MANDATORY MEASURES

EQUIPMENT AND SYSTEMS EFFICIENCY

– ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY STANDARDS MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED TO THE ENERGY COMMISSION, AS SPECIFIED IN THOSE REGULATIONS, WHICH THE APPLIANCE COMPLIES WITH THE APPLICABLE STANDARD FOR THAT APPLIANCE. INCLUDED ARE ROOM AIR CONDITIONERS, CENTRAL AIR CONDITIONING HEAT PUMPS (REGARDLESS OF CAPACITY, EXCEPT THAT REQUIREMENTS FOR CENTRAL AIR CONDITIONING HEAT PUMPS WITH COOLING CAPACITY OF 135,000 BTU/HR OR MORE APPLY TO HEATING PERFORMANCE BUT NOT COOLING PERFORMANCE), OTHER CENTRAL AIR CONDITIONERS WITH A COOLING CAPACITY LESS THAN 135,000 BTU/HR, FAN TYPE CENTRAL FURNACES WITH INPUT RATE LESS THAN 400,000 BTU/HR, BOILERS WALL FURNACES, FLOOR FURNACES, ROOM HEATERS, UNIT HEATERS AND DUCT FURNACES SHALL HAVE BEEN CERTIFIED TO THE ENERGY COMMISSION BY ITS MANUFACTURER TO COMPLY WITH THE APPLIANCE EFFICIENCY STANDARDS.

– THE FOLLOWING SPACE–CONDITIONING EQUIPMENT MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED THAT THE EQUIPMENT MEETS OR EXCEEDS ALL APPLICABLE EFFICIENCY REQUIREMENTS LISTED IN §112 OF THE STANDARDS: ALL AIR CONDITIONERS, HEAT PUMPS AND CONDENSING UNITS >135,000 BTU/HR; ALL WATER CHILLERS; ALL GAS–FIRED BOILERS >300,000 BTU/HR; ALL OIL–FIRED BOILERS >225,000 BTU/HR; AND ALL WARM AIR FURNACES AND COMBINATION WARM AIR FURNACES/AIR–CONDITIONING UNITS >225,000 BTU/HR. FAN TYPE CENTRAL FURNACES SHALL NOT HAVE A PILOT LIGHT.

– PIPING, EXCEPT THOSE CONVEYING FLUIDS AT TEMPERATURES BETWEEN 60°F AND 105°F, OR WITHIN HVAC EQUIPMENT, SHALL BE INSULATED AND PROTECTED FROM DAMAGE IN ACCORDANCE WITH STANDARDS §123.

– AIR HANDLING DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED, SEALED, INSULATED AND PROTECTED FROM DAMAGE AS PROVIDED IN CHAPTER 6 OF THE CALIFORNIA MECHANICAL CODE (REFER TO §124).

CONTROLS

– EACH SPACE–CONDITIONING SYSTEM SERVING BUILDING TYPES SUCH AS OFFICES AND MANUFACTURING FACILITIES (AND ALL OTHERS NOT EXPLICITLY EXEMPT FROM THE REQUIREMENTS OF §122(E)) SHALL BE INSTALLED WITH AN AUTOMATIC TIME SWITCH WITH AN ACCESSIBLE MANUAL OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM DURING OFF–HOURS FOR UP TO FOUR HOURS. THE TIME SWITCH SHALL BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULES FOR WEEKDAYS AND WEEKENDS; AND HAS PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF THE DEVICE'S PROGRAM AND TIME SETTING FOR AT LEAST 10 HOURS IF POWER IS INTERRUPTED.

– EACH SPACE–CONDITIONING SYSTEM SHALL BE INSTALLED WITH AN OCCUPANCY SENSOR TO CONTROL THE OPERATING PERIOD OF THE SYSTEM.

– EACH SPACE–CONDITIONING SYSTEM SHALL BE INSTALLED WITH A FOUR–HOUR TIMER THAT CAN BE MANUALLY OPERATED TO CONTROL THE OPERATING PERIOD OF THE SYSTEM.

– EACH SPACE–CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT TEMPORARILY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN A SETBACK HEATING THERMOSTAT SETPOINT.

– EACH SPACE–CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT TEMPORARILY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN A SETUP COOLING THERMOSTAT SETPOINT.

– EACH SPACE–CONDITIONING SYSTEM SERVING MULTIPLE ZONES WITH A COMBINED CONDITIONED FLOOR AREA MORE THAN 25,000 SQUARE FEET SHALL BE PROVIDED WITH ISOLATION ZONES. EACH ZONE SHALL:
– NOT EXCEED 25,000 SQUARE FEET; SHALL BE PROVIDED WITH ISOLATION DEVICES, SUCH AS VALVES OR DAMPERS, THAT ALLOW THE SUPPLY OF HEATING OR COOLING TO BE
– SETBACK OR SHUT OFF INDEPENDENTLY OF OTHER ISOLATION AREAS; AND SHALL BE CONTROLLED BY A TIME CONTROL DEVICE AS DESCRIBED ABOVE.

– EACH SPACE–CONDITIONING ZONE SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE. WHERE USED TO CONTROL HEATING, THE CONTROL SHALL BE ADJUSTABLE DOWN TO 55°F OR LOWER. FOR COOLING, THE CONTROL SHALL BE ADJUSTABLE UP TO 85°F OR HIGHER. WHERE USED TO CONTROL BOTH HEATING AND COOLING, THE CONTROL SHALL BE CAPABLE OF PROVIDING A DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING IS SHUT OFF OR REDUCED TO A MINIMUM.

– THERMOSTATS SHALL HAVE NUMERIC SETPOINTS IN °F.

– THERMOSTATS SHALL HAVE ADJUSTABLE SETPOINT STOPS ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.

– HEAT PUMPS SHALL BE INSTALLED WITH CONTROLS TO PREVENT ELECTRIC RESISTANCE SUPPLEMENTARY HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE. ELECTRIC RESISTANCE SUPPLEMENTARY HEATER OPERATION IS PERMITTED DURING TRANSIENT PERIODS, SUCH AS START–UPS AND FOLLOWING ROOM THERMOSTAT SETPOINT ADVANCE, WHEN CONTROLS ARE PROVIDED WHICH USE PREFERENTIAL RATE CONTROL, INTELLIGENT RECOVERY, STAGING, RAMPING, OR SIMILAR CONTROL MECHANISMS DESIGNED TO PRECLUDE THE UNNECESSARY OPERATION OF SUPPLEMENTARY HEATING DURING THE RECOVERY PERIOD. SUPPLEMENTARY HEATER OPERATION IS ALSO PERMITTED DURING DEFROST.

VENTILATION

– CONTROLS SHALL BE PROVIDED TO ALLOW OUTSIDE AIR DAMPERS OR DEVICES TO BE OPERATED AT THE VENTILATION RATES AS SPECIFIED IN THESE PLANS.

– GRAVITY OR AUTOMATIC DAMPERS INTERLOCKED AND CLOSED ON FAN SHUTDOWN SHALL BE PROVIDED ON THE OUTSIDE AIR INTAKES AND DISCHARGES OF ALL SPACE–CONDITIONING AND EXHAUST SYSTEMS.

– ALL GRAVITY VENTILATING SYSTEMS SHALL BE PROVIDED WITH AUTOMATIC OR READILY ACCESSIBLE MANUALLY OPERATED DAMPERS IN ALL OPENINGS TO THE OUTSIDE, EXCEPT FOR COMBUSTION AIR OPENINGS.

COMPLETION AND BALANCING

– ALL VENTILATION SYSTEMS SHALL BE DOCUMENTED PER CALIFORNIA SAFETY CODE (TITLE 8, SECTION 5142(B)) TO BE PROVIDING THE MINIMUM REQUIRED VENTILATION RATE AS DETERMINED
USING ONE OF THE FOLLOWING PROCEDURES:
(1) AIR BALANCING: ALL SPACE–CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THESE PLANS, IN ACCORDANCE WITH THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) PROCEDURAL STANDARDS (1983), OR ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS (1989).

SERVICE WATER HEATING SYSTEMS

– THE FOLLOWING SERVICE WATER HEATING SYSTEMS AND EQUIPMENT MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED THAT THE EQUIPMENT MEETS OR EXCEEDS ALL APPLICABLE EFFICIENCY REQUIREMENTS LISTED IN THE APPLIANCE EFFICIENCY REGULATIONS OR APPENDIX B, TABLE B–9.

– UNFIRED SERVICE WATER HEATER STORAGE TANKS AND BACKUP TANKS FOR SOLAR WATER HEATING SYSTEMS SHALL HAVE EITHER:
– EXTERNAL INSULATION WITH AN INSTALLED R–VALUE OF AT LEAST R–12; INTERNAL AND EXTERNAL INSULATION WITH A COMBINED R–VALUE OF AT LEAST R–16; OR
– SUFFICIENT INSULATION SO THAT THE HEAT LOSS OF THE TANK SURFACE BASED ON AN 80°F WATER–AIR TEMPERATURE DIFFERENCE SHALL BE LESS THAN 6.5 BTU/HR/FT² .

– IF A CIRCULATING HOT WATER SYSTEM IS INSTALLED, IT SHALL HAVE A CONTROL CAPABLE OF AUTOMATICALLY TURNING OFF THE CIRCULATING PUMP(S) WHEN HOT WATER IS NOT REQUIRED.

– LAVATORIES IN RESTROOMS OF PUBLIC FACILITIES SHALL BE EQUIPPED WITH EITHER:
– OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 0.5 GALLONS PER MINUTE
– FOOT ACTUATED CONTROL VALVES, AND OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 0.75 GALLONS PER MINUTE.
– PROXIMITY SENSOR ACTUATED CONTROL VALVES, AND OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 0.75 GALLONS PER MINUTE.
– SELF–CLOSING VALVES, AND OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 2.5 GALLONS PER MINUTE, AND 0.25 GALLONS/CYCLE (CIRCULATING SYSTEM).
– SELF–CLOSING VALVES, AND OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 2.5 GALLONS PER MINUTE, AND 0.50 GALLONS/CYCLE (NON–CIRCULATING SYSTEM).
– SELF–CLOSING VALVES, AND OUTLET DEVICES THAT LIMIT THE FLOW OF HOT WATER TO A MAXIMUM OF 2.5 GALLONS PER MINUTE, AND 0.75 GALLONS/CYCLE (FOOT SWITCHES AND PROXIMITY SENSOR CONTROLS).

– LAVATORIES IN RESTROOM OF PUBLIC FACILITIES SHALL BE EQUIPPED WITH CONTROLS TO LIMIT THE OUTLET TEMPERATURE TO 110°F.

SEISMIC ANCHORAGE

THE SEISMIC ANCHORAGE OF MECHANICAL AND PLUMBING EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 2001 CBC SECTION 1632A.1 AND TABLE 16A–0. FOR SUSPENDED OR WALL MOUNTED EQUIPMENT WEIGHING LESS THAN 20 LBS. AND OTHER EQUIPMENT WEIGHING LESS THAN 400 LBS. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, STRUCTURAL ENGINEER AND THE FILED REPRESENTATIVE OF THE OFFICE OF THE STATE ARCHITECT.

ROOFTOP PACKAGED AIR CONDITIONING UNIT SCHEDULE

NO.	SERVES	TONS	(CFM)	MIN OSA (CFM)	ESP (IN)	ELECTRICAL VOLT	PH	FLA	MCA	MOCP	SEER	EER	SUMMER (°F) DB	(°F) WB	WINTER (°F) DB	HEATING (MBH) TOTAL	COOLING (MBH) TOTAL	SENS	WEIGHT (LBS)	MFR & MODEL NO	ACCESSORIES
AC–1	BLDG A–RECEPTION	3	1200	150	0.50	480	3	9.5	11.0	15	15.0	–	98.0	69.0	33.0	60	37.31	28.32	1100	CARRIER #48HCLA04A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–2	BLDG A–CLERICAL CONF. RM./PRINC.	4	1600	225	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–3	BLDG A–CLINIC/ WORK RM./V. PRINC.	3	1200	120	0.50	480	3	9.5	11.0	15	15.0	–	98.0	69.0	33.0	60	37.31	28.32	1100	CARRIER #48HCLA04A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–4	BLDG A–LOUNGE	4	1600	480	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–5	BLDG B–CLASSROOM/ COMP. LAB	6	2400	450	0.50	480	3	15.3	18.2	25	–	12.0	98.0	69.0	33.0	72	75.22	56.92	1450	CARRIER #48HCDA07A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK, AND DUCT SMOKE DETECTOR
AC–6	BLDG B–LIBRARY/ MEDIA CENTER	4	1600	300	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–7	BLDG B–LIBRARY/ MEDIA CENTER	4	1600	300	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–8	BLDG B–RSP CLASSROOM	2	800	230	0.80	208	1	18.3	21.7	30	14.5	–	98.0	69.0	33.0	40	23.64	18.12	675	CARRIER #48VLNA240	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–9	BLDG C–MPR	10	4000	1200	0.50	480	3	27.4	28.1	30	–	11.5	98.0	69.0	33.0	180	119.48	89.56	1800	CARRIER #48HCDD12A	W/ MICROMETL ISOLATING ROOF CURB, 100% ECONOMIZER AND POWER EXHAUST, CO2 SENSOR, AND DUCT SMOKE DETECTOR, W/ DEMAND CONTROL VENTILATION
AC–10	BLDG C–MPR	10	4000	1200	0.50	480	3	27.4	28.1	30	–	11.5	98.0	69.0	33.0	180	119.48	89.56	1800	CARRIER #48HCDD12A	W/ MICROMETL ISOLATING ROOF CURB, 100% ECONOMIZER AND POWER EXHAUST, CO2 SENSOR, AND DUCT SMOKE DETECTOR, W/ DEMAND CONTROL VENTILATION
AC–11	BLDG D–CLASSRM #1	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–12	BLDG D–CLASSRM #2	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–13	BLDG D–CLASSRM #3	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–14	BLDG D–CLASSRM #4	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–15	BLDG D–CLASSRM #5	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–16	BLDG D–CLASSRM #6	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–17	BLDG D–CLASSRM #7	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–18	BLDG D–CLASSRM #8	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–19	BLDG D–RSP ROOM	2	800	150	0.80	208	1	18.3	21.7	30	14.5	–	98.0	69.0	33.0	40	23.64	18.12	675	CARRIER #48VLNA240	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–20	BLDG E–CLASSRM #1	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–21	BLDG E–CLASSRM #2	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–22	BLDG E–CLASSRM #3	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–23	BLDG E–CLASSRM #4	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–24	BLDG E–CLASSRM #5	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–25	BLDG E–CLASSRM #6	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–26	BLDG E–CLASSRM #7	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–27	BLDG E–CLASSRM #8	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–28	BLDG E–RSP ROOM	2	800	150	0.80	208	1	18.3	21.7	30	14.5	–	98.0	69.0	33.0	40	23.64	18.12	675	CARRIER #48VLNA240	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–29	BLDG F–CLASSRM #1	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–30	BLDG F–CLASSRM #2	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–31	BLDG F–CLASSRM #3	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–32	BLDG F–CLASSRM #4	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–33	BLDG F–CLASSRM #5	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–34	BLDG F–CLASSRM #6	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–35	BLDG F–CLASSRM #7	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–36	BLDG F–CLASSRM #8	4	1600	450	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK
AC–37	NOT USED																				
AC–38	NOT USED																				
AC–39	NOT USED																				
AC–40	BLDG K–SERVING	4	1600	200	0.50	480	3	10.6	11.9	15	15.6	–	98.0	69.0	33.0	60	50.57	38.13	1200	CARRIER #48HCLA05A	W/ MICROMETL ISOLATING ROOF CURB, AND MANUAL OUTSIDE AIR HOOD W/ FILTER RACK

EXHAUST FAN SCHEDULE

NO.	TYPE	AREA SERVED	DIA (IN)	HEIGHT (IN)	ELECTRICAL VOLT	PH	HP/W	SPEED (RPM)	DESIGN POINT (CFM)	("SP)	SOUND (SONE)	WEIGHT (LBS)	DRIVE	MANUFACTURER, MODEL NO	CONTROL	NOTES
EF–1	DOWNBLAST	BLDG A–MENS TOILET	21–3/4	22–1/2	120	1	1/6	1000	150	1/4	4.7	60	BELT	GREENHECK # GB–070–6	INTERLOCK W/ HVAC	① ②
EF–2	DOWNBLAST	BLDG A–WOMENS TOILET	21–3/4	22–1/2	120	1	1/6	1000	150	1/4	4.7	60	BELT	GREENHECK # GB–070–6	INTERLOCK W/ HVAC	① ②
EF–3	CEILING	BLDG A–UNISEX TOILET	–	–	120	1	54 WATTS	900	60	1/4	2.5	15	DIRECT	GREENHECK # SP–B80	INTERLOCK W/ LIGHT SWITCH	①
EF–4	NOT USED															
EF–5	DOWNBLAST	BLDG A–ELECTRICAL RM	21–3/4	22–1/2	120	1	1/6	1100	450	1/4	5.7	60	BELT	GREENHECK # GB–080–6	THERMOSTAT	① ②
EF–6	DOWNBLAST	BLDG B–ELECTRICAL RM	21–3/4	22–1/2	120	1	1/6	1100	450	1/4	5.7	60	BELT	GREENHECK # GB–080–6	THERMOSTAT	① ②
EF–7	DOWNBLAST	BLDG C MENS & WOMENS TOILET	21–3/4	22–1/2	120	1	1/6	930	300	1/4	4.1	60	BELT	GREENHECK # GB–080–6	INTERLOCK W/ HVAC	① ②
EF–8	DOWNBLAST	BLDG C–STORAGE	21–3/4	22–1/2	120	1	1/6	1200	200	1/4	6.3	60	BELT	GREENHECK # GB–070–6	INTERLOCK W/ HVAC	① ②
EF–9	DOWNBLAST	BLDG D– BOYS & GIRLS TOILET	21–3/4	22–1/2	120	1	1/6	930	300	1/4	4.1	60	BELT	GREENHECK # GB–080–6	INTERLOCK W/ HVAC	① ②
EF–10	DOWNBLAST	BLDG D–ELECTRICAL RM	21–3/4	22–1/2	120	1	1/6	1100	450	1/4	5.7	60	BELT	GREENHECK # GB–080–6	THERMOSTAT	① ②
EF–11	DOWNBLAST	BLDG E– BOYS & GIRLS TOILET	21–3/4	22–1/2	120	1	1/6	930	300	1/4	4.1	60	BELT	GREENHECK # GB–080–6	INTERLOCK W/ HVAC	① ②
EF–12	DOWNBLAST	BLDG E–ELECTRICAL RM	21–3/4	22–1/2	120	1	1/6	1100	450	1/4	5.7	60	BELT	GREENHECK # GB–080–6	THERMOSTAT	① ②
EF–13	DOWNBLAST	BLDG F– BOYS & GIRLS TOILET	21–3/4	22–1/2	120	1	1/6	930	300	1/4	4.1	60	BELT	GREENHECK # GB–080–6	INTERLOCK W/ HVAC	① ②
EF–14	NOT USED															
EF–15	DOWNBLAST	BLDG F–ELECTRICAL RM	21–3/4	22–1/2	120	1	1/6	1100	450	1/4	5.7	60	BELT	GREENHECK # GB–080–6	THERMOSTAT	① ②
EF–16	CEILING	BLDG F–UNISEX TOILET	–	–	120	1	54 WATTS	900	60	1/4	2.5	15	DIRECT	GREENHECK # SP–B80	INTERLOCK W/ LIGHT SWITCH	①
EF–17	CEILING	BLDG F–UNISEX TOILET	–	–	120	1	54 WATTS	900	60	1/4	2.5	15	DIRECT	GREENHECK # SP–B80	INTERLOCK W/ LIGHT SWITCH	①
EF–18	NOT USED															
EF–19	NOT USED															
EF–20	NOT USED															
EF–21	NOT USED															
EF–22	NOT USED															
EF–21	CEILING	BLDG K–UNISEX TOILET	–	–	120	1	54 WATTS	900	60	1/4	2.5	15	DIRECT	GREENHECK # SP–B80	INTERLOCK W/ HVAC	①
EF–22	UBBLAST	BLDG K–KITCHEN HOOD	24–7/8	19–1/8	120	1	1/4	1497	1020	1/2	10	100	BELT	GREENHECK # CUBE–101–4	INTERLOCK W/ MAKE–UP AIR UNIT AND AC–40	① ③
EF–23	UBBLAST	BLDG K–DISHWASHER HOOD	24–7/8	19–1/8	120	1	1/4	1497	1020	1/2	10	100	BELT	GREENHECK # CUBE–101–4	INTERLOCK W/ MAKE–UP AIR UNIT AND AC–40	① ③ ④

NOTES: ① BACKDRAFT DAMPER ② ROOF CURB ③ UL/CUL 705 LISTED ④ DRAIN CONNECTION

FAN COIL UNIT SCHEDULE

NO.	SERVES	TON	ELECTRICAL VOLT	PH	HZ	FLA	MCA	MAX FUSE	SEER	HSPF	AIRFLOW LOW–HI	DIMENSIONS WIDTH	DEPTH	HEIGHT	WEIGHT (LBS)	MFR & MODEL NO	NOTES
FC–1	A–HEAD END ROOM	1.5	208/230	1	60	0.76	1.0	15	19.2	10.0	230–530	32"	10"	12"	30	MITSUBISHI #MSZ–GE18NA	HEAT PUMP
FC–2	B–SIGNAL ROOM	.75	208/230	1	60	0.76	1.0	15	26.0	10.0	160–380	32"	11"	12"	30	MITSUBISHI #MSZ–FE09NA	HEAT PUMP
FC–3	D–SIGNAL ROOM	1	208/230	1	60	0.76	–	15	20.5	–	145–400	32"	10"	12"	25	MITSUBISHI #MSY–GE12NA	COOLING ONLY
FC–4	E–SIGNAL ROOM	1	208/230	1	60	0.76	–	15	20.5	–	145–400	32"	10"	12"	25	MITSUBISHI #MSY–GE12NA	COOLING ONLY
FC–5	F–SIGNAL ROOM	1	208/230	1	60	0.76	–	15	20.5	–	145–400	32"	10"	12"	25	MITSUBISHI #MSY–GE12NA	COOLING ONLY
FC–6	NOT USED																
FC–7	K–ELEC./SIGNAL ROOM	1	208/230	1	60	0.76	1.0	15	19.2	10.0	230–530	32"	10"	12"	30	MITSUBISHI #MSZ–GE18NA	HEAT PUMP
FC–8	K–DRY STORAGE ROOM	1	208/230	1	60	0.76	–	15	20.5	–	145–400	32"	10"	12"	25	MITSUBISHI #MSY–GE12NA	COOLING ONLY

CONDENSING UNIT SCHEDULE

NO.	SERVES	ELECTRICAL VOLT	PH	HZ	FLA	MCA	MAX FUSE	TOTAL COOLING (BTUH)	HEATING (BTUH)	DIMENSIONS WIDTH	DEPTH	HEIGHT	WEIGHT (LBS)	REF PIPE SIZE	MFR & MODEL NO	NOTES
CU–1	A–HEAD END ROOM	208/230	1	60	0.93	14.0	15	17200	21600	33"	13"	34"	125	1/4X1/2	MITSUBISHI #MUZ–GE18NA	HEAT PUMP
CU–2	B–SIGNAL ROOM	208/230	1	60	0.56	12.0	15	9000	10900	32"	12"	22"	85	1/4X3/8	MITSUBISHI #MUZ–FE09NA	HEAT PUMP
CU–3	D–SIGNAL ROOM	208/230	1	60	0.50	12.0	15	12000	–	32"	12"	22"	80	1/4X3/8	MITSUBISHI #MUY–GE12NA	COOLING ONLY
CU–4	E–SIGNAL ROOM	208/230	1	60	0.50	12.0	15	12000	–	32"	12"	22"	80	1/4X3/8	MITSUBISHI #MUY–GE12NA	COOLING ONLY
CU–5	F–SIGNAL ROOM	208/230	1	60	0.50	12.0	15	12000	–	32"	12"	22"	80	1/4X3/8	MITSUBISHI #MUY–GE12NA	COOLING ONLY
CU–6	NOT USED															
CU–7	K–ELEC./SIGNAL ROOM	208/230	1	60	0.93	14.0	15	17200	21600	33"	13"	34"	125	1/4X1/2	MITSUBISHI #MUZ–GE18NA	HEAT PUMP
CU–8	K–DRY STORAGE ROOM	208/230	1	60	0.50	12.0	15	12000	–	32"	12"	22"	80	1/4X3/8	MITSUBISHI #MUY–GE12NA	COOLING ONLY

MAKE-UP AIR UNIT SCHEDULE

NO.	CFM	HP	ESP	HEATING CAPICITY INPUT MBH	OUTPUT MBH	AFUE	COOLING EAT °F	LAT °F	EVAP EFF	ELECTRICAL VOLTAGE	FLA	MCA	MFS	WEIGHT (LBS)	MFR & MODEL NO
MUA–1	1840	1	0.5	100000	80000	80%	85.0	71.0	93.0	480–3–60	6.9			800	GREENHECK # IG–109–H10

PROVIDE W/ EVAPORATIVE COOLER, INDIRECT GAS FIRED FURNACE, FAN ISOLATION, FILTERS,DUCT MOUNTED TEMPERATURE SENSOR, INTERLOCK W/ KITCHEN HOOD

GRAVITY RELIEF VENTILATOR SCHEDULE

NO.	CFM	S.P. (IN.)	WEIGHT (LBS.)	MFR. & MODEL NO.	MFR. & MODEL NO.
GRV–1	230–450	0.25	150	GREENHECK MODEL # GRSR–8	W/ BACKDRAFT DAMPER AND ROOF CURB

GENERAL NOTES

1. INSTALL ALL WORK IN ACCORDANCE WITH THE 2010 CALIFORNIA MECHANICAL CODE TITLE 24, PART 6 AND AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND LICENSES TO PERFORM THE WORK SPECIFIED AND SHOWN HEREIN.

PROVIDE ALL NEW MATERIALS AND WORK UNLESS OTHERWISE NOTED.

VERIFY ALL EXISTING UTILITIES INCLUDING SIZE, LOCATION, ELEVATION, PRESSURE AND AVAILABILITY PRIOR TO THE START OF WORK..

5. DRAWINGS INDICATE THE FINISHED REQUIREMENTS OF THE MECHANICAL SYSTEMS AND ARE SPECIFIC WHEREVER POSSIBLE; INSTALL THE WORK AS INDICATED. WHERE NECESSARY, THE WORK IS SHOWN DIAGRAMATICALLY; CONFORM TO THE DESIGN INTENT.
6. COORDINATE LOCATIONS, SIZES, AND ELEVATIONS OF ALL SLEEVES THROUGH STRUCTURE AND PARTITIONS WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS. PROVIDE FIRESTOPPING ASSEMBLIES IN CONFORMANCE WITH UL BUILDING MATERIALS / FIRE RESISTIVE DIRECTORY WHERE REQUIRED.
7. COORDINATE THE INSTALLATION OF THIS WORK WITH ALL OTHER TRADES MAKING MINOR ADJUSTMENTS SUCH AS OFFSETS AND TRANSITIONS AS REQUIRED TO AVOID CONFLICTS.
8. PROVIDE PIPING SUPPORTS AND SEISMIC BRACING IN ACCORDANCE WITH SMACNA STANDARDS.
9. COORDINATE ROOF PENETRATION SEALS, ELECTRICAL POWER AND OTHER WORK NECESSARY FOR A COMPLETE INSTALLATION.
10. PROVIDE MANBARS ON EXTERIOR WALL AND ROOF OPENINGS EXCEEDING NINETY–SIX (96) SQUARE INCHES. MANBARS SHALL CONSIST OF 1/2" DIAMETER STEEL BARS SPACED AT 5" ON CENTER WITHIN A 2" X 1 1/4" STEEL FRAME SECURED WITH BOLTS WHICH ARE NON–REMOVABLE FROM THE EXTERIOR.
11. THE CONTRACTOR SHALL MAINTAIN "AS–BUILT" REPRODUCIBLE DRAWINGS OF ALL WORK, AS THE JOB PROGRESSES. A SEPARATE SET OF DRAWINGS FOR THIS PURPOSE ONLY, SHALL BE KEPT AT THE JOB SITE AT ALL TIMES AND IT SHALL BE REQUIRED THAT THESE BE KEPT UP TO DATE.
12. AFTER COMPLETION OF THE INSTALLATION, THE AIR SYSTEM SHALL BE ADJUSTED AND BALANCED TO THE SPECIFIED CONDITIONS AND SIX COPIES OF TABULATED RESULTS SUBMITTED TO THE ARCHITECT FOR APPROVAL.
13. DELIVER TO THE OWNER, MANUFACTURER'S CERTIFICATES, WARRANTY SLIPS, PARTS LIST, DESCRIPTIVE BROCHURES, MAINTENANCE AND OPERATING INSTRUCTIONS FOR ALL EQUIPMENT INSTALLED AND PROPERLY TAGGED AND IDENTIFIED FOR EACH REFERENCE.
14. ENTIRE INSTALLATION (INCLUDING EQUIPMENT, LABOR AND MATERIALS) TO BE GUARANTEED FOR ONE YEAR FROM THE TIME OF OWNER ACCEPTANCE.
15. PROVIDE MANUAL VOLUME DAMPERS FOR ALL TERMINATING BRANCH DUCTS.
16. THE FIRST 15'–0" OF THE SUPPLY AND RETURN DUCTS SHALL BE INTERNALLY INSULATED WITH DUCT LINER (ACOUSTICAL ATTENUATION) AT EACH A/C UNIT.
17. ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24. 2001 CBC SECTION I632A AND TABLE 16A–0.
18. MECHANICAL CONTRACTOR TO PERFORM TITLE 24 ACCEPTANCE TESTING, SIGN AND SUBMIT ALL DOCUMENTATION TO THE AUTHORITY HAVING JURISDICTION.

ENERGY MANAGEMENT CONTROL SYSTEM

THE SOURCE FOR CONTROLS SHALL BE BY JOHNSON CONTROLS ENERGY MANAGEMENT CONTROL SYSTEM OR DISTRICT APPROVED EQUAL. NO SUBSTITUTES ALLOWED.

DIFFUSER/GRILLE SCHEDULE

SD VOL (CFM)	SD SIZE (IN)	MFR. TITUS MODEL	RG/EG/TG VOL (CFM)	RG/EG/TG SIZE (IN)	MFR. TITUS MODEL	SS SIDEWALL SUPPLY	MFR. TITUS MODEL	SR/SE SIDEWALL RETURN/EXH	MFR. TITUS MODEL
250	8X8	MCD	250	8X8	50F		300FS		56FL
350	10X10	MCD	350	10X10	50F		300FS		56FL
500	12X12	MCD	500	12X12	50F		300FS		56FL
650	14X14	MCD	650	14X14	50F		300FS		56FL
800	16X16	MCD	800	16X16	50F		300FS		56FL
950	18X18	MCD	950	18X18	50F		300FS		56FL
1100	20X20	MCD	1100	20X20	50F		300FS		56FL
1250	22X22	MCD	1250	22X22	50F		300FS		56FL
1500	24X24	MCD	1500	24X24	50F		300FS		56FL
			2000	24X48	50F		300FS		56FL

PROVIDE FRAME AND FILLER PANEL TO SUIT INSTALLATION, NC–30, 0.1" P.D.; ALUMINUM TYPE WITH OPPOSED BLADE DAMPER.

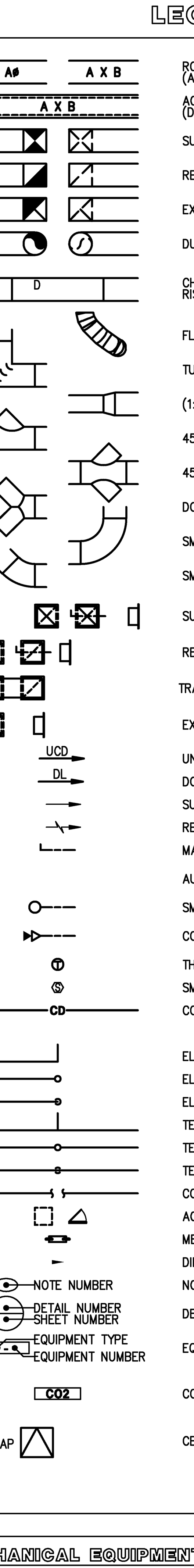
ABBREVIATIONS

A	AMPERE	HZ	HERTZ, FREQUENCY
ABV	ABOVE	H2O	WATER
AC	AIR CONDITION(–ED,–ING), ALTERNATING CURRENT	ID	INSIDE DIAMETER
		IN	INCHES
AD	APPARATUS DEW POINT	INST	INSTALL
AFF	ABOVE FINISHED FLOOR	IPS	IRON PIPE SIZE
AFG	ABOVE FINISHED GRADE	JC	JANITOR'S CLOSET
ALT	ALTERNATE, ALTITUDE	KEC	KITCHEN EQUIPMENT CONTRACTOR
AMB	AMBIENT	KW	KILOWATT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	KWH	KILOWATT–HOUR
		L	LENGTH
AP	ACCESS PANEL, ALARM PANEL	LAP	LOCAL ALRAM PANEL
APPROX	APPROXIMAT(E–LY)	LAT	LEAVING AIR TEMPERATURE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	LH	LATENT HEAT
		LHG	LATENT HEAT GAIN
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	LWT	LEAVING WATER TEMPERATURE
		MAX	MAXIMUM
ASSY	ASSEMBLY	MBH	THOUSAND BTU PER HOUR
ASTM	AMERICAN SOCIETY FOR TESTING	MFR	MASS FLOW RATE, MANUFACTURER
ATM	ATMOSPHERE	MIN	MINIMUM
AVG	AVERAGE	MTD	MOUNTED
AWG	AMERICAN WIRE GAGE	N/A	NOT APPLICABLE
BARO	BAROMET(ER, –RIC)	NC	NORMALLY CLOSED, NOISE CRITERIA
BEL	AND MATERIALS	NEC	NATIONAL ELECTRIC CODE
BFF	BELOW	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BFG	BELOW FINISHED FLOOR		
BHP	BRAKE HORSEPOWER	NIC	NOT IN MECHANICAL CONTRACT
BOB	BELOW FINISHED GRADE BOTTOM OF BEAM	NO	NORMALLY OPEN, NUMBER
		NTS	NOT TO SCALE
BSMT	BASEMENT	OA	OUTSIDE AIR
BTU	BRITISH THERMAL UNIT	OC	ON CENTER
BTUH	BTU PER HOUR	OD	OUTSIDE DIAMETER
CBC	CALIFORNIA BUILDING CODE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ACT
CCW	COUNTER CLOCKWISE		
CF	CUBIC FEET	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
CFH	CUBIC FEET PER HOUR		
CFM	CUBIC FEET PER MINUTE	PD	PRESSURE (DROP, DIFFERENCE)
CI	CUBIC INCHES, CAST IRON	PH	PHASE
℄	CENTERLINE	PLBG	PLUMBING
CLG	CEILING, COOLING	PO	PLUGGED OUTLET
CMC	CALIFORNIA MECHANICAL CODE	PPM	PARTS PER MILLION
COND	CONDENS(ER, –ING, ATE, ATION)	PROV	PROVIDE (FURNISH & INSTALL)
CONN	CONNECT, CONNECTION	PRESS	PRESSURE
CONT	CONTINUE, CONTINUATION	PS	PRESSURE SWITCH
CPC	CALIFORNIA PLUMBING CODE	PSF	POUNDS PER SQUARE FOOT
CV	VALVE FLOW COEFFICIENT	PSI	POUNDS PER SQUARE INCH
CW	CLOCKWISE	PSIA	PSI ABSOLUTE
DB	DECIBEL, DRY BULB	PSIG	PSI GAUGE
DBT	DRY BULB TEMPERATURE	R	THERMAL RESISTANCE
DC	DIRECT CURRENT	R12	REFRIGERANT (12, 22, ...)
DIA, ø	DIAMETER	RH	RELATIVE HUMIDITY
DN	DOWN DEW POINT TEMPERATURE DRAIN	RI&C	ROUGH IN & CONNECT ROOM RATED PRESSURE
DSA	DIVISION OF THE STATE ARCHITECT	RPM	REVOLUTIONS PER MINUTE
DWG	DRAWING	SAT	SATURATION
EAT	ENTERING AIR TEMPERATURE	SCFM	CFM AT STANDARD CONDITIONS
EFF	EFFICIENCY	SF	SQUARE FEET
ELEV	ELEVATION		
ELEC	ELECTRICAL	SH	SENSIBLE HEAT
EQP	EQUIPMENT	SHG	SENSIBLE HEAT GAIN
EQV	EQUIVALENT	SHR	SENSIBLE HEAT RATIO
EWT	ENTERING WATER TEMPERATURE	SL	SLOPE
EX	EXISTING	SP	STATIC PRESSURE
°F	DEGREES FAHRENHEIT	SPEC	SPECIFICATIONS
FFE	FINISHED FLOOR ELEVATION	SS	STAINLESS STEEL
FL	FLOOR, FLOW LINE	TD	TRENCH DRAIN
FPS	FEET PER SECOND	TEMP	TEMPERATURE, TEMPORARY
FPM	FEET PER MINUTE	TOB	TOP OF BEAM
FT	FEET	THRU	THROUGH
FT–LB	FOOT–POUND	TTB	TIGHT TO BEAM
FU	FIXTURE UNITS	TYP	TYPICAL
FURN	FURNISH	U	HEAT TRANSFER COEFFICIENT
FUT	FUTURE	UBC	UNIFORM BUILDING CODE
GA	GAGE, GAUGE	UL	UNDERWRITERS LABORATORY
GAL	GALLONS	UMC	UNIFORM MECHANICAL CODE
GC	GENERAL CONTRACTOR	UON	UNLESS OTHERWISE NOTED
GPD	GALLONS PER DAY	UPC	UNIFORM PLUMBING CODE
GPH	GALLONS PER HOUR	USSG	UNITED STATES STANDARD GAUGE
GPM	GALLONS PER MINUTE	UTR	UP THROUGH ROOF
GR	GRAINS	V	VOLT
GPG	GRAINS PER GALLON	VA	VOLT–AMPERE
H	HEIGHT	VENT	VENTILATION
HD	HEAD	VERT	VERTICAL
HDR	HEADER	W	WIDTH, WATT
HG	HEAT GAIN, MERCURY	WB	WET BULB
HORIZ	HORIZONTAL	WBT	WET BULB TEMPERATURE
HP	HORSEPOWER	W/	WITH
HR	HOUR	W/O	WITHOUT
HTR	HEATER	WBT	WET BULB TEMPERATURE
HVAC	HEATING VENTILATING AND AIR CONDITIONING	WC	WATER COLUMN
		WT	WEIGHT
HX	HEAT EXCHANGER	WP	WORKING PRESSURE

SHEET INDEX

SHEET	TITLE	SCALE
M–0.1	MECHANICAL LEGEND, NOTES AND SCHEDULES	NONE
M–A2	BUILDING "A" MECHANICAL FLOOR & ROOF PLANS	1/8"=1'–0"
M–B2	BUILDING "B" MECHANICAL FLOOR & ROOF PLANS	1/8"=1'–0"
M–C2	BUILDING C MECHANICAL FLOOR & ROOF PLANS	1/8"=1'–0"
M–DE2	BUILDINGS "D" & "E" MECHANICAL FLOOR & ROOF PLANS	1/8"=1'–0"
M–F2	BUILDING "F" MECHANICAL FLOOR & ROOF PLANS	1/8"=1'–0"
M–K2	BUILDING "K" MECHANICAL FLOOR & ROOF PLANS	1/4"=1'–0"
M–3.0	MECHANICAL DETAILS	NONE
M–3.1	EMS RISER DIAGRAM	NONE
M–3.2	EMS DETAILS	NONE

LEGEND



ROUND DUCT & RECTANGULAR DUCT (A IS DIMMENSION SHOWN)
ACCOUSTICALLY LINED / INSULATED DUCT (DIMMENSIONS SHOWN ARE INSIDE FREE AREA)
SUPPLY AIR (SA) UP & DOWN
RETURN AIR (RA) UP & DN
EXHAUST AIR (EA) UP & DN
DUCT UP & DN
CHANGE OF ELEVATION RISE (R) DROP (D)
FLEXIBLE DUCT
TURNING VANES
(1:4) REDUCER
45° WYE
45° CROSS
DOUBLE 45° WYE
SMOOTH RADIUS (R=1.5D) 90° ELBOW
SMOOTH RADIUS (R=1.5D) 45° ELBOW
SUPPLY AIR DIFFUSER & REGISTER (SD),(SR)
RETURN AIR GRILLE & REGISTER (RG),(RR)
TRANSFER GRILLE (TG)
EXHAUST GRILLE (EG)
UNDERCUT DOOR (UCD)
DOOR LOUVER (DL)
SUPPLY AIR (POSITIVE PRESSURE)
RETURN AIR (NEGATIVE PRESSURE)
MANUAL DAMPER
AUTOMATIC FIRE DAMPER (AFD)
SMOKE DAMPER (SD)
COMBINATION FIRE/SMOKE DAMPER (CFSD)
THERMOSTAT (TSTAT)
SMOKE DETECTOR (DET)
CONDENSATE DRAIN PIPING (CD)
ELBOW
ELBOW UP
ELBOW DOWN (DN)
TEE
TEE UP
TEE DOWN (DN)
CONTINUATION (CONT)
ACCESS PANEL (AP)
MECHANICAL EXPANSION JOINT
DIRECTION OF FLOW
NOTE REFERENCE
DETAIL REFERENCE
EQUIPMENT DESIGNATION
CO2 (CARBON DIOXIDE SENSOR)
CEILING ACCESS PANEL

MECHANICAL EQUIPMENT BRACING & ANCHORAGE

ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED WITH SEISMIC RESTRAINTS PER "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING SYSTEMS" PUBLISHED BY SMACNA AND APPROVED BY DSA.

WHERE BRACING AND ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, THE STRUCTURAL ENGINEER, AND THE DSA FIELD ENGINEER.

A COPY OF THE GUIDELINES PUBLISHED BY SMACNA AND APPROVED BY DSA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB SITE AT ALL TIMES.

KITCHEN HOOD SCHEDULE

NO.	DESCRIPTION
KH–1	GAYLORD MODEL HH–W TYPE II HEAT AND ODOR HOOD, 54"x54"x24", 18 GAUGE 304 S/S CONSTRUCTION, W/ INCANDESCENT LIGHT, UL LISTED, WT. 200 LBS.
KH–2	GAYLORD MODEL VH2–W TYPE II VAPOR HOOD, 54"x54"x24", 18 GAUGE 304 S/S CONSTRUCTION, W/ INCANDESCENT LIGHT, UL LISTED, BAFFLE FOR CONDENSED MOISTURE COLLECTION, PERIMETER GUTTER W/ ½" DRAIN STUB OUT, WT. 220 LBS.

REGISTERED PROFESSIONAL ENGINEER
PETER A. KRAUT
No. M–31498
EXP. 12–31–12
MECHANICAL
STATE OF CALIFORNIA

LICENSED ARCHITECT
JAMES M. STINSON
C19098
RENEWAL 02/28/13
STATE OF CALIFORNIA

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04–107199
AC____ FLS____ SS____
DATE____

South Coast Engineering Group, Inc.
5000 N. Pkwy. Calabasas, Suite 307
Calabasas, California 91302
tel (818) 224-2700 fax (818) 224-2711

DATE

REVISIONS

P S W C GROUP
ARCHITECTS / PLANNERS
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909/890–2233 FAX. 909/890–2644

ROOSEVELT II
ELEMENTARY SCHOOL
SAN BERNARDINO CITY UNIFIED SCHOOL DISTRICT
1261 W. 16TH STREET, SAN BEERNARDINO, CA.

MECHANICAL LEGEND, NOTES AND SCHEDULES

SCALE: NONE

JOB NO. 55B1.02
DRAWN BY WD
DATE 12/09/2011

M-0.1

P:\Project\55B1.02\M\M–0.1.dwg

RE-BID #F09-02 ROOSEVELT II (HENRY) E.S. NEW CONSTRUCTION BID ISSUANCE SET 12/09/11

Drawing Name: P:\Project\55B1.02\M\M–0.1.dwg
Date / Time: Dec 07, 2011 - 11:15am by pcastillo