

county of ventura

REVIEW	FIRST	SECOND	THIRD	FOURTH
DATE				

PLAN REVIEW CORRECTION LIST MECHANICAL SYSTEMS AND EQUIPMENT

Project Address	Locality	Plan Check Number
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Owner/Agent	Mailing Address (Number & Street)
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City, State and Zip Code	Phone Number
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INSTRUCTIONS:

Circled item numbers on the following list identify required corrections. Code references following each item refer to California Mechanical Code (CMC) 2007 edition, California Business and Professions Code (BPC), California Building Code (CBC) 2007 edition.

- Corrections shall be made on the tracings. Three new sets of prints from the corrected tracings must be submitted for recheck, along with the marked-up set of drawings which was originally submitted for plan review.
- Minor corrections may be made on plans, in ink, when approved by the plan checker. Such corrections shall be initialed by the person responsible for the design.
- RETURN THIS LIST with corrected plans forms, and energy calculations. To facilitate rechecking, indicate (on the line to the left of any item circled below) the sheet number of your drawings where required corrections are shown.
- The drawings you originally submitted for plan review, marked for correction, are available at the Division of Building and Safety office, Simi Valley, California.

GENERAL REQUIREMENTS

- ___ 1. Plans shall bear the license number and signature of an architect, engineer or contractor licensed in the appropriate discipline. Business and Professions Code, Section 6737.3)
- ___ 2. Show the job address on the plans.
- ___ 3. Plans shall be clearly legible, and to a scale no smaller than 1/8 inch per foot.
- ___ 4. Show equipment schedule on the plans
- ___ 5. Show the occupancy of each area.

- ___ 6. Show the intended use of each room
- ___ 7. Show all fire rated walls and ceilings.
- ___ 8. (3) Ducts used in central vacuum cleaning systems within a dwelling unit shall be constructed of materials in compliance with the applicable standards referenced in Chapter 17, Sec. 506.1.(3)
- ___ 9. Penetrations of fire walls or floor-ceiling or roof-ceiling assemblies shall comply with the Building Code.
- ___ 10. Copper or ferrous pipes or conduits extending from within the separation between a garage and dwelling unit to the central vacuuming unit may be used.

FURNACES AND AIR HANDLERS

- ___ 11. The furnace compartment shall be provided with an opening not less than 30 inches wide. (305.0)
- ___ 12. The furnace compartment: Central-heating furnaces not listed for closet or alcove installation shall be installed in a room or space having a volume at least twelve (12) times the total volume of the furnace; central-heating boilers not listed for closet or alcove installation shall be installed in a room or space having a volume sixteen (16) times the volume of the boiler. (304.2) Submit appliance and compartment volume calculations for review and approval.
- ___ 13. Show location and size of permanent access to the furnace. (904.10, 904.11 & 931
- ___ 14. Show roof access. (307.5 & 904)
- ___ 15. Show direct vent appliance vent termination with clearances specified by manufactures installation instructions, submit manufactures installation

instructions, etc. (802.8.2-3)

- ___ 16. Show location and size of all combustion-air openings or ducts. (701.2)
- ___ 17. Provide calculations for the combustion air. Size of openings or ducts shall be per 701.
- ___ 18. Combustion-air ducts shall be of galvanized steel. (701.10)
- ___ 19. Dampers are not allowed in combustion-air ducts. (701.11)
- ___ 20. Detail equipment support and anchorage for 1106.2.
- ___ 21. Provide an elevation of the furnace: show the draft hood, vent size and type (i.e., double wall type B vent, plastic pipe vent or special gas vent system, etc.) clearance and vent termination. (Table 8-1 Vent type table 802.4)
- ___ 22. The vent shall be metal double wall type B (802.6.3.1)
- ___ 23. The vent shall be positive pressure type. Show category II, III, IV Vent system (802.4, Table 8.1)
- ___ 24. Provide manufacturers listing instructions showing the venting criteria and condensate waste disposal for the condensate furnaces. (802.4 & 802.9 condenser)
- ___ 25. The vent diameter shall be equal to or greater than the diameter of the vent collar of the appliance. (802.6.3.1(3))
- ___ 26. The Type B vent termination shall be at least 5 feet above the highest connected equipment draft hood or flue collar. (802.6.2.1)
- ___ 27. Vents shall extend above the roof and shall terminate in a listed vent cap. Termination point shall be at least 3 feet above any forced air inlet into the building located within 10 feet, 8 feet from a vertical wall or similar obstruction. (802.6.2) Figure 8-2
- ___ 28. A listed pool heater shall be installed in accordance with its listing and the manufacturer's instructions. A pool heater listed for outdoor installation shall be installed with the venting means supplied by the manufacturer and in accordance with the manufacturer's instructions. (922.0)
- ___ 29. The vent shall extend vertically, except one 60-degree offset is allowed. Scope 1/4 inch/foot upward. (802.6.1.1 & 802.10.1)
- ___ 30. The total horizontal run of a vent plus the length of horizontal vent connector shall not exceed 75% of the vertical height of the vent. (802.6.1.1)
- ___ 31. Decorative shrouds shall not be installed at the termination of factory built chimneys or gas vents except where such shrouds are listed for use with the specific factory built chimneys or gas venting system and are installed in accordance with manufacturers' installation instructions. (802.5.2.4 & 802.6.2.4)
- ___ 32. Multiple appliance vent connectors entering a common venting system shall be sized per Section 803.
- ___ 33. The area of a common vent connector shall not be less than the area of the largest vent connectors plus 50% of the areas of the additional vent connectors. (802.6.3.1(4))
- ___ 34. When sizing Category I venting systems, specify which table in App. C, Ch. 8, the venting system has been designed. (803. 1)
- ___ 35. Type B/W Vent, wall heater. (802.6.2.2.)
- ___ 36. Provide/submit manufacturers listing instructions for wall heater or direct vent room heater. (924)
- ___ 37. Outdoor Cooking Appliances. Listed outdoor cooking appliances shall be installed in accordance with their listing and the manufacturers' instructions. (921.0) 917.0 Illuminating Appliances.
- ___ 38. 917.1 Clearances for Listed Appliances. Listed illuminating appliances shall be installed in accordance with their listing and the manufacturers' instruction (NFPA 54:9.16.1) 917.2 Clearances for Unlisted Appliances.

CONDITIONED AIR

- ___ 39. Provide a primary and a secondary condensate drain (watertight pan) for cooling coils installed above the ceiling or in furred spaces. The secondary drain shall terminate in a visible location (310.1.2, 310.3 & 1106.10-13)
- ___ 40. Show on the plans the duct materials and gages. Gages shall be per Tables 6-1, 6-2 & 6-3.
- ___ 41. Ducts shall be insulated in accordance with Table 6-6 Ch. 6 and Title 24 Energy Report.
- ___ 42. Provide duct type smoke detectors in the supply air ducts in every air conditioning system in excess of 2,000 cfm. Multiple units serving the same room, or having a common return air plenum or a common outside air duct are considered to be one system for the determination of the cfm. In lieu of duct type smoke detectors, complete coverage area detectors may be installed. (609)
- ___ 43. Show all fire rated corridors, walls and ceilings on plans.
- ___ 44. Indicate if rated corridors are tunnel type or full height.
- ___ 45. Listed fire dampers and smoke dampers are required to be installed at all duct penetrations through firewalls, fire barriers and fire partitions. (716.5 CBC)
- ___ 46. Listed fire dampers and smoke dampers are required to be installed at all duct penetration through fire rated shafts. (716.5.3 CBC)
- ___ 47. Listed fire dampers are required to be installed at all duct penetration through fire rated ceilings. (716.6 CBC)
- ___ 48. Provide combination smoke/fire dampers to isolate ducts serving rated corridors. (716.5.4 & 716.5.4.1 CBC)
- ___ 49. Provide combination smoke/fire dampers in ducts

penetrating elevator lobbies. (716.5.3 CBC)

exhaust. (505.3)

- ___ 50. Fire dampers shall be accessible for inspection, maintenance with access 2 feet (606.5)
- ___ 51. Provide a copy of the manufacturer's catalogs for the mechanical equipment used.
- ___ 52. Provide a permanent roof access (904.10.3.3)

LAUNDRY ROOMS

- ___ 71. Exhaust duct for domestic dryers shall be 4 inches minimum and shall not exceed a total length of 14 feet including two 90 degree elbows. Two feet shall be deducted for each 90 degree elbow in excess of two. (504.3.2)
- ___ 72. Provide engineer calculations allowing to exceed 14 feet dryer manufacture installation instructions for the dryer vent. (504.3.2)
- ___ 73. Dryer exhausts shall terminate at least 3 feet from property line and 3 feet from openings into any building. (504.5)
- ___ 74. Dryer exhaust ducts shall be made out of metal and have smooth interior surface. (504.3.2.1)
- ___ 75. Laundry ventilation exhaust shall terminate at least 3 feet from property line and 3 feet from openings into any building. (504.5)
- ___ 76. Clothes dryer moisture exhaust duct shall not extend into or through ducts or plenums. (504.3.1)
- ___ 77. Laundry exhaust ducts under positive pressure shall not extend into or pass through ducts or plenums. (504.1)
- ___ 78. Show make-up air for the laundry room exhaust system. (504.3.2 CMC)
- ___ 79. Provide combustion air openings. (701.1)

TITLE 24

- ___ 53. Provide outside air. (Title 24, Sec. 121)
- ___ 54. Make-up air fans shall be electrically interlocked with their associated exhaust systems. (406.4.2 CBC)
- ___ 55. Backdraft dampers shall be provided in outdoor air supply and exhaust systems. (Title 24, Sec. 150(m)(7))
- ___ 56. Provide an economizer in every cooling unit exceeding 2,500 cfm. (Title 24, Sec. 144(e))
- ___ 57. Show thermostats. (Title 24, Sec. 122)
- ___ 58. Show signed statement of compliance (form Mech-1) on the plans. (Title 24, Sec. 10-103(a)2.C)
- ___ 59. Provide heating and cooling load calculation. (Title 24, Sec. 144(b))
- ___ 60. Provide complete Title 24 documentation. (Title 24, Sec. 10-103)
- ___ 61. Show compliance with at least one of the exceptions of Sec. 144(g) for the electrical resistant heating or provide energy budget. (Title 24, Sec. 144(g) & 152(c))
- ___ 62. Show signed statement of compliance (form Mech-1) on the plans. (Title 24, Sec. 10-103(a)2.A).
- ___ 63. Also provide Mech-2, Mech-3 and Mech-4 with the submittal. (Title 24 Sec. 10-103(a)2.C).
- ___ 64. Provide heating and cooling load calculations. (Title 24 Sec. 144(b)).

TOILET ROOMS

- ___ 80. Toilet rooms in commercial buildings shall have 4 air changes per hour. (1202.2.1 CBC)
- ___ 81. Toilet rooms in residential buildings shall have 5 air changes per hour. (1203.3 CBC)
- ___ 82. Toilet exhausts shall terminate at least 3 feet from property line and 3 feet from openings into any building. (504.1)
- ___ 83. The make-up air system shall be interlocked with the associated exhaust system.
- ___ 84. Show make-up air for toilet exhaust.
- ___ 85. Provide a duct type smoke detector in the toilet exhaust system exceeding 2,000 cubic feet per minute. (609.0)
- ___ 86. Toilet exhaust ducts shall be made of metal. (504.1)
- ___ 87. Toilet exhaust ducts under positive pressure shall not extend into or pass through ducts or plenums. (602.1)
- ___ 88. Provide combination fire/smoke dampers where the toilet exhaust ducts penetrate a fire rated shaft. (716.6 CBC)

GENERAL

- ___ 65. Exhaust ducts under positive pressure and venting systems shall not extend into or pass through ducts or plenums. (602.1)
- ___ 66. Show location & sizes of all ventilation ducts & openings.
- ___ 67. Environmental exhausts ducts shall terminate outside the building and shall be equipped with a back-draft damper. (504.3.1)
- ___ 68. Exhaust outlets shall be 3 feet from the property line; 3 feet from opening into the building. (504.5)
- ___ 69. Exhaust outlets for product conveying systems shall be 10 feet from the property line, 3 feet from exterior roof/wall; 10 feet from opening into the building; 10 feet above grade. (510.8.2.1) (510.8.3.1)
- ___ 70. Make-up air shall be provided for all rooms with

CORRIDOR VENTILATION

- ___ 89. Provide corridor ventilation, separate from other building ventilation systems, for the exit enclosure. (Sec. 1020.1.3. CBC)
- ___ 90. Listed fire dampers and smoke dampers are

required to be installed at all duct penetrations through fire rated ceilings. (716 CBC)

and enclosure. (507.6 & 510.7.1.1)

- ___ 91. Listed fire dampers are required to be installed at all duct penetrations through fire rated ceilings. (716 CBC)
- ___ 92. Provide combinations smoke/fire dampers to isolate ducts serving rated corridors. (716 CBC)
- ___ 93. Corridors shall have supply and exhaust air inlets and outlets. (601.1.1)
- ___ 94. Rooms adjacent to the corridor shall not draw air from the corridor or transfer air to the corridor. (601.1.1)

- ___ 107. Provide product literature for the grease exhaust blower and the make-up fan, showing cfm, static pressures, and, if required, listing by a nationally recognized testing and listing agency.
- ___ 108. Provide product literature for compensating and/or ventless hoods. The equipment shall be listed by a nationally recognized testing and listing agency. (516.0)
- ___ 109. Provide product literature for the filters showing the size, free area and friction loss. (509)
- ___ 110. Provide calculations for sizing exhaust fans and make-up air units. Calculations shall show that the fan is capable of providing the minimum required volume or air. (508.4, 511.2 & 511.3)

KITCHEN HOODS – TYPE I HOODS

- ___ 95. Provide kitchen layout plans showing location of hoods, ducts, shafts, make-up air, openable windows and their area, and the volume of the kitchen. (506.7, 506.9 & 507.1.6)
- ___ 96. Provide roof plans showing the location of the kitchen exhaust blower, property line and any openings into the building. (508.4.1, 508.4.1.1 & 508.4.2)
- ___ 97. Provide make-up air. (511.3)
- ___ 98. Show sizes, gauges and materials of all ducts and hoods. (508.1.1 & 511.1.4)
- ___ 99. Specify on the plan the make, model, size, free area and number of filters used. (509.2.4)
- ___ 100. Provide elevations showing finished floor, cooking equipment, grease exhaust hood, distance between cooking equipment and grease filters, overhang, finished ceiling, flushing, fire rated shaft, clearance between duct and shaft, cleanouts, slope of horizontal ducts, roof blower, diverter, distance of outlet termination above roof. In compensating hoods, also show make-up air duct and factory built-in fire damper.
- ___ 101. Each exhaust outlet within a hood shall serve not more than a 12-foot section of hood. (510.3.4.1 & 510.3.4.4)
- ___ 102. Duct system shall have a slope not less than 1/4 inch per lineal foot toward the hood or toward an approved grease reservoir. When horizontal ducts exceed 75 feet in length, the slope shall not be less than 1 inch per lineal foot. (510.1.4) Factory Duct Enclosure (507.2.3)
- ___ 103. Duct enclosures from the point of ceiling, wall or floor penetration shall be at least one hour, except it shall be two-hour fire resistive construction in Type I & II buildings. (510.7.1.1) Factory Duct Enclosure (507.2.3)
- ___ 104. Field-applied and factory built grease duct enclosures shall be listed in accordance with U.L. Standard 2221 and have ICC/ICBO report approval. A listed 2 layer factory wrap grease duct enclosure system only is allowed. (507.2.3)
- ___ 105. The duct enclosure shall be sealed around the duct at the point of penetration. (507.7.1.1)
- ___ 106. A clearance of at least 3 inches and not more than 12 inches shall be maintained between duct

- ___ 111. Provide cleanouts per code. (510.3.4.4)
- ___ 112. Air velocity within the duct system shall not exceed 2,500 cft/min. 511.1 (Performance Test 511.2.2)
- ___ 113. 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 the combustible construction is protected with material required for one-hour fire-resistive construction (508.4)
- ___ 114. Hoods less than 12 inches from the ceiling or wall shall be flashed solidly with materials as specified in Sec. 508.2. (507.10, 508.4 & 508.4.1)
- ___ 115. Exhaust outlets serving grease duct systems shall be 40 inches above roof surface, 10 feet from property line, 10 feet from air intake openings and 10 feet above adjoining grade. (510.8.2)
- ___ 116. A grease gutter shall drain to a receptacle accessible for cleaning. (509.2.5)
- ___ 117. Type I Hoods for use over solid-fuel cooking equipment shall be provided with separate exhaust system. (517.3.1)
- ___ 118. The exhaust and make-up air systems shall be connected by electrical interlock switches. (503.1 & 517.6.2)
- ___ 119. Provide clearance from the Ventura County Health Department.
- ___ 120. Provide clearance from the Ventura County Fire Department.

REFRIGERATION – MACHINERY ROOM

- ___ 121. A 3 foot wide and 6 foot 8 inch high clearance shall be provided around at least two sides of all moving machinery (1107.2)
- ___ 122. Door(s) shall swing in the direction of exit. (1007.4.4 CBC)
- ___ 123. Provide two separate exits. (1007.4.1 CBC & 1107.3)
- ___ 124. Provide calculation showing that the capacity of the exhaust system complies with the section.

- ___ 125. A switch of the break-glass type, controlling the emergency purge ventilation system, shall be provided adjacent to and outside of the exit door. (1108.5)
- ___ 126. A switch controlling fans providing ventilation shall be in glass covered enclosure and shall be located adjacent to and outside of the exit door. (1108.6)
- ___ 127. Show make-up air inlets and exhaust outlets on the plan. (1108.1)
- ___ 128. Make-up air shall be from outside of the building and shall be equipped with a back draft damper. (1108.1 & 1108.9)
- ___ 129. Exhaust shall be discharged at least 20 feet from the property line. Show this on the plans. (1108.7)
- ___ 130. Only equipment essential to the operation of the refrigeration system shall be allowed in the machinery room. (1109)
- ___ 131. Show on plans the make, model, HP, cfm & static pressure rating of all fans.
- ___ 132. Provide product literature for all fans used showing their cfm & static pressure rating.
- ___ 133. State type of refrigerant (1102)
- ___ 134. Show location of refrigerant-vapor detectors (1107.4)

GAS PIPING

- ___ 135. State type(s) of gas pipe materials proposed. (1309)
- ___ 136. Show gas piping system and pipe size on plumbing floor plans. Show length, size of all gas piping. (1317.0)
- ___ 137. Show appliance BTU and CFT/Hour at each outlet. (Use 1000 BTU/HR when calculating appliance's CFT/HR gas demand, per the Gas Company)
- ___ 138. Gas piping system design submitted requires California licensed mechanical engineer design and calculations. (1309.4.3)

BOILERS

- ___ 139. Show method of providing combustion air. (701.5, 701.6, 701.9 & 802.6.1)
- ___ 140. Show detail of water heater vent to atmosphere.
- ___ 141. Note on plans, water heater vent shall terminate 8', minimum, from vertical wall or similar obstruction. (802.6.2)
- ___ 142. Show temperature and pressure relief valves. 1007 piped to discharge to an approved receptor connected to the building waste system.
- ___ 143. State on plans, that boiler must be listed by nationally recognized test laboratory. (307.1)
- ___ 144. To meet combustion air requirements, provide detail of combustion vent, size, material, etc.

GARAGE VENTILATION

- ___ 145. Provide calculations showing that the exhaust fan is capable of uniformly exhausting 1.5 cfm per square foot of gross floor area (1203.1)
- ___ 146. A variance is required to size the garage ventilation system based on 14,000 cfm per moving vehicle. (1203.1 CBC)
- ___ 147. Provide make up air. (505.3)
- ___ 148. Show the termination of the garage exhaust. Exhaust outlet shall terminate not less than 10 feet from property line, 3 feet from exterior wall or roof, 10 feet from openings into the building, 10 feet above adjoining grade. (506.9.2)
- ___ 149. Provide combination fire/smoke dampers where the garage exhaust ducts penetrate the fire rated shaft. (606.1, 606.2 & 716 CBC)
- ___ 150. Provide combination fire/smoke dampers where the make up air ducts penetrate a fire rated shaft. (606.3, 606.5 & 716 CBC)
- ___ 151. Do not connect any other ventilation system to the garage ventilation system (505.1)
- ___ 152. Ducts shall be made out of metal or poured in concrete, dry wall is not acceptable (602.1)

