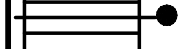
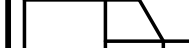







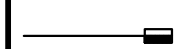

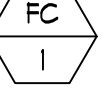
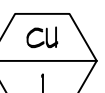
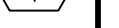
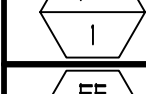

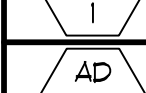



AIR CONDITIONING SYMBOLS AND ABBREVIATIONS					
SYMBOLS	ABBR	DESCRIPTION	ABBR/SYMBOL	DESCRIPTION	ABBR/SYMBOL DESCRIPTION
	F.D.	AUTOMATIC FIRE DAMPER	GA	GAUGE	WB WATER BULB
	C.S.F.D.	COMBINATION SMOKE FIRE DAMPER	AC	AIR CONDITIONING	WG WATER GAGE
	APV	AIR PROPORTIONING VANE	B.H.P	BREAK HORSEPOWER	 PERFORATED 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
			DB	DRY BULB	 ROOF EXHAUST FAN
			DISH.	DISCHARGE	 EXIST. SUPPLY DIFFUSER
			EXT	EXTERNAL	 EXIST. RETURN REGISTER
	OBD	OPPOSED BLADE DAMPER	EVAP	EVAPORATOR (ING) (IVE)	 EXIST. CEILING EXHAUST REGISTER
	PBD	PARALLEL BLADE DAMPER	FT.IN	SQUARE FEET CUBIC INCH	 EXIST. ROOF EXHAUST FAN
	-MO	-MOTOR OPERATED	OPNG	OPENING	EXIST. SMOKE DETECTOR
	-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 DUCT
	TFT	TOP FLAT TRANSITION	INSUL	INSULATE INSULATION	EXISTING SUPPLY/ RETURN/ EXHAUST/ MAKE-UP/ GREASE/ OSA AIR DUCT
	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	CFM CUBIC FEET / MINUTE (CFM)
		SUPPLY DUCT SECTION	CG	CEILING GRILLE	△ DIFFERENCE BETWEEN
	EXH	EXHAUST	TR	TOP REGISTER	(R) RELOCATED
	OSA	OUTSIDE AIR FLOW	BR	BOTTOM REGISTER	(E) EXISTING
	RA	RETURN AIR	RH	RELATIVE HUMIDITY	(N) NEW
	SA	SUPPLY AIR	REQ'D	REQUIRED	EXIST. EXISTING
	UC	UNDERCUT DOOR	S.P	STATIC PRESSURE	(WZD) MOTORIZED ZONE DAMPER
	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	T	THERMOSTAT	 EXHAUST AIR DUCT UP
		POINT OF DISCONNECTION	E	BY ELECTRICAL CONTRACTOR	 RETURN AIR DUCT DOWN
	Ø	DIAMETER OR ROUND	M	BY MECHANICAL CONTRACTOR	 EXHAUST AIR DUCT DOWN
	S.D.	DUCT SMOKE DETECTOR	S	SENSOR	◇ EQUIPMENT DESIGNATION
	B.D.D.	BACKDRAFT DAMPER	CMS	CARBON MONOXIDE SENSOR	⊗ FLEXIBLE CONNECTION
	UTR	UP THRU ROOF	CD/OSV	DEMAND CONTROL VENTILATION SENSOR 0.5	OUTLET VELOCITY (FPM)
		ROUND SUPPLY DIFFUSER	WALL	WALL LINEAR FLOWBAR	 CEILING LINEAR FLOWBAR
	(E)	ROUND SUPPLY DIFFUSER	(E) WALL	(E) WALL LINEAR FLOWBAR	(E) CEILING LINEAR FLOWBAR
			INLINE FAN (BELT DRIVEN)		INLINE FAN (DIRECT DRIVE)

DUCT SIZING CHART (LOW PRESSURE DUCTWORK)							
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																																
SYMBOL	UNIT TYPE		SERVICE	LOCATION	MANUFACT. AND MODEL	HEATING CAPACITY BTU/HR		COOLING CAPACITY BTU/HR		INDOOR FAN								COMPRESSOR								WEIGHT LBS	EER SEER	TONS	MCA	MOP	OSA	REMARKS
	INDOOR	OUTDOOR				COP	HSPF	OUTPUT	TH	SH	FAN				ELECTRIC DATA				COMP		FAN		ELEC. DATA		UNIT FLA							
											CFM	ESP	RPM	HP	V	PH	HZ	UNIT FLA	RLA		FLA		V	PH HZ								
																			(1)	(2)	(1)	(2)										
	INDOOR		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.
	OUTDOOR		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																															
SYMBOL	SERVICE	LOCATION	MANUFACT. AND MODEL	HEATING CAPACITY BTU/HR	HSPF	COOLING CAPACITY BTU/HR		INDOOR FAN							COMPRESSOR							UNIT FLA	WEIGHT LBS	EER	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		FLA								HP		
						TH	SH					(1)	(2)	(1)	(2)	(3)															
	SEE PLANS	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																															

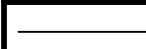
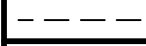
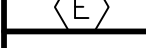
NEW EXHAUST FAN / MAKE-UP FAN & AIR DOOR SCHEDULE														
SYMBOL	SERVICE	LOCATION	MANUFACTURER AND MODEL	FAN DATA			MOTOR DATA					WEIGHT LBS	REMARKS	
				CFM	E.S.P. IN.W.G.	R.P.M.	DRIVE	HP	WATT	VOLTS	PHASE	HZ		
	HOOD # 1 (TYPE I)	ROOF	NEW CAPTIVE_AIRE EA-USBI15BD-RM	2300	2.0"	1584	BELT/DIRECT	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).
	RESTROOM	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.
	HOOD # 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.
	ENTRY DOOR	ABOVE DOOR	NEW MARS STD236-1U*	1379	--	--	DIRECT	1/2	-	120	1	60	60	WITH (1) DOOR MOUNTED MICRO SWITCH.

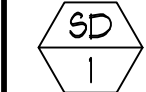
\*\*\*\*\* VERIFY POWER REQUIREMENTS BEFORE ORDERING UNITS \*\*\*\*\*

CONDENSATE WASTE SIZING			
EQUIPMENT CAPACITY IN		MINIMUM CONDENSATE PIPE DIAMETER	
Tons of Refrigeration	(kW)	Inches	(mm)
UP to 20	(Up to 70.34)	3/4"	(20)
21 - 40	(73.85 - 140.67)	1"	(25)
41 - 90	(144.19 - 316.6)	1-1/4"	(32)
91 - 125	(320.03 - 439.6)	1-1/2"	(40)
126 - 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 1/8" INCH PER FOOT (10.5 mm/m) OR ONE PERCENT SLOPE, WITH THE PIPE RUNNING THREE-QUARTERS (3/4) FULL AT THE FOLLOWING CONDITIONS:

Outside Air - 20%		Room Air - 80%	
DB	WB	DB	WB
90°F	73°F	75°F	62.5°F
(32°C)	(23°C)	(24°C)	(17°C)

CONTROL LEGEND	
	LINE VOLTAGE WIRING UNDER ELECTRICAL SECTION.
	LOW VOLTAGE WIRING UNDER THIS SECTION.
	ITEMS FURNISHED AND INSTALLED UNDER ELECTRICAL SECTION.
NOTE ALL CONDUIT UNDER ELECTRICAL SECTION.	
DIAGRAMS SHOWN ARE SCHEMATIC AND INTENDED TO SHOW SEQUENCE OF OPERATION ONLY. CONTRACTOR TO PROVIDE ALL ITEMS AND WIRING REQUIRED FOR PROPER OPERATION AND COMPLIANCE WITH CODE, VERIFY THE EXACT REQUIREMENTS WITH EQUIPMENT MANUFACTURER.	

DUCT SMOKE DETECTOR SCHEDULE					
SYMBOL	MANUFACTURE & MODEL	VELOCITY		POWER	REMARKS
		MIN.	MAX.		
	SYSTEM SENSOR INNOVAIR FLEX-D4120 OR APPROVED EQUAL	100	4,000	24 VAC / DC OR 120 VAC	CSFM LISTING 3242-1653:02*

\*COORDINATE POWER REQUIREMENTS W / ELECTRICAL.


NOTE: DO NOT FINALIZE BID ESTIMATE PRIOR TO PLAN CHECK APPROVAL.

SHEET INDEX		
M-1.0--HVAC NOTES, LEGEND, & SCHEDULES	M-3.1--HVAC DETAILS	M-4.0--HOOD SPE'S BY CAPTIVE AIRE
M-1.1--HVAC NOTES	M-3.2--HVAC DETAILS	M-4.1--FAN SPEC'S BY CAPTIVE AIRE
M-1.2--HVAC NOTES & SCHEDULES	M-3.3--HVAC DETAILS	M-5.0--T24 COMPLIANCE FORMS
M-2.0--HVAC 1ST & 2ND FLOOR PLAN	M-3.4--HVAC DETAILS	M-5.1--T24 COMPLIANCE FORMS
M-2.1--HVAC ROOF PLAN	M-3.5--HVAC DETAILS	M-5.2--T24 COMPLIANCE FORMS
M-3.0--HVAC DETAILS		

SCOPE OF PROJECT	
SCOPE OF WORK CONSISTS OF BUT NOT LIMITED TO: INSTALLATION OF (1) TYPE I HOOD, (1) EVAPORATIVE SECTION, (1) SPLIT SYSTEM HEAT PUMP, (1) ROOFTOP HEAT PUMP, EXHAUST FANS, T'STAT, &, DUCTWORK.	

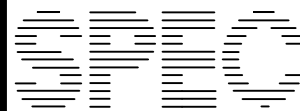
APPLICABLE CODES	
THIS PROJECT SHALL COMPLY WITH 2017 LABC, LAMC, LAPC, NEC, CIBC ALONG WITH THE T-24 ENERGY STANDARDS.	

CITY APPROVAL STAMP SECTION	



FE DESIGN & CONSULTING


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



GAMBOGE GROUP, INC.

CONSULTING MECHANICAL ENGINEERS

6345 BALBOA BLVD., TEL. (818) 783-6965  
BUILDING 4, SUITE #288 FAX (818) 783-6996  
ENCINO, CA 91316



REGISTERED PROFESSIONAL ENGINEER  
CLARK GAREST  
No. 26426  
Exp. 9-30-19  
MECHANICAL  
STATE OF CALIFORNIA

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 LEGEND,  
NOTES, &  
SCHEDULES


SHEET NUMBER

M-1.0



MANDATORY MEASUREMENTS (NOT ALL MAY APPLY)	
<b>ADMINISTRATIVE REQUIREMENTS:</b>	
A. THE PERSON WITH OVERALL RESPONSIBILITY FOR CONSTRUCTION OR THE PERSON RESPONSIBLE FOR THE INSTALLATION OF REGULATED FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVICES SHALL POST OR MAKE AVAILABLE TO THE BUILDING PERMIT(S) ISSUED FOR THE BUILDING, THE REQUIRED INSTALLATION CERTIFICATE(S) FOR FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVICES REGULATED BY THE APPLIANCE EFFICIENCY REGULATIONS OR PART 6. SUCH INSTALLATION CERTIFICATE(S) SHALL BE MADE AVAILABLE TO THE ENFORCEMENT AGENCY FOR ALL APPROPRIATE INSPECTIONS. THESE CERTIFICATES SHALL:	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)
	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)
i) IDENTIFY FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVICES REQUIRED TO VERIFY COMPLIANCE WITH THE APPLIANCE EFFICIENCY REGULATIONS AND PART 6.	M. THE THERMOSTATIC CONTROLS FOR HVAC SYSTEMS SHALL MEET THE FOLLOWING REQUIREMENTS AS APPLICABLE:  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:
ii) INCLUDE A STATEMENT INDICATING THAT THE FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVISE CONFORM TO THE APPLIANCE EFFICIENCY REGULATIONS AND PART 6 AND THE REQUIREMENTS FOR SUCH FEATURES, MATERIALS, COMPONENTS OR MANUFACTURED DEVICES GIVEN IN THE PLANS AND SPECIFICATIONS APPROVED BY THE LOCAL ENFORCEMENT AGENCY.	1. COMFORT HEATING DOWN 55 °F OR LOWER, COMFORT COOLING UP TO 85 °F OR LOWER.
iii) STATE THE NUMBER OF THE BUILDING PERMIT UNDER WHICH THE CONSTRUCTION OR INSTALLATION WAS PERFORMED.	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)
SEC. 10-103 (A) 3A	
B. WITHIN 90 DAYS AFTER ISSUANCE OF CERTIFICATE OF OCCUPANCY RECORD DRAWINGS SHALL BE PROVIDED TO THE OWNER. IF A BUILDING DESIGN FEATURE, MATERIAL, COMPONENT OR MANUFACTURED DEVICE IS CHANGED BEFORE FINAL CONSTRUCTION AND INSTALLATION, SUCH THAT THE BUILDING MANY NO LONGER COMPLY WITH PART 6, THE BUILDING MUST BE BROUGHT INTO COMPLIANCE, AND SO INDICATED ON AMENDED PLANS AND CERTIFICATE OF COMPLIANCE(S) THAT SHALL BE SUBMITTED FOR APPROVAL.	N. OUTDOOR AIR SUPPLY AND EXHAUST EQUIPMENT SHALL BE INSTALLED WITH DAMPERS THAT AUTOMATICALLY CLOSE UPON FAN SHUTDOWN.  SEC. 120.2 (F)
SEC. 10-103 (A) 2B	
C. THE BUILDER SHALL PROVIDE THE BUILDING OWNER OR THE PERSON(S)RESPONSIBLE FOR BUILDING MAINTENANCE (IN CASE OF MULTI-TENANT OR CENTRALLY OPERATED BUILDINGS) AT OCCUPANCY THE FOLLOWING:	O. SPACE CONDITIONING SYSTEMS WITH DDC ZONE CONTROLS SHALL HAVE OPTIMUM START/ STOP CONTROLS. MINIMUM CONTROLS SHOULD FUNCTION THE DIFFERENCE(S) 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)
1. OPERATING INFORMATION: THE APPROPRIATE CERTIFICATE(S) OF COMPLIANCE AND A LIST OF THE FEATURES, MATERIALS, COMPONENTS AND MANUFACTURED DEVICES INSTALLED IN THE BUILDING AND INSTRUCTIONS ON HOW TO OPERATE THEM EFFICIENTLY.	P. ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS, INCLUDING, BUT NOT LIMITED TO, BUILDING CAVITIES, MECHANICAL CLOSETS, AIR-HANDLER BOXES AND SUPPORT PLATFORMS USED AS DUCTS OR PLENUMS, SHALL BE INSTALLED, SEALED AND INSULATED TO MEET THE REQUIREMENTS OF THE 2016 CALIFORNIA MECHANICAL CODE AND ANSI/SMACNA –006.2006 HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE. SUPPLY-AIR DUCTS CONVEYING HEATED OR COOLED AIR SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-4.2 (R-8 IN UNCONDITIONED SPACE), UNLESS DUCTS ARE IN CONDITIONED PLACES.  SEC. 120.4 (A)
2. MAINTENANCE INFORMATION: REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY STATED AND INCORPORATED ON A READILY ACCESSIBLE LABEL. THE LABEL MAY BE LIMITED TO IDENTIFYING THE OPERATION AND MAINTENANCE MANUAL.	Q. MAXIMUM LENGTH OF FLEXIBLE DUCT AND CONNECTORS SHALL NOT BE MORE THAN 5 FEET. FLEXIBLE DOTS SHALL NOT BE USED IN LIEU OF RIGID ELBOWS.  SEC. 603.4.1
3. VENTILATION INFORMATION: A DESCRIPTION OF THE QUANTITIES OF OUTDOOR AND RECIRCULATED AIR THAT THE VENTILATION SYSTEMS ARE DESIGNED TO PROVIDE EACH AREA.	R. EACH SPACE-CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT COMPLY WITH THE FOLLOWING:  1. CAPABLE OF AUTOMATICALLY SHUTTING OFF THE SYSTEM DURING PERIODS OF NON-USE AND SHALL HAVE:  1. AN AUTOMATIC TIME SWITCH CONTROL DEVICE COMPLYING WITH SEC. 110.9, WITH AN ACCESSIBLE MANUAL OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM FOR UP TO 4 HOURS; OR  2. AN OCCUPANCY SENSOR; OR  3. A FOUR-HOUR TIMER THAT CAN BE MANUALLY OPERATED.  EXCEPTION: MECHANICAL SYSTEMS SERVING RETAIL STORES AND ASSOCIATED MALLS, RESTAURANTS, GROCERY STORES, CHURCHES AND THEATERS EQUIPPED WITH 7-DAY PROGRAMMABLE TIMERS.
SEC. 10-103 (B) 2, 3 & 4	2. AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN:  1. A SETBACK HEATING THERMOSTAT SETPOINT, IF THE SYSTEM PROVIDES MECHANICAL HEATING.  EXCEPTION: AREA WITH THE DESIGN WINTER OUTDOOR TEMPERATURE OF GREATER OF 32 °F.  2. A SETUP COOLING THERMOSTAT SETPOINT, IF THE SYSTEM PROVIDES MECHANICAL COOLING.  EXCEPTION: AREA WITH THE DESIGN SUMMER OUTDOOR TEMPERATURE OF LESS THAN 100 °F.
<b>MANDATORY MEASURES:</b>	3. MULTIPURPOSE ROOM LESS THAN 1000 FT², CLASSROOMS GREATER THAN 750 FT², AND CONFERENCE, CONVENTION, AUDITORIUM AND MEETING CENTER ROOMS GREATER THAN 750 FT², THAT DO NOT HAVE PROCESSES OR OPERATIONS THAT GENERATE DUSTS, FUMES, VAPORS OR GASSES SHALL BE EQUIPPED WITH OCCUPANT SENSOR(S) TO ACCOMPLISH THE FOLLOWING DURING OCCUPIED PERIODS:  1. AUTOMATICALLY SETUP THE OPERATING COOLING TEMPERATURE SET POINT BY 2 °F OR MORE AND SETBACK THE OPERATING HEATING TEMPERATURE SET POINT BY 2 °F OR MORE; AND  2. AUTOMATICALLY RESET THE MINIMUM REQUIRED VENTILATION RATE WITH AN OCCUPANT SENSOR VENTILATION CONTROL DEVICE ACCORDING TO SECTION 120.1(C)5.  EXCEPTION TO SECTIONS 120.2(E)3: IF DEMAND CONTROL VENTILATION IS IMPLEMENTED AS REQUIRED BY SECTION 120.1(C)3 AND 120.1(4).  SEC. 120.2(E)
A. MANUFACTURED FENESTRATION PRODUCTS AND EXTERIOR DOORS SHALL:	S. THE PIPING FOR ALL SPACE CONDITIONING AND SERVICE WATER HEATING SYSTEMS SHALL BE INSULATED IN ACCORDANCE WITH TABLE 120.3-A.  SEC. 120.3
1. HAVE A CLEARLY VISIBLE TEMPORARY LABEL MEETING THE REQUIREMENTS OF SEC. 10-111 (a) 1, NOT TO BE REMOVED BEFORE INSPECTION BY THE ENFORCEMENT AGENCIES, LISTING THE CERTIFIED U-FACTOR, THE SOLAR HEAT GAINS COEFFICIENT (SHGC) AND VISIBLE TRANSMITTANCE (VT) CERTIFYING THAT THE AIR LEAKAGE REQUIREMENTS OF SEC. 116 (a) 1 ARE MET FOR EACH PRODUCT LINE; AND	T. SERVICE WATER HEATER SYSTEMS AND EQUIPMENT SHALL MEET THE APPLICABLE REQUIREMENTS OF THE APPLIANCE EFFICIENCY REGULATIONS AS REQUIRED BY SEC. 110.1  SEC. 110.3 (B)
2. HAVE A PERMANENT LABEL MEETING THE REQUIREMENTS OF SEC. 10-111 (a) 2 IF THE PRODUCT IS RATED USING NFRC PROCEDURES.	U. SERVICE HOT WATER SYSTEMS WITH CIRCULATING PUMPS OR WITH ELECTRICAL HEAT TRACE SYSTEMS SHALL BE CAPABLE OF AUTOMATICALLY TURNING OFF THE SYSTEM.  SEC. 110.3 (C) 2
SEC. 110.6 (A)	V. INSTANTANEOUS WATER HEATERS WITH AN INPUT RATING GREATER THAN 6.8 KBTU/HR (2 kW) SHALL HAVE ISOLATION VALVES ON BOTH COLD WATER SUPPLY AND HOT PIPE LEAVING THE WATER HEATER. HOSE BIES OR OTHER FITTINGS SHALL BE INSTALLED ON EACH VALVE FOR FLUSHING THE WATER HEATER WHEN THE VALVES ARE CLOSED.  SEC. 110.3 (C)3
B. FIELD-FABRICATED FENESTRATION AND FIELD-FABRICATED EXTERIOR DOORS SHALL BE CAULKED BETWEEN THE FENESTRATION PRODUCTS OR EXTERIOR DOOR AND THE BUILDING, AND SHALL BE WEATHER STRIPPED. EXCEPTION: UNFRAMED GLASS DOORS AND FIRE DOORS.	W. LAVATORIES IN PUBLIC RESTROOMS SHALL HAVE CONTROLS THAT LIMIT THE WATER SUPPLY TEMPERATURES TO 110 °F.  SEC. 110.3 (C)3
SEC. 110.6 (B)	
C. 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. 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. NO MECHANICAL EQUIPMENT NOR PLUMBING VENTS SHALL BE LOCATED WITHIN THE DESIGNED "SOLAR ZONE" AREAS	
SEC. 110.10 (B) 1-B	
F. 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 (CRR) AND MEET CONDITIONS SET IN SEC. 110.8 (I)	
SEC. 110.8 (I)	
G. 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. HEAT PUMPS WITH SUPPLEMENTARY ELECTRIC RESISTANCE HEATERS SHALL HAVE CONTROLS:	
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. 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. 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 COVERED PROCESS FOR CONTROL OF ORDERS, OR FOR THE REMOVAL OF CONTAMINANTS WITHIN THE SPACE. ALL VARIABLE AIR VOLUME 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	
<b>DUCTWORK:</b>	
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.	6. DUCT VELOCITY AND PRESSURE DIFFERENTIAL SHALL BE VERIFIED FOR EACH DUCT SMOKE DETECTOR LOCATION IN ACCORDANCE WITH U.L. LISTING. DUCT SMOKE DETECTORS SHALL BE MAGNEHELIC TESTED TO THE LISTED SPECIFICATIONS IN THE PRESENCE OF THE CITY BUILDING INSPECTOR PRIOR TO FINAL APPROVAL.
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).	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 PLATFORM SHALL BE PROVIDED.
3. DUCT SUPPORTS AND ANCHORAGE SHALL COMPLY WITH 2017 LAMC CHAPTER 6.	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.
4. MANUAL VOLUME DAMPERS TO BE INSTALLED IN ALL BRANCH TAKE-OFFS. ALL DAMPERS TO HAVE LOCKING QUADRANTS.	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.
5. DUCT SIZES SHOWN ARE NET SIZES REQUIRED. LINED DUCTS SHALL BE INCREASED IN SIZE TO ACCOMMODATE LINING WITHOUT LOSS OF AREA.	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 EXHAUST EXHAUST, SUCH AS GARAGE VENTILATION, COMMERCIAL KITCHEN HOOD, 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 OR ROOF.
6. PROVIDE MASTIC OR DUCT TAPE JOINT SEALANT TO SEAL TRANSVERSE JOINTS ON AIR SUPPLY DUCTS INSTALLED IN LOCATIONS WHERE AIR LEAKAGE THROUGH THE JOINTS WOULD BE NON-BENEFICIAL TO THE OCCUPIED AREA TEMPERATURE, REQUIREMENTS, AND SEAL LONGITUDINAL JOINTS ON LOW-PRESSURE SUPPLY DUCTS WHERE INTERNAL STATIC PRESSURE EXCEED 0.75" OF WATER PRESSURE.	11. ALL PENETRATIONS IN FIRE WALLS AND 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.
7. FLEX DUCT SHALL BE ATTACHED TO ALL REGISTERS, GRILLS, COLLARS AND FITTINGS ACCORDING TO ITS LISTINGS. I.E. A MINIMUM OF TWO WRAPS OF UL 181 TAPE AND A PANDUIT STRAP ON THE INSIDE LINER AND A MINIMUM OF TWO WRAP OF UL 181 TAPE OR A PANDUIT STRAP OR BOTH ON THE OUTSIDE COVER.	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.
8. ALL FLEX DUCT SPLICES SHALL BE SLEEVED.	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).
9. ALL AFD SPLICES SHALL BE SLEEVED.	14. CLOTHES DRYER & TOILET EXHAUST DUCTS MUST BE OF METAL.
10. PROVIDE DUCT LINING TO SUPPLY DUCT OF EACH AC UNIT FOR MINIMUM OF 10 FT. DUCT LINING TO BE EQUAL TO JOHNS-MANVILLE, 1" THICK x 1-1/2" PCF DENSITY DUCT LINER. DUCTWORK TO BE INCREASED IN EACH DIMENSION TO INCORPORATE THICKNESS OF LINING.	15. ALL GAS FIRED HEATING EQUIPMENT SHALL BE "ID" (PILOT-LESS) TYPE.
11. VOLUME DAMPERS IN ALL BRANCH DUCTS.	16. PROVIDE A 6" CLEARANCE ON FRONT, SIDES AND BACK OF THE FURNACE OR BY MAJORS.
12. PROVIDE GALVANIZED SHEET METAL DUCTS FABRICATED AND INSTALLED PER LAMC 2017 EDITION.	17. SEAL THE CEILING MOUNTED EXHAUST FAN HOUSING TO THE CEILING MEMBRANE. USE U.L. APPROVED FIRE STOPPING SEALANT.
13. ALL EXPOSED SHEET METAL DUCTS SHALL BE LINED.	18. THIS PROJECT SHALL COMPLY WITH 2017 LABC, LAMC, LAPC, NEC, CGCB ALONG WITH THE T-24 ENERGY STANDARDS.
14. FACTORY-MADE FLEXIBLE AIR DUCTS AND CONNECTORS SHALL BE NOT MORE THAN 5 FEET (1524 MM) IN LENGTH AND SHALL NOT BE USED IN LIEU OF RIGID ELBOWS OR FITTINGS.	19. 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.
<b>EXCEPTION</b> RESIDENTIAL OCCUPANCIES.	20. 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.
<b>AIR DEVICES:</b>	21. 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
1. ARROWS AT CEILING DIFFUSERS INDICATE THE AIR THROW PATTERN.	<b>ENERGY:</b>
2. COORDINATE WITH ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL DIFFUSERS AND REGISTERS AND LOUVERS.	1. BACK-DRAFT DAMPERS FOR ALL EXHAUST AND FAN SYSTEMS SHALL BE PROVIDED. EXCEPTION: NO BACK-DRAFT DAMPERS IN GREASE DUCTS.
3. SUPPLY DIFFUSERS AND REGISTERS TO BE TITUS MODEL OR APPROVED EQUAL WITH KEY OPERATED OPPOSED BLADE DAMPER UNIT.	2. ALL WATER HEATING AND AIR CONDITIONING EQUIPMENT, SHOWER HEADS AND FAUCETS SHALL BE C.E.C. CERTIFIED.
4. RETURN AND EXHAUST AIR REGISTERS TO BE TITUS MODEL OR APPROVED EQUAL WITH KEY OPERATED OPPOSED BLADE DAMPER UNIT.	3. AUTOMATIC TEMPERATURE CONTROL DEVICE FOR REGULATION OF SPACE TEMPERATURE SHALL BE EQUIPPED WITH NIGHT SET BACK AND HAVE THE ABILITY TO OPERATE THE HEATING AND THE COOLING IN SEQUENCE. CONTROL SHALL BE ADJUSTABLE TO PROVIDE A RANGE OF UP TO 10 DEGREES F BETWEEN FULL HEATING AND FULL COOLING AND HAVE A CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NO MORE THAN 70 DEGREES F AND COOLING AT A TEMPERATURE NO LESS THAN 78 DEGREES F.
5. ALL REGISTERS AND GRILLS INSTALLED IN T-BAR CEILINGS SHALL BE ATTACHED AT EACH CORNER TO THE MAIN RUNNERS WITH APPROVED CLIPS OR SM SCREWS.	4. AT LEAST ONE AUTOMATIC SPACE TEMPERATURE CONTROL DEVICE (THERMOSTAT) SHALL BE PROVIDED FOR EACH ZONE AND/OR EACH SEPARATE HVAC SYSTEM. (NOT MORE THAN ONE FLOOR OF BUILDING SHALL BE INCLUDED).
<b>INSULATION:</b>	5. ALL AIR CONDITIONING UNITS TO BE FURNISHED WITH MAINTENANCE MANUALS, SCHEDULES AND INSTRUCTIONS.
1. MINERAL FIBER INSULATION SHALL BE INSTALLED IN JOINT SPACES WHENEVER A PLUMBING PIPE OR DUCT PENETRATES A FLOOR-CEILING ASSEMBLY OR WHERE SUCH PIPE OR DUCT PASSES THROUGH THE PLANE OF FLOOR-CEILING ASSEMBLY FROM WITHIN A WALL. THE INSULATION SHALL BE INSTALLED TO A POINT 12" BEYOND THE PIPE OR DUCT.	6. ALL AIR CONDITIONING UNITS TO BE EQUIPPED WITH A READILY ACCESSIBLE MANUALLY ADJUSTABLE AUTOMATIC MEANS OF REDUCING THE ENERGY USED FOR HVAC DURING PERIOD OF NON USE OR ALTERNATE USE OF THE BUILDING SPACE OR ZONES SERVED BY THE SYSTEM, SUCH AS A TIME CLOCK OR TIME SWITCH.
2. COMBUSTION AIR, KITCHEN AND BATHROOM EXHAUST DUCTS WITHIN SOUND SEPARATION ASSEMBLIES SHALL BE WRAPPED WITH INSULATION.	7. VENTILATORS SHALL BE EQUIPPED WITH AN AUTOMATIC TYPE NORMALLY CLOSED OUTSIDE AIR DAMPER TO SERVE AS A MEANS OF PROVIDING AIR VOLUME REDUCTION AND/OR SHUT-OFF WHEN VENTILATION IS NOT REQUIRED. (DOES NOT APPLY TO COMBUSTION AIR OPENINGS).
3. CEILING CONCEALED SUPPLY AND RETURN DUCTS TO BE COVERED ALL SIDES WITH INSULATION PER DEC STANDARDS; THE INSULATION TO BE CERTIFIED BY LOS ANGELES ENERGY COMMISSION; (JOHN MANSVILLE IS ACCEPTED) WHEN DUCTWORK PENETRATE INSULATED WALLS OR ROOF, THE HOLE MUST BE SEALED WITH AN APPROVED POLY SEAL MATERIAL. INSULATION INSTALLER SHALL POST IN A CONSPICUOUS LOCATION IN THE BUILDING A CERTIFICATE SIGNED BY THE INSTALLER AND BUILDER STATING THAT THE INSULATION CONFORMS WITH THE REQUIREMENTS OF TITLE 24, AND THAT THE MATERIAL INSTALLED CONFORMS.	<b>QUALITY CONTROL:</b>
4. ALL INSULATION MATERIALS SHALL BE CERTIFIED BY THE MANUFACTURER AS COMPLYING WITH THE LOS ANGELES QUALITY STANDARD FOR INSULATION MATERIAL.	1. PROVIDE AS BUILT DRAWINGS AND SUBMIT COPIES TO THE OWNER.
5. INSULATION APPLIED TO THE EXTERIOR SURFACE OF DUCTS LOCATED IN THE BUILDINGS SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND A SMOKE-DENSITY NOT EXCEEDING 50 PER LABC 2017.	2. CONTRACTOR SHOULD SUBMIT SHOP DRAWINGS, EQUIPMENT HANGERS, ANCHOR BOLTS AND METHODS OF INSTALLATION MUST HAVE CITY APPROVAL AND MAY BE SUPPLIED BY HILT OR EQUAL.
<b>FFNG:</b>	3. IT IS THE SPECIFIC INTENT OF THIS DESIGN CONDITIONS THAT THE ENTIRE SYSTEM INCLUDING EQUIPMENT, DUCTWORK, AIR OUTLETS/INLETS AND ALL OTHER PARTS BE NOISELESS AND FREE OF VIBRATION TRANSMISSION. PROVIDE AND INSTALL VIBRATION ISOLATORS OR DAMPERS, SOUND INSULATION PADS, FLEXIBLE CONNECTORS AND SIMILAR MATERIAL AS REQUIRED. INSTALL VOLUME DAMPERS ON ALL DUCTS AS FAR AS POSSIBLE FROM AIR INLET/OUTLET. MAKE THE NECESSARY NOISE OR VIBRATION CORRECTIONS BY INSTALLING THESE ITEMS AT NO COST TO THE OWNER.
1. PROVIDE A 3/4" MINIMUM CONDENSATE DRAIN FROM EACH AC UNIT TO AN APPROVED DISPOSAL AREA. CONDENSATE WATER SHALL NOT DRAIN OVER A PUBLIC WAY. THE DRAIN SHALL HAVE A SLOPE OF NOT LESS THAN 1/8 INCH PER FOOT AND SHALL BE OF APPROVED CORROSION-RESISTANT PIPE. (THIS WORK IS UNDER PLUMBING SECTION, REFER TO PLUMBING DRAWINGS).	4. THE DRAWINGS ARE IN PART DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF THE WORK; THEY INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE SIZES OF EQUIPMENT, DUCTWORK, PIPING, OUTLETS, ETC. FOLLOW THE DRAWINGS AS CLOSELY AS PRACTICAL IN LAYING OUT THE WORK, BE GUIDED BY THE CONDITIONS AT THE JOB AND CONSULT THE CONSTRUCTION DRAWINGS OF THE OTHER TRADES TO BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE WORK.
2. FOR COOLING EQUIPMENT LOCATED IN AN ATTIC OR FURRED SPACE, EACH MECHANICAL OR GRAVITY VENTILATING UNIT, EXCEPT ATTIC SHALL BE INSTALLED BENEATH THE COOLING COIL TO CATCH THE OVERFLOW CONDENSATE DUE TO CLOGGED PRIMARY CONDENSATE DRAIN. THE ADDITIONAL PAN SHALL BE PROVIDED WITH A DRAIN PIPE, 3/4 INCH NOMINAL PIPE SIZE, DISCHARGING AT A POINT WHICH CAN BE READILY OBSERVED. (THIS WORK IS UNDER PLUMBING SECTION REFER TO PLUMBING DRAWINGS).	5. UPON COMPLETION OF AND AFTER CLEANING OF SYSTEM AND EQUIPMENT, CAREFULLY ADJUST FOR NORMAL OPERATION OF THE AUTOMATIC PARTS OF HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS.
<b>CODE:</b>	6. EQUIPMENT AND DUCTWORK EXPOSED TO WEATHER MUST BE WEATHERPROOFED.
1. MOUNT WALL MOUNTED THERMOSTATS 4'-0" ABOVE FINISHED FLOOR.	7. ROOF MOUNTED EQUIPMENT SHALL BE LABELED AS TO THE SPACE IT SERVES. (WHEN MORE THAN ONE HEATING OR COOLING UNIT SERVES DIFFERENT OCCUPANTS.)
2. EACH SINGLE SYSTEM WITH ONE OR MORE AIR CONDITIONING UNITS PROVIDING HEATING OR COOLING IN EXCESS OF 2000 CFM OR AIR SERVING MORE THAN ONE OCCUPANCY, SHALL HAVE SMOKE DETECTORS (PRODUCT OF COMBUSTION) AND SHALL BE INSTALLED IN THE MAIN SUPPLY DUCT DOWNSTREAM OF THE FILTERS. ACTIVATION OF THE SMOKE SHALL CAUSE THE UNIT TO SHUT DOWN AND ACTIVATE THE FIRE ALARM SYSTEM. (WHERE FIRE DETECTION & ALARM SYSTEMS ARE PROVIDED) (2017 LAMC, 608). IF THERE ARE A NUMBER OF AIR CONDITIONING UNITS SERVING ONE AREA, OR THERE IS A COMMON RETURN AIR PLENUM FOR A NUMBER OF AIR CONDITIONING UNITS, ALL SMOKE DETECTORS MUST BE INTERCONNECTED TO SHUT-OFF ALL EQUIPMENT EVEN WHEN SMOKE IS DETECTED BY ONLY ONE SMOKE DETECTOR. DUCT VELOCITY AND PRESSURE DIFFERENTIAL MAY HAVE TO BE VERIFIED FOR EACH DUCT SMOKE DETECTOR LOCATION IN ACCORDANCE WITH U.L. LISTING. AUTOMATIC SHUTOFFS NEED NOT BE INSTALLED WHEN ALL ROOMS HAVE DIRECT EXIT TO THE EXTERIOR OF THE BUILDING.	8. CONTRACTOR SHALL BALANCE AIR SYSTEM TO THE CFM CAPACITY AS SHOWN ON FLOOR PLAN.
3. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF ALL APPLICABLE CODES, LAWS, ORDINANCES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, ADDITIONAL PLAN CHECK FEES, INSPECTIONS, ETC. AND FURNISH SIGNED, CERTIFIED AND ACCEPTABLE COPIES TO THE OWNER FOR HIS RECORD.	
4. CONTRACTOR SHALL PROVIDE FIRE DAMPERS AT FIRE RATED PENETRATIONS.	
5. DUCTS OPENING INTO CORRIDOR SHALL HAVE INSTALLED A COMBINATION FIRE/SMOKE DAMPER CONFORMING TO LABC STANDARD WITH A MINIMUM LEAKAGE CLASSIFICATION OF II AND ELEVATED TEMPERATURE RATINGS SHALL NOT BE LESS THAN 250 DEGREE FAHRENHEIT.	



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PROJECT INFORMATION

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SUBMITTALS

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

SHEET NAME

HVAC NOTES

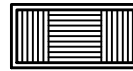
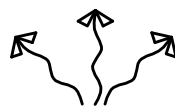

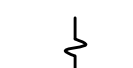


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


M-1.1




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 INSTALLATIONS 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 SCHEMATICS, 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 DETERMINED 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. <div>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 18E 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:<div>o)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".</div></div>

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.

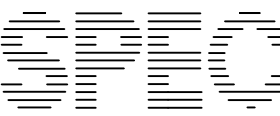
DIFFUSER, REGISTER AND GRILLE SCHEDULE							
TAG	SYMBOL	MANUFACTURE AND MODEL	DUCT SIZE	POSITION	CFM RANGE	REMARKS	
S2 CFM	<div></div> <div>SIDE VIEW AT WALL</div> <div></div> <div>TOP VIEW AT WALL</div>	TITUS 300RS	6X6	WALL / SURFACE MOUNT/ EXPOSED DUCT	0-75	<div><div>1234</div><div>5618</div><div>9ABC</div></div>	
			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	<div></div> <div>SIDE VIEW AT WALL</div> <div></div> <div>TOP VIEW AT WALL</div>	TITUS 350RL	6X6	WALL / SURFACE MOUNT/ EXPOSED DUCT	0-75	<div><div>1234</div><div>5618</div><div>9ABC</div></div>	
			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		
			22X6, 18X14, 16X16		576-625		
			24X12 OR18X16		626-725		
			18X18		726-825		
	24X14		826-850				
	E2 CFM		<div></div> <div>TOP VIEW CEILING (EXHAUST)</div> <div></div> <div>TOP VIEW CEILING (RETURN)</div>		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
48X18 OR 36X24		2201-2250					
30X30	2251-2375						
42X24 OR 36X28	2376-2650						
REMARKS:							
A. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.							
B. FRAME ALL AIR DEVICES FOR APPROPRIATE CEILING TYPE.							
C. PROVIDE ALUMINUM FRAME FOR HARD CEILINGS IN TOILETS, JANITOR'S CLOSET AND LOCK-UP ROOM.							
1. DUCTS CONNECTING THE DIFFUSERS SHALL BE FULL SIZE OF NECK DIAMETER.							
2. MAXIMUM NOISE CRITERION RATING LESS THAN 30.							
3. BAKED ENAMEL FINISH, COLOR TO BE WHITE OR BY ARCHITECTURAL SPECIFICATIONS.							
4. DIFFUSERS SHALL BE 4-WAY BLOW UNLESS OTHERWISE INDICATED ON PLANS.							
5. MOUNTING FRAME TYPE SHALL BE COORDINATED WITH CEILING CONSTRUCTION TYPE, COORDINATE WITH ARCHITECT.							
6. NECK DIAMETER SHALL BE PER MANUFACTURE.							
7. DEVICE SHALL BE PAINTED BY PAINTING CONTRACTOR TO MATCH ADJACENT CEILING SURFACES PER ARCHITECTURAL SPECIFICATIONS.							
8. WITH DIRECTIONAL BLADES.							
9. PROVIDE SUBMITTAL FOR ARCHITECT'S / ENGINEER REVIEW AND APPROVAL.							
R = RETURN S = SUPPLY E = EXHAUST							

DIFFUSER, REGISTER AND GRILLE SCHEDULE						
TAG	SYMBOL	MANUFACTURE AND MODEL	NECK SIZE	POSITION	CFM RANGE	REMARKS
S1 CFM		TITUS TMS (LAY-IN)	6"ø	CEILING	0-100	<div><div>1234</div><div>5618</div><div>9ACD</div></div>
			8"ø		101-180	
			10"ø		181-250	
			12"ø		251-450	
			14"ø		451-700	
R1 CFM		TITUS PAR (LAY-IN)	6"ø	CEILING	0-170	<div><div>1234</div><div>5618</div><div>9ABC</div><div>D</div></div>
			8"ø		171-270	
			10"ø		271-340	
			12"ø		341-520	
			14"ø		521-670	
E1 CFM			16"ø		671-780	
			18X18		781-1100	
			22X22		1001-1700	
			22X46		1701-3600	
REMARKS:						
A. MODEL NUMBERS ARE TITUS UNLESS OTHERWISE NOTED.						
B. PROVIDE 24x24 MODULE FOR ALL DIFFUSERS INSTALLED IN LAY-IN CEILINGS.						
C. FRAME ALL AIR DEVICES FOR APPROPRIATE CEILING TYPE.						
D. PROVIDE ALUMINUM FRAME FOR HARD CEILINGS IN TOILETS, JANITOR'S CLOSET AND LOCK-UP ROOM.						
1. DUCTS CONNECTING THE DIFFUSERS SHALL BE FULL SIZE OF NECK DIAMETER.						
2. MAXIMUM NOISE CRITERION RATING LESS THAN 30.						
3. BAKED ENAMEL FINISH, COLOR TO BE WHITE OR BY ARCHITECTURAL SPECIFICATIONS.						
4. DIFFUSERS SHALL BE 4-WAY BLOW UNLESS OTHERWISE INDICATED ON PLANS.						
5. MOUNTING FRAME TYPE SHALL BE COORDINATED WITH CEILING CONSTRUCTION TYPE, COORDINATE WITH ARCHITECT.						
6. NECK DIAMETER SHALL BE PER MANUFACTURE.						
7. DEVICE SHALL BE PAINTED BY PAINTING CONTRACTOR TO MATCH ADJACENT CEILING SURFACES PER ARCHITECTURAL SPECIFICATIONS.						
8. WITH DIRECTIONAL BLADES.						
9. PROVIDE SUBMITTAL FOR ARCHITECT'S / ENGINEER REVIEW AND APPROVAL.						
R = RETURN    S = SUPPLY    E = EXHAUST						



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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
DATE	DESCRIPTION

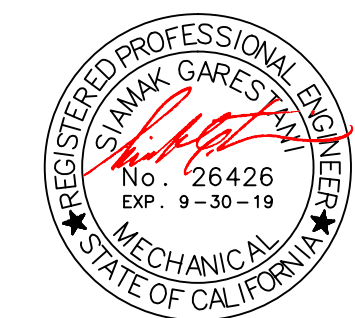
SHEET NAME

HVAC NOTES & SCHEDULES

SHEET NUMBER

M-1.2





- A. ALL AFFLUENCES AND PLUMBING VENTS AND DISCHARGE OUTLET OF EXHAUST FAN SHALL BE AT LEAST 10' IN HORIZONTAL DIRECTION OR 3' ABOVE THE O.S.A 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 EXHAUSTING SYSTEM HAS BEEN ACTIVATED, UNLESS FAN SHUTDOW 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 OUTS SHALL BE PROVIDED PER 910 OF THE 2017 ILMC. 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 POCKETED, 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-2006 HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE OR UL 181.
- 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 SYSTEM, 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.

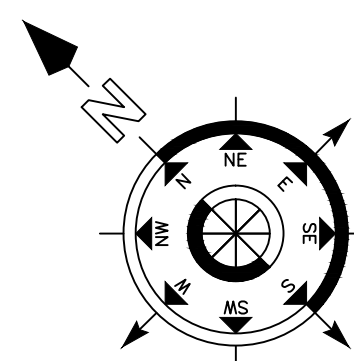
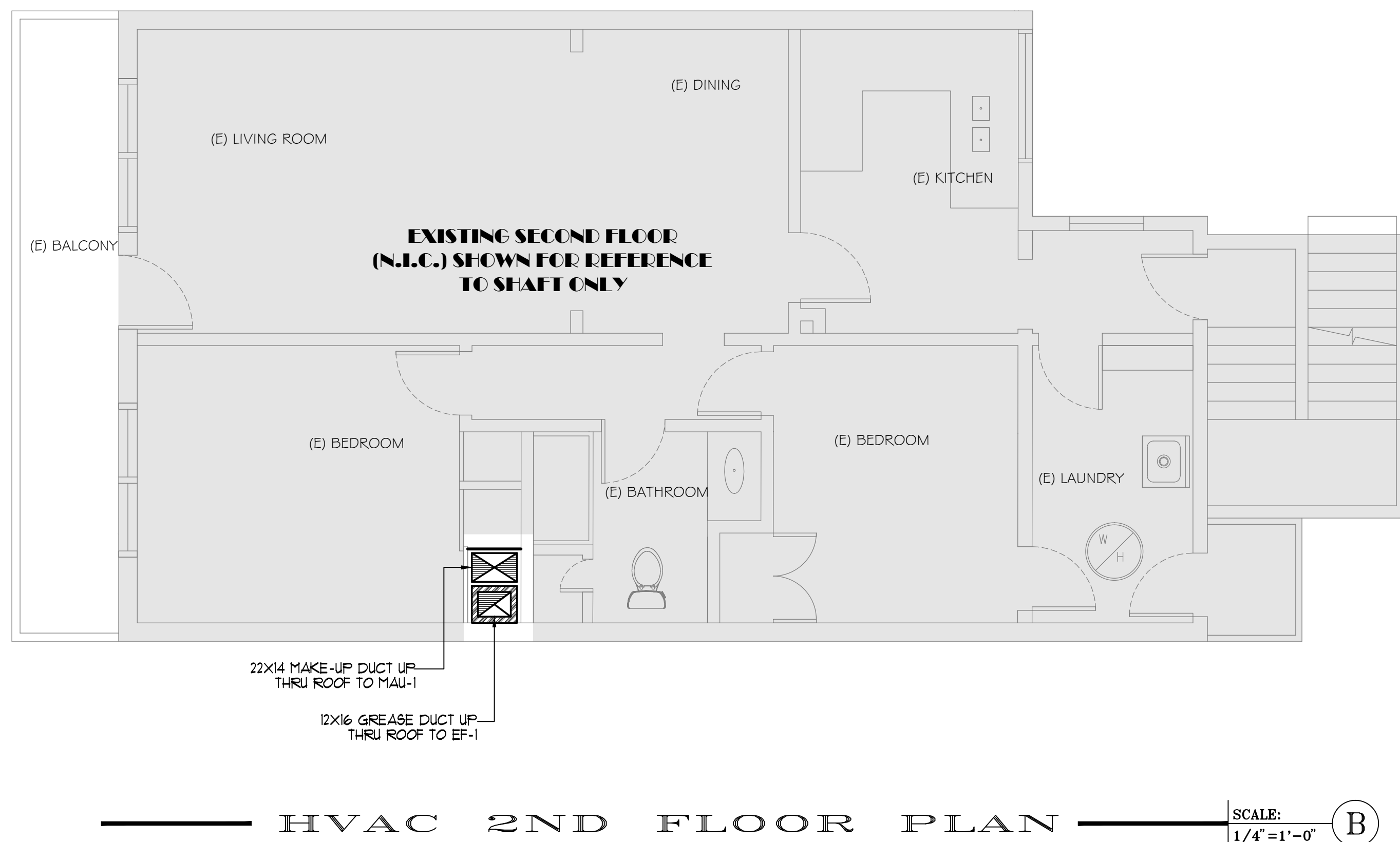
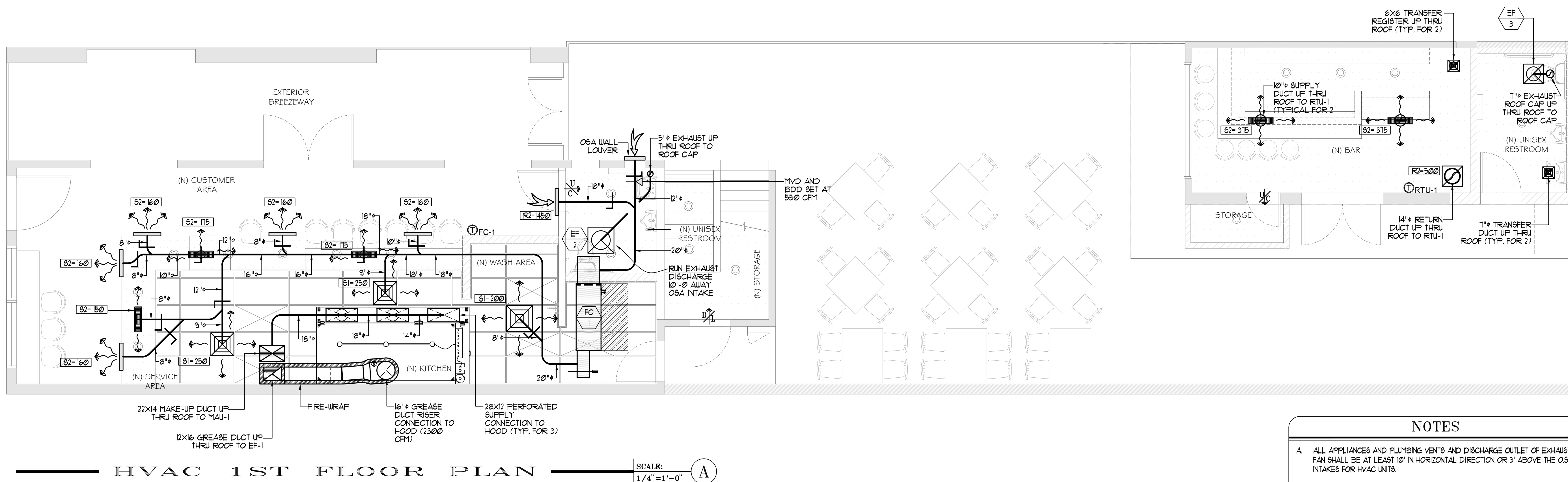
# GAMBOGE

1822 N BROADWAY  
LOS ANGELES, CA 90031

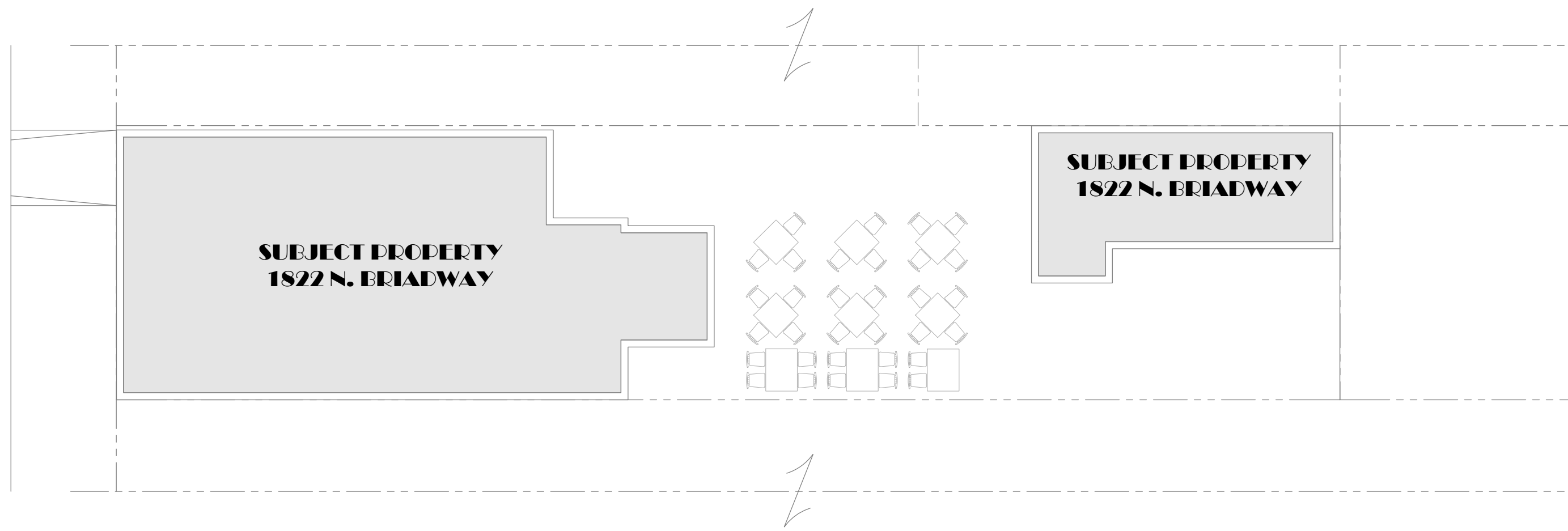
8/19/2019	BLDG. RE-SUBMITTAL
7/24/2019	BLDG. SUBMITTAL
DATE	DESCRIPTION

# HVAC 1ST & 2ND FLOOR PLAN

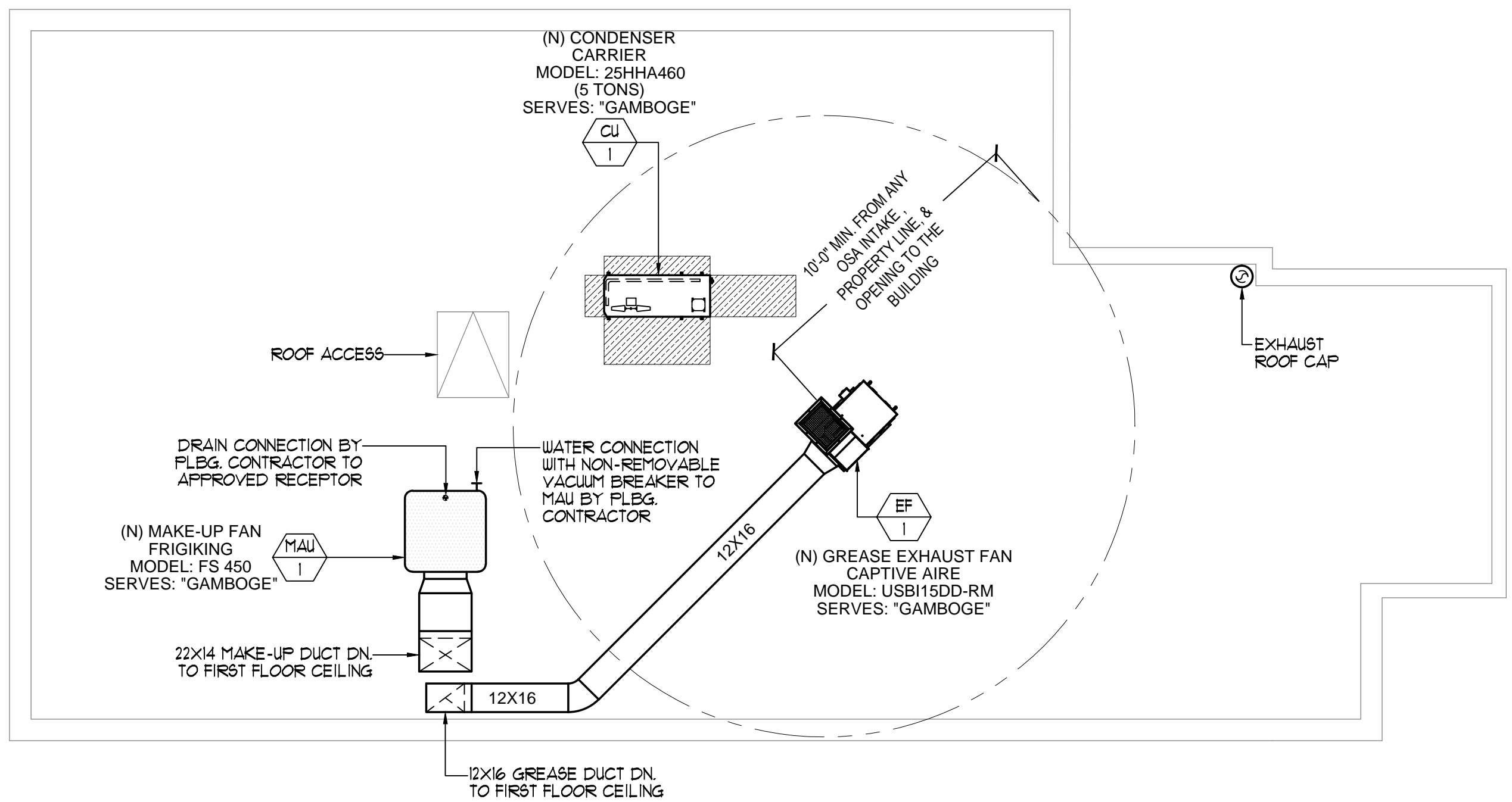
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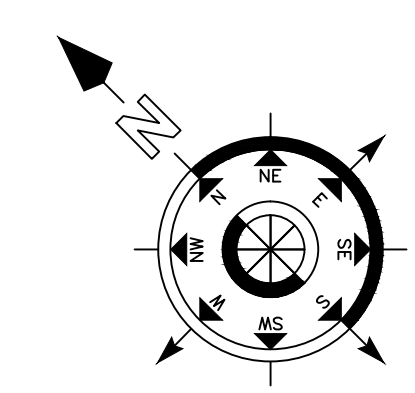




SITE PLAN (KEY PLAN) SCALE: N.T.S.

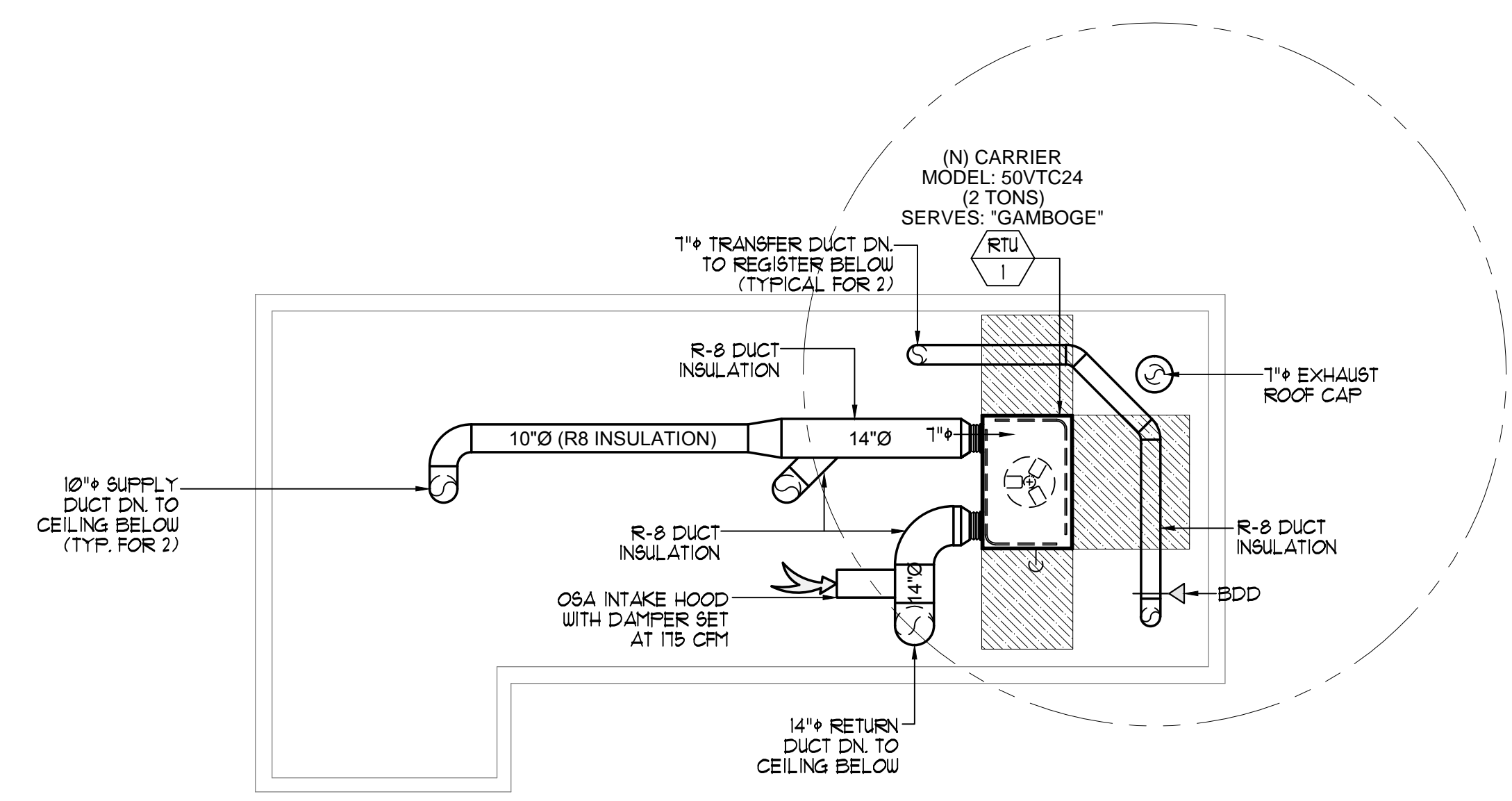



HVAC ROOF PLAN SCALE: 1/4" = 1'-0"



### ROOF NOTES

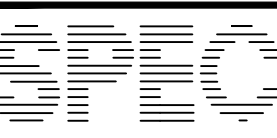
- A. ALL APPLIANCES AND PLUMBING VENTS AND DISCHARGE OUTLET OF EXHAUST FAN SHALL BE AT LEAST 10' IN HORIZONTAL DIRECTION OR 3' ABOVE THE OSA INTAKES FOR HVAC UNITS.
- B. EACH PLUMBING VENT SHALL TERMINATE NOT LESS THAN TEN (10) FEET FROM, OR NOT LESS THAN THREE (3) FEET ABOVE, ANY OPENABLE WINDOW, DOOR, 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 906.2
- C. ROOFTOP TERMINATIONS SHALL BE ARRANGE WITH OR PROVIDE 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 510.21
- 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**

1822 N BROADWAY  
LOS ANGELES, CA 90031

### SUBMITTALS

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

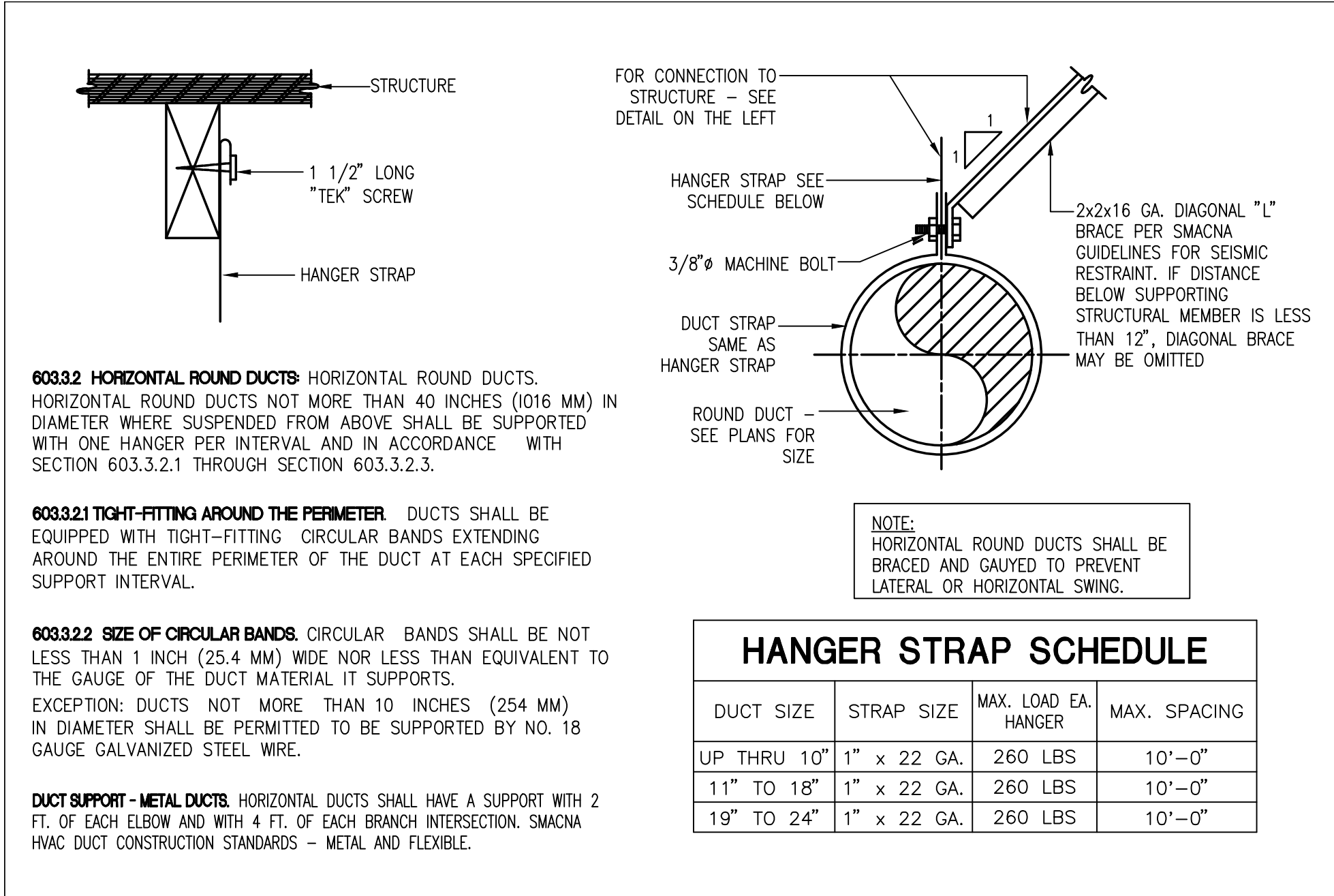
### SHEET NAME

**HVAC ROOF PLAN**

### SHEET NUMBER

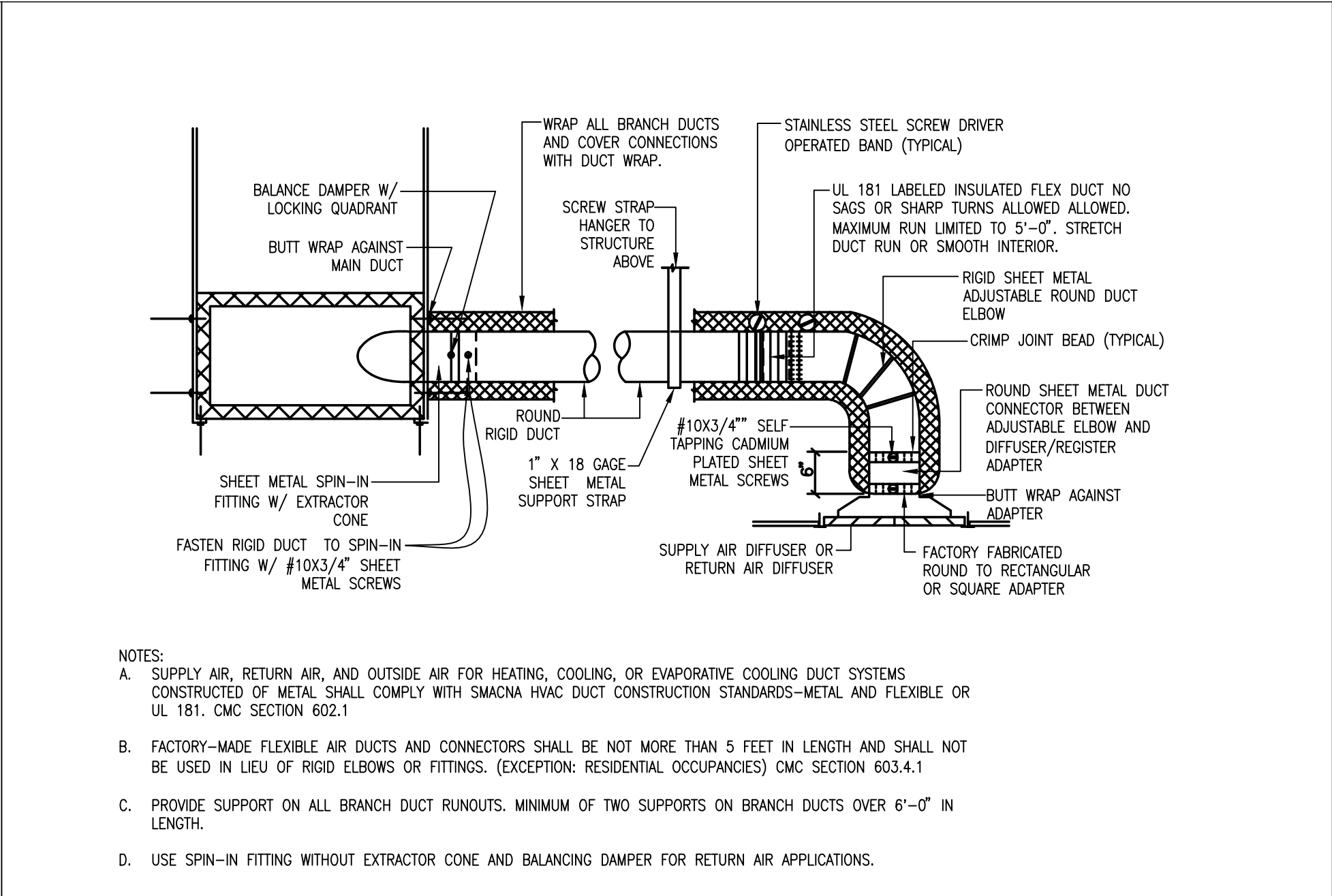
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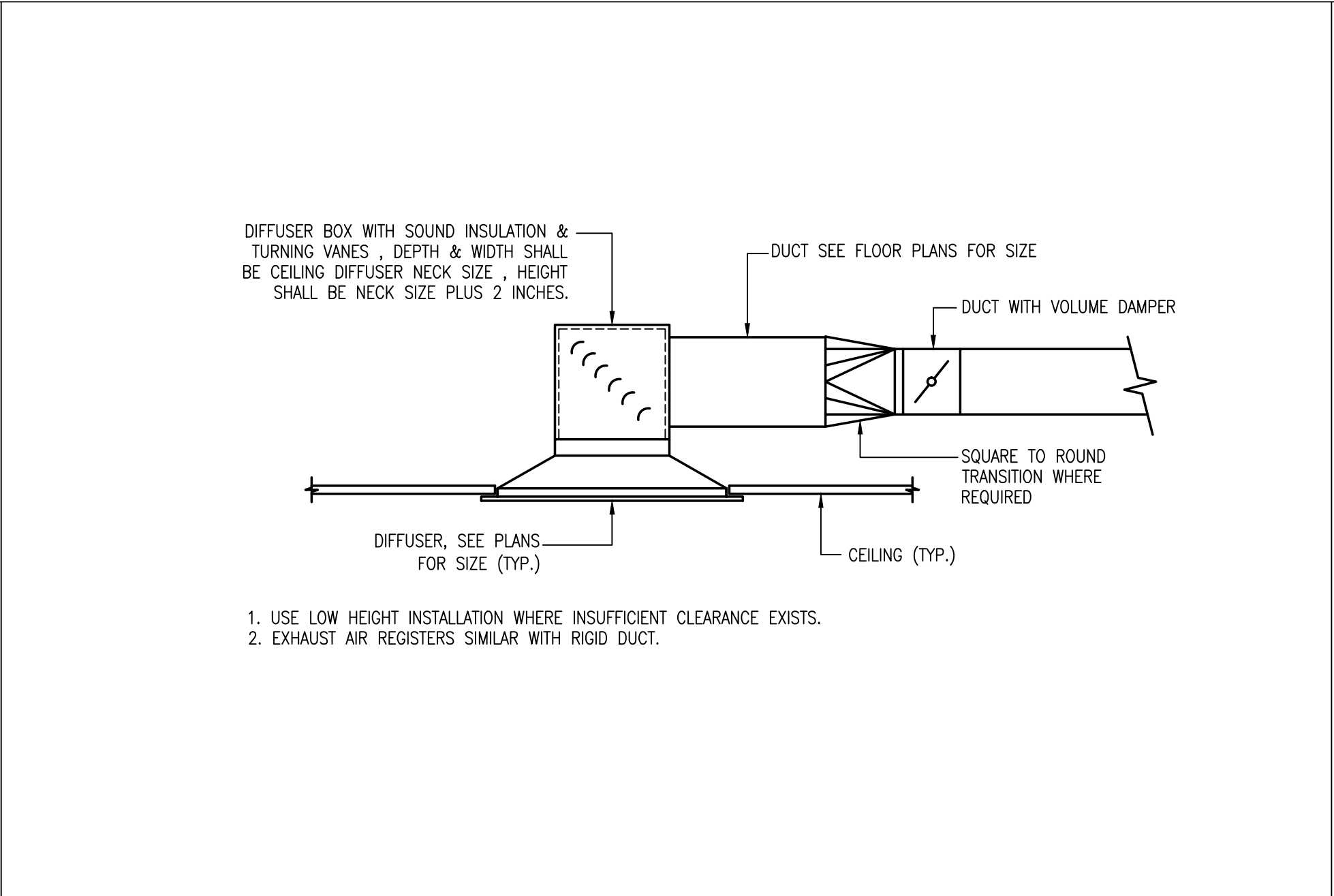
ROUND DUCT SUPPORT DETAIL

SCALE: NONE A



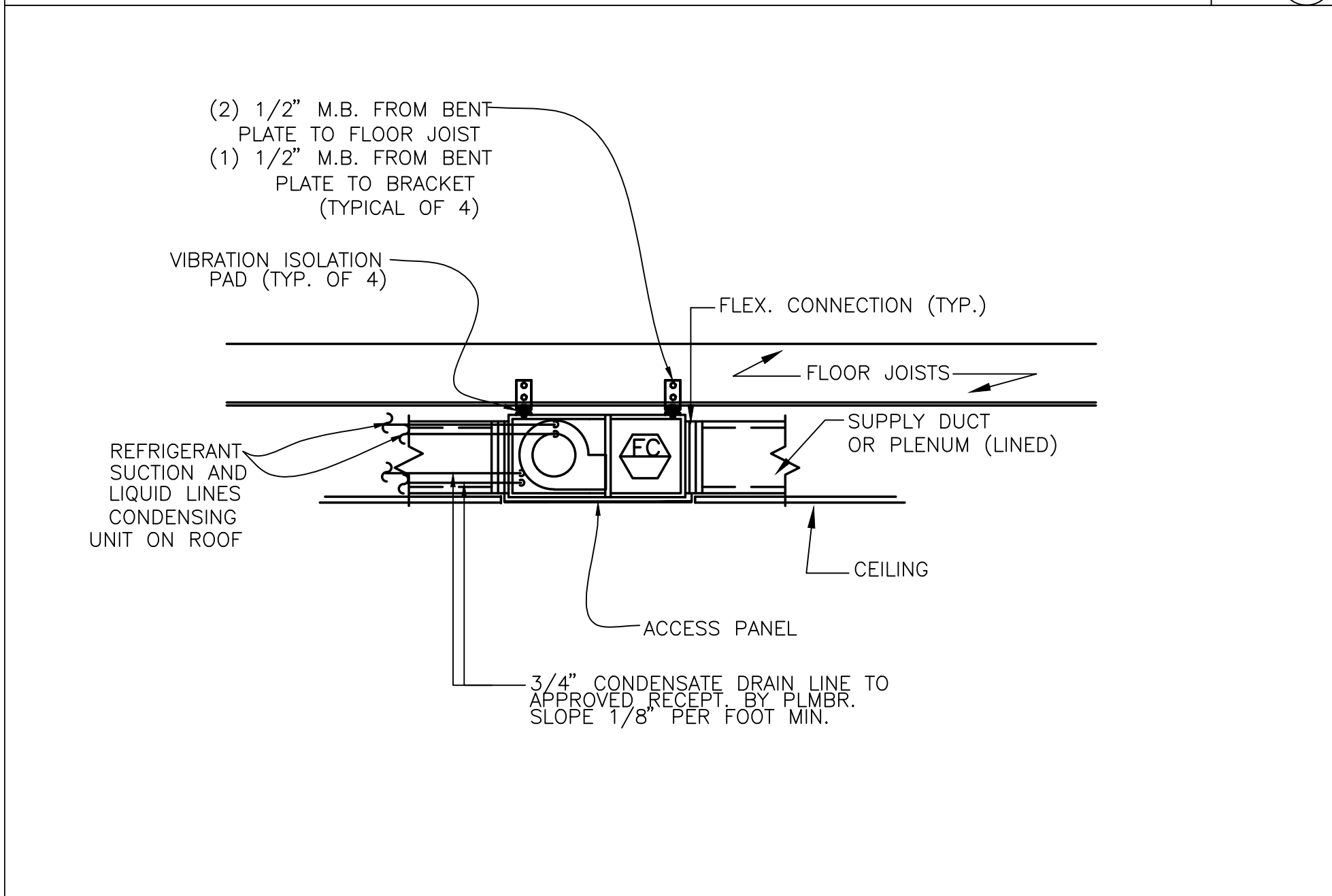
CEILING DIFFUSER DETAIL

SCALE: NONE D



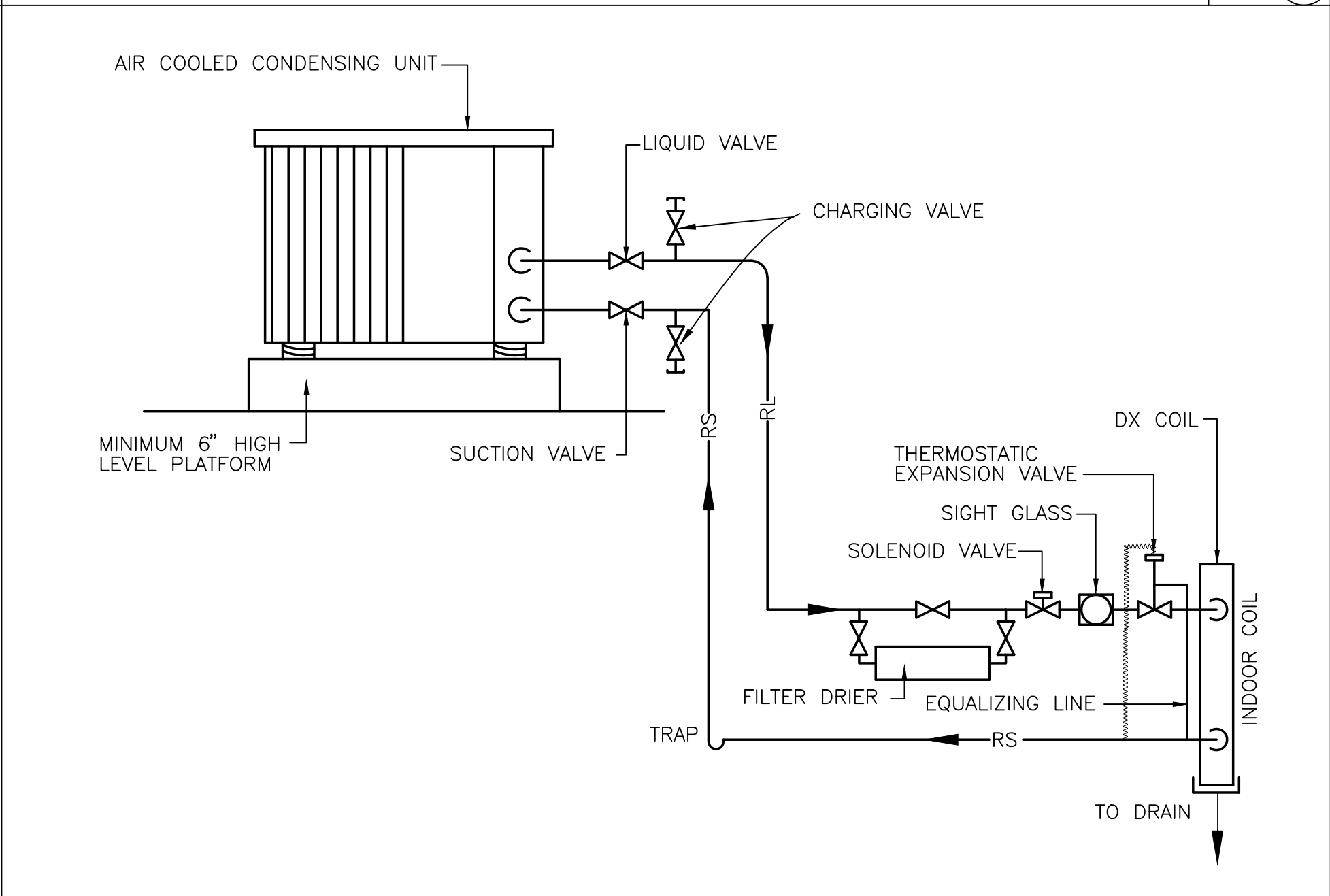
CEILING DIFFUSER DETAIL (SHEET METAL DUCT)

SCALE: NONE G



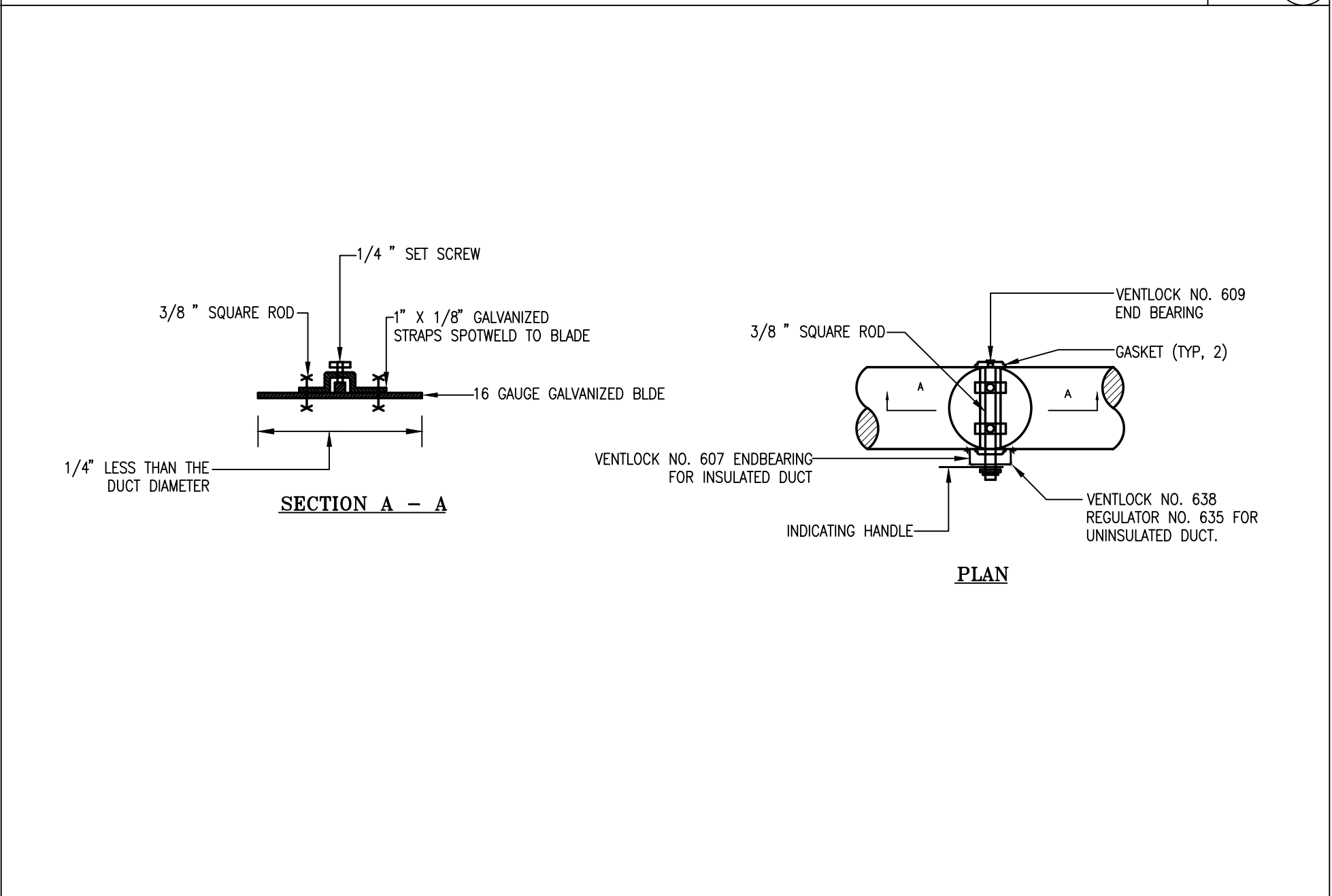
FAN COIL UNIT INSTALLATION DETAIL

SCALE: NONE B



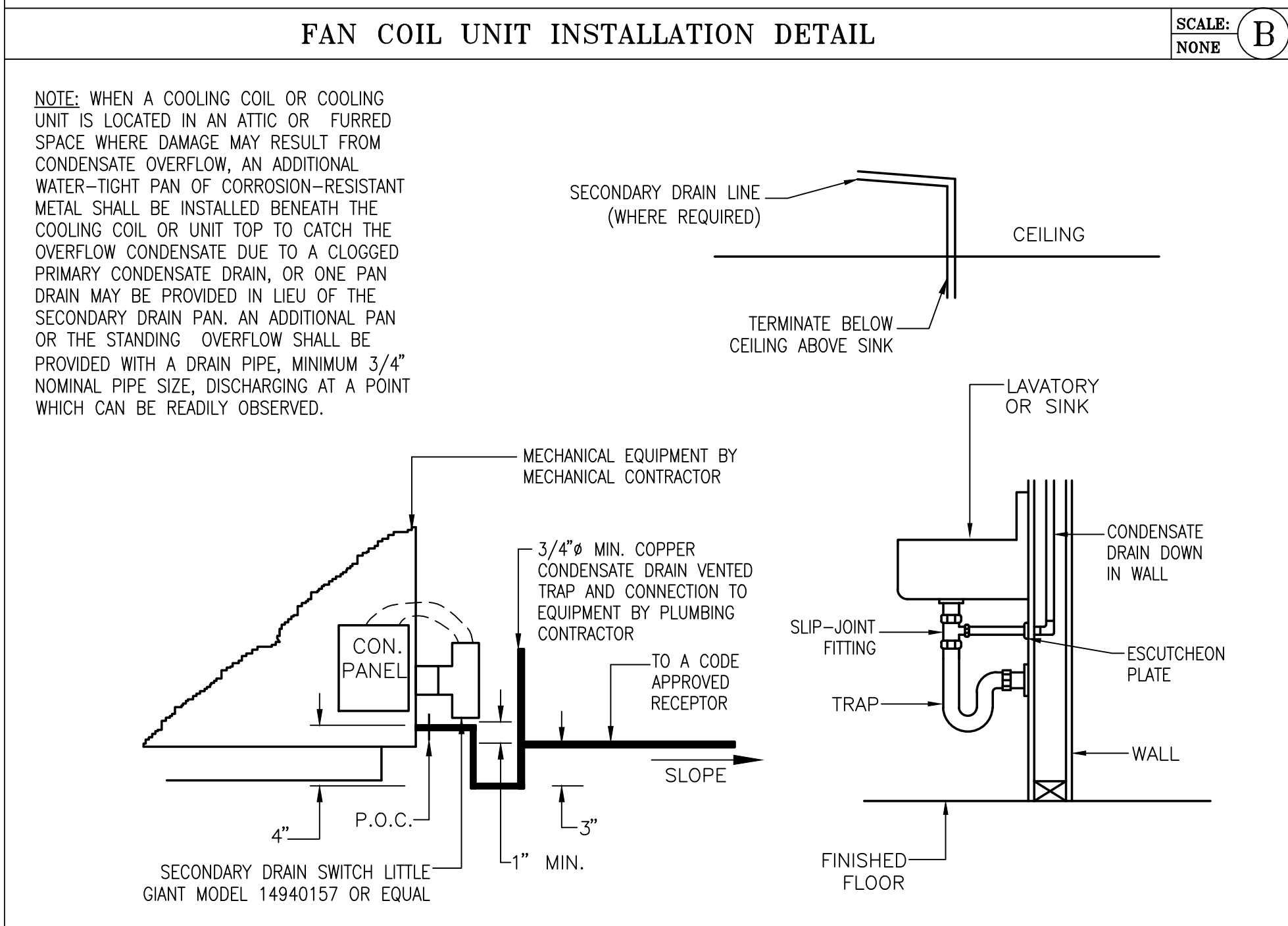
SPLIT SYSTEM REFRIGERATION PIPING DETAIL

SCALE: NONE E



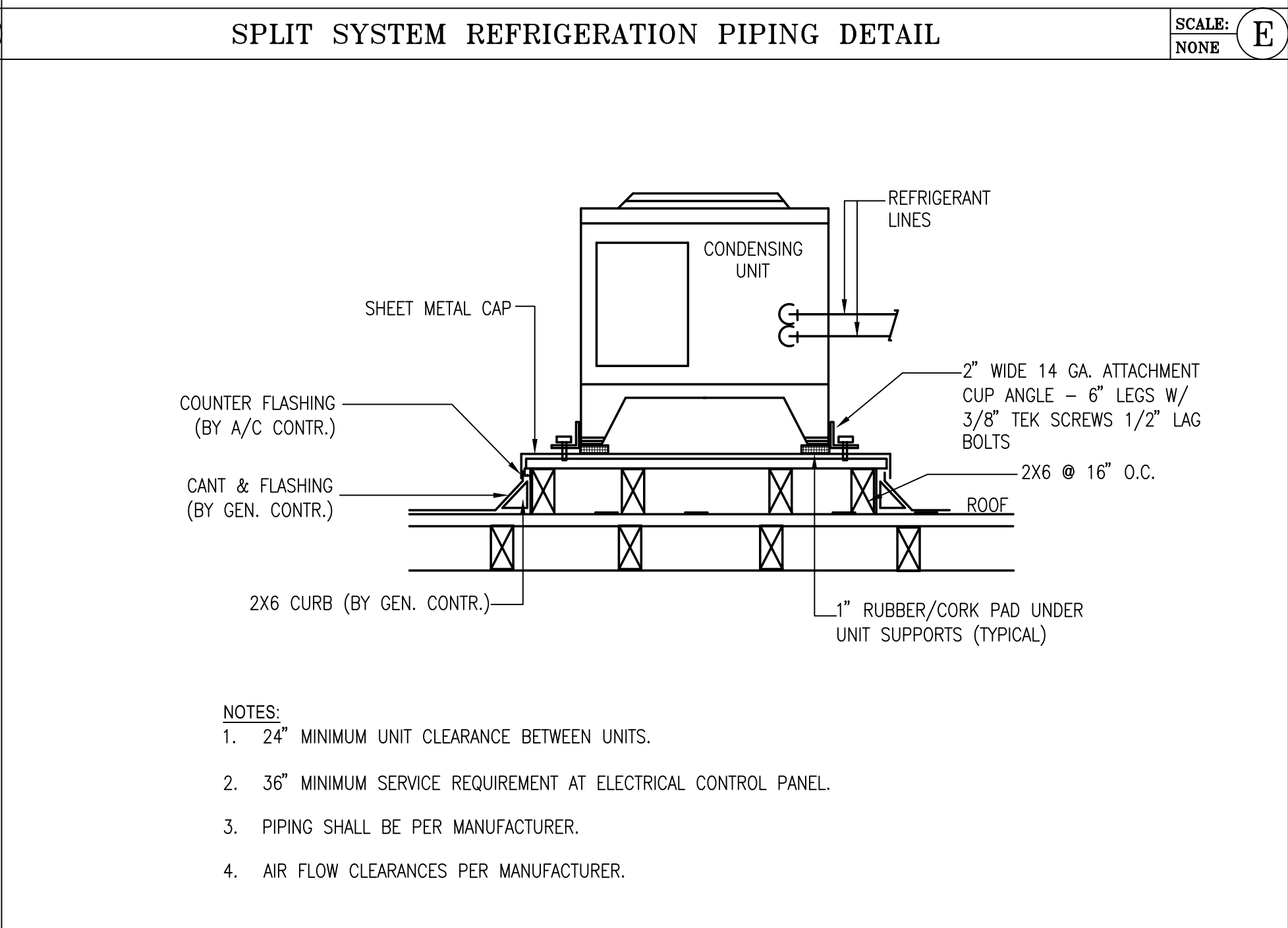
ROUND VOLUME DAMPER DETAIL FOR LOW PRESSURE DUCTS

SCALE: NONE I



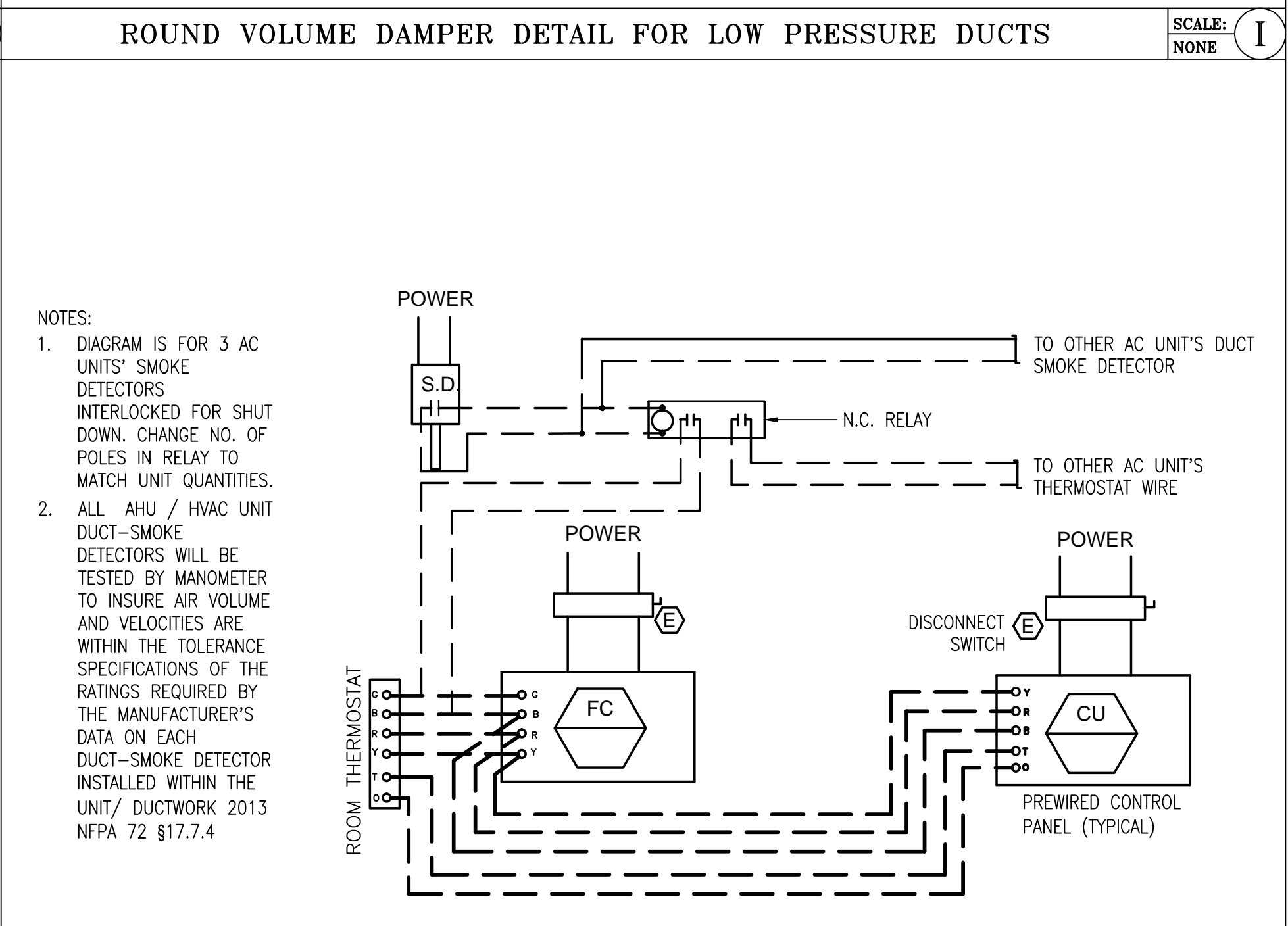
CONDENSATE DRAIN CONNECTION

SCALE: NONE C



CONDENSING UNIT MOUNTING DETAIL

SCALE: NONE F



FAN COIL UNIT WIRING DIAGRAM

SCALE: NONE J

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REGISTERED PROFESSIONAL ENGINEER  
ALAN K. GARET  
No. 26426  
EXP. 9-30-19  
MECHANICAL  
STATE OF CALIFORNIA

PROJECT INFORMATION

**GAMBOGE**

1822 N BROADWAY  
LOS ANGELES, CA 90031

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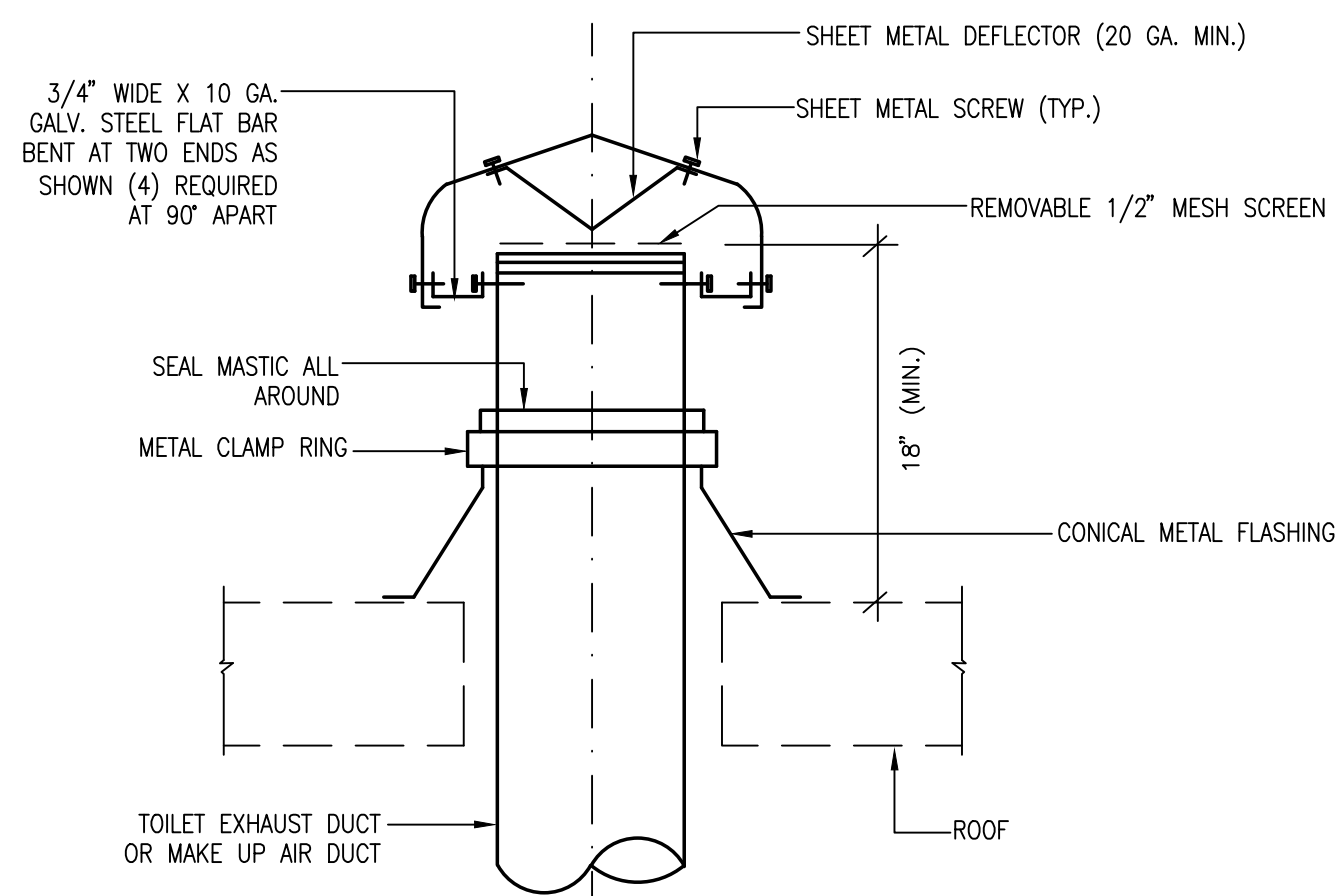
SHEET NAME

**HVAC DETAILS**

SHEET NUMBER

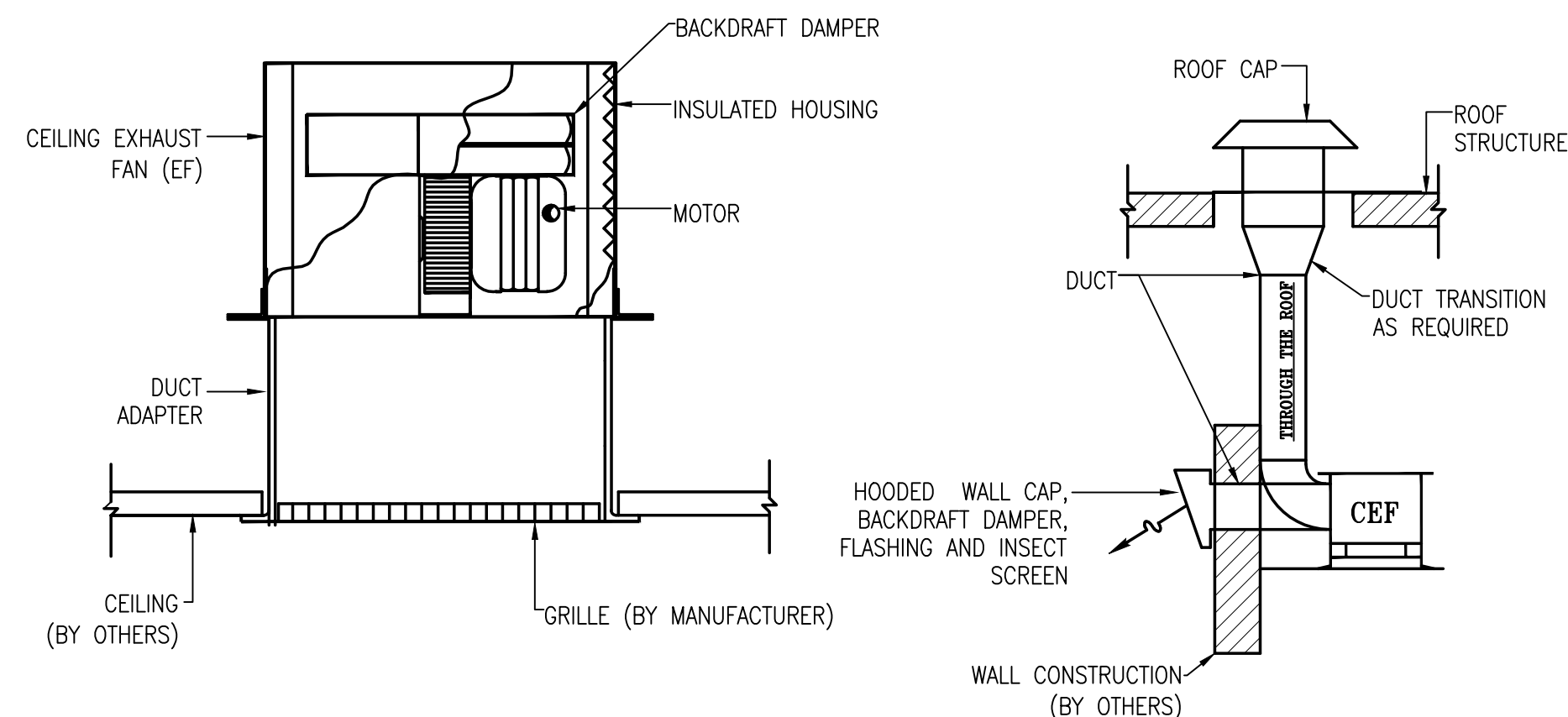
**M-3.0**





ROOF CAP DETAIL

SCALE: **A**

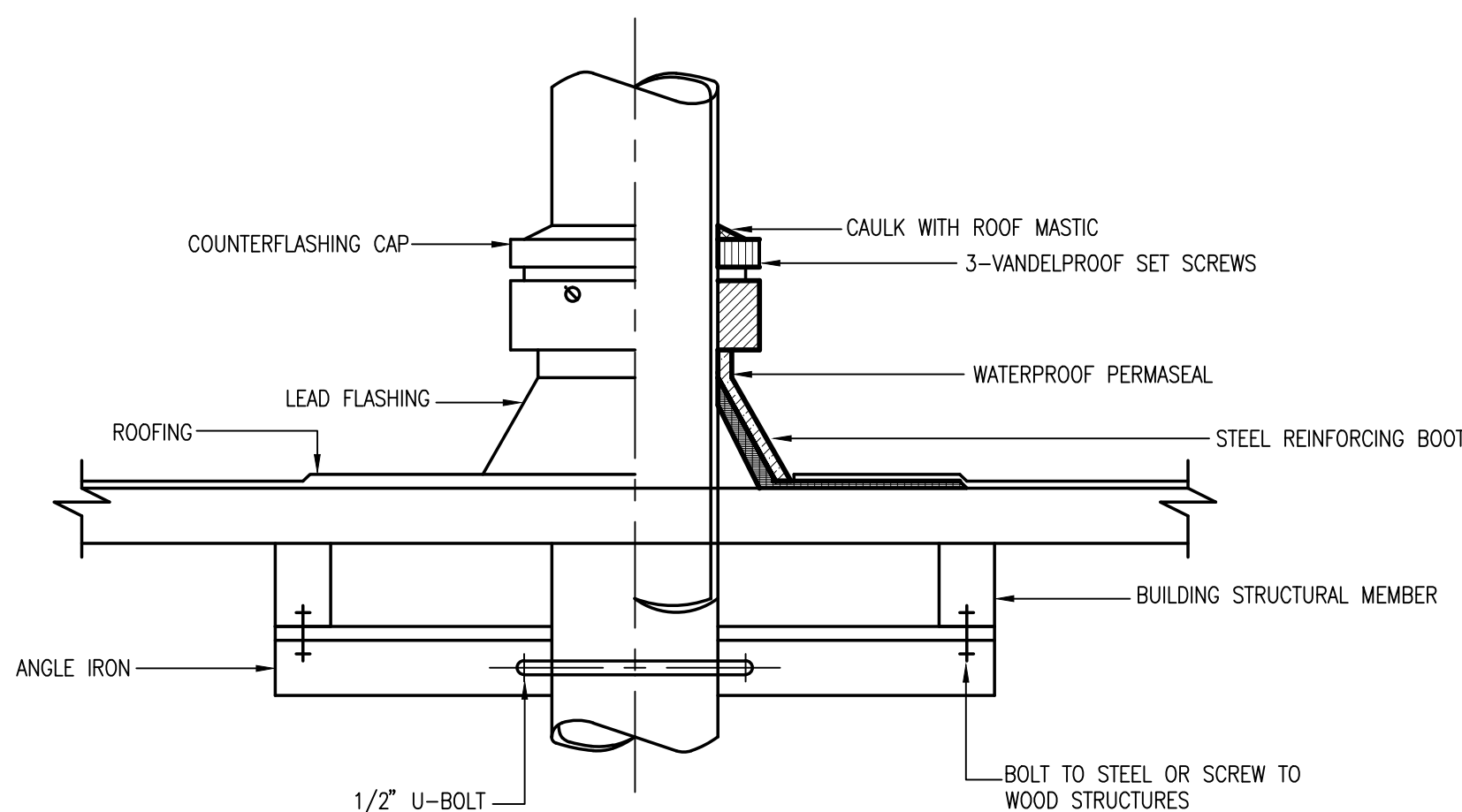


INSULATION NOTES:

1. WALL AND / OR ROOF PENETRATIONS SHALL BE PROVIDED WITH WEATHER-TIGHT SEAL; COORDINATE WITH GENERAL CONSTRUCTION.
2. INSTALL MINIMUM 16 GAUGE SHEET STEEL SUPPORTS TO RIGIDLY ATTACH FAN HOUSING TO STRUCTURE; FIELD VERIFY EXACT REQUIREMENTS. ENSURE ADEQUATE VIBRATION ISOLATION.
3. INSTALLATION SHALL BE NEAT AND COMPLETED TIMELY AND IN SUCH A MANNER TO ALLOW CC TO FINISH SURFACES UNIFORMLY.
4. ALL ELECTRICAL WIRING AND CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR.

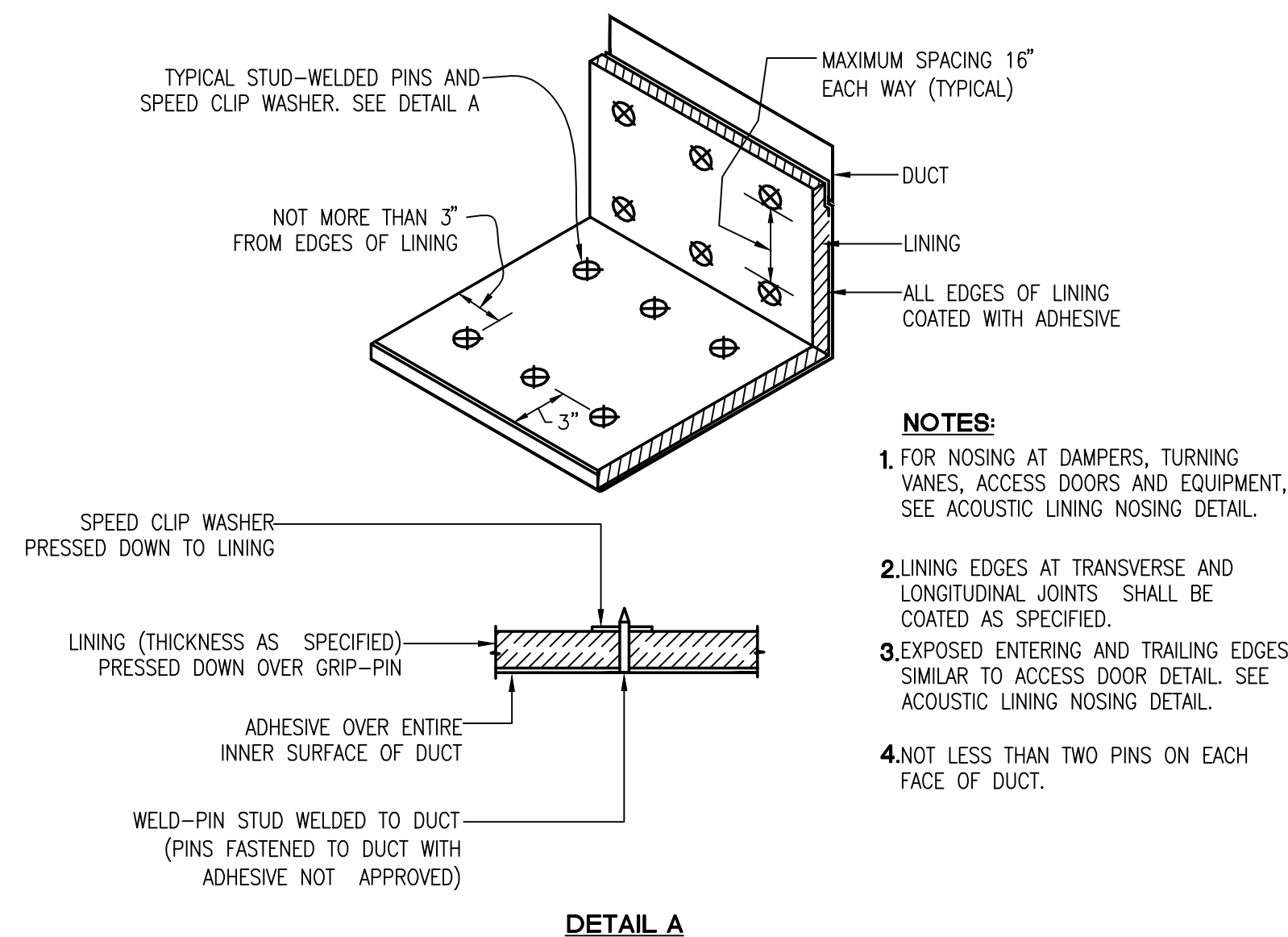
CEILING EXHAUST FAN

SCALE: **D**



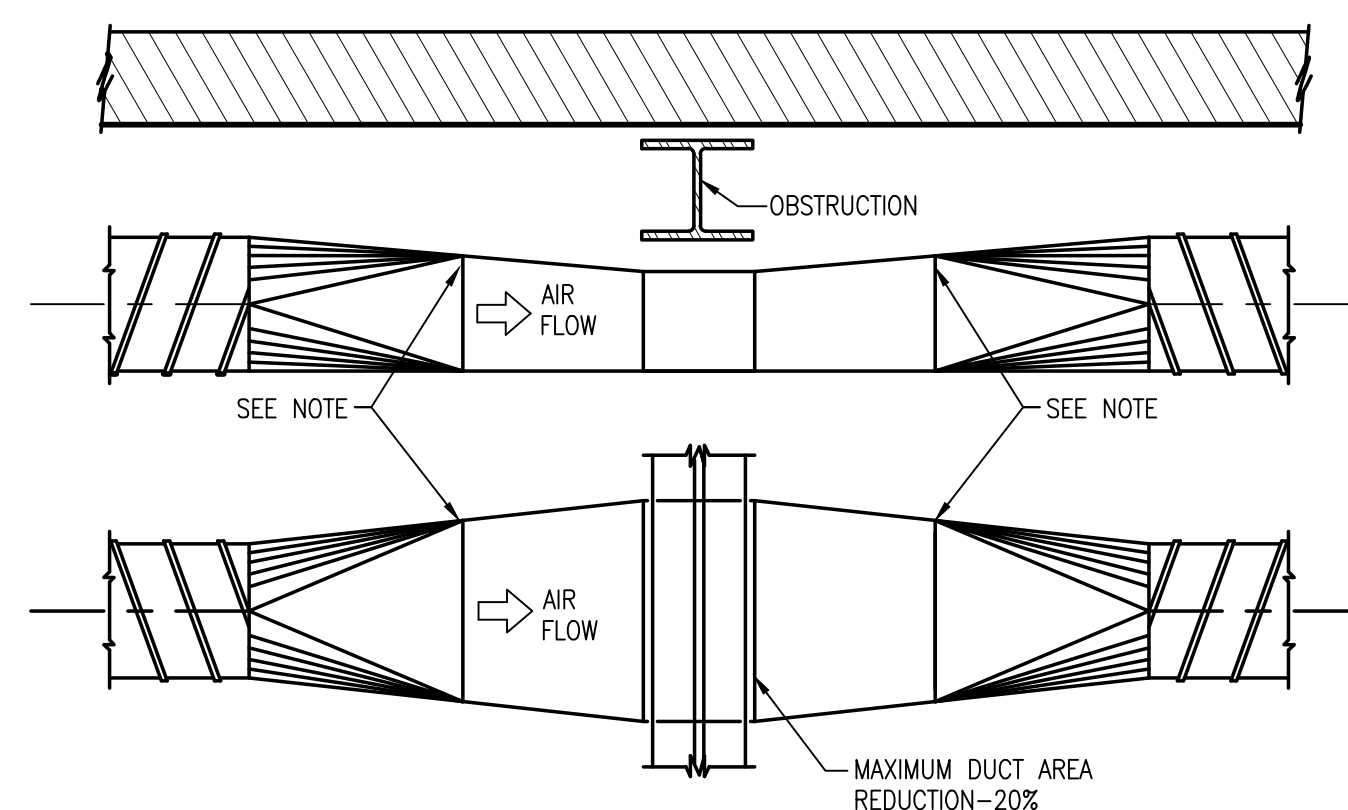
DUCT THRU ROOF DETAIL

SCALE:	I
NONE	



### ACCOUSTIC LINING INSTALLATION DETAIL

SCALE: **B**



NOTE:

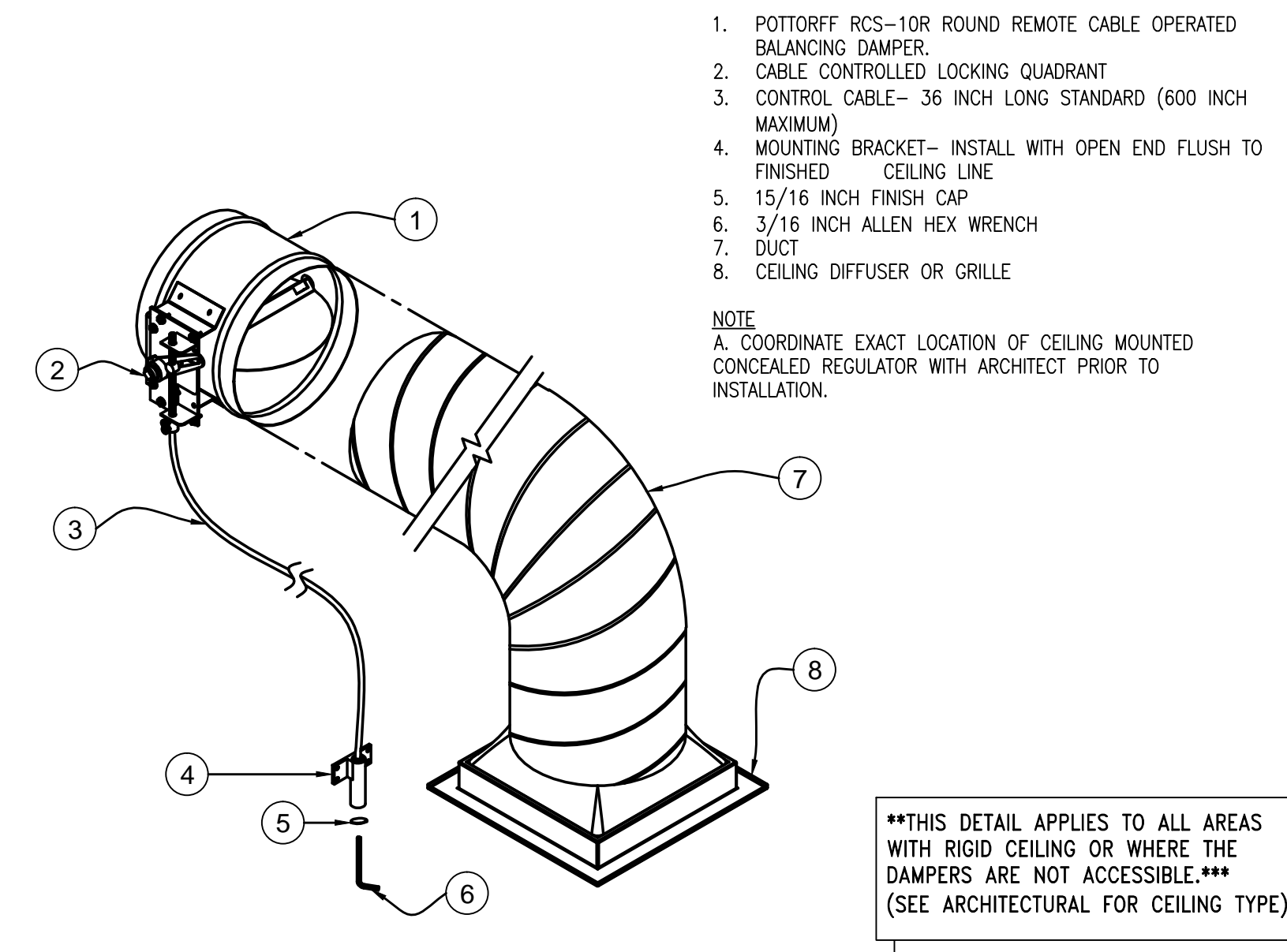
- 1.) 1:7 SLOPE IS RECOMMENDED FOR HIGH VELOCITY, 1:4 SLOPE FOR LOW VELOCITY.
- 2.) FOR SUPPLY, RETURN, MAKE-UP, OSA, AND EXHAUST AIR DUCTS ONLY.
- 3.) NOT TO BE USED FOR GREASE DUCTS.

BEAM BOX DETAIL (IF REQUIRED)

SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION	SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION

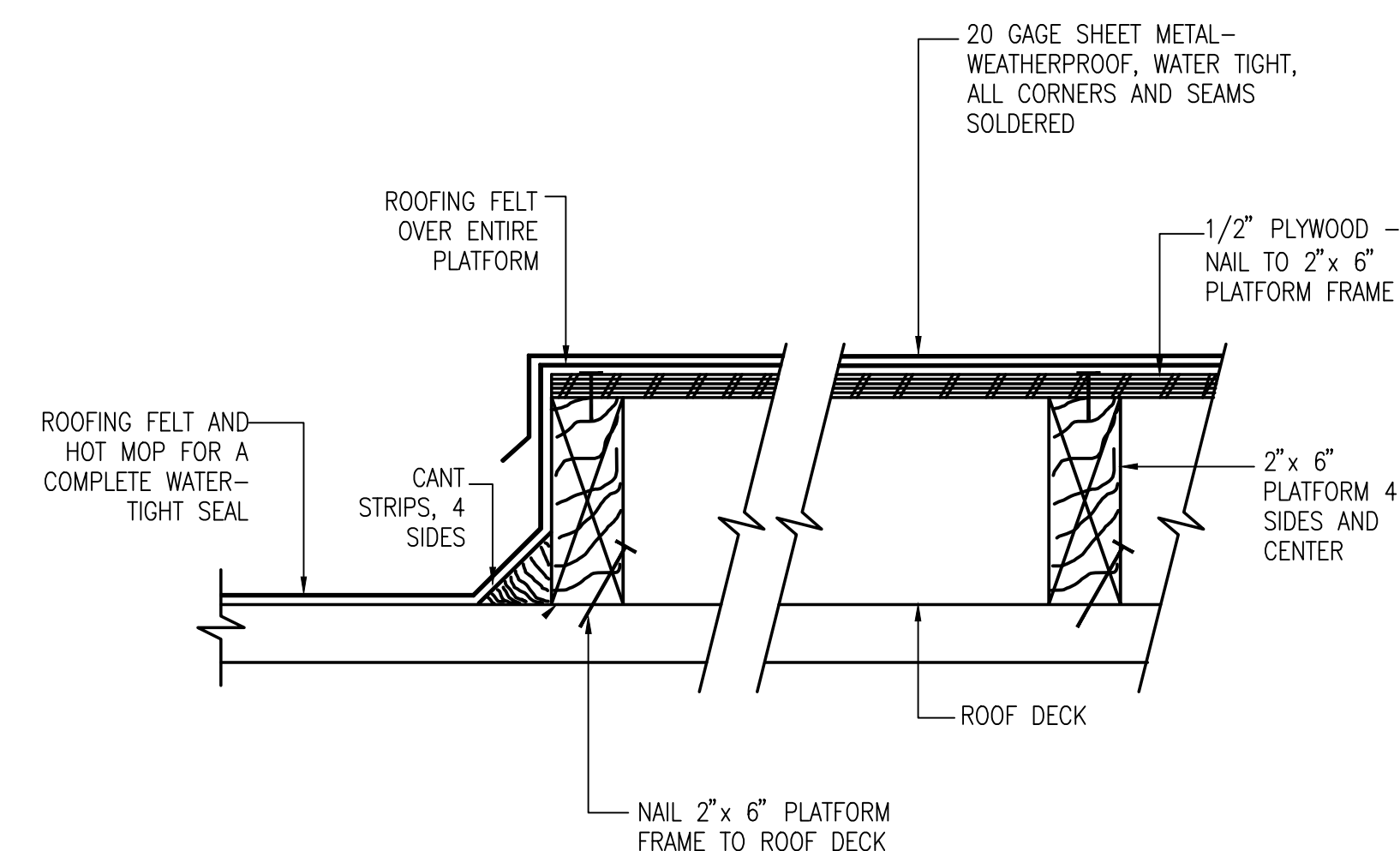
RECTANGULAR DUCTWORK DETAIL

SCALE:	H
NONE	



MODEL RCS-10R REMOTE CABLE OPERATED BALANCING DAMPER.

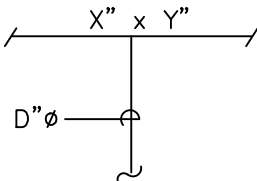
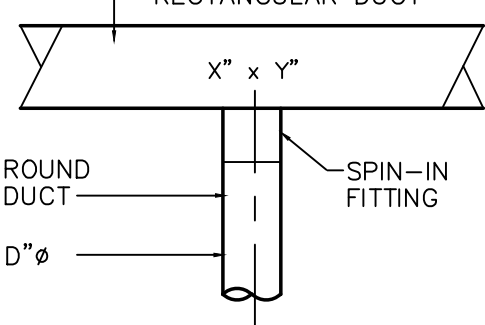
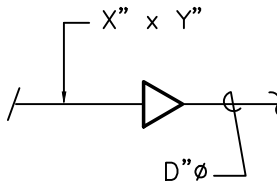
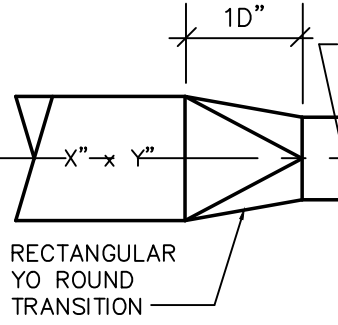
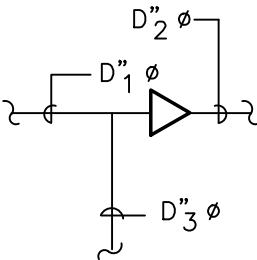
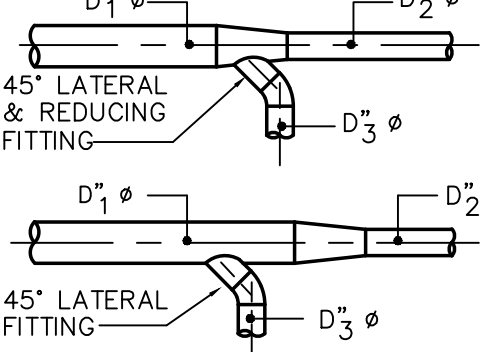
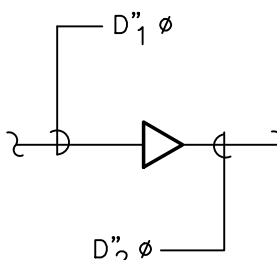
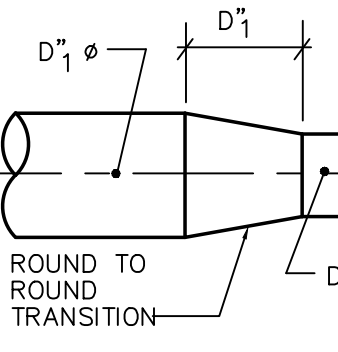
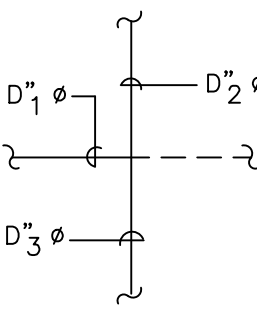
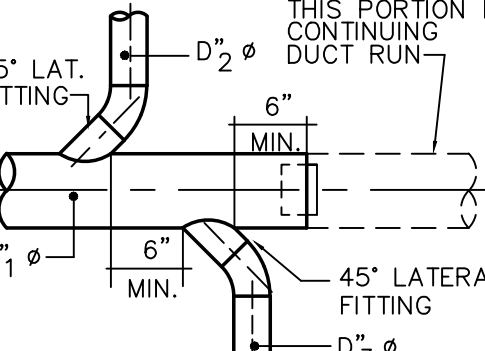
SCALE:	C
NONE	



NOTE: COORDINATE INSTALLATION WITH ARCHITECTURAL DRAWINGS AND DETAILS.

SECTION PLATFORM DETAIL

SCALE: **F**

SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION	SINGLE LINE DIAGRAM	DOUBLE LINE CONFIGURATION
			
			
			

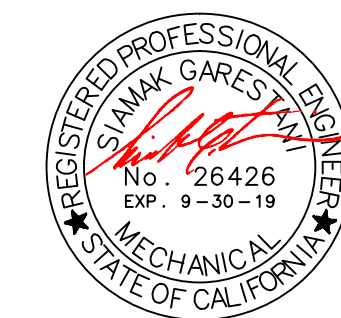
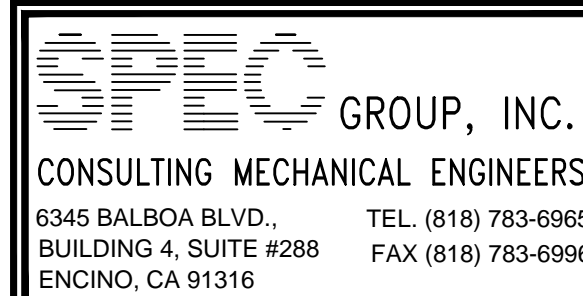
### ROUND LOW PRESSURE DUCTWORK DETAIL

SCALE:	G
NONE	



**FE DESIGN & CONSULTING**

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

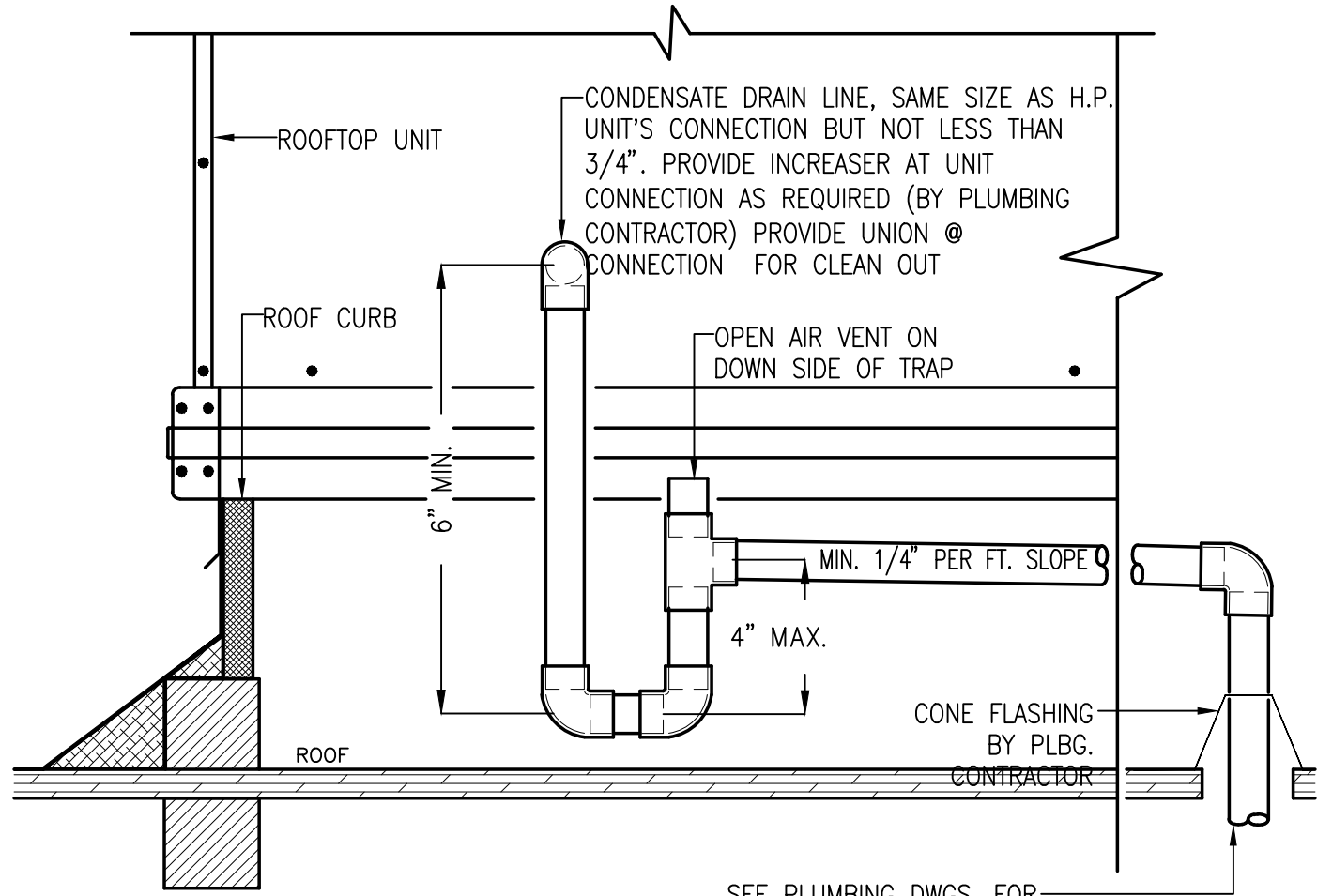
## SHEET NAME

## HVAC DETAILS

SHEET NUMBER

## M-3.1

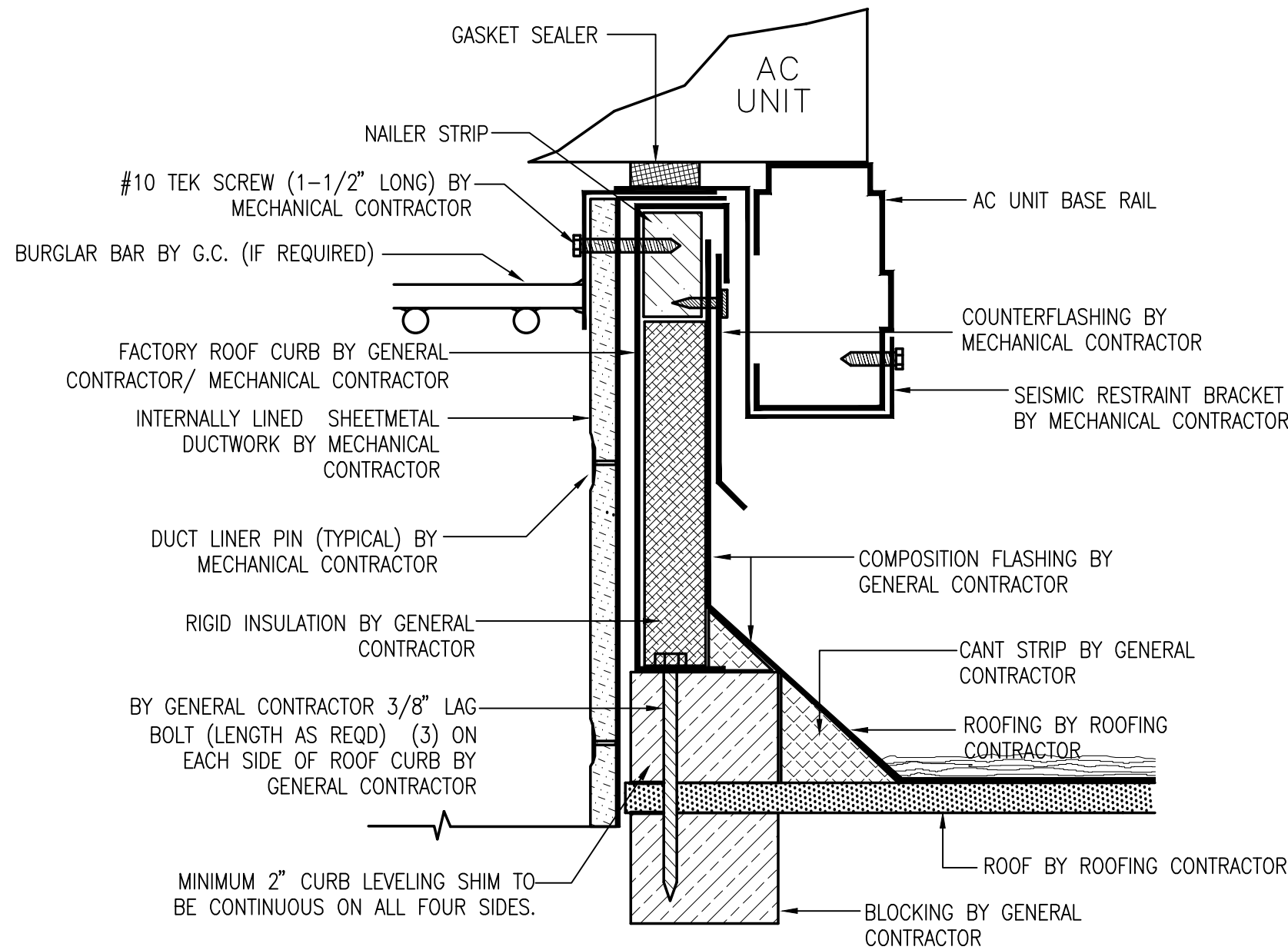




NOTE: 1. SEE MANUFACTURES SPECIFICATIONS.  
EXTERNAL TRAP MAY BE PROHIBITED.

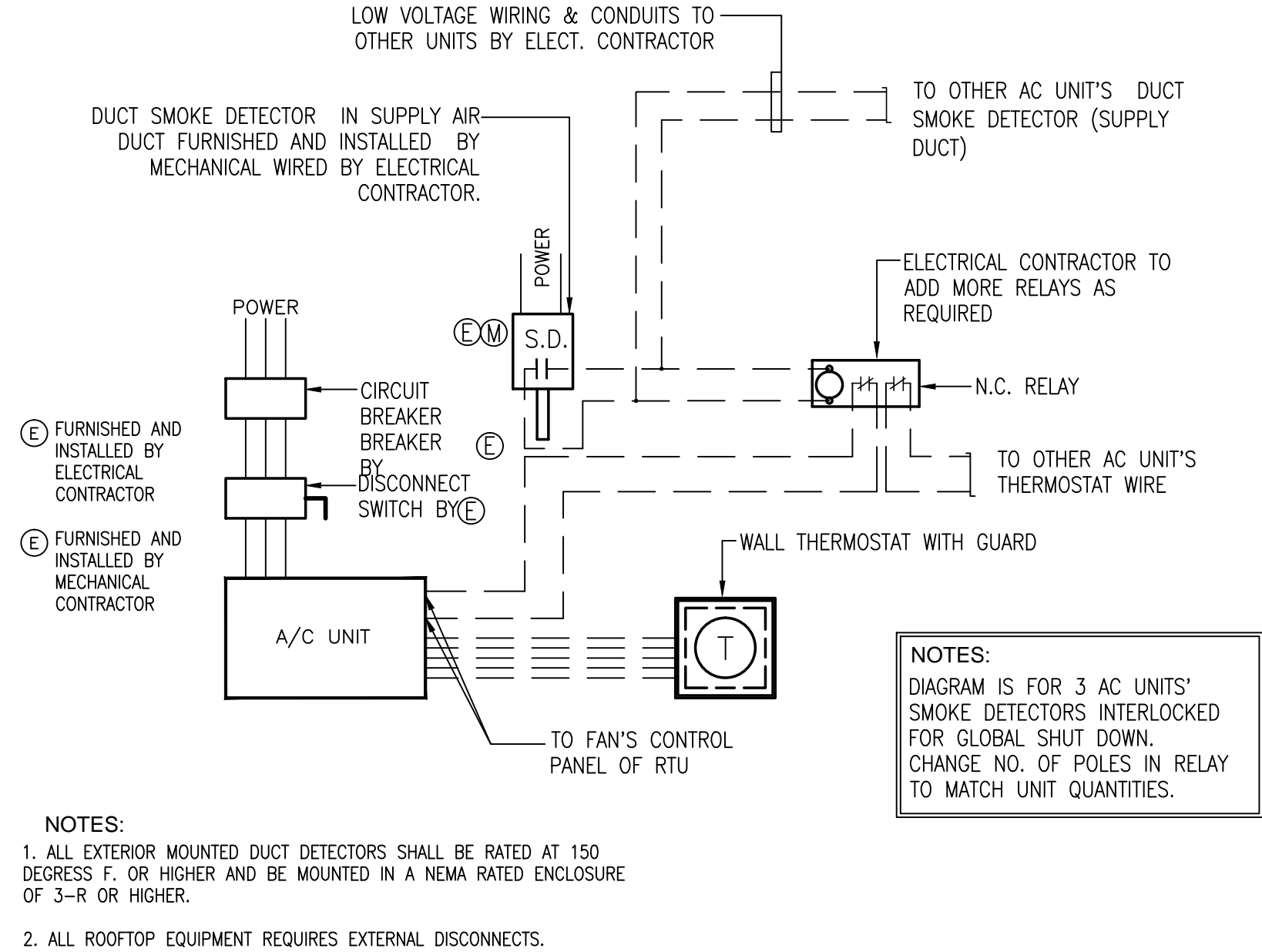
ROOFTOP UNIT CONDENSATE DRAIN TRAP DETAIL

SCALE: NONE A



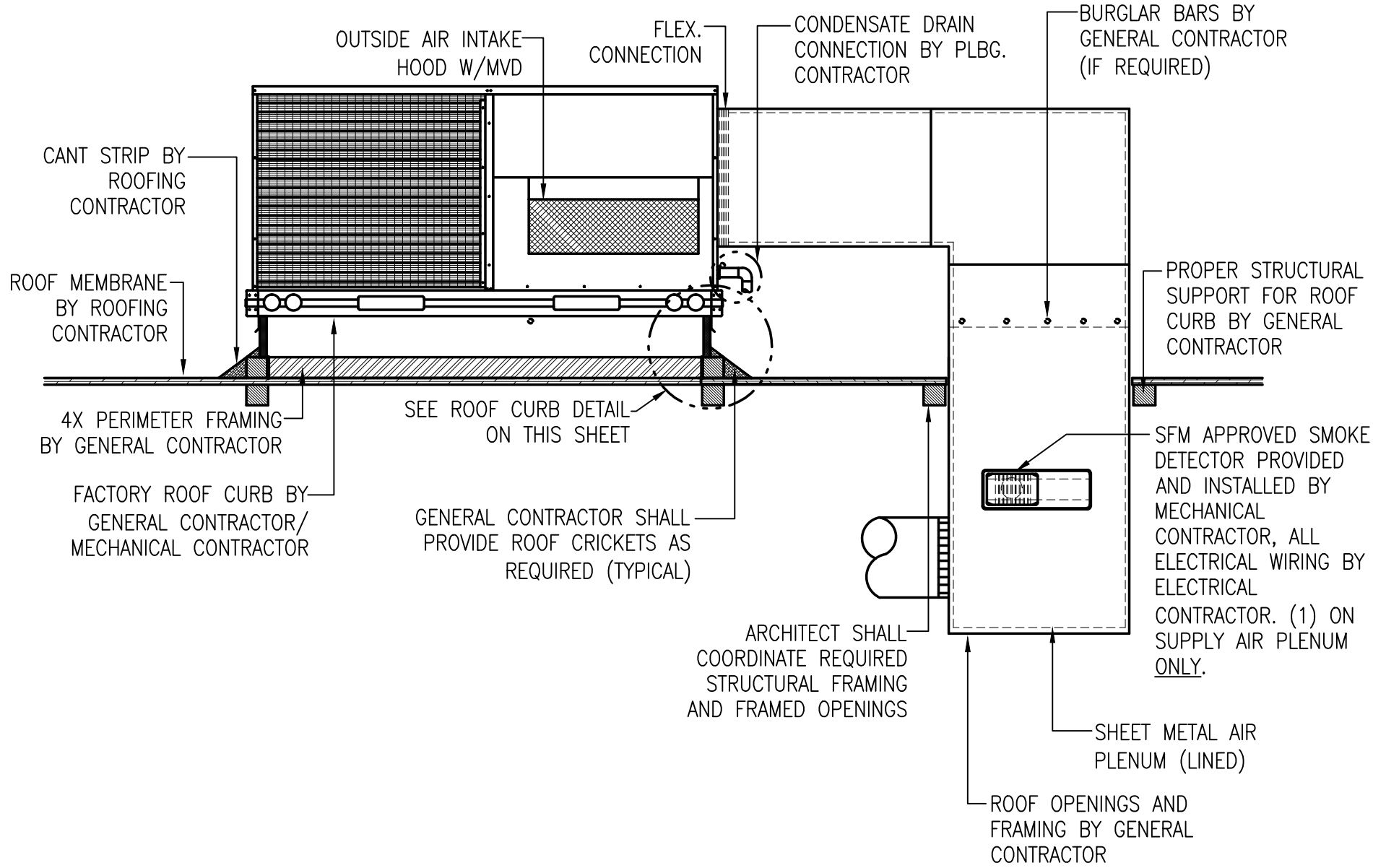
PACKAGED UNIT ROOF CURB DETAIL

SCALE: NONE B



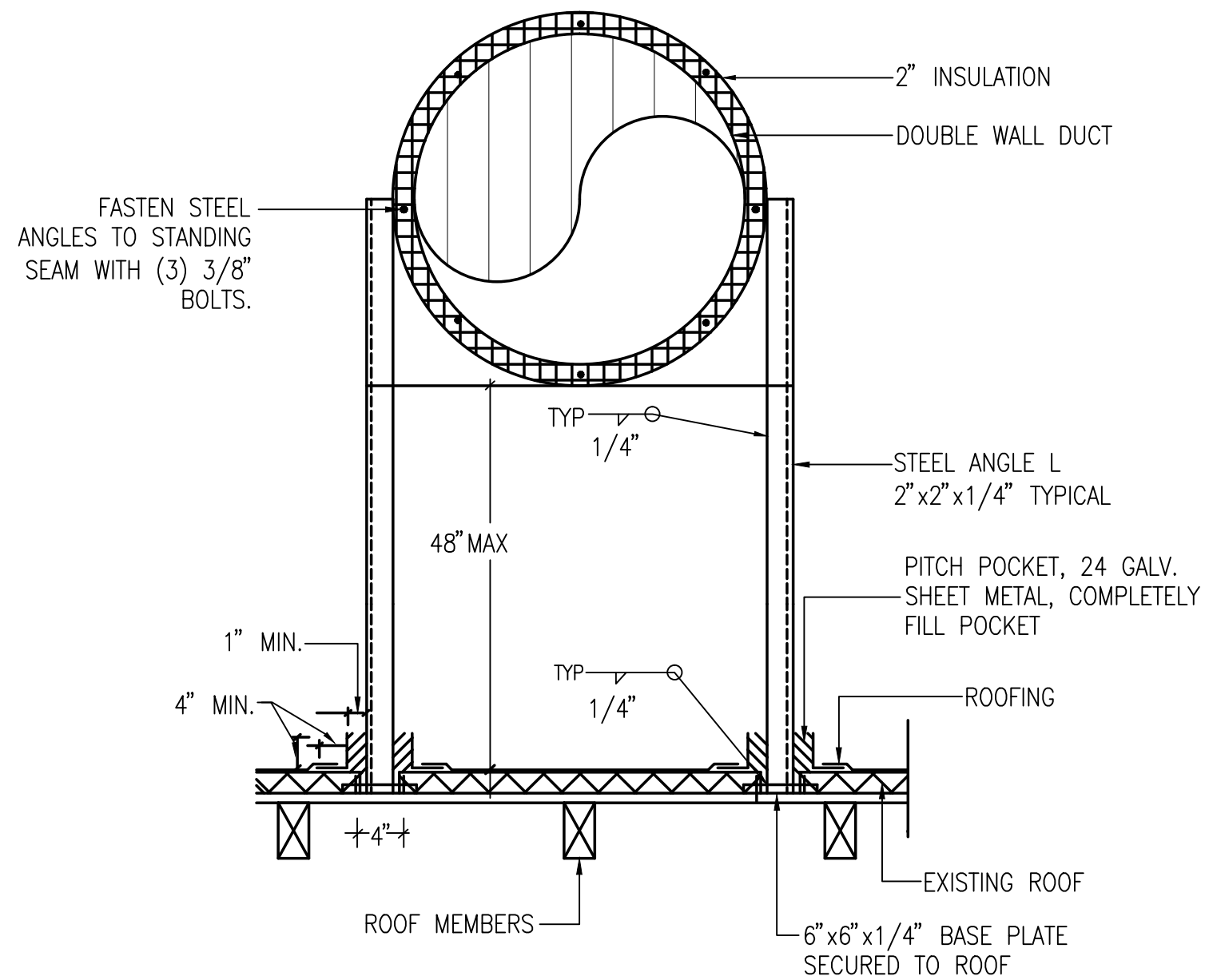
ROOFTOP UNIT WIRING DIAGRAM

SCALE: NONE C



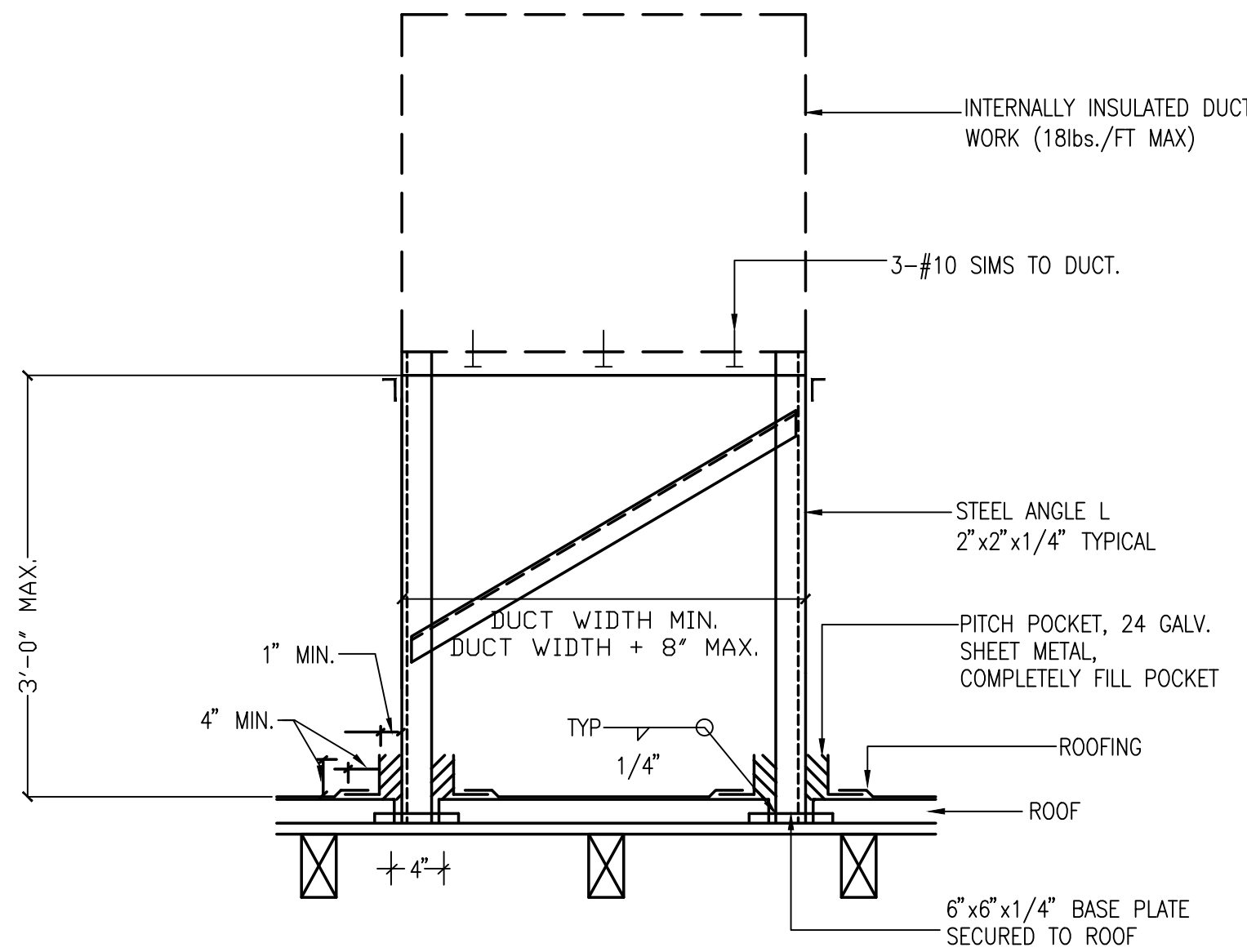
PACKAGED ROOFTOP UNIT ELEVATION DETAIL

SCALE: NONE D



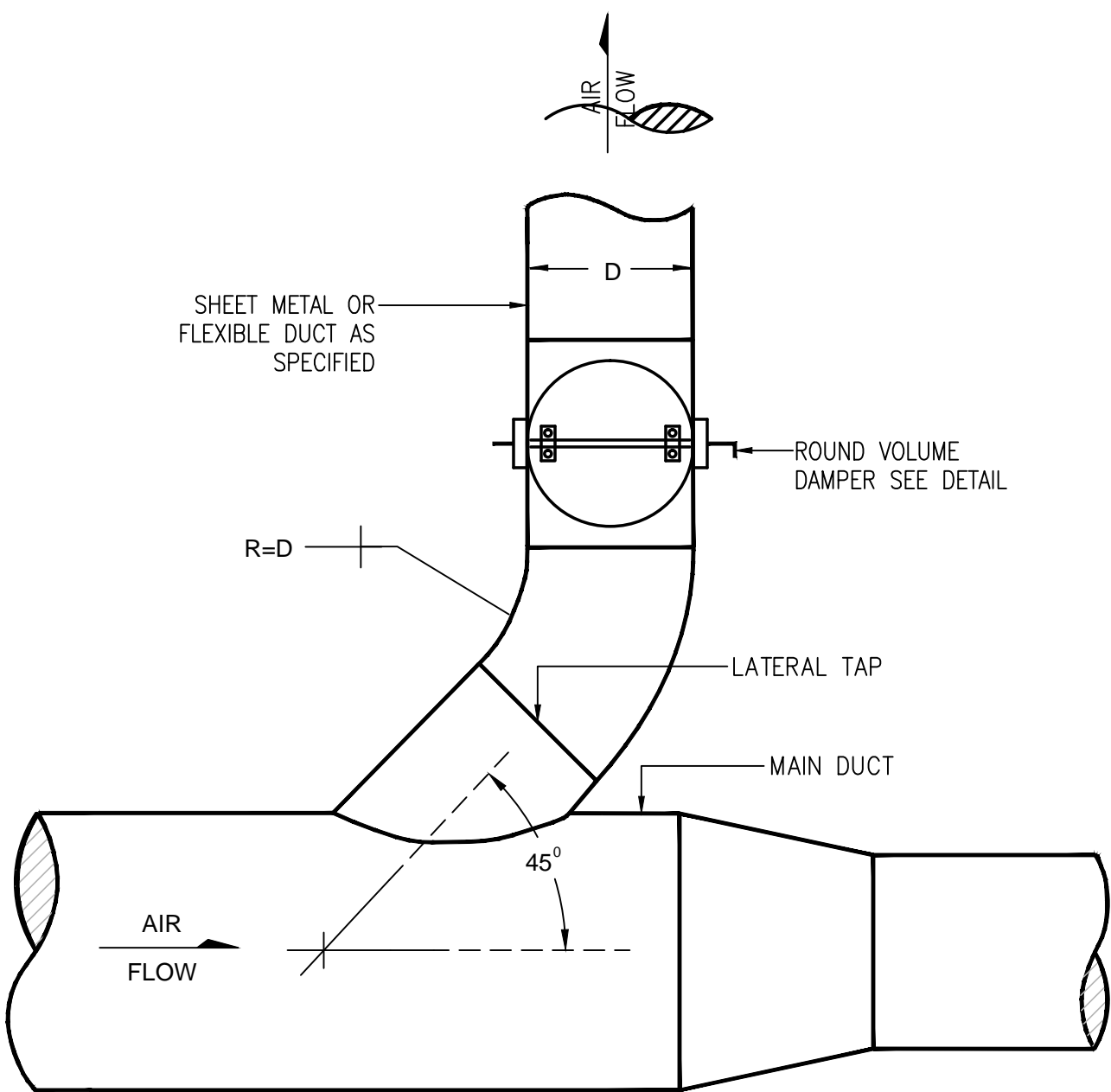
DUCT SUPPORT ON ROOF

SCALE: NONE E



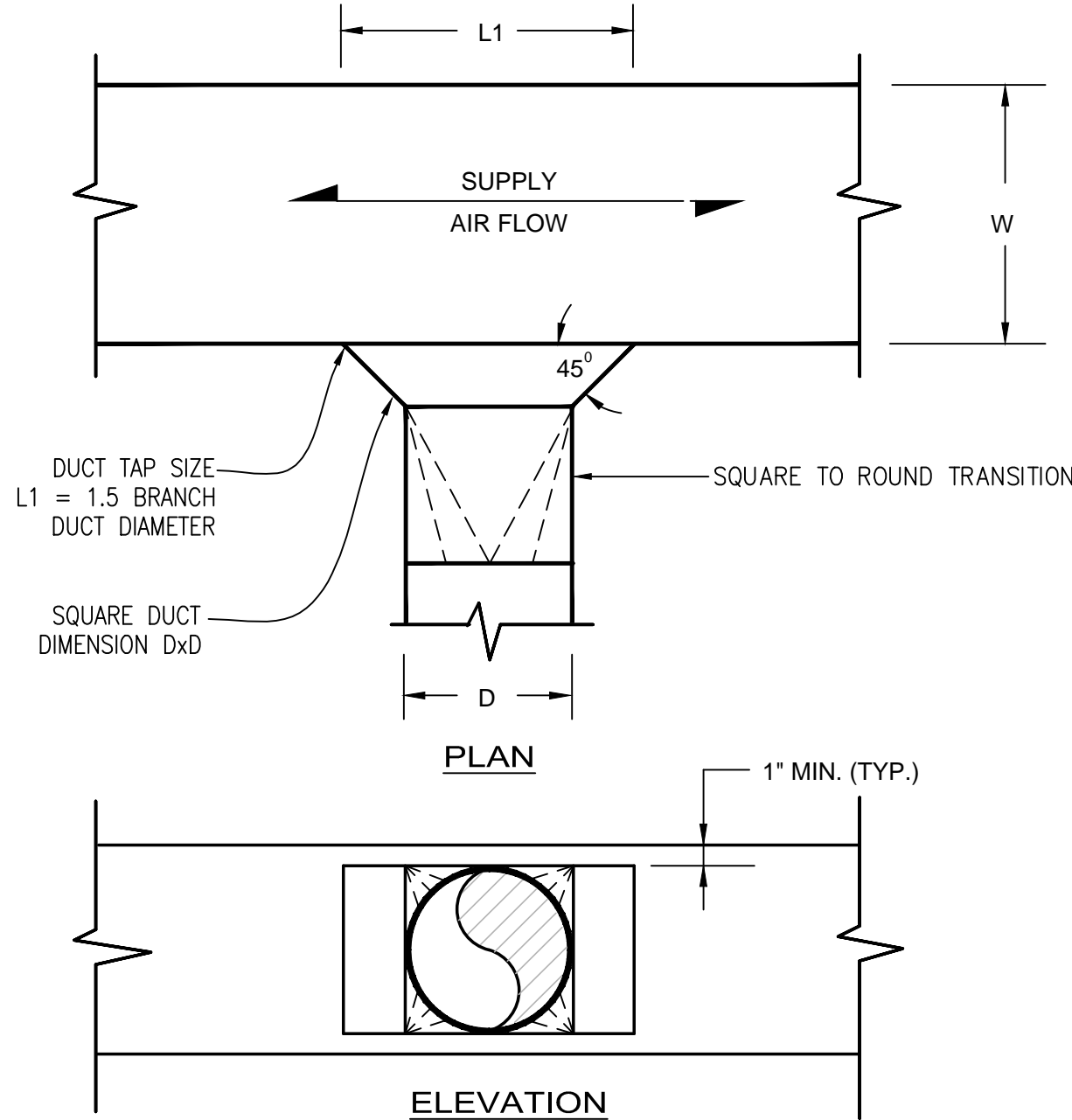
DUCT SUPPORT ON ROOF

SCALE: NONE F



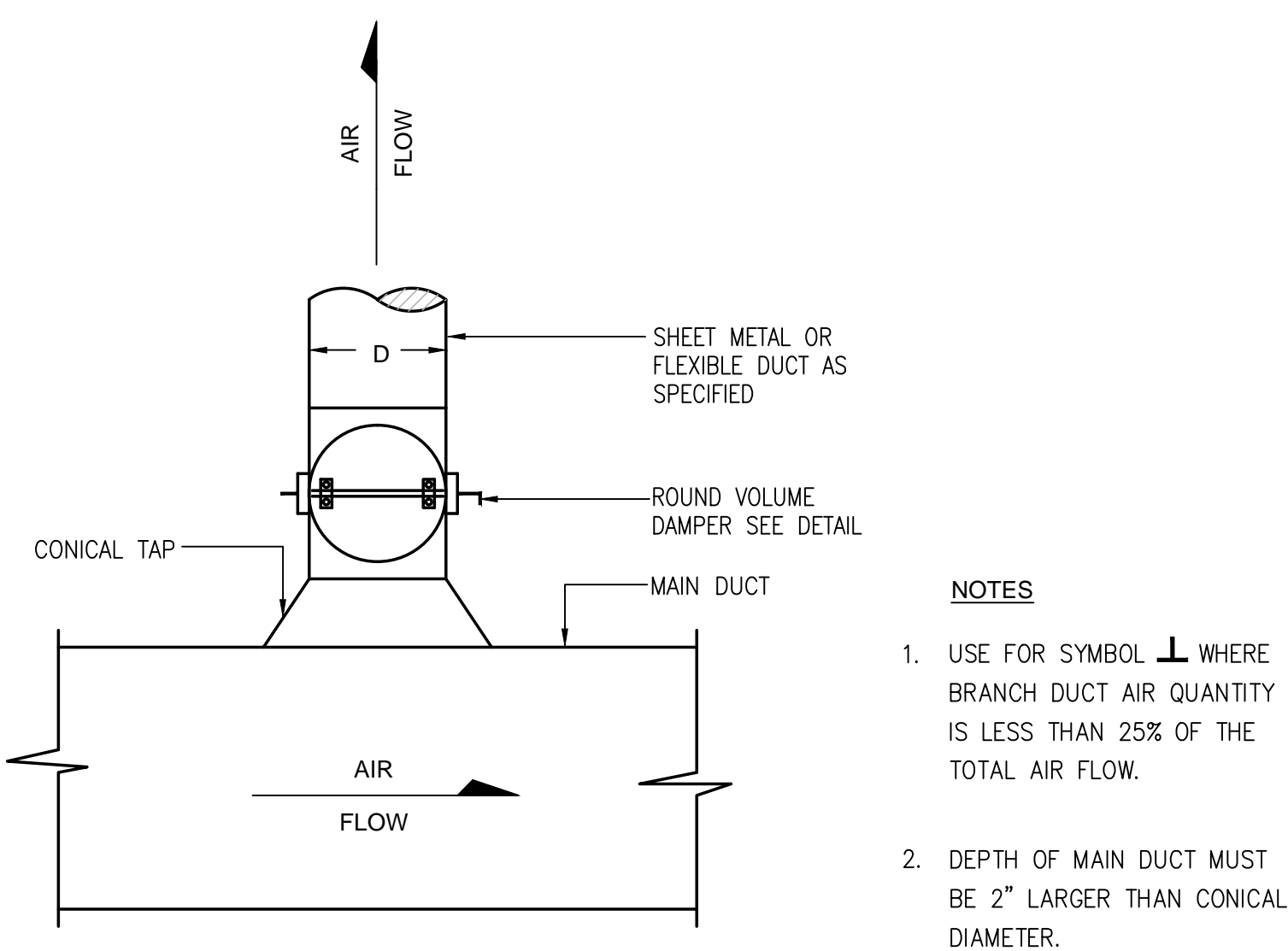
CIRCULAR DUCT LATERAL TAP WITH VOLUME DAMPER

SCALE: NONE I



RECTANGULAR DUCT SQUARE TO ROUND TAP

SCALE: NONE H



CIRCULAR DUCT CONICAL TAP WITH VOLUME DAMPER

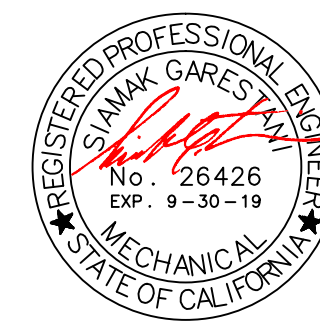
SCALE: NONE G



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

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ENCINO, CA 91316



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

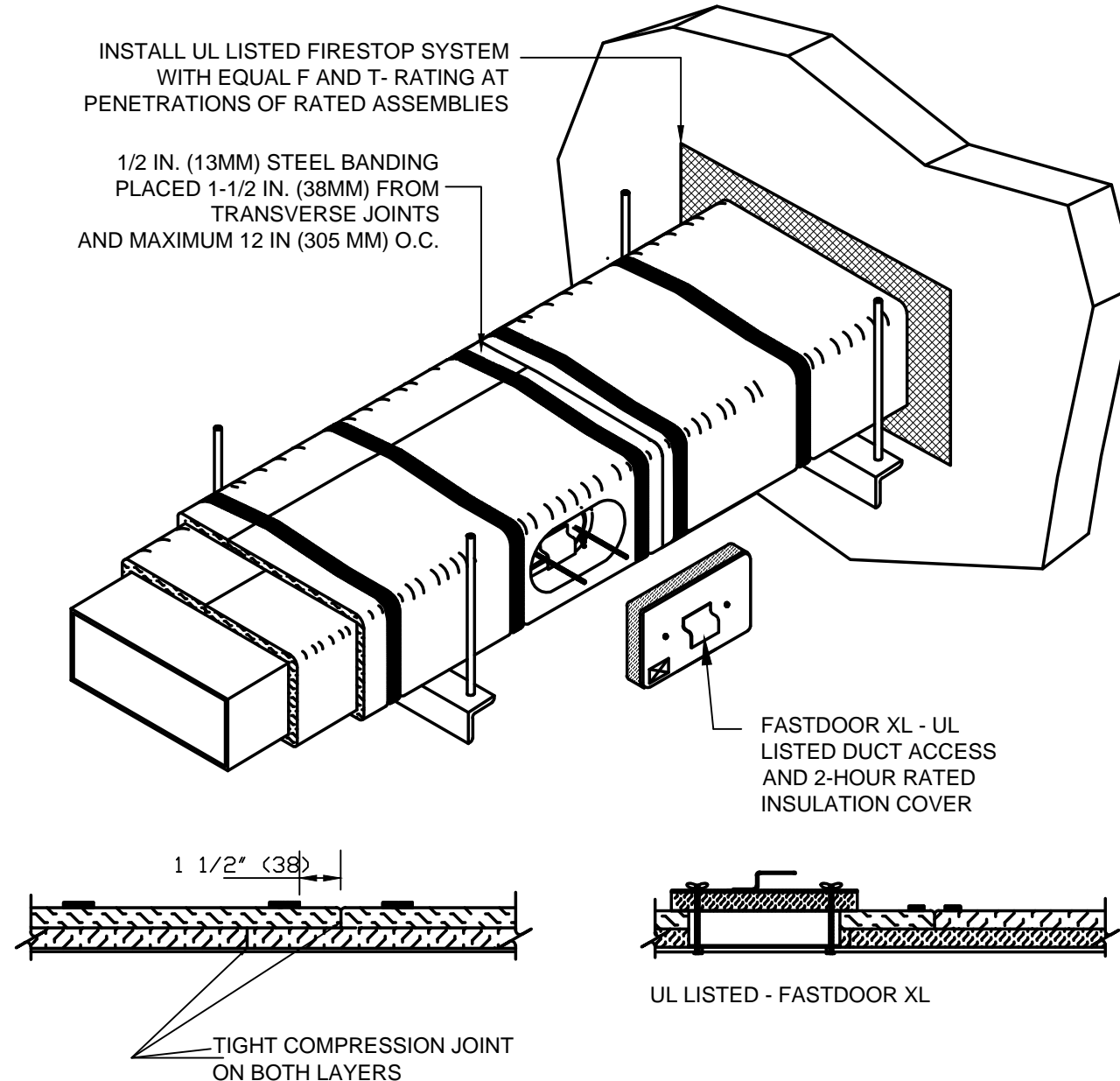
**M-3.2**







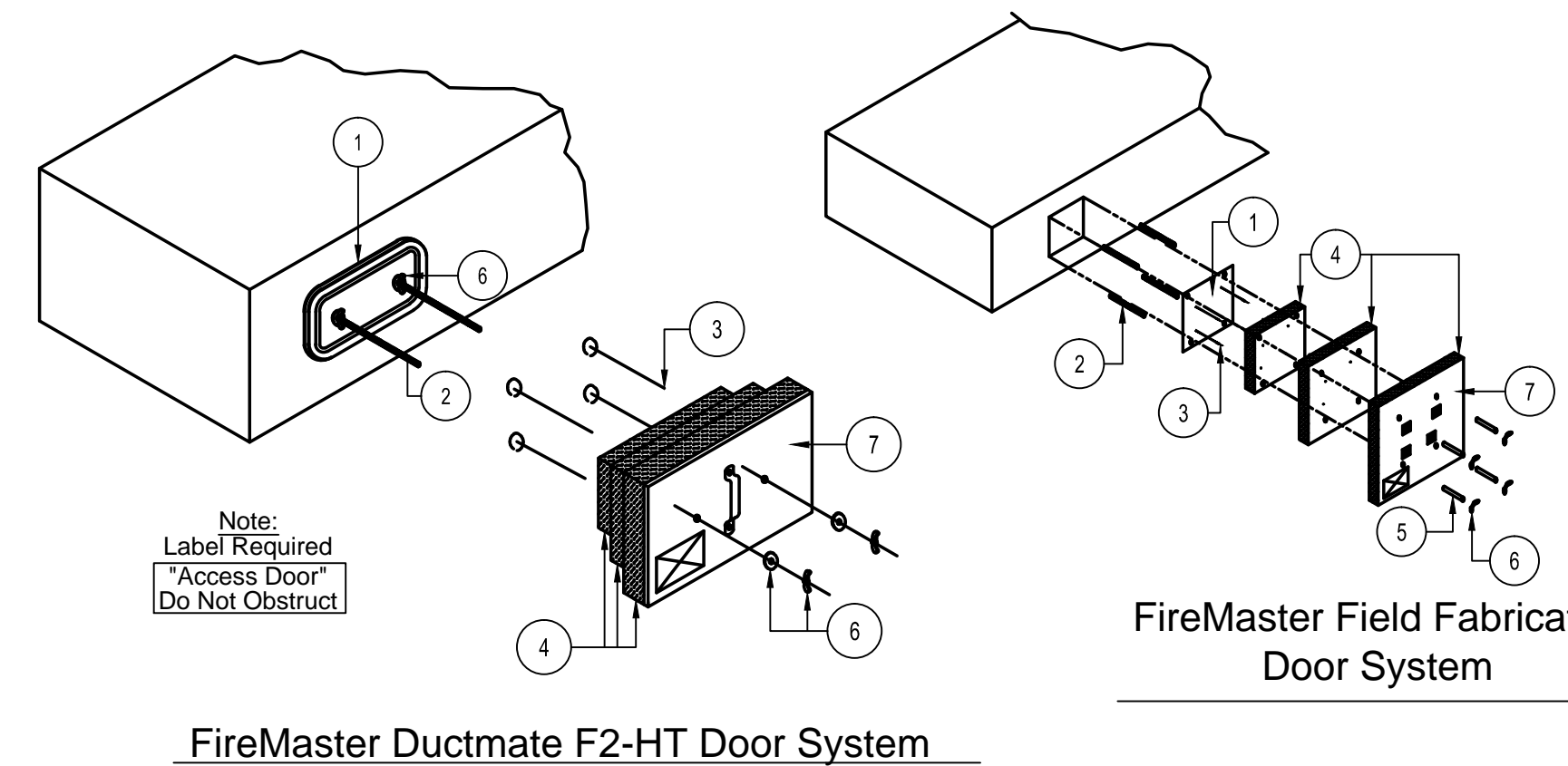
- A. THERMAL CERAMICS FIREMASTER FASTWRAP XL IS TESTED TO ASTM E2336 AND UL LISTED PER HNKT.G18 TO PROVIDE ZERO CLEARANCE TO COMBUSTIBLES AND TO PROVIDE A 1- OR 2- HOUR ENCLOSURE. THROUGH PENETRATIONS FIRESTOP SYSTEMS ARE TESTED IN ACCORDANCE WITH ASTM E 814 (UL 1479). ICC-ES APPROVAL PER REPORT ESR 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.



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 HNKT G-18, CERTIFYING THAT THE PRODUCT MEETS THE REQUIREMENTS OF "ASTME 2336". 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 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.

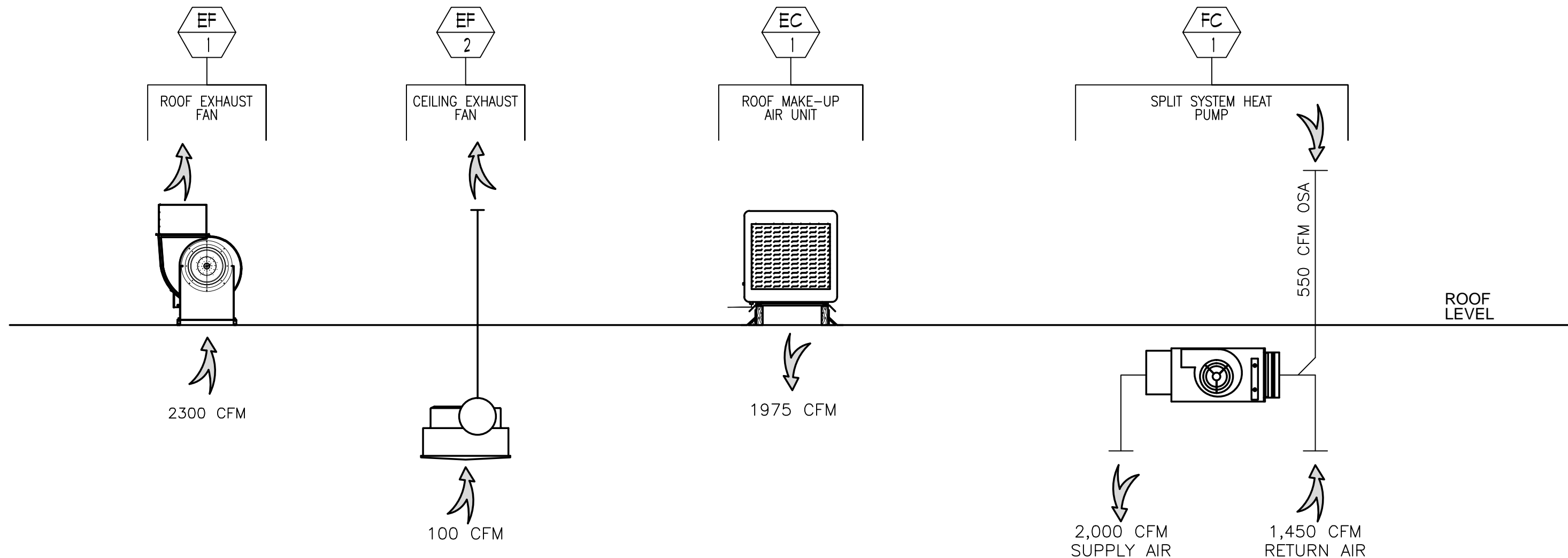
**FireMaster®FastWrap XL**  
Access Door Systems  
Commercial Kitchen Grease Duct Enclosure System

KITCHEN EXHAUST DUCT FIRE WRAP DETAIL

SCALE: NONE A

FIRE WRAP ACCESS DOOR DETAIL

SCALE: NONE B



AIR BALANCE SCHEDULE								
MARK	FRONT OF HOUSE				KITCHEN (OPEN TO DINING/ BACK OF HOUSE)			
	S/A	R/A	O/A	E/A	S/A	R/A	O/A	E/A
FC-1	1400	1450	550	-	600	-	-	-
EF-1	-	-	-	-	-	-	-	2300
EF-2	-	-	-	-	-	-	-	100
MAU-1	-	-	-	-	-	-	1975	-
TOTAL	1400	1450	550	-	600	-	1975	2400
DINING PRESSURIZATION (O/A) - (E/A)= 550 = POSITIVE					KITCHEN PRESSURIZATION (O/A) - (E/A)= -425 = NEGATIVE			
NET BUILDING PRESSURIZATION (DINING + KITCHEN) = 75 (POSITIVE)								

RESTAURANT AREA AIR DIAGRAM

SCALE: NONE C

CAPTRATE® GREASE-STOP® SOLO FILTER INFORMATION						CAPTRATE & KLEEN-GARD FILTERS ARE BUILT IN COMPLIANCE WITH	
NOM. SIZE (H x W)	ACTUAL DIMENSIONS (H x W x D)	FREE AREA (SQ. FEET)	WEIGHT (LBS)	VELOCITY (FPM)	STATIC PRESSURE (WATER GAUGE)	NFPA #96 UL STANDARD #2 INT. MECH. CODE (IMC)	
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

HOOD DATA						
HOOD #	EXHAUST AIR FLOW REQUIRED PER MANUFACTURER (CAPTIVEAIRE)	EXHAUST AIR PROVIDED	DUCT SIZE	DUCT VELOCITY	MAKE-UP PROVIDED	
				( CFM X 144 DUCT SIZE )	MAU	AC'S OSA
1	2300	2300	(1) 16"	2300 X 144 (1) 8X8X3.14 = 1648 FPM	1975 CFM	325 CFM

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

FILTER CALCULATION

SCALE: NONE D

HOOD CALCAULATION

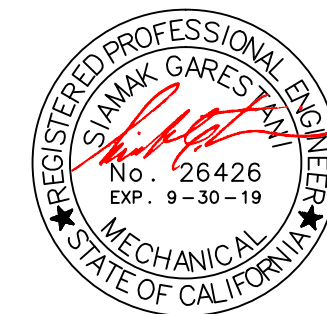
SCALE: NONE E



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ENCINO, CA 91316



PROJECT INFORMATION

GAMBOGE

1822 N BROADWAY  
LOS ANGELES, CA 90031

SUBMITTALS

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

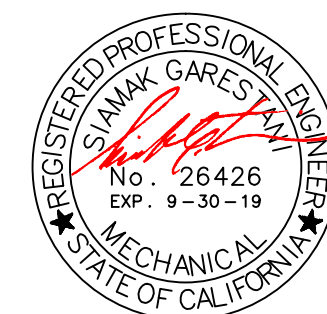
SHEET NAME

HVAC DETAILS

SHEET NUMBER

M-3.4



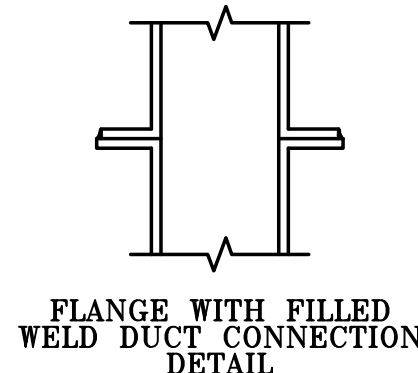


# GAMBOGE

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

## HVAC DETAILS

M-3.5



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

- ## 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-EXTINGUISHING 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 REQUIRE.
  - 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



HOOD INFORMATION - Job#3680286

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

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

HOOD INFORMATION

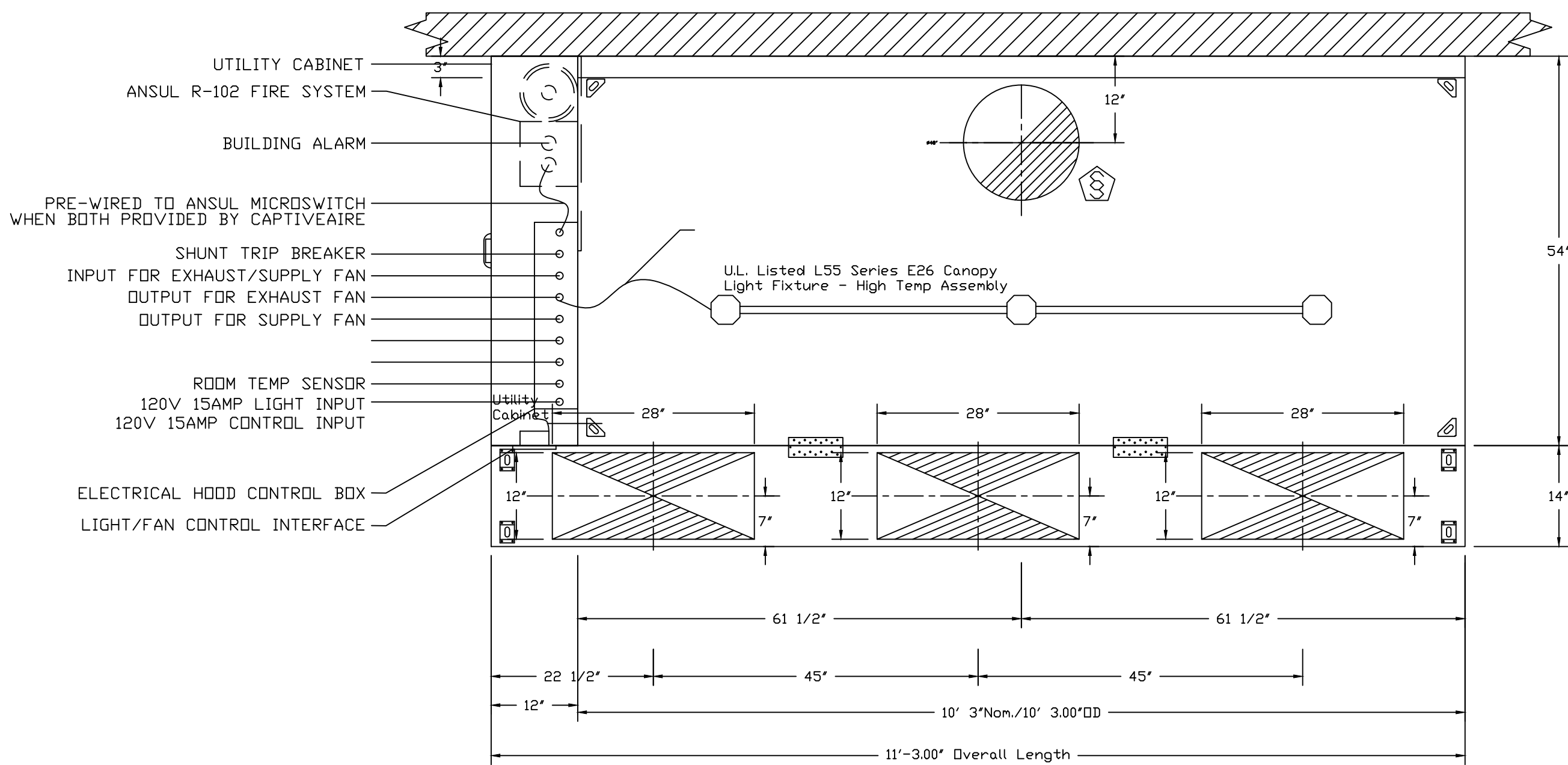
HOOD NO.	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WGT	
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL			SWITCHES
												TYPE	SIZE	MODEL #			QUANTITY
1		Captrate Solo Filter	7	20"	16"	85% See Filter 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

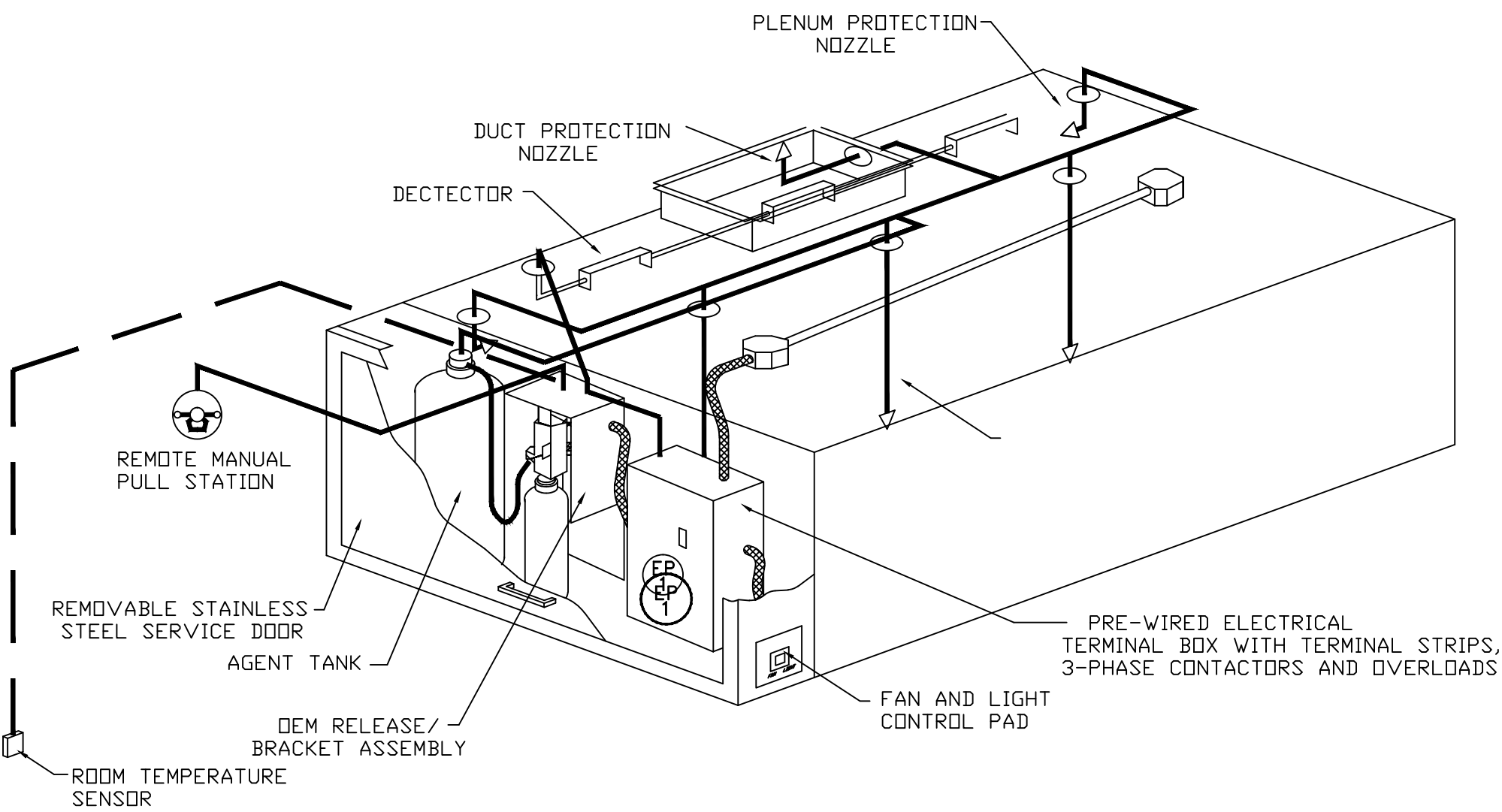
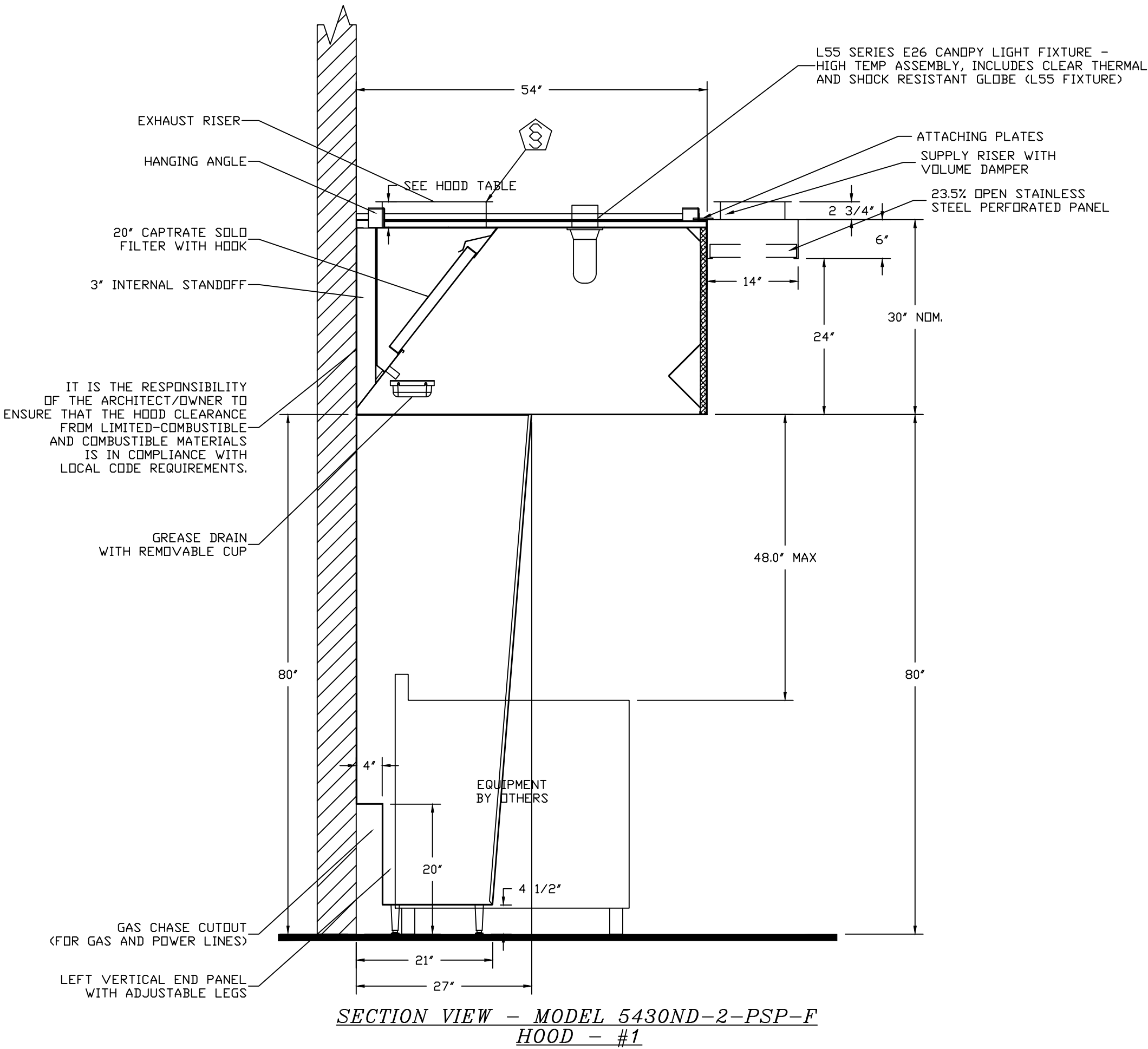
HOOD NO.	TAG	OPTION
1		LEFT VERTICAL END PANEL 27" Top Width, 21" Bottom Width, 80" High Insulated 430 SS

PERFORATED SUPPLY PLENUM(S)

HOOD NO.	TAG	PDS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							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"



PLAN VIEW - Hood #1  
10' 3.00" LONG 5430ND-2-PSP-F



TYPICAL INTEGRATED COMPONENT LAYOUT DETAIL

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

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH



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

ROOM TEMPERATURE SENSOR

DIMENSIONS: 3.25"H X 2"W

Provides room override based on temperature differential between the room and duct. Installed by electrician on a wall, 5'-6" off the finished floor, in the space but not directly under the hood or close to an appliance (including the electrical control box) so the reading is accurate for space.

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

**CAPTIVE-AIRE**  
SOUTHERN CALIFORNIA OFFICE  
www.captiveaire.com

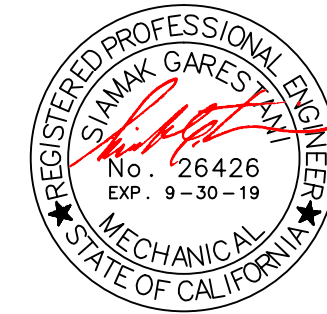
3002 Dow Ave., Suite 410, Tustin, CA, 92780 PHONE: (714) 957-1500 FAX: (919) 227-5975 EMAIL: reg86@captiveaire.com



FE DESIGN & CONSULTING

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

**FE GROUP, INC.**  
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6345 BALBOA BLVD., TEL. (818) 783-6965  
BUILDING 4, SUITE #288 FAX (818) 783-6996  
ENCINO, CA 91316



PROJECT INFORMATION

**GAMBOGE**

1822 N BROADWAY  
LOS ANGELES, CA 90031

SUBMITTALS

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

SHEET NAME

**CAPTIVE AIRE  
HOOD SPEC'S**

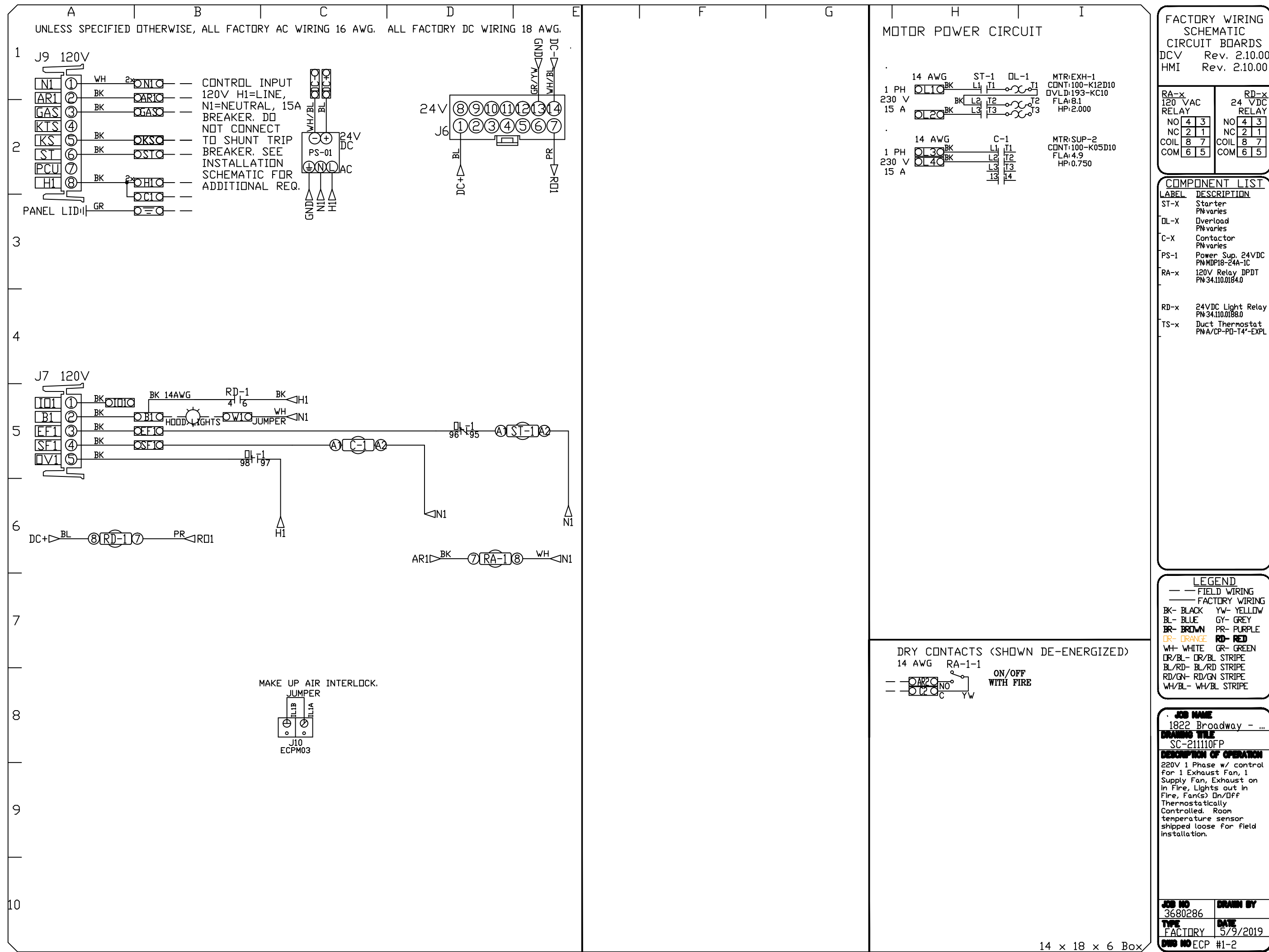
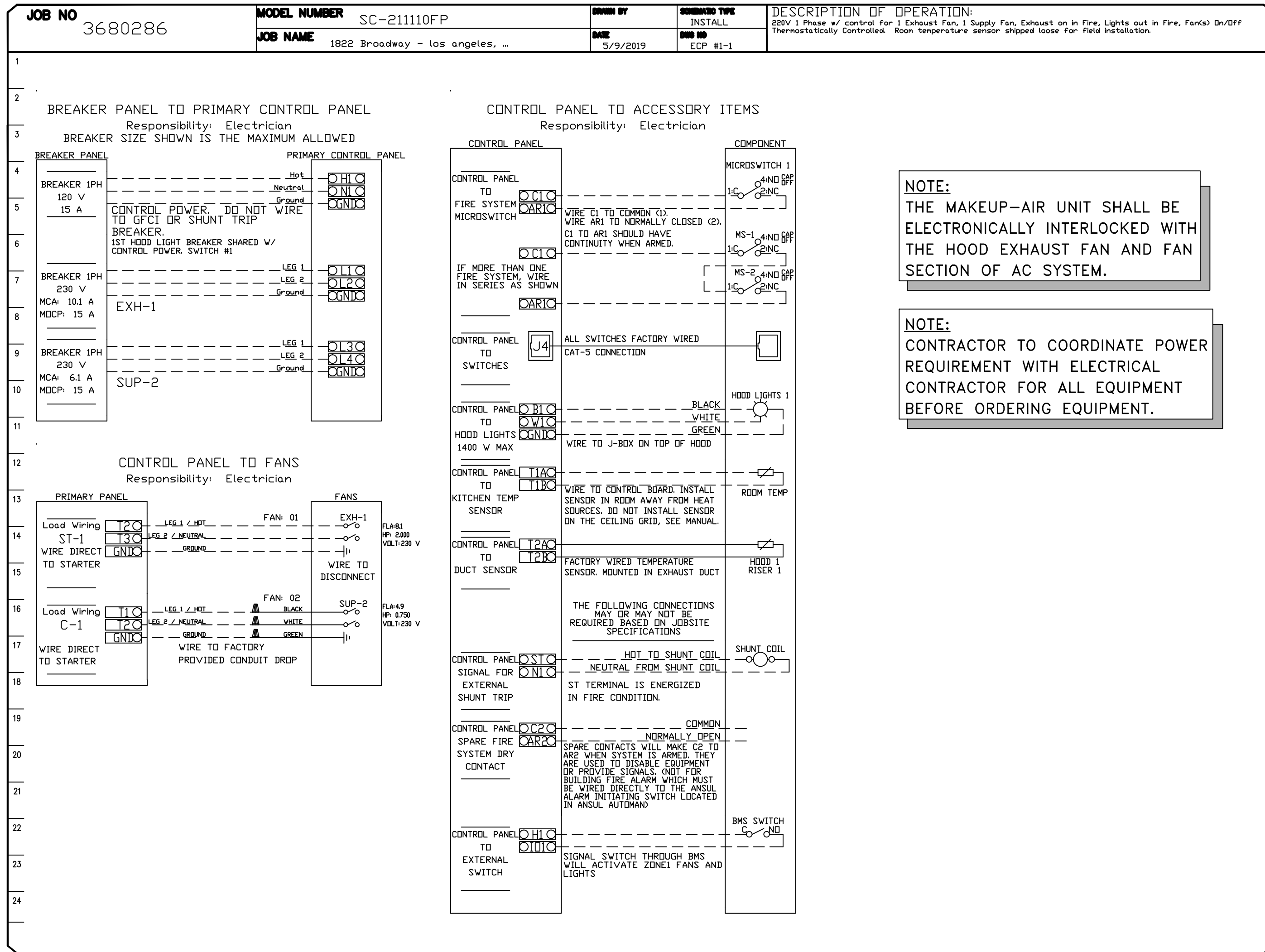
SHEET NUMBER

**M-4.0**



ELECTRICAL PACKAGE – Job#3680286

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED			
				LOCATION	QUANTITY		TYPE	?	H.P.	VOLT FLA
1		SC-21110FP	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





Project Name:	Gamboe	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.cibd16x

A. PROJECT GENERAL INFORMATION				
1.	Project Location (city)	Los Angeles	8.	Standards Version
2.	CA Zip Code	90031	9.	Compliance Software (version)
3.	Climate Zone	9	10.	Weather File
4.	Total Conditioned Floor Area in Scope	1,078 ft²	11.	Building Orientation (deg)
5.	Total Unconditioned Floor Area	0 ft²	12.	Permitted Scope of Work
6.	Total # of Stories (Habitable Above Grade)	1	13.	Building Type(s)
7.	Total # of dwelling units	0	14.	Gas Type

B. COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft²-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 Fans	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 Ltg	--	--	--	--	
Process Motors	--	--	--	--	
TOTAL	1,369.38	1,286.97	--	6.0%	

Project Name:	Gamboe	NRCC-PRF-01-E	Page 3 of 20
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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	NRCC-PRF-ENV-DETAILS (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-ENV-01 / 02 / 03 / 04 / 05 / 06-E	
	<input type="checkbox"/> NA		
Mechanical	<input checked="" type="checkbox"/> Performance	NRCC-PRF-MCH-DETAILS (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-MCH-01 / 02 / 03 / 04 / 05 / 06 / 07-E	
	<input type="checkbox"/> NA		
Domestic Hot Water	<input checked="" type="checkbox"/> Performance	NRCC-PRF-PLB-DETAILS (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-PLB-01-E	
	<input type="checkbox"/> NA		
Lighting (Indoor Conditioned)	<input type="checkbox"/> Performance	NRCC-PRF-LTI-DETAILS (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-LTI-01 / 02 / 03 / 04 / 05-E	
	<input checked="" type="checkbox"/> NA		
Covered Process: Commercial Kitchens	<input type="checkbox"/> Performance	S2 (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-PRC-01/ 03-E	
	<input checked="" type="checkbox"/> NA		
Covered Process: Computer Rooms	<input type="checkbox"/> Performance	S3 (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-PRC-01/ 04-E	
	<input checked="" type="checkbox"/> NA		
Covered Process: Laboratory Exhaust	<input type="checkbox"/> Performance	S4 (section of the NRCC-PRF-01-E)	
	<input type="checkbox"/> Prescriptive	NRCC-PRC-01/ 09-E	
	<input checked="" type="checkbox"/> NA		

Project Name:	Gamboe	NRCC-PRF-01-E	Page 2 of 20
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C. PRIORITY PLAN CHECK/ INSPECTION ITEMS (in order of highest to lowest TDV energy savings)	
1st	Indoor Fans: Check envelope and mechanical
2nd	Domestic Hot Water: Check mechanical
3rd	Space Heating: Check envelope and mechanical
4th	Heat Rejection: Check envelope and mechanical
5th	Pumps & Misc.: Check mechanical
6th	Indoor Lighting: Check lighting
7th	Space Cooling: Check envelope and mechanical

Compliance Margin By Energy Component (from Table B column 4)

Indoor Fans

Domestic Hot Water

Space Heating

Heat Rejection

Pumps & Misc.

Indoor Lighting

Space Cooling

Penalty

Energy Credit

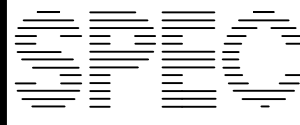
D. EXCEPTIONAL CONDITIONS
This project uses the Simplified Geometry Performance Modeling Approach which is not capable of modeling daylighting controls and assumes the prescriptive Secondary Daylit Control requirements are met. PRESCRIPTIVE COMPLIANCE documentation (form NRCC-LTI-02-E) for the requirements 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 Name:	Gamboe	NRCC-PRF-01-E	Page 4 of 20
Project Address:	1822 Broadway Los Angeles 90031	Calculation Date/Time:	17:08, Wed, Jul 24, 2019
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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	Yes	NA	Mandatory 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"/>	Commissioning: §120.8 Simple Systems Complex Systems	NRCC-CXR-01 / 02 / 03 / 05-E NRCC-CXR-01 / 02 / 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"/>	Electrical: §130.5	NRCC-ELC-01-E
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lighting (Sign) §140.8	NRCC-LTS-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"/>	Solar Thermal Water Heating: §140.5	NRCC-STH-01-E	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Covered Process: §120.6 Parking Garage Commercial Refrigeration Warehouse Refrigeration Compressed Air Process Boilers	NRCC-PRC-01-E NRCC-PRC-02-E NRCC-PRC-05-E NRCC-PRC-06/07/08-E NRCC-PRC-10-E NRCC-PRC-11-E



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ENCINO, CA 91316



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-4.0



Project Name:	Gamboge	NRCC-PRF-01-E	Page 5 of 20
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cibd16x

H. CERTIFICATE OF INSTALLATION, CERTIFICATE OF ACCEPTANCE & CERTIFICATE OF VERIFICATION SUMMARY (NRCI/NRCA/NRCV) – 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.

Building Component	Compliance Forms (required for submittal)	Pass	Fail
Envelope	<input checked="" type="checkbox"/> NRCH-ENV-01-E - For all buildings	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/> NRCA-ENV-02-F- NFRC label verification for fenestration	<input type="checkbox"/>	<input type="checkbox"/>
Mechanical	<input type="checkbox"/> NRCH-MCH-01-E - For all buildings with Mechanical Systems	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/> NRCA-MCH-02-A- Outdoor Air	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/> NRCA-MCH-03-A – Constant Volume Single Zone HVAC	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-04-H- Air Distribution Duct Leakage	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-05-A- Air Economizer Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-06-A- Demand Control Ventilation	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-07-A – Supply Fan Variable Flow Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-08-A- Valve Leakage Test	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-09-A – Supply Water Temp Reset Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-10-A – Hydronic System Variable Flow Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-11-A – Auto Demand Shed Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-12-A- Packaged Direct Expansion Units	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-13-A- Air Handling Units and Zone Terminal Units	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-14-A- Distributed Energy Storage	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-15-A – Thermal Energy Storage	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-16-A- Supply Air Temp Reset Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-17-A – Condensate Water Temp Reset Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-MCH-18-A- Energy Management Controls Systems	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCV-MCH-04-H- Duct Leakage Test	<input type="checkbox"/>	<input type="checkbox"/>

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

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Project Name:	Gamboge	NRCC-PRF-01-E	Page 7 of 20
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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cibd16x

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Building Component	Compliance Forms (required for submittal)	Pass	Fail
Covered Process	<input type="checkbox"/> NRCH-PRC-01-E Covered Processes	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-01-F- Compressed Air Systems	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-02-F- Kitchen Exhaust	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-03-F- Garage Exhaust	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-04-F- Refrigerated Warehouse- Evaporator Fan Motor Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-05-F- Refrigerated Warehouse- Evaporative Condenser Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-06-F- Refrigerated Warehouse- Air Cooled Condenser Controls	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-07F- Refrigerated Warehouse- Variable Speed Compressor	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> NRCA-PRC-08-F- Electrical Resistance Underslab 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 ft²	5.	Number of Floors Above Grade	1	Confirmed	Pass	Fail
2.	Total Unconditioned Floor Area	0 ft²	6.	Number of Floors Below Grade	0			
3.	Addition Conditioned Floor Area	327 ft²						
4.	Addition Unconditioned Floor Area	0 ft²						
7. Opaque Surfaces & Orientation		8. Total Gross Surface Area	9. Total Fenestration Area	10. Window to Wall Ratio				
North Wall		601 ft²	38 ft²	06.3%	<input type="checkbox"/>	<input type="checkbox"/>		
East Wall		252 ft²	0 ft²	00.0%	<input type="checkbox"/>	<input type="checkbox"/>		
South Wall		547 ft²	40 ft²	07.3%	<input type="checkbox"/>	<input type="checkbox"/>		
West Wall		279 ft²	108 ft²	38.8%	<input type="checkbox"/>	<input type="checkbox"/>		
Total		1,679 ft²	186 ft²	11.1%	<input type="checkbox"/>	<input type="checkbox"/>		
Roof		402 ft²	0 ft²	00.0%	<input type="checkbox"/>	<input type="checkbox"/>		

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

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Compliance Scope:	ExistingAdditionAndAlteration	Input File Name:	19-026 1822 Broadway.cibd16x

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

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

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

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Project Name:	Gamboge	NRCC-PRF-01-E	Page 8 of 20
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J. FENESTRATION ASSEMBLY SUMMARY

1.	2.	3.	4.	5.	6.	7.	8.	9.	§ 110.6		Confirmed	
Fenestration Assembly Name / Tag or I.D.	Fenestration Type / Product Type / Frame Type	Certification Method¹	Assembly Method	Area ft²	Overall U-factor	Overall SHGC	Overall VT	Status²	Pass	Fail		
(N) Window	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	27	1.19	0.83	0.50	N	<input type="checkbox"/>	<input type="checkbox"/>		
(N) Door	VerticalFenestration FixedWindow N/A	NFRC Rated	Manufactured	121	1.19	0.83	0.50	N	<input type="checkbox"/>	<input type="checkbox"/>		
Existing Window	VerticalFenestration FixedWindow MetalFraming	Default Performance	Manufactured	38	1.19	0.83	0.77	E	<input type="checkbox"/>	<input type="checkbox"/>		

¹ Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Center of Glass (COG) values are for the glass-only, determined by the manufacturer, and are shown for ease of verification. Site-built fenestration values are calculated per Nonresidential Appendix NA6 and are used in the analysis.

² Status: N - New, A - Altered, E - Existing

Taking compliance credit for fenestration shading devices? (If "Yes", see NRCC-PRF-ENV-DETAILS for more information)

No

K. OPAQUE SURFACE ASSEMBLY SUMMARY

1.	2.	3.	4.	5.	6.	7.	8.	§ 120.7/ § 140.3		Confirmed	
Surface Name	Surface Type	Area (ft²)	Framing Type	Cavity R-Value	Continuous R-Value	U-Factor / F-Factor / C-Factor	Status³	Pass	Fail		
(E) CMU Wall7	ExteriorWall	1128	NA	0	NA	U-Factor: 0.629	E	<input type="checkbox"/>	<input type="checkbox"/>		
Slab On Grade17	UndergroundFloor	751	NA	0	NA	F-Factor: 0.730	E	<input type="checkbox"/>	<input type="checkbox"/>		
R-30 Roof Attic19	Roof	75	Wood	30	NA	U-Factor: 0.038	E	<input type="checkbox"/>	<input type="checkbox"/>		
(N) CMU Wall23	ExteriorWall	550	NA	0	NA	U-Factor: 0.629	N	<input type="checkbox"/>	<input type="checkbox"/>		
(N) Slab On Grade30	UndergroundFloor	327	NA	0	NA	F-Factor: 0.730	N	<input type="checkbox"/>	<input type="checkbox"/>		
New Roof32	Roof	327	NA	0	19	U-Factor: 0.045	N	<input type="checkbox"/>	<input type="checkbox"/>		

³ Status: N - New, A - Altered, E - Existing

CA Building Energy Efficiency Standards- 2016 Nonresidential Compliance

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

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FE DESIGN & CONSULTING

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ENCINO, CA 91316

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-4.1



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L. ROOFING PRODUCT SUMMARY							§ 140.3	Confirmed	
1.	2.	3.	4.	5.	6.	7.		Pass	Fail
Product Type	Product Density (lb/ft²)	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		<input type="checkbox"/>	<input type="checkbox"/>
New Roof32	5.582	0.08	0.75	NA	No	NA		<input type="checkbox"/>	<input type="checkbox"/>

M. HVAC SYSTEM SUMMARY (see NRCC-PRF-MCH-DETAILS for more information)											§ 110.1 / § 110.2	Confirmed	
Dry System Equipment¹ (Fan & Economizer info included below in Table N)												Pass	Fail
1.	2.	3.	4.	5.	6.	7.	8.	9.		10.	11.		
Equip Name	Equip Type	System Type (Simple² or Complex³)	Qty	Total Heating Output (kBtu/h)	Supp Heat Source (V/N)	Supp Heat Output (kBtu/h)	Total Cooling Output (kBtu/h)	Efficiency		Acceptance Testing Required? (V/N)⁴	Status⁵	Pass	Fail
								Cooling	Heating				
FC/CU-1	SZHP (Split3Phase)	Simple	1	57	No	0	59	SEER-14.00 / EER-11.00	HSPF-8.20	Yes	N	<input type="checkbox"/>	<input type="checkbox"/>
RTU-1	SZHP (Packaged3Phase)	Simple	1	23	No	0	23	SEER-14.50 / EER-12.00	HSPF-8.00	Yes	N	<input type="checkbox"/>	<input type="checkbox"/>

¹ Dry System Equipment includes furnaces, air handling units, heat pumps, etc.  
² Simple Systems must complete NRCC-CXR-03-E commissioning design review form  
³ Complex Systems must complete NRCC-CXR-04-E commissioning design review form  
⁴ A summary of which acceptance tests are applicable is provided in NRCC-PRF-MCH-DETAILS  
⁵ Status: N – New, A – Altered, E – Existing

Wet System Equipment <sup>1</sup>								Pumps					Confirmed	
12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	Pass	Fail
Equip Name	Equip Type	Qty	Vol (gal)	Rated Capacity (kBtu/h)	Efficiency	Standby Loss	Tank Ext. R Value	Qty	GPM	HP	VSD (Y/N)	Status <sup>2</sup>		
American Standard D-80-122	Storage	1	80.00	125	ThrmL Eff.: 0.76	SBLF: 0.001	NA	NA	NA		No	N	<input type="checkbox"/>	<input type="checkbox"/>
American Standard LDN-CE-3	Storage	1	30.00	15	EF: 0.93	SBLF: NA	NA	NA	NA		No	N	<input type="checkbox"/>	<input type="checkbox"/>

¹ Wet System Equipment includes boilers, chillers, cooling towers, water heaters, etc.  
² Status: N – New, A – Altered, E – Existing

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P. SYSTEM DISTRIBUTION SUMMARY							§ 120.4/ § 140.4(I)	Confirmed	
Dry System Distribution								Pass	Fail
1.	2.	3.	4.	5.		6.			
Equip Name	Equip Type	Duct Leakage and Sealing Required per 140.4(I)	Duct Leakage will be verified per NA1 and NA2	Insulation R-Value	Location	Status¹			
FC/CU-1	SZHP	No	No	4.2	Conditioned	N		<input type="checkbox"/>	<input type="checkbox"/>
RTU-1	SZHP	No	No	8.0	Unconditioned	N		<input type="checkbox"/>	<input type="checkbox"/>

Does the Project Include Zonal Systems? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Does the Project Include a Solar Hot Water System? (If "Yes", see NRCC-PRF-MCH-DETAILS for system information)	No
Multifamily or Hotel/ Motel Occupancy? (If "Yes", see NRCC-PRF-MCH-DETAILS for DHW system information)	No

Q. INDOOR CONDITIONED LIGHTING GENERAL INFO (see NRCC-PRF-LTI-DETAILS for more info) <sup>3</sup>						\$ 140.6	
						Confirmed	
1.	2.	3.	4.	5.		Pass	Fail
Occupancy Type <sup>1</sup>	Conditioned Floor Area <sup>2</sup> (ft <sup>2</sup> )	Installed Lighting Power (Watts)	Lighting Control Credits (Watts)	Additional (Custom) Allowance			
				Area Category Footnotes	Tailored Method (Watts)	<input type="checkbox"/>	<input type="checkbox"/>
Dining Area	327	327	0	0	0	<input type="checkbox"/>	<input type="checkbox"/>
Building Totals:	327	327	0	0	0		

¹ See Table 140.6-C  
² See NRCC-LTI-01-E for unconditioned spaces  
³ Lighting information for existing spaces modeled is not included in the table

R. INDOOR CONDITIONED LIGHTING SCHEDULE (Adapted from NRCC-LTI-01-E)¹	§ 130.0
This Section Does Not Apply	

¹ 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	§ 140.9
This Section Does Not Apply	

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Discrepancy between modeled and designed equipment sizing? (If "Yes", see Table F. "Additional Remarks" for an explanation)	No
---	----

N. ECONOMIZER & FAN SYSTEMS SUMMARY¹											§ 140.4	Confirmed	
1.	2.	3.				4.					5.	Pass	Fail
Equip Name	Outside Air	Supply Fan				Return Fan					Economizer Type (if present)	Pass	Fail
	CFM	CFM	HP	BHP	TSP (inch WC)	Control	CFM	HP	BHP	TSP (inch WC)			
FC/CU-1	113	2000	1.000	1.000	1.90	ConstantVolume	NA	NA	NA	NA	NoEconomizer	<input type="checkbox"/>	<input type="checkbox"/>
RTU-1	164	750	0.500	0.500	2.12	ConstantVolume	NA	NA	NA	NA	NoEconomizer	<input type="checkbox"/>	<input type="checkbox"/>

¹ Mechanical ventilation calculations and exhaust fans are included in the NRCC-PRF-MCH-DETAILS section

O. EQUIPMENT CONTROLS							§ 120.2	Confirmed	
1.	2.	3.						Pass	Fail
Equip Name	Equip Type	Controls							
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"/>

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S2. COVERED PROCESS SUMMARY – COMMERCIAL KITCHENS					\$ 140.9	
Space Name	Exhaust Hood Style	Exhaust Hood Duty	Exhaust Length (ft)	Exhaust Flow Rate (cfm)	Confirmed	
					Pass	Fail
S-1-(N) Service Area/(N) Cust.		Light			<input type="checkbox"/>	<input type="checkbox"/>
		Light			<input type="checkbox"/>	<input type="checkbox"/>
		Light			<input type="checkbox"/>	<input type="checkbox"/>
		Light			<input type="checkbox"/>	<input type="checkbox"/>
		Light			<input type="checkbox"/>	<input type="checkbox"/>

S3. COVERED PROCESS SUMMARY – COMPUTER ROOMS	§ 140.9
This Section Does Not Apply	

S4. COVERED PROCESS SUMMARY – LABORATORY EXHAUSTS	§ 140.9
This Section Does Not Apply	

T. UNMET LOAD HOURS
This Section Does Not Apply

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)
Space Heating	--	0.4	--	4.3	--	--
Space Cooling	4.4	5.1	-0.7	--	--	--
Indoor Fans	14.0	9.6	4.4	--	--	--
Heat Rejection	--	--	--	--	--	--
Pumps & Misc.	--	--	--	--	--	--
Domestic Hot Water	--	0.4	--	29.7	17.1	12.6
Indoor Lighting	5.8	5.8	0.0	--	--	--
COMPLIANCE TOTAL	24.2	21.3	2.9	34.0	17.1	16.9
Receptacle	6.5	6.5	0.0	--	--	--

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GROUP, INC.

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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
DATE	DESCRIPTION

SHEET NAME

TITLE 24  
COMPLIANCE  
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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 Ltg	--	--	--	--	--	--
Process Motors	--	--	--	--	--	--
TOTAL	58.8	55.9	2.9	34.0	17.1	16.9

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NRCC-PRF-ENV-DETAILS -SECTION START-

A. OPAQUE SURFACE ASSEMBLY DETAILS				Confirmed	
1.	2.	3.	4.	Pass	Fail
Surface Name	Surface Type	Description of Assembly Layers	Notes		
(E) CMU Wall17	ExteriorWall	Concrete - 140 lb/ft3 - 10 in.		<input type="checkbox"/>	<input type="checkbox"/>
Slab On Grade17	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		<input type="checkbox"/>	<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.		<input type="checkbox"/>	<input type="checkbox"/>
(N) CMU Wall23	ExteriorWall	Concrete - 140 lb/ft3 - 10 in.		<input type="checkbox"/>	<input type="checkbox"/>
(N) Slab On Grade30	UndergroundFloor	Slab Type = UnheatedSlabOnGrade Insulation Orientation = None Insulation R-Value = R0		<input type="checkbox"/>	<input type="checkbox"/>
New Roof32	Roof	Compliance Insulation R19.00 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.		<input type="checkbox"/>	<input type="checkbox"/>

B. OVERHANG DETAILS (Adapted from NRCC-ENV-02-E)					Confirmed	
1.	2.	3.	4.		Pass	Fail
Fenestration Tag/ID	Fenestration Orientation	Overhang Dimensions		Side fin		
		Horizontal Projection	Distance Above Window	Vertical Projection		
(N) Roll Up Door24	West	4.0 ft.	0.5 ft.	Left: 0 ft., Right: 0 ft.	<input type="checkbox"/>	<input type="checkbox"/>
C. OPAQUE DOOR SUMMARY						
This Section Does Not Apply						

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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.	Signature Date: 07/24/2019	
Address: 6345 Balboa Blvd. Bldg 4 Suite 288	CEA Identification (If applicable): M26426	
City/State/Zip: Encino CA 91316	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 in the State of California as a civil engineer, mechanical engineer, electrical engineer, or 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		Title:
Phone:		License #:
Responsible Lighting Designer Name:		Signature: NOT IN SCOPE
Company:		Date Signed:
Address:		Declaration Statement Type:
City/State/Zip:		Title:
Phone:		License #:
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		Title: Mechanical Engineer
Phone: (818) 783-6965		License #: M-26426


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NRCC-PRF-MCH-DETAILS -SECTION START-

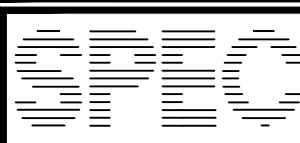
A. MECHANICAL VENTILATION AND REHEAT (Adapted from 2016-NRCC-MCH-03-E)																			Confirmed	
1. DESIGN AIR FLOWS								2. VENTILATION (§ 120.1)											Pass	Fail
CONDITIONED ZONE NAME	HEATING/COOLING SYSTEM ID	DESIGN PRIMARY AIR FLOW (CFM)	DESIGN MINIMUM AIR FLOW FRACTION	MINIMUM PRIMARY AIR FLOW FRACTION	MAXIMUM HEATING AIR FLOW (CFM)	MAXIMUM HEATING AIR FLOW FRACTION	DDC CONTROL (Y/N)	VENT SYSTEM ID	CONDITIONED AREA (ft2)	MIN. VENT PER AREA (CFM/ft2)	DESIGN NUM. OF PEOPLE (CFM/person)	MIN. VENT PER PERSON (CFM/person)	REQ'D VENT AIR FLOW (CFM)	DESIGN VENT AIR FLOW (CFM)	TRANSFER AIRFLOW (CFM)	DCU (Y/N)	Operable Window Interlock § 120.4(f) (Y/N)			
1-(N) Service Area/(N) Cust	FC/CU-1	2,000	NA	0.00	NA	NA	N	FC/CU-1	751	0.15	1.88	60.00	113	113	NA	N	NA	<input type="checkbox"/>	<input type="checkbox"/>	
2-(N) Bar (RTU-1)	RTU-1	750	NA	0.00	NA	NA	N	RTU-1	327	0.50	10.90	15.00	164	164	NA	N	NA	<input type="checkbox"/>	<input type="checkbox"/>	
TOTAL									1,078		12.78		277	277	NA			<input type="checkbox"/>	<input type="checkbox"/>	
B. ZONAL SYSTEM AND TERMINAL UNIT SUMMARY																			\$ 140.4	
1.	2.	3.	4.		5.	6.	7.			8.			Pass	Fail						
System ID	System Type	Qty	Rated Capacity (kBtu/h)		Economizer	Zone Name	Airflow (cfm)			Fan										
			Heating	Cooling			Design	Min.	Min. Ratio	BHP	Cycles	ECM Motor								
1-(N) Service Area/(N) Cust-Trm	Uncontrolled	1	NA	NA	NA	1-(N) Service Area/(N) Cust	2000	NA	0.00	NA	NA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
2-(N) Bar (RTU-1)-Trm	Uncontrolled	1	NA	NA	NA	2-(N) Bar (RTU-1)	750	NA	0.00	NA	NA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
C. EXHAUST FAN SUMMARY																				
This Section Does Not Apply																				

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FE DESIGN & CONSULTING

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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
DATE	DESCRIPTION

SHEET NAME

TITLE 24  
COMPLIANCE  
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SHEET NUMBER

M-4.3



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D. DHW EQUIPMENT SUMMARY – (Adapted from NRCC-PLB-01)											§ 110.3		Confirmed	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.			Pass	Fail
DHW Name	Heater Element Type	Tank Type	Qty	Tank Vol (gal)	Rated Input (kBtu/h)	Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss Fraction	Heat Pump Type	Tank Location or Ambient Condition				
American Standard D-80-122	Gas	Storage	1	80.00	125	Thrmf. Eff.: 0.76	NA	SBLF: 0.001	NA	NA			<input type="checkbox"/>	<input type="checkbox"/>
American Standard LDN-CE-3	Electricity	Storage	1	30.00	15	EF: 0.93	NA	SBLF: NA	NA	NA			<input type="checkbox"/>	<input type="checkbox"/>

<b>E. MULTI-FAMILY CENTRAL DHW SYSTEM DETAILS</b>
This Section Does Not Apply

<b>F. SOLAR HOT WATER HEATING SUMMARY (Adapted from NRCC-STH-01)</b>
This Section Does Not Apply

G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)														§ RA4
Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).														
Test Description	MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	Confirmed
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Duct Ducts	Economizer Controls	DCV	Supply Air Temp. Reset	Condenser Water Reset Controls	FDD for DX Units	Auto Demand Shed Control	Hyd. Variable Flow Control	Auto FDD for Air & Zone	Dis. Energy Storage DX/AC	TES Systems
Water Heater1 - SHW	1	-	-	-	-	-	-	-	-	-	-	-	-	<input type="checkbox"/>

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<b>C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)</b>	§ 140.6
Total watts	0

<b>D. GENERAL LIGHTING POWER (Adapted from NRCC-LTI-04-E)</b>	§ 140.6-D
This Section Does Not Apply	

E. GENERAL LIGHTING FROM SPECIAL FUNCTION AREAS (Adapted from NRCC-LTI-04-E)							§ 140.6(c) 3H	
Room Number	Primary Function Area	Illuminance Value (LUX)	Room Cavity Ratio (Table G)	Allowed LPD	Floor Area (ft²)	Allowed Watts	Confirmed	
NA	NA	NA	NA	NA	NA	NA	Pass	Fail

Note: Tailored Method for Special Function Areas is not currently implemented

F. ROOM CAVITY RATIO (Adapted from NRCC-LTI-04-E)							Confirmed	
Rectangular Spaces							Pass	Fail
Room Number	Task/Activity Description	Room Length (ft)	Room Width (ft)	Room Cavity Height (ft)	RCR			
NA	NA	NA	NA	NA	NA		<input type="checkbox"/>	<input type="checkbox"/>

<b>Non-Rectangular Spaces</b>
This Section Does Not Apply
Note: All applicable spaces are listed under the Non-Rectangular Spaces table

G. ADDITIONAL "USE IT OR LOSE IT" (Adapted from NRCC-LTI-04-E)						Confirmed	
1.	2.	3.	4.	Allowed Watts		Pass	Fail
Wall Display	Combined Floor Display and Task Lighting	Combined Ornamental and Special Effects Lighting	Very Valuable Merchandise	0		<input type="checkbox"/>	<input type="checkbox"/>

<b>5. Wall Display</b>
This Section Does Not Apply

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G. MECHANICAL HVAC ACCEPTANCE TESTS & FORMS (Adapted from 2016-NRCC-MCH-01-E)														§ RA4
Declaration of Required Acceptance Certificates (NRCA) – Acceptance Certificates that may be submitted. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).														
Test Description	MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A	MCH-12A	MCH-13A	MCH-14A	Confirmed
Equipment Requiring Testing or Verification	# of units	Outdoor Air	Single Zone Unitary	Air Duct Ducts	Economizer Controls	DCV	Supply Fan VAV	Valve leakage	Supply Water Temp. Reset	Hyd. Variable Flow Control	Auto Demand Shed Control	FDD for DX Units	Auto FDD for Air & Zone	Dis. Energy Storage DX/AC
FC/CU-1	1	X	X	-	-	-	-	-	-	-	-	-	-	<input type="checkbox"/>
RTU-1	1	X	X	-	-	-	-	-	-	-	-	-	-	<input type="checkbox"/>

<b>H. EVAPORATIVE COOLER SUMMARY</b>
This Section Does Not Apply

NRCC-PRF-LTI-DETAILS -SECTION START-	
A. INDOOR CONDITIONED LIGHTING CONTROL CREDITS (Adapted from NRCC-LTI-02-E)	§ 140.6
This Section Does Not Apply	

<b>B. INDOOR CONDITIONED LIGHTING MANDATORY LIGHTING CONTROLS (Adapted from NRCC-LTI-02-E)</b>	§ 130.1
This Section Does Not Apply	

§130.1(a) = Manual area controls; §130.0(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive

<b>C. TAILORED METHOD CONDITIONED LIGHTING POWER ALLOWANCE SUMMARY AND CHECKLIST (Adapted from NRCC-LTI-04-E)</b>	§ 140.6
General lighting power (see Table D)	0
General lighting power from special function areas (see Table E)	NA
Additional "use it or lose it" (See Table G)	0

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Project Name:	Gamboe	NRCC-PRF-01-E	Page 20 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.cld16x

<b>6. Floor Display and Task Lighting</b>
This Section Does Not Apply

<b>7. Combined Ornamental and Special Effects Lighting</b>
This Section Does Not Apply

<b>8. Very Valuable Merchandise</b>
This Section Does Not Apply

<b>H. INDOOR &amp; OUTDOOR LIGHTING ACCEPTANCE TESTS &amp; FORMS (Adapted from NRCC-LTI-01-E and NRCC-LTO-01-E)</b>	§ 130.4
Declaration of Required Acceptance Certificates (NRCA) –Acceptance Certificates that must be verified in the field. (Retain copies and verify forms are completed and signed to post in field for Field Inspector to verify).	

Test Description		Indoor			Outdoor	Confirmed	
		NRCA-LTI-02-A	NRCA-LTI-03-A	NRCA-LTI-04-A	NRCA-LTO-02-A	Pass	Fail
Equipment Requiring Testing or Verification	# of units	Occ Sensors / Auto Time Switch	Auto Daylight	Demand Responsive	Outdoor Controls		
Occupant Sensors	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Time Switch	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Daylighting	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demand Responsive	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outdoor Controls	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL		ENV-MM
Project Name	Gamboge	Date
		7/24/2019
DESCRIPTION		
Building Envelope Measures:		
§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.	
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.	
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.	
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.	
§110.8(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft. <sup>2</sup> of window area, 0.3 cfm/ft. <sup>2</sup> of door area for residential doors, 0.3 cfm/ft. <sup>2</sup> of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft. <sup>2</sup> for nonresidential double doors (swinging).	
§110.8(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.	
§110.8(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.	
§110.8(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).	
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows:  <b>Metal Building-</b> The weighted average U-factor of the roof assembly shall not exceed 0.098. <b>Wood Framed and Others-</b> The weighted average U-factor of the roof assembly shall not exceed 0.075. The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows:  <b>Metal Building-</b> The weighted average U-factor of the wall assembly shall not exceed 0.113. <b>Metal Framed-</b> The weighted average U-factor of the wall assembly shall not exceed 0.151. <b>Light Mass Walls-</b> A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. <b>Heavy Mass Walls-</b> An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. <b>Wood Framed and Others-</b> The weighted average U-factor of the wall assembly shall not exceed 0.110. <b>Spandrel Panels and Opaque Curtain Wall-</b> The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. <b>Demising Walls-</b> The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.	
§120.7(b):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows:  <b>Raised Mass Floors-</b> Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. <b>Other Floors-</b> The weighted average U-factor of the floor assembly shall not exceed 0.071.	
§120.7(c):		

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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
DATE	DESCRIPTION

SHEET NAME

TITLE 24  
COMPLIANCE  
FORMS

SHEET NUMBER

M-4.4