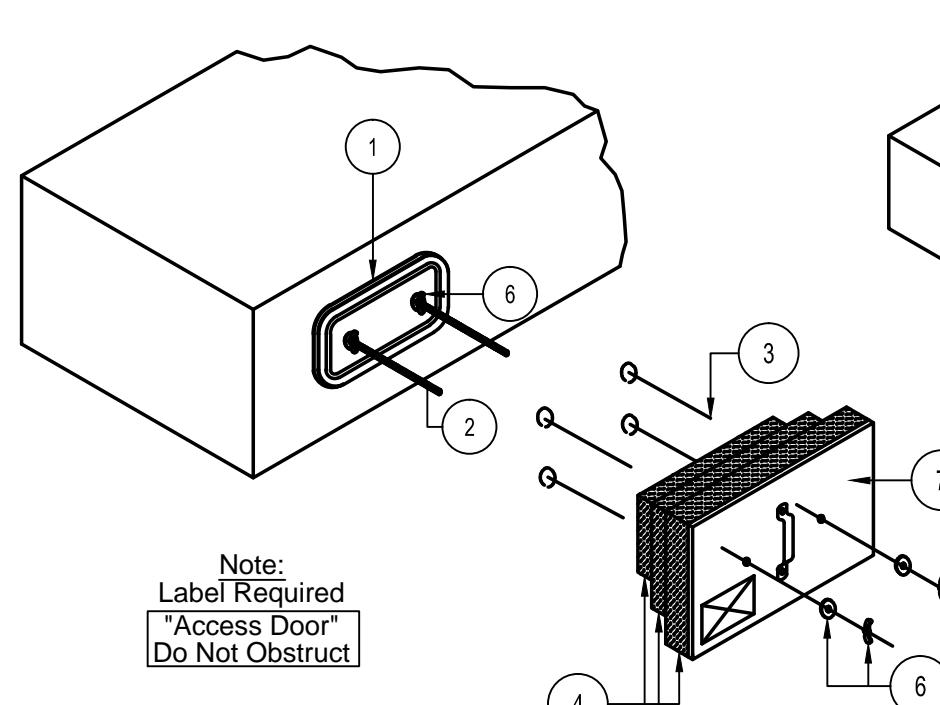
G. THERMAL CERAMICS DUCT WRAP SHALL BE INSTALLED DIRECTLY ONTO THE DUCT AND APPLIED FROM THE HOOD CONNECTION TO THE CONNECTION TO THE FAN.

H. THERMAL CERAMICS DUCT ENCLOSURE SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND UL LISTINGS.

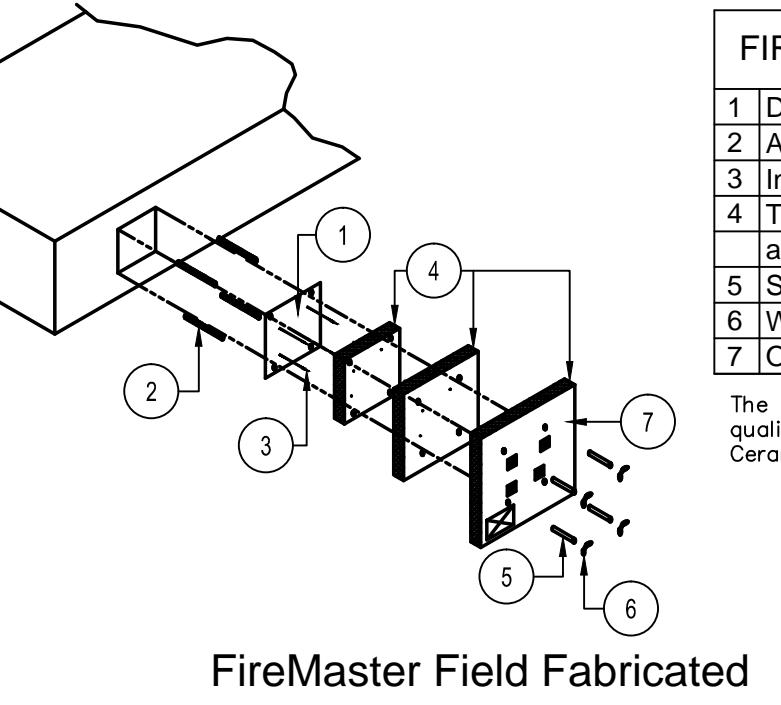


Morgan
ThermalCeramics
P.O. Box 923
Augusta, Georgia 30903-0923
Phone: (706) 560-4038

SHALL BE 2 HOUR
FIRE-MASTER FAST-WRAP XL APPLIED IN 2 LAYERS MEETS THE REQUIREMENTS OF "ASTM E2336". FAST-WRAP XL IS LISTED BY UNDERWRITERS LABORATORIES UNDER HNKTC18, CERTIFYING THAT THE PRODUCT MEETS THE REQUIREMENTS OF "ASTM E2336". FIRE-MASTER FAST-WRAP XL IS LISTED IN ICC-ES REPORT ESR 2213 AS MEETING THE REQUIREMENTS OF THE 2016 CMC AND THE 2012 IAPMO UMC.



FireMaster Ductmate F2-HT Door System

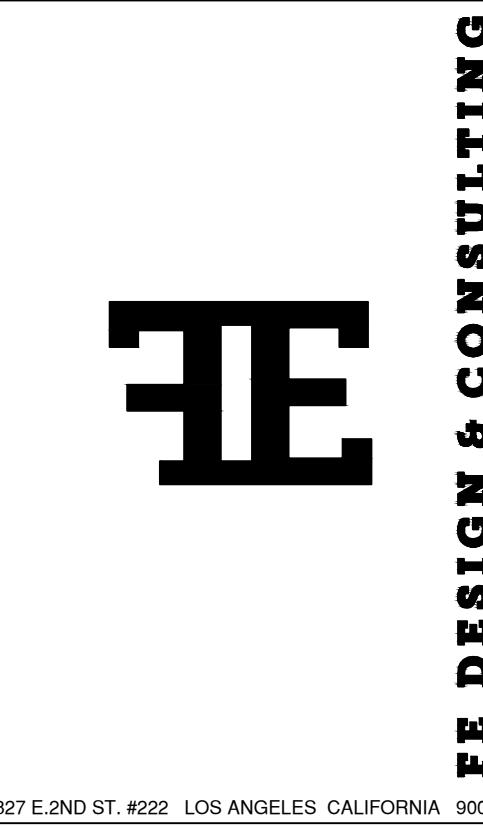


FireMaster Field Fabricated Door System

FIREMASTER FASTWRAP XL DOOR SYSTEMS						
1	DuctMate F2-HT Access Door or 16 Gage Cover Plate.					
2	All Thread Rods.					
3	Installation Pins with Speed Clips.					
4	Three Layers of FastWrap XL Blanket with Minimum 1" Overlaps and All Edges Sealed with Aluminum Tape.					
5	Spool Pieces for Threaded Rods					
6	Wing Nuts and Washers					
7	Outer Cover Plate Labeled "ACCESS DOOR - DO NOT OBSTRUCT"					

The integrity of the duct wrap insulation product is limited to the quality of the installation. FireMaster are trademarks of Thermal Ceramics Inc.

©Thermal Ceramics
FireMaster®FastWrap XL®
Access Door Systems
Commercial Kitchen Grease Duct Enclosure System

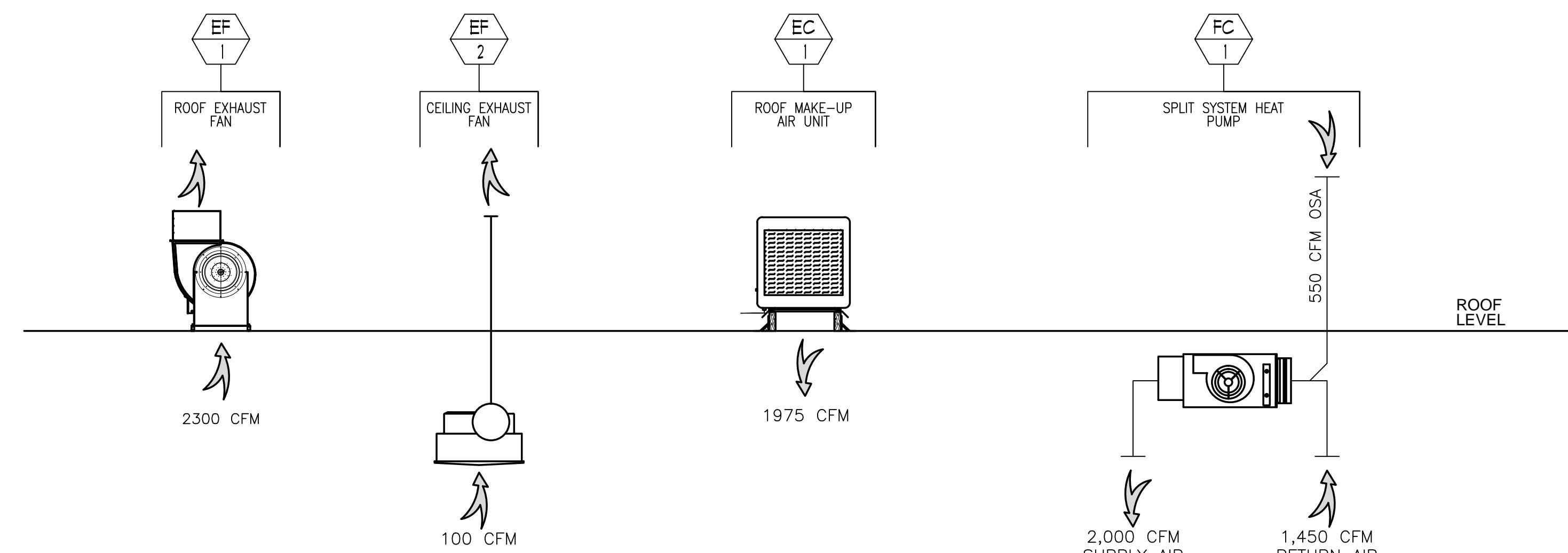


KITCHEN EXHAUST DUCT FIRE WRAP DETAIL

SCALE: A
NONE

FIRE WRAP ACCESS DOOR DETAIL

SCALE: B
NONE



RESTAURANT AREA AIR DIAGRAM

PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

8/19/2019 BLDG. RE-SUBMITTAL

7/24/2019 BLDG. SUBMITTAL

DATE DESCRIPTION

SHEET NAME

HVAC DETAILS

SHEET NUMBER

M-3.4

CAPTRATE® GREASE-STOP® SOLO FILTER INFORMATION		CAPTRATE & KLEEN-GARD FILTERS ARE BUILT IN COMPLIANCE WITH NSF STANDARD #96 UL STANDARD #1046 INT. MECH. CODE (IMC)			
NOM. SIZE (H x W) ACTUAL DIMENSIONS (H x W x D)		FREE AREA (SQ. FEET) WEIGHT (LBS) VELOCITY (FPM) STATIC PRESSURE (WATER GAUGE)			
20 x 20	19-5/8" x 19-5/8" x 1-7/8"	2.28	11	100	0.25
20 x 16	19-5/8" x 15-5/8" x 1-7/8"	1.78	8.9	125	0.35
16 x 20	15-5/8" x 19-5/8" x 1-7/8"	1.78	9.1	150	0.45
16 x 16	15-5/8" x 15-5/8" x 1-7/8"	1.39	7.4	175	0.75

FILTER CALCULATION						
MARK	EXHAUST CFM	FILTERS (QTY) SIZE	FREE AREA PER MANUFACTURE	TOTAL FREE AREA (ALL FILTERS)	VELOCITY THRU FILTER (FPM) (EXHAUST CFM ÷ TOTAL FREE AREA)	CFM PER FILTER (FREE AREA x FPM)
HOOD # 1	2300	(7) 20" x 16"	1.78 EACH	(7) 1.78 = 12.46	2300 / 12.46 = 185	1.78 x 185 = 329

FILTER CALCULATION

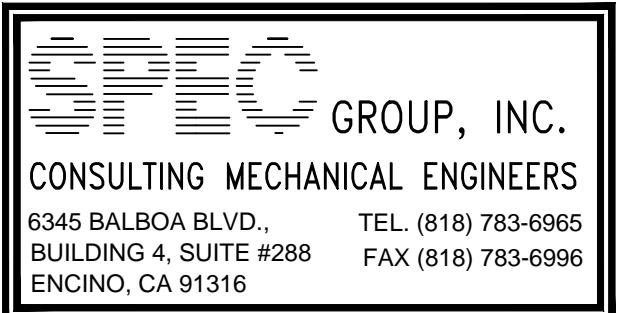
HOOD #	EXHAUST AIR FLOW REQUIRED PER MANUFACTURER (CAPTIVEAIRE)	EXHAUST AIR PROVIDED	DUCT SIZE	DUCT VELOCITY		MAKE-UP PROVIDED (CFM X 144 DUCT SIZE)	SIZE & NO. OF FILTERS
				MAU	AC'S OSA		
1	2300	2300	(1) 16"Ø	2300 X 144 (1) 8X8X3.14 = 1648 FPM	1975 CFM	325 CFM	(7) 20X16

HOOD #1 (EF-1) COOKING EQUIPMENT LIST UNDER HOOD	
ITEM #	EQUIPMENT
10	CHARBROILER, GAS
11	OVEN, SLOW COOK/ HOLD
12	RANGE, HEAVY DUTY, GAS
13	STOCK POT

SCALE: D
NONE

HOOD CALCAULATION

SCALE: E
NONE



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

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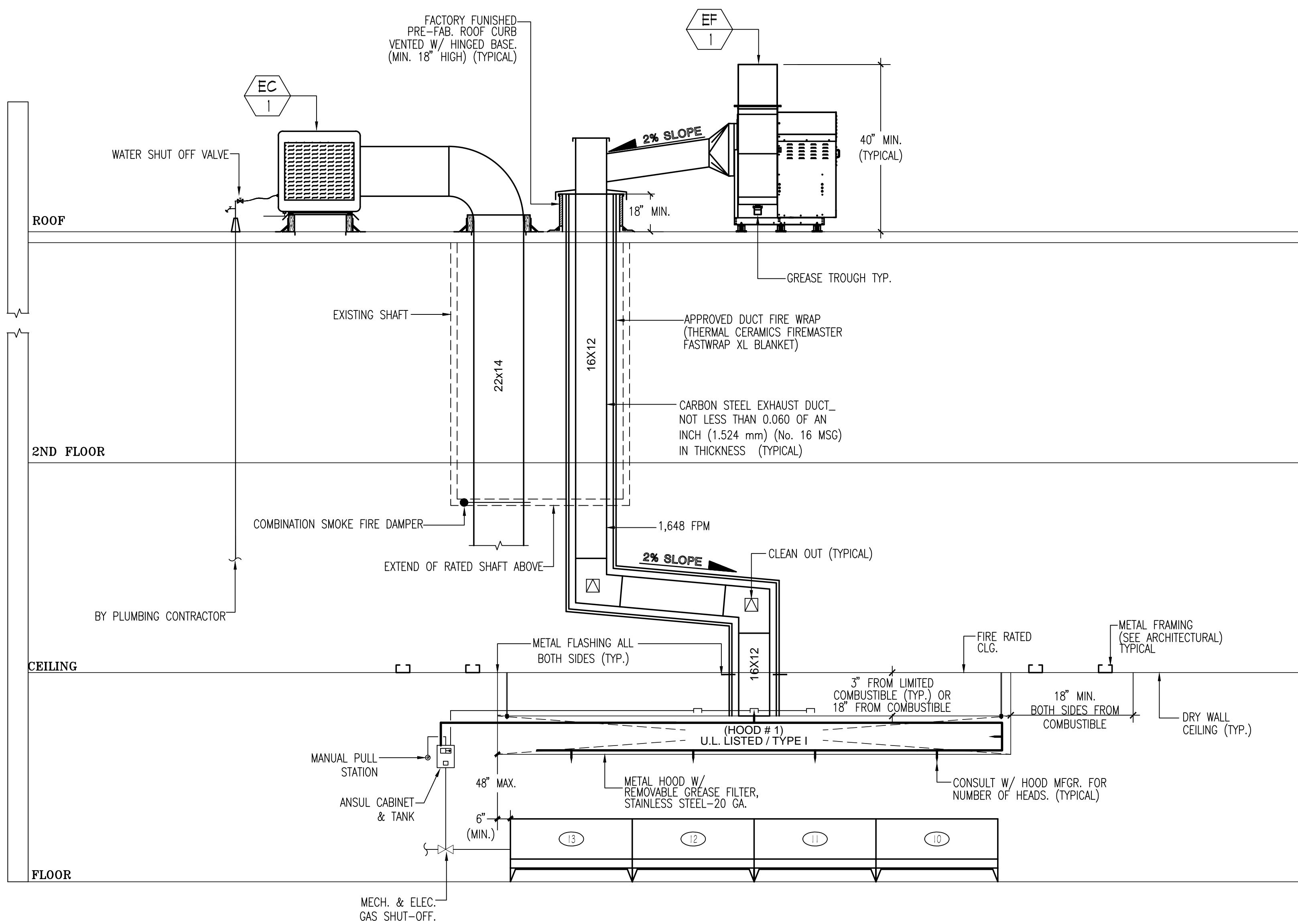
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7/24/2019	BLDG. SUBMITTAL
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HVAC DETAILS

SHEET NUMBER

M-3.5

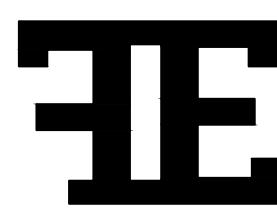


RESTAURANT AREA AIR DIAGRAM

NOTES (NOT ALL MAY APPLY)

- ① ACCESS PANELS/ CLEAN OUTS SHALL BE PROVIDED PER 510.3.1-510.3.4, 510.3.4.1, 510.3.4.2, AND 510.3.6 OF THE 2017 LAMC EVERY FLOOR VERTICALLY, 12' (FEET) OF HORIZONTAL INTERVALS, AND CHANGE OF DIRECTION.
- ② EXHAUST OUTLETS SERVING GREASE DUCT SYSTEM SHALL TERMINATE ABOVE ROOF SURFACE, 10' FROM PROPERTY LINE, 10' FROM AIR INTAKE OPENINGS AND 10' ABOVE ADJOINING GRADE. BASE OF FAN SHALL BE 40" ABOVE ROOF SURFACE.
- ③ HOODS LESS THAN 12" FROM THE CEILING OR WALL SHALL BE FLASHED SOLIDLY WITH MATERIALS AS REQUIRED.
- ④ THE FIRE-EXTINISHING SYSTEM SHALL BE INTERCONNECTED TO THE FUEL OR CURRENT SUPPLY SO THAT THE FUEL OR CURRENT IS AUTOMATICALLY SHUT OFF ALL EQUIPMENT UNDER THE HOOD WHEN THE SYSTEM IS ACTUATED.
- ⑤ DUCT BRACING AND SUPPORTS SHALL BE OF NONCOMBUSTIBLE MATERIAL.
- ⑥ WEATHER PROTECTION FOR OPENINGS TO BE A MINIMUM OF 26 GAUGE GALVANIZED STEEL.
- ⑦ FIRE DEPARTMENT APPROVAL SHALL BE REQUIRED ON FIRE PROTECTION SYSTEMS FOR GREASE HOODS AND DUCTS AS REQUIRED BY SECTION 513 OF THE MECHANICAL CODE AND AS REQUIRED BY THE FIRE CODE.
- ⑧ DUCT SYSTEMS SHOULD BE INSTALLED WITH NOT LESS THAN 2 PERCENT SLOPE ON HORIZONTAL RUNS UP TO 75 FEET (22 860 MM) AND NOT LESS THAN 8 PERCENT SLOPE ON HORIZONTAL RUNS MORE THAN 75 FEET (22 860 MM). FACTORY-BUILT GREASE DUCTS SHALL BE PERMITTED TO BE INSTALLED IN ACCORDANCE WITH LISTING AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. DUCTS SHALL BE INSTALLED WITHOUT FORMING DIPS OR TRAPS. IN MANIFOLD (COMMON DUCT) SYSTEMS, THE LOWEST END OF THE MAIN DUCT SHALL BE CONNECTED FLUSH ON THE BOTTOM WITH THE BRANCH DUCT.
- ⑨ EACH EXHAUST OUTLET WITHIN THE HOOD SHALL SERVE NOT MORE THAN 12-FOOT SECTION OF HOOD.
- ⑩ THE DUCT ENCLOSURE SHALL BE SEALED AROUND THE DUCT AT THE POINT OF PENETRATION.
- ⑪ WHERE ENCLOSURES ARE NOT REQUIRED, HOODS, GREASE REMOVAL DEVICES, EXHAUST FANS, AND DUCTS SHALL HAVE A CLEARANCE OF AT LEAST EIGHTEEN (18) INCHES (457 MM) TO COMBUSTIBLE MATERIAL, THREE (3) INCHES (76 MM) TO LIMITED-COMBUSTIBLE MATERIAL, AND ZERO (0) INCHES (0 MM) TO NONCOMBUSTIBLE MATERIAL.
- ⑫ BOLTS, SCREWS, RIVETS OR OTHER MECHANICAL FASTENERS, EXCEPT OVAL OR PAN HEAD SCREWS SHALL NOT PENETRATE THE INSIDE OF THE GREASE DUCT OR HOOD WALLS.
- ⑬ THE DUCT ENCLOSURE SHALL BE SEALED AROUND THE DUCT AT THE POINT OF PENETRATION.
- ⑭ PROVIDE ACCESS CLEANOUT OPENING FOR CLEANING, MAINTENANCE, AND INSPECTION.
- ⑮ WHEN FIRE-RATED DUCT WRAP IS TO BE USED IN LIEU OF A FIRE-RATED SHAFT, 2 LAYERS ARE REQUIRED.
- ⑯ ALL GREASE DUCT CLEAN OUTS SHALL BE ACCESSIBLE BY 10' STEPLADDER OR SAFE ACCESS AND PLATFORM WILL BE INSTALLED 510.3.3.1 B OF THE 2017 LAMC.
- ⑰ ALL SEAMS, JOINTS, PENETRATIONS, AND DUCT TO HOOD COLLAR CONNECTIONS SHALL HAVE A LIQUID-TIGHT CONTINUOUS EXTERNAL WELD. LAMC SECTION 510.5.2.1 RECOMMEND TESTING PER ASHRE 154, SECTION 5.2, LIGHT TEST - PASS 100 W OR HALOGEN LAMP THROUGH THE ENTIRE SECTION OF DUCTWORK TO BE TESTED. THE LAMP SHALL BE OPEN SO AS TO EMIT LIGHT EQUALLY IN ALL DIRECTIONS PERPENDICULAR TO THE DUCT WALLS. LIGHT FROM DUCT INTERIOR SHALL NOT BE VISIBLE THROUGH ANY EXTERIOR SURFACE.
- ⑱ ALL GREASE DUCT ACCESS PANELS SHALL BE ACCESSIBLE WITH SIGN STATING "ACCESS PANEL - DO NOT OBSTRUCT".
- ⑲ THIS CONTRACTOR MAY INSTALL FACTORY DOUBLE WALL DUCT BY CAPTIVE AIRE IN LIEU OF ALL WELDED DUCTWORK.
- ⑳ PROVIDE A MINIMUM 8 INCH HEIGHT BARRIER BETWEEN THE FRYER AND THE RANGE BURNERS OR 16 INCH HORIZONTAL SPACE.
- ㉑ HOOD REQUIRES AIR BALANCE REPORT FOR FINAL INSPECTION.
- ㉒ EXPOSED GREASE DUCT/ HOOD SYSTEMS SERVING A TYPE I HOOD SHALL HAVE A CLEARANCE FROM UNPROTECTED COMBUSTIBLE CONSTRUCTION OF AT LEAST 18 INCHES. CLEARANCE MAY BE REDUCED TO NOT LESS THAN 3 INCHES WHEN COMBUSTIBLE CONSTRUCTION IS PROTECTED WITH MATERIAL REQUIRED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION.
- ㉓ HORIZONTAL DUCTS REQUIRE AT LEAST 20"X20" OPENING FOR PERSONNEL ENTRY. IF ACCESS SIZING (20"x20") IS NOT POSSIBLE, CLEANOUTS ARE REQUIRED TO BE INSTALLED EVERY 12 FEET.
- ㉔ MAXIMUM ACCESS PANEL HEIGHT FROM FINISHED FLOOR SHALL BE 12'-0"; OTHERWISE PROVIDE PERMANENT PLATFORM OR CATWALK FOR SERVICE/ CLEANING.

SCALE: A
NONE



HOOD INFORMATION - Job#3680286

HOOD NO.	TAG	MODEL	LENGTH	MAX COOKING TEMP.	EXHAUST PLENUM RISER(S)						TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG.	
					TOTAL EXH. CFM	WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.		
1		5430 ND-2-PSP-F	10' 3"	600 Deg.	2300		4'	16"	2300	1647	-0.770"	1975	430 SS Where Exposed	ALONE ALONE

HOOD INFORMATION

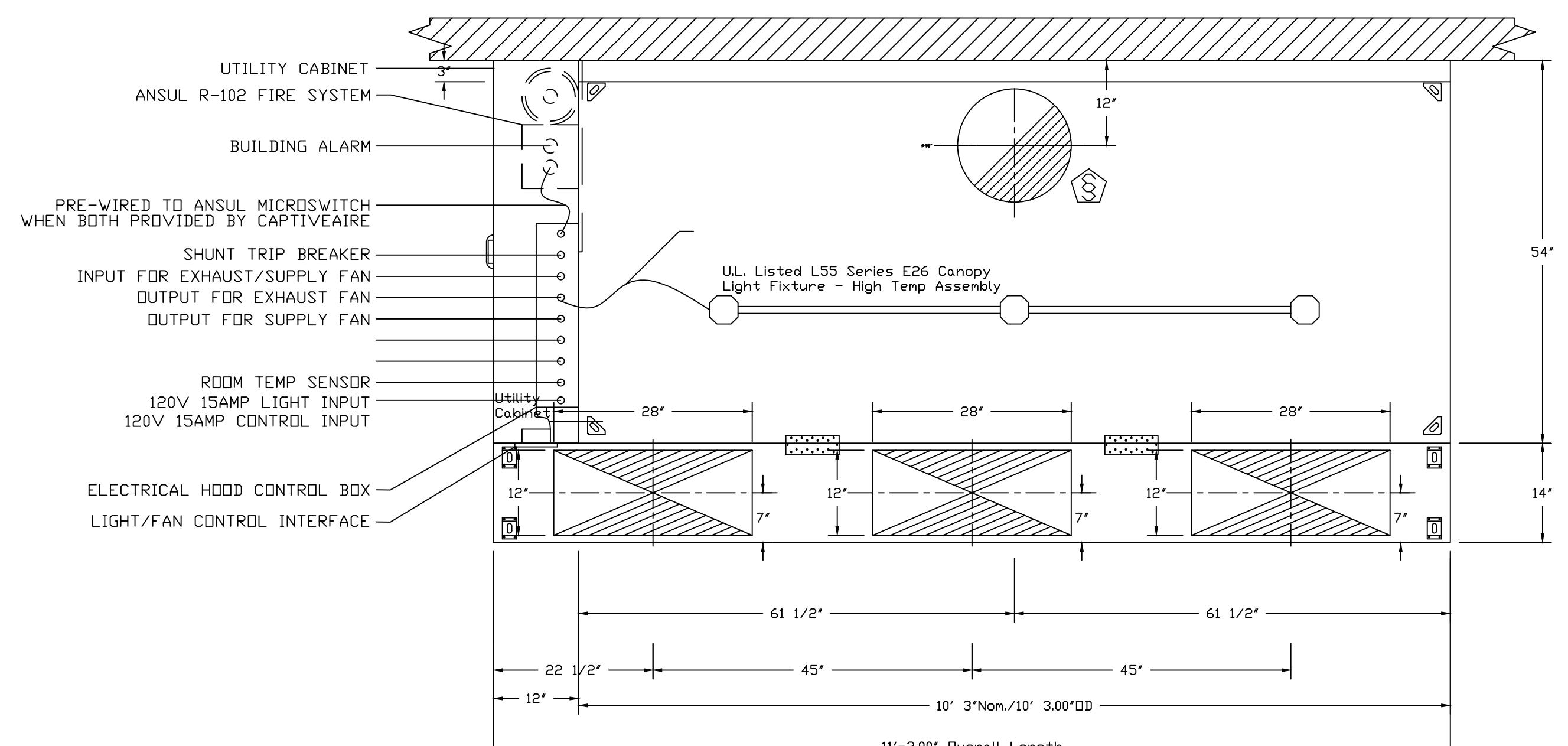
HOOD NO.	TAG	FILTER(S)				LIGHT(S)			UTILITY CABINET(S)							
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM	ELECTRICAL	SWITCHES	FIRE SYSTEM PIPING	HOOD HANGING WGT
1		Captrate Solo Filter	7	20"	16"	85% See Filter Spec.	3	L55 Series E26	NO	Left	12"x54"x30"	Ansul R102	3.0	SC-211110FP	1 Light 1 Fan	YES 781 LBS

HOOD OPTIONS

HOOD NO.	TAG	OPTION					
1	SS	LEFT VERTICAL END PANEL	27"	Top Width,	21"	Bottom Width,	80" High Insulated 430

PERFORATED SUPPLY PLENUM(S)

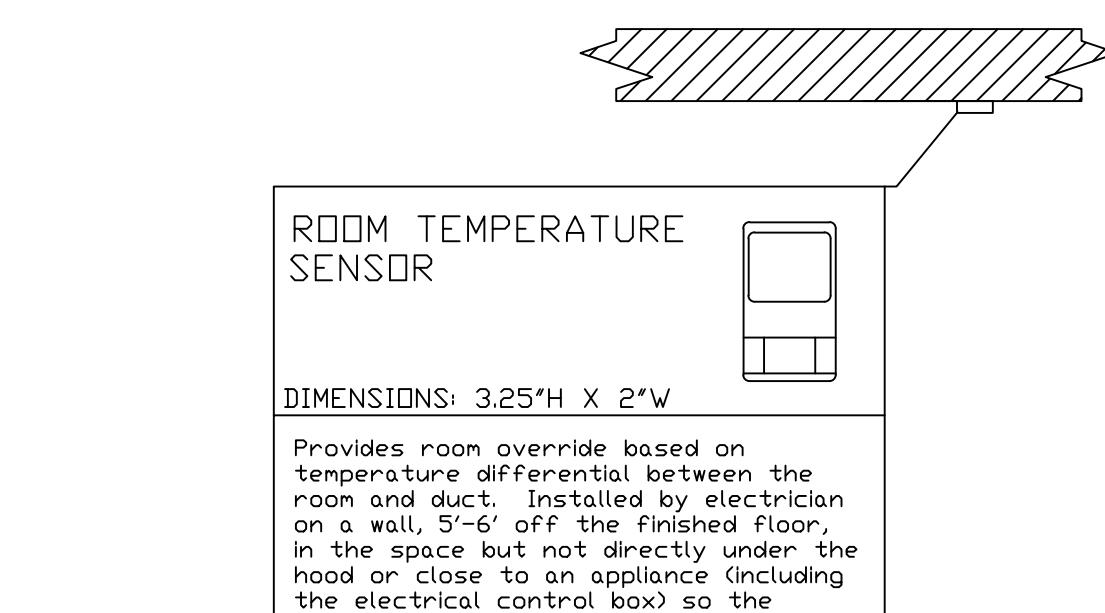
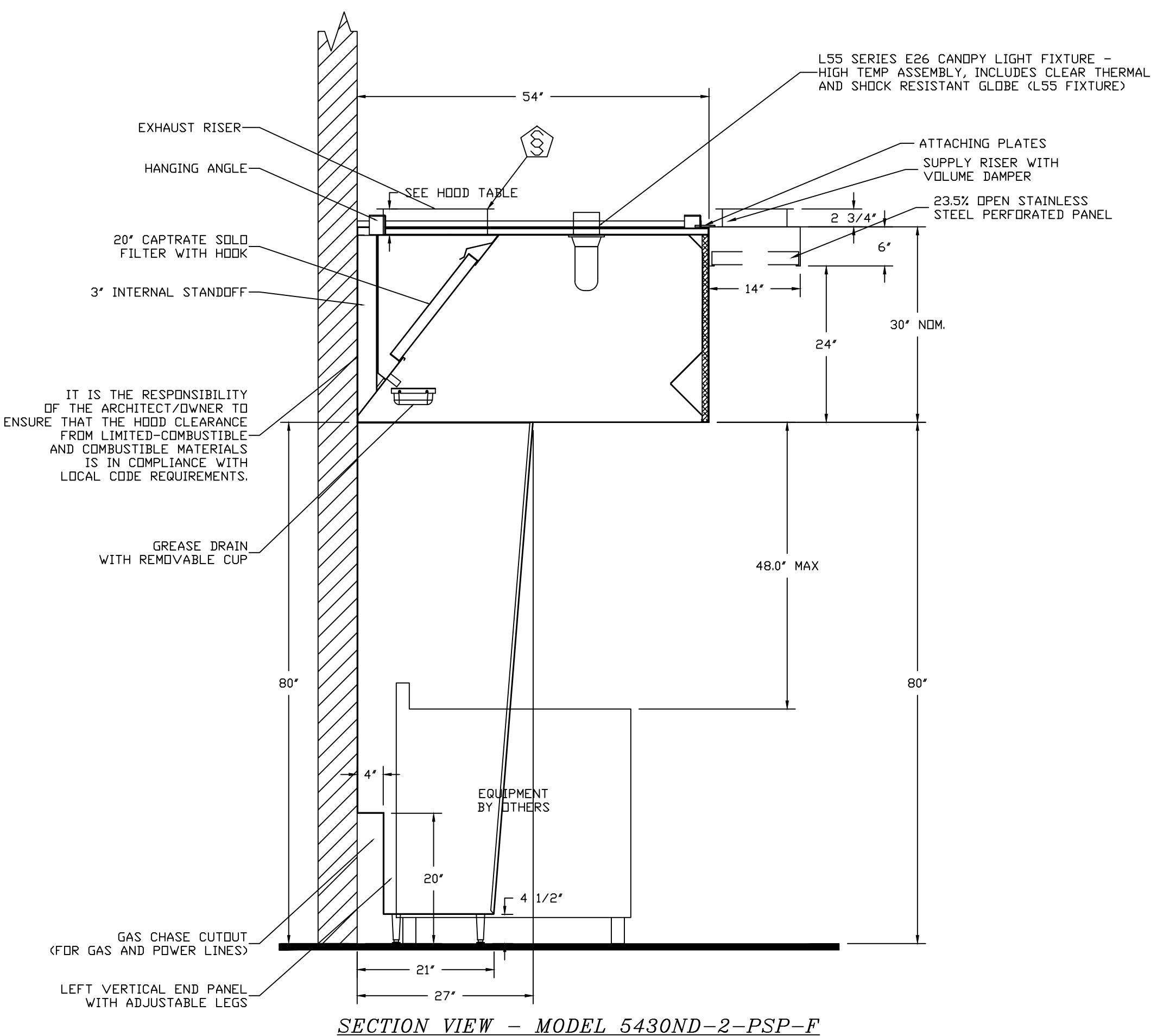
HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	RISER(S)					
						TYPE	WIDTH	LENG.	DIA.	CFM	S.P.
1		Front	135"	14"	6"	MUA	12"	28"	658	0.165"	
						MUA	12"	28"	658	0.165"	
						MUA	12"	28"	658	0.165"	



Fire System Information - Job#3680286

FIRE SYSTEM NO.	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		Ansul R102	3.0	3	Fire Cabinet Left	Left

FIRE SYSTEM NO.	Tag	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		Ansul R102	3.0	3	Fire Cabinet Left	Left



CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH



NFPA #96
NSF
E.T.L. LISTED 102900319PRT-001 TO
UL 710 & ULC710 STANDARDS

FOR QUESTIONS, CALL
SO. CALIFORNIA FOOD SERVICE SALES/ENGINEERING OFFICE
3002 DOW AVE, SUITE 410, TUSTIN, CA 92780
PHONE: 714-957-1500 | FAX: 919-227-5975
reg86@captiveaire.com | www.captiveaire.com

TYPICAL INTEGRATED COMPONENT LAYOUT DETAIL

ACTUAL FIRE SYSTEM PIPING SCHEMATIC TO BE PROVIDED BY
CONTRACTED FIRE SYSTEM DISTRIBUTOR AT TIME OF PERMITTING



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

8/19/2019	BLDG. RE-SUBMITTAL
7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

SHEET NAME

CAPTIVE AIRE
HOOD SPEC'S

SHEET NUMBER

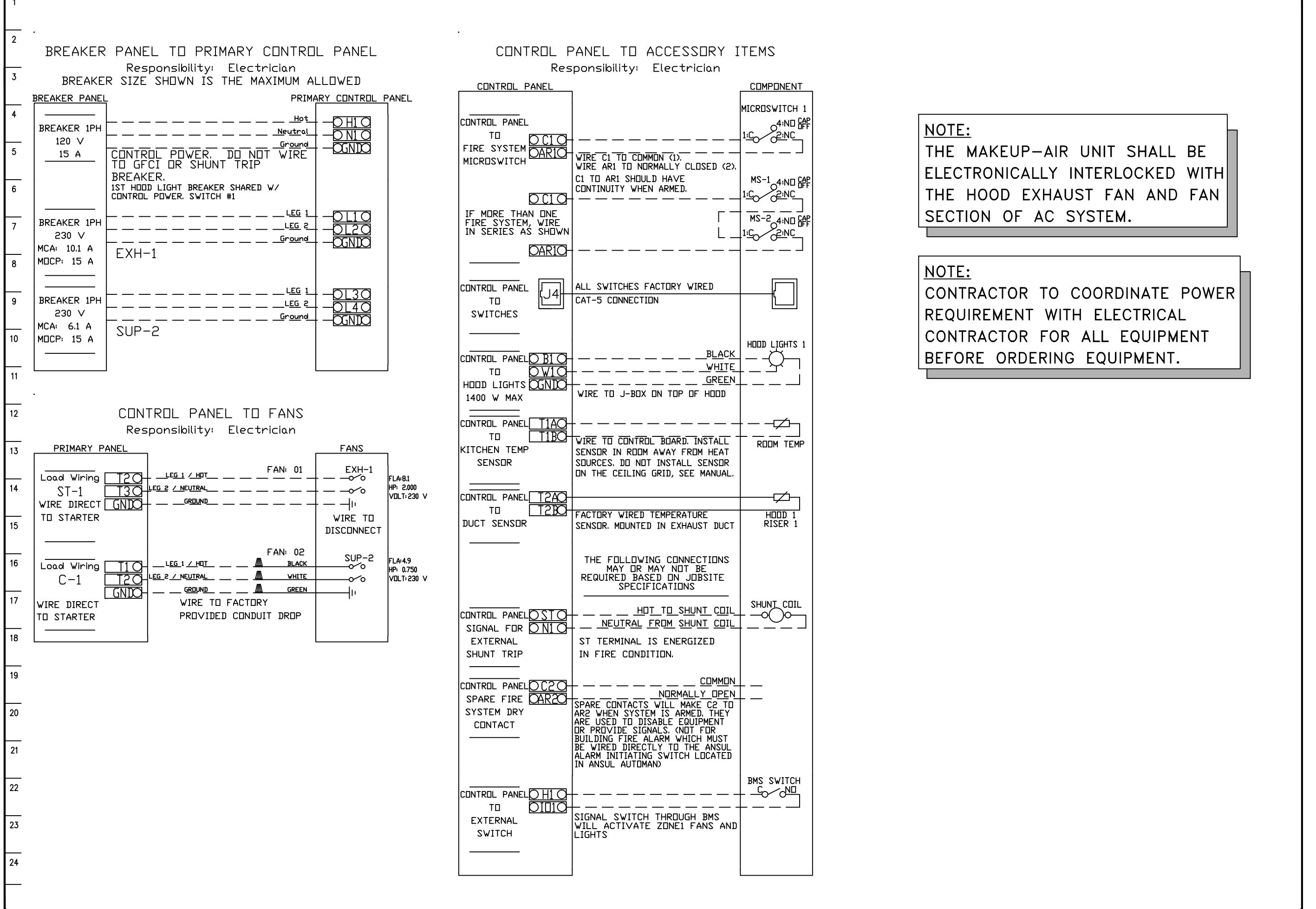
M-4.0

E

ELECTRICAL PACKAGE - Job#3680286

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	?	H.P.	VOLT	FLA
1		SC-211110FP	Utility Cabinet Left	03 - Utility Cabinet Left	1 Light	Smart Controls Thermostatic Control	Exhaust	1	2.000	230	8.1
				Hood # 1	1 Fan		Supply	1	0.750	230	4.9

JOB NO		MODEL NUMBER	SC-211110FP	OWNER BY	MANUFACTURER	DESCRIPTION OF OPERATION:
3680286		JOB NAME	1822 Broadway - los angeles, ...	5/9/2019	ECP #1-1	220V 1 Phase w/ control for 1 Exhaust Fan, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Fans On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation.



EXHAUST FAN INFORMATION - Job#3680286

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS.)	SONES
1		EA-USBI15BD-RM	2300	2.000	1773	2.000	1.5140	1	230	8.1	1599 FPM	333	22

FAN OPTIONS

FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
		1 - BI15 - 24" Discharge Extension.
		1 - BI - Discharge Orientation Vertical Upper Left - CW Inlet Side.
		1 - BI15 - Inlet Connection Standard 16" Flanged Grease Duct.
		1 - Utility Set - Spring Vibration Isolators - BI10 Thru BI11 / Equivalent Sized Utility Set - Indoor/Outdoor use.

FAN ACCESSORIES

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

CURB ASSEMBLIES

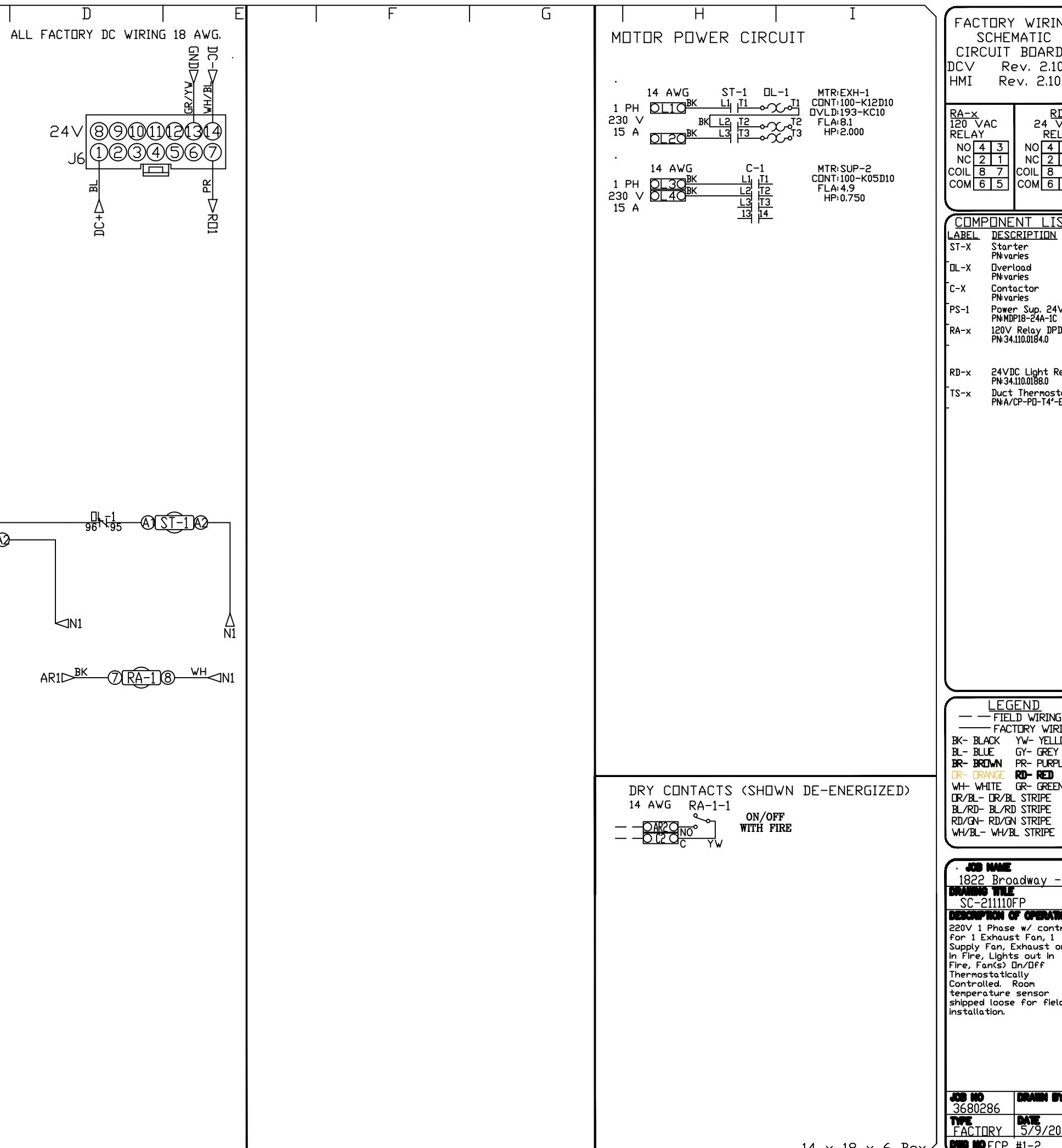
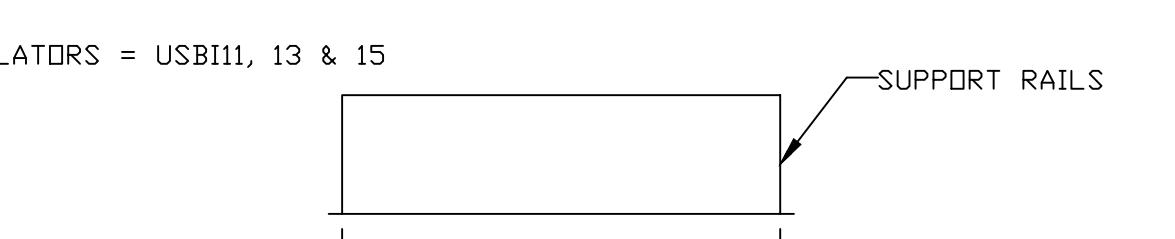
NO.	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	19 LBS	Rail	4.000" W x 36.000" L x 10.000" H Comes as a set of 2.

NORMAL TEMPERATURE TEST BELT 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.

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

OPTIONS

BI15 - 24" DISCHARGE EXTENSION.
BI - DISCHARGE ORIENTATION VERTICAL
UPPER LEFT - CW INLET SIDE.
BI15 - INLET CONNECTION STANDARD 16"
FLANGED GREASE DUCT.
UTILITY SET GREASE CUP.
UTILITY SET - SPRING VIBRATION
ISOLATORS - BI10 THRU BI11 /
EQUIVALENT SIZED UTILITY SET -
INDOOR/OUTDOOR USE.

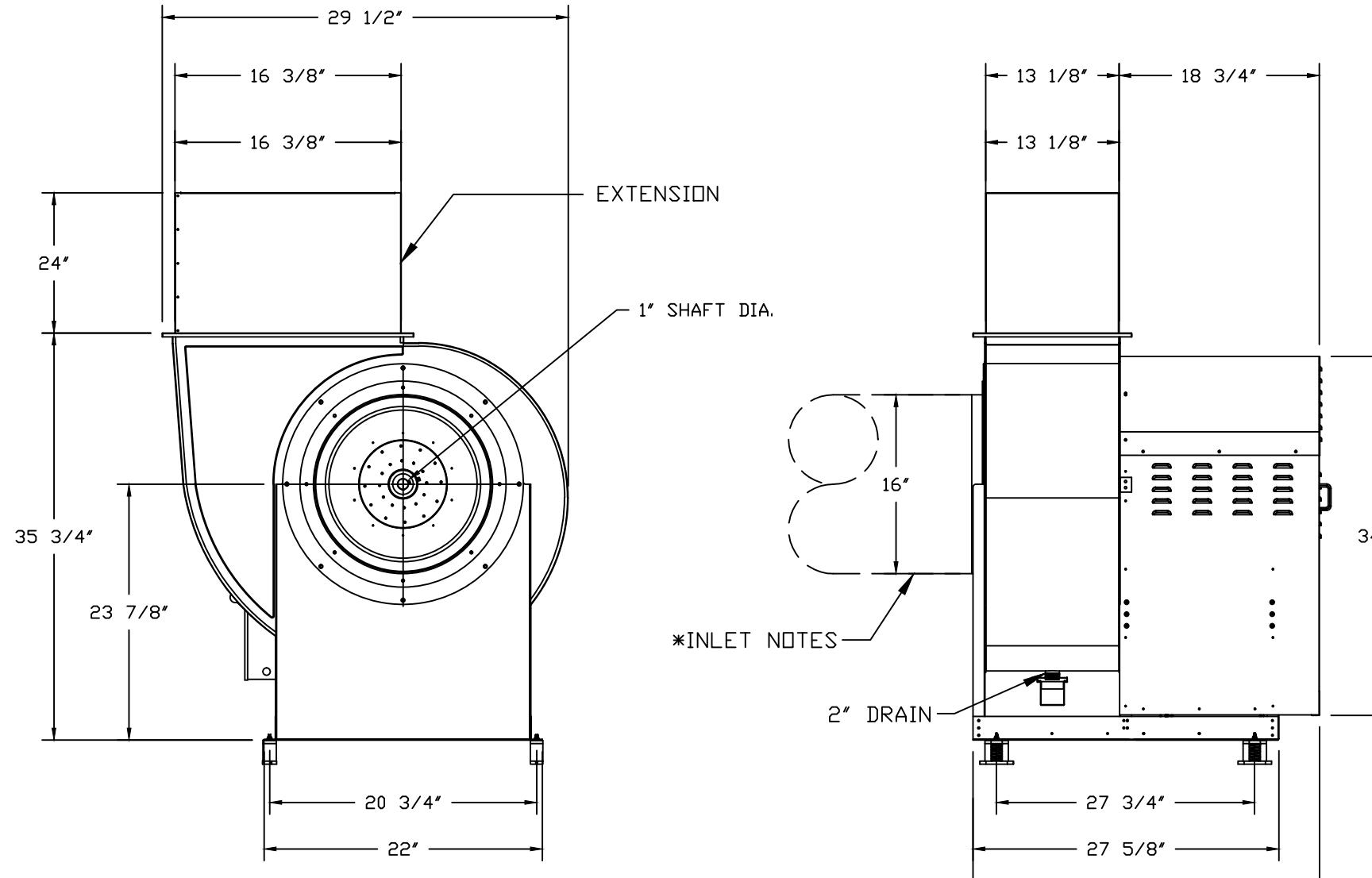


14 x 18 x 6 Box

FEATURES:

- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705
- UL762 AND ULC-S645
- 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" DRAIN
- MOTOR WEATHER COVER
- FULLY SEALED SCROLL HOUSING
- SCROLL ACCESS DOOR
- FLANGE 1 1/4" - 11 THRU 20.
- FLANGE 2" - 24 THRU 36.

FAN #1 EA-USBI15BD-RM - EXHAUST FAN



1822 N BROADWAY
LOS ANGELES, CA 90031

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FAN SPEC'S

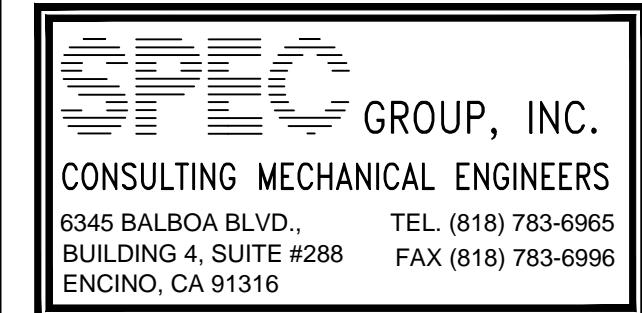
SHEET NUMBER

M-4.1





327 E 2ND ST. #222 LOS ANGELES, CALIFORNIA 90012

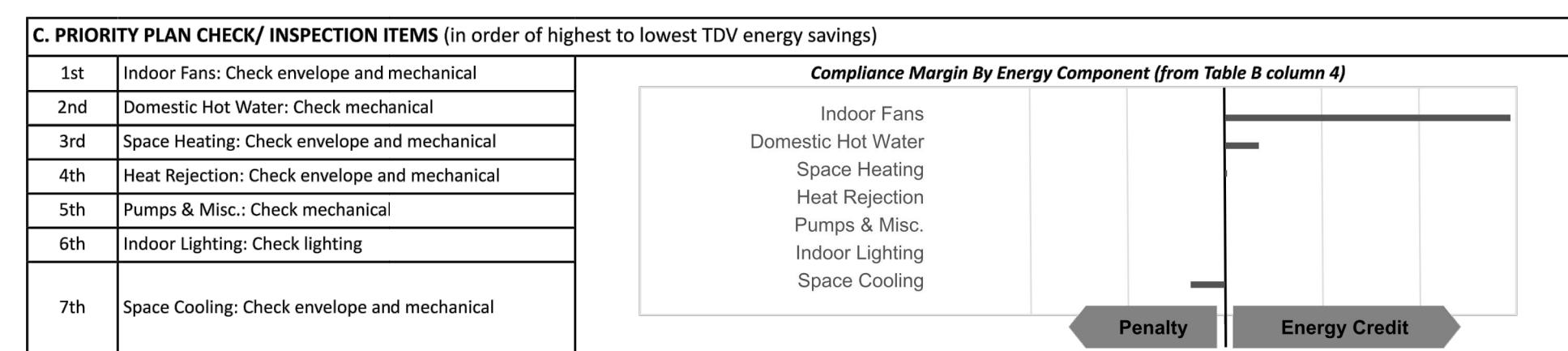


Project Name:	Gamboge	NRCC-PRF-01-E	Page 1 of 20
Project Address:	1822 Broadway Los Angeles 90031	Calculation Date/Time:	17:08, Wed, Jul 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cbd16x

A. PROJECT GENERAL INFORMATION			
1. Project Location (city)	Los Angeles	8. Standards Version	Compliance2016
2. CA Zip Code	90031	9. Compliance Software (version)	EnergyPro 7.2
3. Climate Zone	9	10. Weather File	LOS-ANGELES-DOWNTOWN_722874_CZ2010.epw
4. Total Conditioned Floor Area in Scope	1,078 ft ²	11. Building Orientation (deg)	(N) 0 deg
5. Total Unconditioned Floor Area	0 ft ²	12. Permitted Scope of Work	ExistingAdditionAndAlteration
6. Total # of Stories (Habitable Above Grade)	1	13. Building Type(s)	Nonresidential
7. Total # of dwelling units	0	14. Gas Type	NaturalGas

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft ² -yr)				\$ 140.1
BUILDING COMPLIES				
1. Energy Component	2. Standard Design (TDV)	3. Proposed Design (TDV)	4. Compliance Margin (TDV)	5. Percent Better than Standard
Space Heating	6.60	6.49	0.11	1.7%
Space Cooling	161.53	171.03	-9.50	-5.9%
Indoor Fan	272.11	189.67	82.44	30.3%
Heat Rejection	--	--	--	--
Pumps & Misc.	--	--	--	--
Domestic Hot Water	39.74	30.38	9.36	23.6%
Indoor Lighting	123.68	123.68	--	0.0%
COMPLIANCE TOTAL	603.66	521.25	82.41	13.7%
Receptacle	137.97	137.97	0.0	0.0%
Process	627.75	627.75	0.0	0.0%
Other Lit	--	--	--	--
Process Motors	--	--	--	--
TOTAL	1,369.38	1,286.97	--	6.0%

Project Name:	Gamboge	NRCC-PRF-01-E	Page 2 of 20
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D. EXCEPTIONAL CONDITIONS	
This project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements of section 140.6(d) Automatic Daylighting Controls in Secondary Daylit Zones is required.	
This project includes Domestic Hot Water in the analysis. Please verify that Domestic Hot Water is included in the design for the permitted scope of work.	
E. HERS VERIFICATION	
This Section Does Not Apply	
F. ADDITIONAL REMARKS	
Minimum standard heating for required cooling of the system.	

PROJECT INFORMATION

GAMBOGE

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

Report Version: NRCC-PRF-01-E-06262019-5583

Report Generated at: 2019-07-24 17:08:47

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

Report Version: NRCC-PRF-01-E-06262019-5583

Report Generated at: 2019-07-24 17:08:47

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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY			
Identify which building components use the performance or prescriptive path for compliance. "NA"= not in project			
For components that utilize the performance path, indicate the sheet number that includes mandatory notes on plans.			
Building Component	Compliance Path	Compliance Forms (required for submittal)	Location of Mandatory Notes on Plans
Envelope	<input checked="" type="checkbox"/> Performance <input type="checkbox"/> Prescriptive	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E) NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
Mechanical	<input type="checkbox"/> NA		
Domestic Hot Water	<input checked="" type="checkbox"/> Performance <input type="checkbox"/> Prescriptive	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E) NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06-E NRCC-PLB-01-E	
Lighting (Indoor Conditioned)	<input type="checkbox"/> Performance <input type="checkbox"/> Prescriptive	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E) NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
Covered Process: Commercial Kitchens	<input checked="" type="checkbox"/> NA		
Covered Process: Computer Rooms	<input type="checkbox"/> Performance <input type="checkbox"/> Prescriptive	S2 (section of the NRCC-PRF-01-E) NRCC-PRC-01 / 03-E	
Covered Process: Laboratory Exhaust	<input type="checkbox"/> Performance <input type="checkbox"/> Prescriptive	S3 (section of the NRCC-PRF-01-E) NRCC-PRC-01 / 04-E NRCC-PRC-01 / 09-E	

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G. COMPLIANCE PATH & CERTIFICATE OF COMPLIANCE SUMMARY			
The following building components are only eligible for prescriptive compliance. Indicate which are relevant to the project.			
The following building components may have mandatory requirements per Part 6. Indicate which are relevant to the project.			
Yes	NA	Prescriptive Requirement	Compliance Forms
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lighting (Indoor Unconditioned) \$140.6	NRCC-LTI-01 / 02 / 03 / 04 / 05-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lighting (Outdoor) \$140.7	NRCC-LTO-01 / 02 / 03-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lighting (Sign) \$140.8	NRCC-LTS-01-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solar Thermal Water Heating: \$140.5	NRCC-STH-01-E
Yes	NA	Mandatory Requirement	Compliance Forms
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Commissioning: \$120.8	NRCC-CXR-01 / 02 / 03 / 05-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Simple Systems	NRCC-CXR-01 / 02 / 04 / 05-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complex Systems	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Electric: \$130.5	NRCC-ELC-01-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Solar Ready: \$110.10	NRCC-SRA-01 / 02-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Covered Process: \$120.6	NRCC-PRC-01-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Parking Garage	NRCC-PRC-02-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Commercial Refrigeration	NRCC-PRC-05-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Warehouse Refrigeration	NRCC-PRC-06/07/08-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Compressed Air	NRCC-PRC-10-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Process Boilers	NRCC-PRC-11-E

SUBMITTALS

SHEET NAME

SHEET NUMBER

M-4.0

1822 N BROADWAY
LOS ANGELES, CA 90031

8/19/2019 BLDG. RE-SUBMITTAL

7/24/2019 BLDG. SUBMITTAL

DATE DESCRIPTION

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

Report Version: NRCC-PRF-01-E-06262019-5583

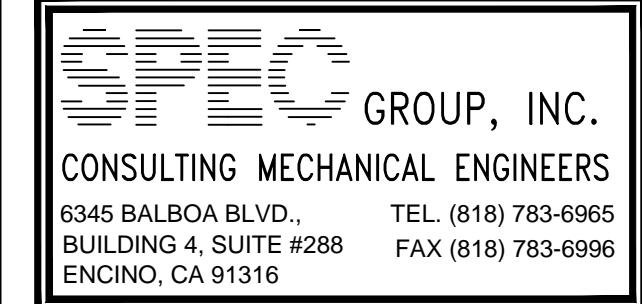
Report Generated at: 2019-07-24 17:08:47

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

Report Version: NRCC-PRF-01-E-06262019-5583

Report Generated at: 2019-07-24 17:08:47

8/19/2019 2:44:06 PM



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

8/19/2019	BLDG. RE-SUBMITTAL
7/24/2019	BLDG. SUBMITTAL

SHEET NAME

TITLE 24
COMPLIANCE
FORMS

SHEET NUMBER

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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cbd16x

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCC) – Documentation Author to indicate which Certificates must be submitted for the features to be recognized for compliance (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify). See Tables G. and H. in MCH and LTI Details Sections for Acceptance Tests and forms by equipment.		Confirmed	
Building Component	Compliance Forms (required for submittal)	Pass	Fail
Envelope	<input checked="" type="checkbox"/> NRCI-ENV-01-E - For all buildings <input checked="" type="checkbox"/> NRCA-ENV-02-F - NFRC label verification for fenestration	<input type="checkbox"/>	<input type="checkbox"/>
Mechanical	<input checked="" type="checkbox"/> NRCI-MCH-01-E - For all buildings with Mechanical Systems <input checked="" type="checkbox"/> NRCA-MCH-02-A - Outdoor Air <input checked="" type="checkbox"/> NRCA-MCH-03-A - Constant Volume Single Zone HVAC <input type="checkbox"/> NRCA-MCH-04-H - Air Distribution Duct Leakage <input type="checkbox"/> NRCA-MCH-05-A - Air Economizer Controls <input type="checkbox"/> NRCA-MCH-06-A - Demand Control Ventilation <input type="checkbox"/> NRCA-MCH-07-A - Supply Fan Variable Flow Controls <input type="checkbox"/> NRCA-MCH-08-A - Valve Leakage Test <input type="checkbox"/> NRCA-MCH-09-A - Supply Water Temp Reset Controls <input type="checkbox"/> NRCA-MCH-10-A - Hydronic System Variable Flow Controls <input type="checkbox"/> NRCA-MCH-11-A - Auto Demand Shed Controls <input type="checkbox"/> NRCA-MCH-12-A - Packaged Direct Expansion Units <input type="checkbox"/> NRCA-MCH-13-A - Air Handling Units and Zone Terminal Units <input type="checkbox"/> NRCA-MCH-14-A - Distributed Energy Storage <input type="checkbox"/> NRCA-MCH-15-A - Thermal Energy Storage <input type="checkbox"/> NRCA-MCH-16-A - Supply Air Temp Reset Controls <input type="checkbox"/> NRCA-MCH-17-A - Condensate Water Temp Reset Controls <input type="checkbox"/> NRCA-MCH-18-A - Energy Management Controls Systems <input type="checkbox"/> NRCAV-MCH-04-H - Duct Leakage Test	<input type="checkbox"/>	<input type="checkbox"/>

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Building Component	Compliance Forms (required for submittal)	Pass	Fail
Plumbing	<input checked="" type="checkbox"/> NRCI-PLB-01-E - For all buildings with Plumbing Systems <input type="checkbox"/> NRCI-PLB-02-E - required on central systems in high-rise residential, hotel/motel application. <input type="checkbox"/> NRCI-PLB-03-E - Single dwelling unit systems in high-rise residential, hotel/motel application. <input type="checkbox"/> NRCI-PLB-21-E - HERS verified central systems in high-rise residential, hotel/motel application. <input type="checkbox"/> NRCI-PLB-22-E - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application. <input type="checkbox"/> NRCAV-PLB-21-H - HERS verified central systems in high-rise residential, hotel/motel application. <input type="checkbox"/> NRCAV-PLB-22-H - HERS verified single dwelling unit systems in high-rise residential, hotel/motel application. <input type="checkbox"/> NRCI-STH-01-E - Any solar water heating	<input type="checkbox"/>	<input type="checkbox"/>
Indoor Lighting	<input type="checkbox"/> NRCI-LTI-01-E - For all buildings <input type="checkbox"/> NRCI-LTI-02-E - Lighting control system, or for an Energy Management Control System (EMCS) <input type="checkbox"/> NRCI-LTI-03-E - Line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting <input type="checkbox"/> NRCI-LTI-04-E - Two interlocked systems serving an auditorium, a convention center, a conference room, or a theater <input type="checkbox"/> NRCI-LTI-05-E - Lighting Control Credit Power Adjustment Factor (PAF) <input type="checkbox"/> NRCI-LTI-06-E - Additional wattage installed in a video conferencing studio <input type="checkbox"/> NRCA-LTI-02-A - Occupancy sensors and automatic time switch controls. <input checked="" type="checkbox"/> NRCA-LTI-03-A - Automatic daylighting controls <input type="checkbox"/> NRCA-LTI-04-A - Demand responsive lighting controls	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Lighting	<input type="checkbox"/> NRCI-LTO-01-E - Outdoor Lighting <input type="checkbox"/> NRCI-LTO-02-E - EMCS Lighting Control System <input type="checkbox"/> NRCA-LTO-02-A - Outdoor Lighting Control	<input type="checkbox"/>	<input type="checkbox"/>
Sign Lighting	<input type="checkbox"/> NRCI-LTS-01-E - Sign Lighting	<input type="checkbox"/>	<input type="checkbox"/>
Electrical	<input type="checkbox"/> NRCI-ELC-01-E - Electrical Power Distribution	<input type="checkbox"/>	<input type="checkbox"/>
Photovoltaic	<input type="checkbox"/> NRCI-SPV-01-E Photovoltaic Systems	<input type="checkbox"/>	<input type="checkbox"/>

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Building Component	Compliance Forms (required for submittal)	Pass	Fail
Covered Process	<input type="checkbox"/> NRCP-01-E - Covered Processes <input type="checkbox"/> NRCA-PRC-01-F - Compressed Air Systems <input type="checkbox"/> NRCA-PRC-02-F - Kitchen Exhaust <input type="checkbox"/> NRCA-PRC-03-F - Garage Exhaust <input type="checkbox"/> NRCA-PRC-04-F - Refrigerated Warehouse- Evaporator Fan Motor Controls <input type="checkbox"/> NRCA-PRC-05-F - Refrigerated Warehouse- Evaporative Condenser Controls <input type="checkbox"/> NRCA-PRC-06-F - Refrigerated Warehouse- Air Cooled Condenser Controls <input type="checkbox"/> NRCA-PRC-07F - Refrigerated Warehouse- Variable Speed Compressor <input type="checkbox"/> NRCA-PRC-08-F - Electrical Resistance Under slab Heating System	<input type="checkbox"/>	<input type="checkbox"/>

I. ENVELOPE GENERAL INFORMATION (See NRCC-PRF-ENV-DETAILS for more information)						
1.	Total Conditioned Floor Area	1,078 ft ²	5.	Number of Floors Above Grade	1	Confirmed
2.	Total Unconditioned Floor Area	0 ft ²	6.	Number of Floors Below Grade	0	<input type="checkbox"/>
3.	Addition Conditioned Floor Area	327 ft ²				<input type="checkbox"/>
4.	Addition Unconditioned Floor Area	0 ft ²				<input type="checkbox"/>
7. Opaque Surfaces & Orientation	8. Total Gross Surface Area	1,679 ft ²	9. Total Fenestration Area	186 ft ²	10. Window to Wall Ratio	11.1% <input type="checkbox"/>
North Wall		601 ft ²		38 ft ²		0.63% <input type="checkbox"/>
East Wall		252 ft ²		0 ft ²		0.00% <input type="checkbox"/>
South Wall		549 ft ²		40 ft ²		0.73% <input type="checkbox"/>
West Wall		279 ft ²		108 ft ²		38.8% <input type="checkbox"/>
Total		1,679 ft ²		186 ft ²		11.1% <input type="checkbox"/>
Roof		402 ft ²		0 ft ²		0.00% <input type="checkbox"/>

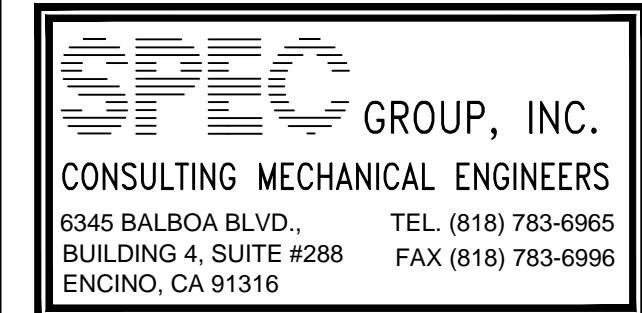
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J. FENESTRATION ASSEMBLY SUMMARY						§ 110.6		Confirmed	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
(N) Window	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	27	1.19	0.83	0.50	N	<input type="checkbox"/>
(N) Door	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	121	1.19	0.83	0.50	N	<input type="checkbox"/>
Existing Window	VerticalFenestration FixedWindow MetalFraming	Default Performance	Manufactured	38	1.19	0.83	0.77	E	<input type="checkbox"/>

K. OPAQUE SURFACE ASSEMBLY SUMMARY						§ 120.7 / § 140.3	
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327 E 2ND ST. #222 LOS ANGELES CALIFORNIA 90012



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

8/19/2019 BLDG. RE-SUBMITTAL
7/24/2019 BLDG. SUBMITTAL
DATE DESCRIPTION

**TITLE 24
COMPLIANCE
FORMS**

SHEET NUMBER

M-4.2

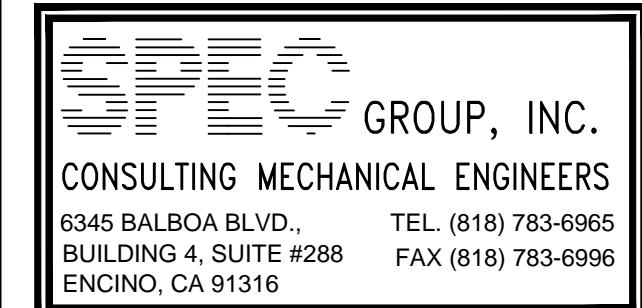
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L. ROOFING PRODUCT SUMMARY						
1.	2.	3.	4.	5.	6.	7.
Product Type	Product Density (lb/ft ²)	Aged Solar Reflectance	Thermal Emittance	SRI	Cool Roof Credit	Roofing Product Description
R-30 Roof Attic19	5.813	0.08	0.75	NA	No	NA
New Roof32	5.582	0.08	0.75	NA	No	NA
M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information)						
Dry System Equipment ¹ (Fan & Economer info included below in Table N)						
1.	2.	3.	4.	5.	6.	7.
Equip Name	Equip Type	System Type (Simple ² or Complex ³)	Qty	Total Heating Output (kBtu/h)	Supp Heat Source (V/N)	Supp Heat Output (kBtu/h)
FC/CU-1	SZHP (Split3Phase)	Simple	1	57	No	0
RTU-1	SZHP (Packaged3Phase)	Simple	1	23	No	0
Efficiency						
				Cooling	Heating	
				SEER-14.00 / EER-11.00	HSPF-8.20	Yes
				SEER-14.50 / EER-12.00	HSPF-8.00	Yes
Acceptance Testing Required? (V/N)						
				4		
10. 11.						
				Pass	Fail	
N. ECONOMIZER & FAN SYSTEMS SUMMARY⁴						
1.	2.	3.	4.	5.	6.	7.
Equip Name	Outside Air	Supply Fan	Return Fan	Economizer Type (if present)	Pass	Fail
CF/CU-1	CFM	CFM	HP	TSP (inch WC)	Control	CFM
RTU-1	113	2000	1.000	1.000	ConstantVolume	NA
	750	0.500	0.500	2.12	ConstantVolume	NA
					NA	NA
					NA	NA
					NoEconomizer	<input type="checkbox"/>
					NoEconomizer	<input type="checkbox"/>
¹ Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section						
O. EQUIPMENT CONTROLS						
1.	2.	3.	4.	5.	6.	7.
Equip Name	Equip Type	Controls			Pass	Fail
FC/CU-1	SZHP	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery			<input type="checkbox"/>	<input type="checkbox"/>
RTU-1	SZHP	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery			<input type="checkbox"/>	<input type="checkbox"/>
Water Heater1 - SHW	Service Hot Water, Primary Only	Fixed Temperature Control, No DDC No Heat Recovery			<input type="checkbox"/>	<input type="checkbox"/>
P. SYSTEM DISTRIBUTION SUMMARY						
12.	13.	14.	15.	16.	17.	18.
Equip Name	Equip Type	Qty	Vol (gal)	Rated Capacity (kBtu/h)	Efficiency	Standby Loss
American Standard D-80-122	Storage	1	80.00	125	Thrm. Eff.: 0.76	SBLF: 0.001
American Standard LDN-CE-3	Storage	1	30.00	15	EF: 0.93	SBLF: NA
Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info) ⁵						
1.	2.	3.	4.	5.	6.	7.
Occupancy Type ¹	Conditioned Floor Area ² (ft ²)	Installed Lighting Power (Watts)	Lighting Control Credits (Watts)	Additional (Custom) Allowance	Pass	Fail
Dining Area	327	327	0	0	<input type="checkbox"/>	<input type="checkbox"/>
Building Totals:	327	327	0	0	<input type="checkbox"/>	<input type="checkbox"/>
² See Table 140.6-C						
³ See NRCC-IT-01-E for unconditioned spaces						
⁴ Lighting information for existing spaces modeled is not included in the table						
R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E) ¹						
This Section Does Not Apply						
⁵ If lighting power densities were used in the compliance model Building Departments will need to check prescriptive forms for Luminaire Schedule details.						
S1. COVERED PROCESS SUMMARY – ENCLOSED PARKING GARAGES						
This Section Does Not Apply						
CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance						
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Discrepancy between modeled and designed equipment sizing? (if "Yes", see Table F. "Additional Remarks" for an explanation)

No

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N. ECONOMIZER & FAN SYSTEMS SUMMARY¹						
1.	2.	3.	4.	5.	6.	7.
Equip Name	Outside Air	Supply Fan	Return Fan	Economizer Type (if present)	Pass	Fail
CF/CU-1	CFM	CFM	HP	TSP (inch WC)	Control	CFM
RTU-1	113	2000	1.000	1.000	ConstantVolume	NA
	750	0.500	0.500	2.12	ConstantVolume	NA
					NA	NA
					NA	NA
					NoEconomizer	<input type="checkbox"/>
					NoEconomizer	<input type="checkbox"/>
¹ Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section						
O. EQUIPMENT CONTROLS						
1.	2.	3.	4.	5.	6.	7.
Equip Name	Equip Type	Controls			Pass	Fail
FC/CU-1	SZHP	No DCV Controls No Economizer No Supply Air Temp. Control No Optimum Start No Evaporative Cooler No Heat Recovery</				



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY
LOS ANGELES, CA 90031

SUBMITTALS

8/19/2019	BLDG. RE-SUBMITTAL
7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

SHEET NAME

TITLE 24
COMPLIANCE
FORMS

SHEET NUMBER

M-4.3

Project Name:	Gamboge	NRCC-PRF-01-E	Page 13 of 20
Project Address:	1822 Broadway Los Angeles 90031	Calculation Date/Time:	17:08, Wed, Jul 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cbd16x

U. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Process	28.1	28.1	0.0	--	--	--
Other Lit	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	58.8	55.9	2.9	34.0	17.1	16.9

Project Name:	Gamboge	NRCC-PRF-01-E	Page 14 of 20
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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

§ 10-103

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Siamak Garestani	Signature:
Company: Spec Engineering Group, Inc.	
Address: 6345 Balboa Blvd, Bldg 4 Suite 288	Signature Date: 07/24/2019
City/State/Zip: Encino CA 91316	CEA Identification (If applicable): M26426
Phone: (818) 783-6965	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- 1 I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am a licensed architect.
- 2 I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.
- 3 I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

Responsible Envelope Designer Name:

Signature:

Company: FE Design and Consulting

Date Signed:

Address: 327 E. 2nd St. #222

Declaration Statement Type:

City/State/Zip: Los Angeles CA 90012

Phone:

Responsible Lighting Designer Name:

Signature: NOT IN SCOPE

Company:

Date Signed:

Address:

Declaration Statement Type:

City/State/Zip:

Phone:

Responsible Mechanical Designer Name: Siamak Garestani

Signature:

Company: SPEC Group, Inc.

Date Signed: 07/24/2019

Address: 6345 Balboa Blvd., Bldg 4 Suite 288

Declaration Statement Type:

City/State/Zip: Encino CA 91316

Phone: (818) 783-6965

Title: Mechanical Engineer

License #: M-26426

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

Report Version: NRCC-PRF-01-E-06262019-5583

Report Generated at: 2019-07-24 17:08:47

Project Name:	Gamboge	NRCC-PRF-01-E	Page 15 of 20
Project Address:	1822 Broadway Los Angeles 90031	Calculation Date/Time:	17:08, Wed, Jul 24, 2019
Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cbd16x

NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS

1.	2.	3.	4.	Confirmed
Surface Name	Surface Type	Description of Assembly Layers	Notes	Pass <input type="checkbox"/> Fail <input type="checkbox"/>
(E) CMU Wall7	ExteriorWall	Concrete - 140 lb/ft³ - 10 in.		Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Slab On Grade17	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		Pass <input type="checkbox"/> Fail <input type="checkbox"/>
R-30 Roof Attic19	Roof	Asphalt shingles - 1/4 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Wood framed roof, 24in. OC, 3.5in, R-30 Gypsum Board - 1/2 in.		Pass <input type="checkbox"/> Fail <input type="checkbox"/>
(N) CMU Wall23	ExteriorWall	Concrete - 140 lb/ft³ - 10 in.		Pass <input type="checkbox"/> Fail <input type="checkbox"/>
(N) Slab On Grade30	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		Pass <input type="checkbox"/> Fail <input type="checkbox"/>
New Roof32	Roof	Compliance Insulation R13.00 Built-up roofing - 3/8 in. Vapor permeable felt - 1/8 in. Plywood - 1/2 in. Air - Cavity - Wall Roof Ceiling - 4 in. or more Gypsum Board - 1/2 in.		Pass <input type="checkbox"/> Fail <input type="checkbox"/>

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)

Confirmed

1.	2.	3.	4.	Confirmed
Fenestration Tag/ID	Fenestration Orientation	Overhang Dimensions	Side fin	Pass <input type="checkbox"/> Fail <input type="checkbox"/>
		Horizontal Projection	Distance Above Window	Vertical Projection

(N) Roll Up Door24

West

4.0 ft.

0.5 ft.

Left: 0 ft., Right: 0 ft.

This Section Does Not Apply

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

Report Version: NRCC-PRF-01-E-06262019-5583

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NRCC-PRF-MCH-DETAILS -SECTION START-

A. MECHANICAL VENTILATION AND REHEAT (Adapted from 2016-NRCC-MCH-03-E)

1. DESIGN AIR FLOWS	2. VENTILATION (§ 120.1)	Confirmed	
		Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
CONDITIONED ZONE NAME	VENT SYSTEM ID		
	DOE CONTROL (Z/N)		
	MIN. VENT AIR FLOW (CFM)		
	MAXIMUM HEATING AIR FLOW (CFM)		
	MIN. VENT PER PERSON (CFM/Person)		
	MIN. VENT PER AREA (CFM/100 ft²)		
1-(N) Service Area/(N) Cust	FC/CU-1	2,000	NA
		0.00	NA
		NA	NA
	FC/CU-1	751	0.15
		1.88	60.00
		113	113
2-(N) Bar (RTU-1)	RTU-1	750	NA
		0.00	NA
		NA	NA
	RTU-1	327	0.50
		10.90	15.00

