SUMMARY OF PROPOSED CD2:

Bill 35 (2012), CD1 - RELATING TO THE BUILDING CODE

PROPOSED REVISED CD2:

A. Includes the amendments approved by the Zoning and Planning Committee at the May 24, 2012 meeting, i.e.:

1. Amends Bill 35 (2012), CD1, by incorporating the amendments recommended by the Structural Engineers Association of Hawaii as discussed in Miscellaneous Communication 1150 (2012) and Miscellaneous Communication 1578 (2012).

2. Makes nonsubstantive technical amendments to the bill to correct typographical and numbering errors, to clarify references cited in the bill, and to conform with standard drafting style and formatting criteria.

3. Changes SECTION 36 of the bill to a standard effective date provision.

B. Deletes the last two sentences of proposed Section 112.5 ("Procedure") because the language is redundant to HRS Section 91-6.

C. Makes additional technical and nonsubstantive amendments.

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE _____

BILL 35 (2012), CD2

PROPOSED

A BILL FOR AN ORDINANCE

TO AMEND CHAPTER 16 OF THE REVISED ORDINANCES OF HONOLULU 1990, AS AMENDED, RELATING TO THE BUILDING CODE.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. Purpose. The purpose of this ordinance is to amend Chapter 16 ("Building Code") of the Revised Ordinances of Honolulu 1990, as amended.

SECTION 2. Article 1 of Chapter 16, Revised Ordinances of Honolulu 1990 ("Adoption of the International Building Code and International Residential Code for One- and Two-Story Dwellings"), is repealed.

SECTION 3. Chapter 16 ("Building Code"), of the Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Article 1 to read as follows:

"Article 1. Adoption of the International Building Code and International Residential Code for One- and Two-Family Dwellings

Sec. 16-1.1 International Building Code.

The "International Building Code, 2006 Edition" as published by the International Code Council, Inc., 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001 is by reference incorporated herein and made a part hereof, subject to the following amendments.

(1) Amending Section 101.1. Section 101.1 is amended to read:

101.1 Title. These regulations shall be part of the Building Code of the City and County of Honolulu, hereinafter referred to as "this code."

(2) Amending Section 101.2. Section 101.2 is amended to read:

101.2 Scope. The provisions of this code shall apply to the construction, alteration, moving, demolition, replacement, repair, and use of any building or structure within this jurisdiction inland of the shoreline, except where located primarily in a public way, public utility towers and poles, mechanical equipment not specifically regulated in this code, and hydraulic flood control structures.

Exceptions:

1. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than two stories high with separate means of egress and their accessory structures shall be permitted to comply with the International Residential Code.

2. Existing buildings undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the International Existing Building Code.

(3) Amending Section 101.4. Section 101.4 is amended to read:

101.4 Referenced Codes. The other codes referenced elsewhere in Sections 101.4.1 through 101.4.8 shall be considered part of the requirements of this code to the prescribed extent and scope of each such reference.

101.4.1 Electrical. The provisions of ROH 1990, Chapter 17, Electrical Code shall apply.

101.4.2 Plumbing. The provisions of ROH 1990, Chapter 19, Plumbing Code shall apply.

101.4.3 Fire Prevention. Whenever the provisions of the International Fire Code are referenced, the provisions of ROH 1990, Chapter 20, Fire Code of the City and County of Honolulu shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration or removal or fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

101.4.4 Housing. The provisions of ROH 1990, Chapter 27, Housing Code shall apply.

101.4.5 Energy. The provisions of ROH 1990, Chapter 32, Building Energy Conservation Code shall apply.

101.4.6 Fixed Transit and Passenger Rail Systems. The provisions of the Standard for Fixed Guideway Transit and Passenger Rail Systems, NFPA 130, shall apply to fixed guideway transit and passenger rail stations to the prescribed extent of this standard.

101.4.7 Other Codes. Other referenced codes not listed in Sections 101.4.1 through 101.4.6 shall be considered referenced guidelines.

(4) Amending Section 102.4. Section 102.4 is amended by adding the following exception:

Exception: Whenever in this code reference is made to the International Mechanical Code and International Fuel Gas Code, the provisions of the International Mechanical Code and International Fuel Gas Code shall be deemed guidelines and not mandatory.

(5) Amending Section 102.6. Section 102.6 is amended to read:

102.6 Existing Structures. Buildings in existence at the time of the adoption of this code may have their existing use or occupancy continued if such use or occupancy was legal at the time of the adoption of this code, provided such continued use does not constitute a hazard to the general safety and welfare of the occupants and the public.

(6) Amending Section 103. Section 103 is amended to read:

SECTION 103 – ORGANIZATION AND ENFORCEMENT

103.1 In accordance with the prescribed procedures and with the approval of the appointing authority, the building official shall have the authority to appoint technical officers, inspectors, plan examiners and other personnel necessary to support this code enforcement agency. The building official may designate such inspectors or employees as may be necessary to carry out the functions of this code enforcement agency. Such employees shall have powers as delegated by the building official.

The building official may deputize volunteers to temporarily carry out functions of the code enforcement agency in the event of a major natural disaster.

(7) Amending Section 105. Section 105 is amended to read:

SECTION 105 – PERMITS

A building permit is required to perform work covered by this code as provided in ROH Chapter 18.

(8) Amending Section 106. Section 106 is amended to read:

SECTION 106 – CONSTRUCTION DOCUMENTS

106.1 Submittal Documents. See ROH Chapter 18.

106.2 Fire Protection. When automatic sprinkler systems are installed, construction drawings shall contain all information as required by the referenced installation standards in Chapter 9.

For new installations the construction drawings shall include but not limited to, the spacing, location, and position of all fire sprinklers heads, the sprinkler system monitoring and alarm system information, the system riser and fire department connection details with their location.

For existing construction, the construction drawings shall include but not limited to, the locations of the existing and final fire sprinkler heads affected by the proposed work.

106.2.1 Fire Protection System Working Drawings. Shall be required for new installations, and to include but limited to, existing systems which; increase the coverage areas, change the hazard classification, provide in-rack sprinkler systems, and any storage in excess of 12 feet in height. Working drawings for the fire protection system(s) shall be submitted to indicate conformance with this code and the construction documents and shall be submitted by the fire protection special inspector in accordance to Section 913.1.2.

106.3 Means of Egress. The construction documents shall show in sufficient detail the location, construction, size and character of all portions of the means of egress in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-3, and I-1, the construction documents shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

106.4 Exterior Wall Envelope. Construction documents for all buildings shall describe the exterior wall envelope in sufficient detail to determine compliance with this code. The construction documents shall provide details of the exterior wall envelope as required, including flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves or parapets, means of drainage, water-resistive membrane and details around openings.

The construction documents shall include manufacturer's installations instructions that provide supporting documentation that the proposed penetration and opening details described in the construction documents maintain the weather resistance of the exterior wall envelope. The supporting documentation shall fully describe the exterior wall system which was tested, where applicable, as well as the test procedure used.

106.5 Site Plan. In addition to the plot plan required in ROH Chapter 18, the construction documents submitted with the application for permit shall be accompanied by a site plan showing to scale the size and location of new construction and exiting structures on the site, distances from lot lines, the established street grades and the proposed finished grades and as applicable, flood hazard areas, floodways, design flood elevations; and it shall be drawing in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and location and size of existing structures and construction that are to remain on the site or plot.

106.6 General. All plans and specifications relating to work which affects the public safety or health and for which a building permit is required shall be prepared by or under the supervision of a duly licensed professional engineer or architect as required by HRS Chapter 464.

Where special inspection is required by this code, all special inspection shall be provided on the submitted plans as a condition for permit issuance. For special inspections, see Sections 909, 913, 1704, and 1707.

(9) Deleting Section 107. Section 107 is deleted.

(10) Deleting Section 108. Section 108 is deleted.

(11) Amending Section 109. Section 109 is amended to read:

SECTION 109 – INSPECTIONS AND LOT SURVEY

109.1 General. All construction or work for which a permit is required shall be subject to inspection by the building official. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of any other ordinance. Inspections presuming to give authority to violate or cancel the provisions of this code or of any other ordinances shall not be valid.

It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the building official nor the city shall be liable for any expense entailed in the removal or replacement of any material required to allow inspection.

A survey of the lot may be required by the building official to verify that the structure is located in accordance with the approved plans.

109.2 Inspection Requests. It shall be the duty of the person doing the work authorized by a permit to notify the building official that the work is ready for inspection. The building official may require that every request for inspection be filed at least one working day before the day for which inspection is requested. The request may be, but not limited to, communication in writing or by telephone.

It shall be the duty of the person requesting any inspections required by this code to provide access to and means of proper inspection of such work.

109.3 Required Inspections. The building official, upon notification from the permit holder or the permit holder's agent, shall make the following inspections and shall either approve that portion of the construction as completed or shall notify the permit holder or the permit holder's agent if the same fails to comply with this code.

109.3.1 Final Inspection. To be made after all construction is completed and prior to final occupancy.

109.3.2 Lath and/or Gypsum Board Inspection. To be made after all lathing and gypsum board, interior and exterior, in construction required to be fire-resistive is in place but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.

Exception: Lath and gypsum board installed in Group U Occupancies.

109.3.3 Lowest Floor Elevation. In flood hazard areas, upon placement of the lowest floor, including the basement, and prior to further vertical construction, an elevation certification required in Section 1612.5 shall be submitted to the building official.

(12) Amending Section 110.1. Section 110.1 is amended by adding an exception to read:

Exceptions:

1. For R-3 Occupancies, see Residential Code Section R110.1.

2. Group U Occupancies.

(13) Amending Section 112. Section 112 is amended to read:

SECTION 112 – BOARD OF APPEALS

112.1 Creation. There shall be and is hereby created a board of appeals consisting of nine members who shall be qualified by experience and training to pass upon matters pertaining to building construction and fire safety and who shall be appointed by the mayor with the approval of the council. Four members shall be currently licensed as engineers or

architects with the State of Hawaii board of registration of professional engineers, architects, land surveyors, and landscape architects. One member shall be qualified by experience and training to pass on matters pertaining to electrical work. One member shall be qualified by experience and training to pass on matters pertaining to plumbing work. Two members shall be qualified by experience and training to pass on matters pertaining to fire safety. One member shall be a general contractor licensed under HRS Chapter 444. The members of the board shall serve for terms of five years and until their successors have been appointed and qualified. Any vacancy occurring other than by expiration of a term of office shall be filled for the remainder of such unexpired term in the same manner as for an original appointment. The board shall select a chair and vice-chair annually.

112.2 Board Action. All board action requires an affirmative vote of five or more board members.

112.3 Power and Duties. The board shall:

112.3.1 Hear and determine appeals from the decisions of the building official in the administration of the Building Code, Electrical Code, Plumbing Code, Housing Code, Building Energy Efficiency Standards, and ROH Chapter 18, including, but not limited to, matters involving any approval or denial, the use of new or alternate materials, types of construction, equipment, devices or appliances, administrative enforcement, and the issuance, suspension or revocation of permits issued under ROH Chapter 18.

In the case of any denial of the use of new or alternative materials, types of construction, equipment, devices or appliances, an appeal may be sustained if the record shows that: (1) the new or alternate materials, types of construction, equipment, devices or appliances meet the required standards established by the codes being appealed from; (2) permitting the use thereof will not jeopardize life, limb or property, and; (3) the use will not be contrary to the intent and purpose of the code being appealed from. The appellant shall pay all expenses necessary for tests that may be ordered by the board.

In all cases not involving the use of new or alternate materials, an appeal shall only be sustained if the record shows that the decision of the building official is based on an erroneous finding of material fact, arbitrary or capricious decision making, or a manifest abuse of discretion. The board may reverse, affirm or modify, in whole or in part, the decision appealed from.

112.3.2 The board of appeals shall hear and determine appeals from the decisions of the fire official in the administration of the Fire Code, including the suspension or revocation of permits issued pursuant to the Fire Code, and any denial of the use of new or alternate materials, types of construction, equipment, devices or appliances. The standard of review for the use of new or alternate materials, types of construction, equipment, devices or appliance shall be the same as for Section 112.3.1.

112.3.3 The board of appeals shall hear and determine petitions for varying the application of the Building Code, Electrical Code, Plumbing Code, Fire Code, or Building Energy Efficiency Standards. A variance may be granted if the board finds: (1) that the strict application, operation or enforcement of the code provision or provisions being appealed from would result in practical difficulty or unnecessary hardship to the applicant; (2) that safety to life, limb, and property will not be jeopardized, and; (3) that the granting of a variance would not be injurious to the adjoining lots and the building thereon, would not create additional fire hazards and would not be contrary to the purposes of the code and public interest. In making its determination, the board shall take into account the character, use, and type of occupancy and construction of adjoining buildings, buildings on adjoining lots and the building involved.

112.3.4 The board of appeals shall hear and determine appeals from the decisions of the building official in the administration enforcement of ROH Chapter 29, Article 4. An appeal shall only be sustained if the record shows that the decision of the building official is based on an erroneous finding of material fact, arbitrary or capricious decision making, or a manifest abuse of discretion. The board may reverse, affirm or modify, in whole or in part, the decision appealed from.

112.3.5 The board of appeals shall hear and determine appeals concerning the summary removal of unlawful signs pursuant to ROH Chapter 29, Article 14. Such appeals shall be limited to a determination of whether a sign was properly removed pursuant to the provisions of that article. An appeal shall only be sustained if the record shows that the decision of the building official is based on an erroneous finding of material fact, arbitrary or capricious decision making, or a manifest abuse of discretion. The board may reverse, affirm or modify, in whole or in part, the decision appealed from.

112.3.6 Appeals from the decisions of the building official to issue, suspend, or revoke permits shall be in writing and filed with the board within ten (10) working days of the permittee's receipt of the notice of issuance, suspension, or revocation. In all other cases, appeals from the decisions of the building official and fire official shall be in writing and filed within thirty (30) calendar days of the decision appealed from.

112.4 Compensation. Each member of the board shall be compensated at the rate of $20 per day for each day's actual attendance at a meeting, but such compensation shall not exceed, in the aggregate, $60 in any one month.

112.5 Procedure. The proceedings of the board shall be subject to the provisions of HRS Chapter 91. The board shall adopt reasonable rules and regulations for conducting its meetings, hearings, and investigations in conformity therewith and may impose reasonable fees to cover the costs of such proceedings.

112.6 Fees. The filing fee for a petition for appeal from a decision of the Authority Having Jurisdiction in the administration the Building Code, Electrical Code, Fire Code, Plumbing Code, Housing Code, ROH Chapter 29, Article 4, ROH Chapter 18 and the Building Energy Efficiency Standard or an application for varying the application of the Building Code, Electrical Code, Plumbing Code, Fire Code, or Building Energy Efficiency Standards, shall be $200.00. No petition for appeal shall be filed without payment of said fee.

(14) Amending Section 113. Section 113 is amended to read:

SECTION 113 – VIOLATIONS AND PENALTIES.

For violation and penalty provisions, see ROH Chapter 16, Article 10.

(15) Amending Section 114. Section 114 is amended to read:

See ROH Chapter 18. Section 18-7.5.

(16) Amending Section 115. Section 115 is amended to read:

SECTION 115 – UNSAFE BUILDINGS

115.1 General. All buildings or structures which are structurally unsafe or not provided with adequate egress, or which constitute a fire hazard, or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard or abandonment, as specified in this code or any other effective ordinance are, for the purpose of this section, unsafe buildings. An unsafe building shall also include a dangerous building as defined by Chapter 2 of the International Existing Building Code. All such unsafe buildings or structures are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition, removal, or other methods approved by the building official in accordance with the procedure specified in Sections 115.2, 115.3, and 115.4.

115.2 Notice to Owner. The building official shall examine or cause to be examined every building or structure or portion thereof reported as dangerous or damaged and, if such is found to be an unsafe building as defined in this section, the building official shall give to the owner of such building or structure a written notice of violation stating the defects thereof. This notice may require the owner or person in charge of the building or premises, within 48 hours, to commence either the required repairs or improvements or demolition and removal of the building or structure or portions thereof, and all such work shall be completed within 90 days from the date of notice, unless otherwise required by the building official. If necessary, such notice also require the building, structure or portion thereof to be vacated forthwith and not reoccupied until the required

repairs and improvements are completed, inspected, and approved by the building official.

Proper service of such notice of violation shall be by personal service or certified mail upon the owner of record, provided that if such notice is returned as undeliverable after mailing by certified mail, service may be by publication or posting a copy of the notice upon the property. The designated periods within which the owner or person in charge is required to comply with the order of the building official shall begin as of the date the owner or person in charge receives the notice of violation, in person or by certified mail, or, the date on which the notice is published or posted upon the property.

115.3 Posting of Signs. The building official shall cause to be posted at each entrance to buildings ordered vacated a notice to read: DO NOT ENTER. UNSAFE TO OCCUPY. DEPARTMENT OF PLANNING AND PERMITTING, CITY AND COUNTY OF HONOLULU. Such notice shall remain posted until the required repairs, demolition or removal is completed. Such notice shall not be removed without written permission of the building official, and no person shall enter the building except for the purpose of making the required repairs or of demolishing the building.

In the event of a major disaster, the building official may post "RESTRICTED USE" or "UNSAFE" placards at each entrance to a building or portion of a building if an inspection warrants such posting. Entry or occupancy in a building or portion of a building posted with "RESTRICTED USE" placard shall be limited to the restrictions stated on the placard. No entry is permitted in a building or portion of a building posed "UNSAFE." Placards shall not be removed or altered unless authorized by the building official.

115.4 Action Upon Noncompliance. Where the owner of an unsafe structure fails, neglects or refuses to comply with a notice of violation requiring the repair, rehabilitation or demolition and removal of an unsafe building or structure, or, portions thereof, the building official may serve the owner of the building a notice of order in accordance with Article 10 of the Chapter and repair, rehabilitate or to demolish and remove the building or structure or portion thereof and to recover the cost of such work from the owner. Costs incurred by the building official in the repair, demolition, and removal of such buildings or structures shall be considered civil fines that may be attached as a lien upon real property.

To the extent that repairs, alterations or additions are made or a change of occupancy occurs during the restoration of the structure, such repairs, alterations, additions or change of occupancy shall comply with the requirements of this code and ROH, Chapter 18, Article 3.

(17) Amending Section 202. Section 202 is amended by:

a. By amending the definition of "BUILDING" to read:

BUILDING. A building is any structure used or intended for supporting any use or occupancy. The term shall include but not be limited to any structure mounted on wheels such as a trailer, wagon or vehicle which is parked and stationary for any 24-hour period, and is used for business or living quarters; provided, however, that the term shall not include the push wagon which is readily movable and which does not exceed 25 square feet in area, nor shall the term include a vehicle, used exclusively for the purpose of selling any commercial product there from, which holds a vehicle license and actually travels on public or private streets.

b. By adding the following definition immediately before the definition of "BUILDING LINE":

BUILDING ENERGY EFFICIENCY STANDARDS shall mean ROH Chapter 32.

c. By amending the definition of "BUILDING OFFICIAL" to read:

BUILDING OFFICIAL shall mean the director of planning and permitting of the city or the director's authorized representative.

d. By adding the following definition immediately before the definition of "CAST STONE":

CARPORT is a private garage which is at least 100 percent open on one side and with 50 percent net openings on another side or which is provided with an equivalent of such openings on two or more sides.

A private garage which is 100 percent open on one side and 25 percent open on another side with the latter opening so located to provide adequate cross ventilation may be considered a carport when approved by the building official.

e. By adding the following definition immediately before the definition of "CLEAN AGENT":

CITY shall mean the City and County of Honolulu.

f. By amending the definition of "DWELLING UNIT" to read:

DWELLING UNIT. A building or portion thereof that contains living facilities, including permanent provisions for living, sleeping, eating, cooking and sanitation, as required by this code, for not more than one family, or a congregate residence for 16 or fewer persons.

g. By adding the following definition immediately before the definition of "EMERGENCY ALARM SYSTEM":

ELECTRICAL CODE shall mean ROH Chapter 17.

h. By amending the definition of "EXISTING STRUCTURE" to read:

EXISTING BUILDING. A building for which a legal building permit has been issued and complies with the Building Code in effect prior to the effective date of this ordinance.

i. By adding the following definition immediately before the definition of "FIBER CEMENT SIDING."

FAMILY shall be as defined in the Land Use Ordinance, except that the number of residents in a licensed health adult residential care home, a licensed health special treatment facility, or other similar licensed health facility shall be limited to six persons in order for the residents of the facility to be considered a family under this code. For the purpose of this definition, "licensed" refers to licensure or certification by the State of Hawaii.

j. By adding the following definition immediately before the definition of "FIRE COMMAND CENTER":

FIRE CODE shall mean ROH Chapter 20.

k. By adding the following definition immediately before the definition of "HPM FLAMMABLE LIQUID":

HOUSING CODE shall mean ROH Chapter 27.

l. By adding the following definition immediately before the definition of "LIGHT-DIFFUSING SYSTEM":

LAND USE ORDINANCE shall mean ROH Chapter 21.

m. By adding the following definition immediately before the definition of "POSITIVE ROOF DRAINAGE":

PLUMBING CODE shall mean ROH Chapter 19.

(18) Adding Section 303.2. A new Section 303.2. is added to read:

303.2 Sanitation. In a building or portion of a building containing a new Group A Occupancy such as an entertainment center, movie theatre, sports area, or other similar occupancy, the number of water closets available to females who are not employed in that building or portion shall be at least twice the number available to males who are not employed in that building or portion.

This section shall further apply to any bathroom open to the general public in any specified place of public assembly that is altered where the cost of making alterations in any twelve-month period shall exceed $500,000.

The cost of making alterations and the value of the building or space shall be determined by the building official.

Where urinals are permitted, urinals may be provided in bathrooms in lieu of water closets, but the number or urinals shall not exceed fifty percent of the required number of water closets.

(19) Amending Section 308.2. Section 308.2 is amended to read:

308.2 Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised

residential environment that provides personal care services in an assisted living facility. The residents participate in fire drills, are self starting, and may require some physical assistance from up to one staff to reach a point of safety in an emergency situation. Facilities with residents who require assistance by more than one staff, are not self starting, who are bedridden beyond 14 days, or require intermittent nursing care beyond 45 days, shall reside on the first floor in all Type III, IV, and V construction, or shall be classified as Group I-2.

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section R101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group
R-4.

(20) Amending Section 308.3. Section 308.3 is amended to read:

308.3 Group I-2. This occupancy shall include buildings and structures used for personal, medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

Hospitals
Nursing homes (both intermediate-care facilities and skilled Nursing facilities)
Mental hospitals
Detoxification facilities
Specialized Alzheimer's facilities or areas
Assisted Living Facilities (with residents beyond Group I-1 limitations for capability)

A facility such as the above with five or fewer persons shall be classified as Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2.

(21) Amending Section 310.1. Section 310.1 is amended to read:

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping

purposes when not classified as an institutional Group I. Residential occupancies shall include the following:

R-1 Residential occupancies containing sleeping units where the occupant primarily transient in nature including:

Boarding houses (transient)
Hotels (transient)
Motels (transient)

R-2 Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, and facilities providing personal care services that have residents that are capable of self evacuation in an emergency situation, including:

Apartment houses
Boarding houses (not transient)
Convents
Dormitories
Facilities providing personal care services (with residents that are capable of self evacuation)
Fraternities and sororities
Hotels (nontransient)
Monasteries
Motels (nontransient)
Vacation timeshare properties

Congregate living facilities with 16 or fewer occupants and facilities providing personal care services with 16 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as R-1, R-2, R-4 or I including:

Buildings that do not contain more than two dwelling units.
Adult care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
Child care facilities that provide accommodations for five or fewer persons of any age for less than 24 hours.
Congregate living facilities with 16 or fewer persons.

Adult and child care facilities within a single-family home are permitted to comply with the International Residential Code in accordance with Section 101.2.

R-4 Residential occupancies shall include buildings, arranged for occupancy as assisted living facilities including more than five but not more than 16 occupants, excluding staff. Residents shall meet the ability to evacuate requirements and other limitations as required in Group I-1.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code, or shall comply with the International Residential Code.

(22) Amending Section 310.2. Section 310.2 is amended:

a. By adding the following definition immediately before "BOARDING HOUSE" to read:

ASSISTED LIVING FACILITIES. A building or part thereof housing persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides personal care services and are licensed by the State.

b. By amending the following definition to read:

PERSONAL CARE SERVICE. The care of residents who do not require chronic or convalescent, health, medical or nursing care. Personal care involves responsibility for fire safety of the resident while inside the building. The types of facilities providing personal care services shall include, but not be limited to, the following: assisted living facilities, residential care facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

c. By deleting the definition of "RESIDENTIAL CARE/ASSISTED LIVING FACILITIES."

(23) Adding Section 402.17. Section 402.17 is added to read:

402.17 Fire Alarm Systems. Fire alarm systems shall comply with the Fire Code.

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(24) Amending Section 403.6. Section 403.6 is amended to read:

403.6 Fire Alarm and Communications System. The fire alarm and communications systems shall comply with the Fire Code and be approved by the fire chief.

(25) Amending Section 403.7. Section 403.7 is amended to read:

403.7 Fire Department Communications System. The fire department communications system shall comply with the Fire Code and be approved by the fire chief.

(26) Amending Section 403.8. Section 403.8 is amended to read:

403.8 Fire Command Station. Fire command station shall comply with the Fire Code and be approved by the fire chief.

(27) Deleting Section 403.9. Section 403.9 is deleted.

(28) Amending 403.10. Section 403.10 is amended to read:

403.10 Standby and Emergency Power and Light Systems. A permanently installed standby power-generator set conforming to the Electrical Code shall be provided. If the set is located inside a building, the set shall be located in a separate room enclosed with 2-hour fire-resistance-rated fire barrier assemblies. The set shall be equipped with suitable means for automatically starting the generator set upon failure of the normal electrical supply systems and for automatic transfer and operation of all the required electrical functions at full power within 30 seconds of such normal service failure. An on-premises fuel supply sufficient for not less than 8 hours of full demand operation of the set shall be provided. Should the standby unit become inoperable at any time due to breakdown of equipment and cannot be repaired immediately, a portable emergency power unit shall be installed to take its place until the equipment is repaired and in operable condition.

The building official may approve other reliable sources of energy to power the standby power-generation set.

All power, lighting and signal facilities provided under the requirements of this section shall be transferable to the standby and emergency power system. The power requirement shall be determined so as to provide service to the following:

1. Fire alarm systems.

2. Exit and other emergency lighting.

3. Fire protection equipment.

4. Mechanical ventilation required by this section.

5. Elevator lighting and elevator designated for fire service as required by the State elevator code.

6. Electrically-operated exit locks.

7. Power and lighting for central control station.

8. Ventilation and automatic fire detection equipment for smoke-proof enclosures.

9. Fire department communication system.

The standby power to the fire pump may also be connected to the domestic water pump. In the event the sprinkler system is activated, the power shall be automatically transferred to service the fire pump if needed.

The standby power-generator set shall be tested regularly as required by the fire chief.

(29) Amending Section 403.12. Section 403.12.1 is deleted and Section 403.12 is amended to read:

403.12 Stairway Door Operation. All stairway doors that are locked to prevent entry from the stairway side shall be automatically unlocked without unlatching upon actuation of the fire alarm system or in the event of power failure. Manual override of the automatic system shall be provided from the fire control station.

(30) Amending Section 404.2. Section 404.2 is amended by deleting the word "International."

(31) Amending Section 405.6. Section 405.6 is amended to read:

405.6 Fire Alarm Systems. Fire alarm systems shall comply with the Fire Code.

(32) Amending Section 406.1.3. Section 406.1.3 is amended to read:

406.1.3 Garages and Carports. Carport floor surfaces shall be of approved noncombustible material.

Exception: Asphalt surfaces shall be permitted at ground level in carports.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

(33) Amending Section 406.1.4. Exception number 3 in Section 406.1.4 is amended to read:

3. An occupancy separation need not be provided between a Group R-3 Occupancy and a carport having no enclosed uses above or below.

(34) Amending Section 406.2.4. Section 406.2.4 is amended by deleting the last sentence and replacing with:

Vehicle barriers not less than 2 feet (607 mm) high shall be placed at the ends of drive lanes and at the end of parking spaces in openings located in exterior walls where the difference in the adjacent floor elevation is greater than 1 foot (305 mm).

(35) Amending Section 406.4.2. Section 406.4.2 is amended to read:

406.4.2 Ventilation. A mechanical ventilation system shall be provided as specified by the Administrative Rules of the Department of Health, State of Hawaii.

(36) Amending Section 406.5.1. Section 406.5.1 is amended by deleting the word "International."

(37) Amending Section 406.6.1. Section 406.6.1 is amended by deleting the word "International."

(38) Amending Section 406.6.3. Section 406.6.3 is amended to read:

406.6.3 Ventilation. A mechanical ventilation system shall be provided as specified by the Administrative Rules of the Department of Health, State of Hawaii.

(39) Amending Section 409.3. Section 409.3 is amended to read:

409.3 Projection Room and Equipment Ventilation. Ventilation shall be provided as specified by the Administrative Rules of the Department of Health, State of Hawaii.

(40) Amending Section 410.3.6. Section 410.3.6 is amended by deleting the word "International" in the first and second sentence.

(41) Amending Section 410.4. Section 410.4 is amended by amending the third sentence to read:

When the space beneath a raised platform is used for storage or any purpose other than equipment wiring or plumbing, the floor construction shall be not less than one-hour fire-resistive construction or of heavy timber floor construction.

(42) Amending Section 411.1. Section 411.1 is amended by deleting the word "International."

(43) Amending Section 411.2. Section 411.2 is amended to read:

411.2 Special Amusement Building. A special amusement building is a building or portion thereof in which the means of egress are not apparent due to theatrical distractions, or are disguised or not readily available. A portable special amusement building structure is an amusement building that is used on a short-term basis at each location. A temporary special amusement building is an amusement building used for a period of six weeks or less in any given 12-month period.

(44) Amending Section 412.4.1. Section 412.4.1 is amended by deleting the word "International."

(45) Amending Section 412.4.6. Section 412.4.6 is amended to read:

> **412.4.6 Ventilation.** Aircraft paint hangers ventilation shall be provided as specified by the Administrative Rules of the Department of Health, State of Hawaii.

(46) Amending Section 413.1. Section 413.1 is amended by deleting the word "International."

(47) Amending Section 414.1.1. Section 414.1.1 is amended by deleting the word "International."

(48) Amending Section 414.1.2. The second sentence in Section 414.1.2 is amended to read:

> Individual material requirements are also found in Sections 307 and 415 and in the Fire Code.

(49) Amending Section 414.1.2.1. The second sentence in Section 414.1.2.1 is amended to read:

> Individual material requirements are also found in Sections 307 and 415 and in the Fire Code.

(50) Amending Section 414.2. Section 414.2 is amended by deleting the word "International."

(51) Amending Section 414.2.5. Section 414.2.5 is amended by deleting the words "International."

(52) Amending Section 414.3. Section 414.3 is amended to read:

> **414.3 Ventilation.** Rooms, areas or spaces of Group H occupancy in which explosive, corrosive, combustible, flammable or highly toxic dusts, mists, fumes, vapors or gases are or may be emitted due to the processing, use, handling or storage of materials shall be mechanically ventilated as required by the Fire Code and as specified by the Administrative Rules of the Department of Health, State of Hawaii.

Ducts conveying explosives or flammable vapors, fumes or dusts shall extend directly to the exterior of the building without entering other spaces. Exhaust ducts shall not extend into or through ducts and plenums.

Exception: Ducts conveying vapor or fumes having flammable constituents less than 25 percent of their lower flammability limit may pass through other spaces.

Emissions generated at work stations shall be confined to the area in which they are generated as specified in the Fire Code.

Exhaust air contaminated by highly toxic material shall be treated in accordance with the Fire Code.

A manual shutoff control for ventilation equipment required by this section shall be provided outside the room adjacent to the principal access door to the room. The switch shall be of the break-glass type and shall be labeled: VENTILATION SYSTEM EMERGENCY SHUTOFF.

(53) Amending Section 414.5. Section 414.5 is amended by deleting the word "International."

(54) Amending Section 414.5.1. Section 414.5.1 is amended by deleting the words "International."

(55) Amending Section 414.5.2. Section 414.5.2 is amended by deleting the word "International."

(56) Amending Section 414.5.4. Section 414.5.4 is amended by deleting the acronym "ICC" and the word "International."

(57) Amending Section 414.5.5. Section 414.5.5 is amended by deleting the words "International."

(58) Amending Section 414.6. Section 414.6 is amended by deleting the word "International."

(59) Amending Table 414.5.1. Table 414.5.1 is amended by deleting the word "International."

(60) Amending Section 415.1. Section 415.1 is amended by deleting the word "International."

(61) Amending Section 415.3. Section 415.3 is amended by deleting the words "International."

(62) Amending Table 415.3.1. Table 415.3.1 is amended by deleting the word "International."

(63) Amending Section 415.6.1.4. Section 415.6.1.4 is amended to read:

> **415.6.1.4. Explosion Control.** Explosion control shall be provided as specified in the Fire Code.

(64) Amending Section 415.6.2. The first sentence of Section 415.6.2 is amended to read:

> The storage, handling, processing and transporting of flammable and combustible liquids shall be in accordance with the International Mechanical Code and the Fire Code.

(65) Amending Section 415.6.2.3. Section 415.6.2.3 is amended by deleting the word "International."

(66) Amending Section 415.6.2.5. Section 415.6.2.5 is amended by deleting the word "International."

(67) Amending Section 415.6.2.7. Section 415.6.2.7 is amended by deleting the word "International."

(68) Amending Section 415.6.2.8. The second sentence of Section 415.6.2.8 is amended to read:

> The storage, handling, processing and transporting of flammable and combustible liquids shall be in accordance with the International Mechanical Code and the Fire Code.

(69) Amending Section 415.6.2.9. Section 415.6.2.9 is amended by deleting the word "International."

(70) Amending Section 415.6.3. Section 415.6.3 is amended to read:

415.6.3 Liquefied Petroleum Gas-Distribution Facilities. The design and construction of propane, butane, propylene, butylenes and other liquefied petroleum gas-distribution facilities shall conform to the applicable provisions of Sections 415.6.3.1 through 415.6.3.5.2. The storage and handling of liquefied petroleum gas systems shall conform to the Fire Code. Liquefied petroleum gas distribution facilities shall be ventilated in accordance with Section 415.6.3.1 and the administrative rules of the Department of Health, State of Hawaii.

(71) Amending Section 415.6.3.5. Section 415.6.3.5 is amended by deleting the word "International."

(72) Amending Section 415.6.4. Section 415.6.4 is amended to read:

415.6.4 Dry Cleaning Plants. The construction and installation of dry cleaning plants shall be in accordance with the requirements of this code, the International Mechanical Code, the Plumbing Code and NFPA 32. Dry cleaning solvents and systems shall be classified in accordance with the Fire Code.

(73) Amending Section 415.7. Section 415.7 is amended by deleting the word "International."

(74) Amending Section 415.8. Section 415.8 is amended by deleting the word "International."

(75) Amending Section 415.8.2.7. Section 415.8.2.7 is amended by deleting the word "International."

(76) Amending Section 415.8.2.8. Section 415.8.2.8 is amended by deleting the acronym "ICC."

(77) Amending Section 415.8.5.1. Section 415.8.5.1 is amended by deleting the words "International."

(78) Amending Section 415.8.9.3. Section 415.8.9.3 is amended by deleting the words "International."

(79) Amending Section 415.8.10.1. Section 415.8.10.1 is amended by deleting the words "International."

(80) Amending Section 416.1. Section 416.1 is amended by deleting the word "International."

(81) Adding Section 419.4. Section 419.4 is added to read:

419.4. Group I-1 Smoke Barriers. Group I-1 assisted living facilities shall be provided with at least one smoke barrier in accordance with Section 709. Smoke barriers shall subdivide every story used by residents for sleeping or treatment into at least two smoke compartments. Each compartment shall have not more than 16 sleeping rooms, and the travel distance from any point in a smoke compartment to a smoke barrier door shall not exceed 150 feet (45 720 mm). At least 10 square feet (0.93 m^2) of refuge area per resident shall be provided within the aggregate area of corridors, treatment rooms, or other low hazard rooms on each side of each smoke barriers.

(82) Amending Section 420.1. Section 420.1 is amended by deleting the word "International."

(83) Amending Section 420.7. Section 420.7 is amended to read:

420.7 Explosion control. Explosion control shall be provided in accordance to the Fire Code.

(84) Adding Section 421. Section 421 is added to read:

SECTION 421 – FENCES

421.1 General. Fences shall be constructed in accordance with this code, the Land Use Ordinance and ROH Chapter 15, Article 24, Section 15.24.6. In areas where fence height is not regulated under the Land Use Ordinance, fences over 6 feet in height will be subject to the approval of the fire department as to access.

421.2 Barbed or Razor Wire Fences. Barbed or razor wire shall not be used for construction of any fence.

Exceptions:

1. Barbed or razor wire may be used in fences enclosing the following premises, provided that barbed or razor wire shall be placed along or above the height of 6 feet from the ground, subject to the approval of the fire department:

   1.1 Any "public utility" as defined in HRS Section 269.1;

   1.2 Premises in industrial zoned districts and used for storage or handling of hazardous materials, and premises zoned I-2 or I-3, intensive or waterfront industrial districts which are used for industrial purposes and are not adjacent to premises used for other purposes;

   1.3 Zoos for keeping animals and birds for public view or exhibition; and

   1.4 Jails, prisons, reformatories, and other institutions which are involved in law enforcement or military activities where security against entry is an important factor.

2. Barbed wire may be used in fences enclosing premises used for pasturing cattle or raising swine.

421.3 Construction Barriers. See Section 3306 for fences allowed during construction or demolition.

(85) Adding Section 422. Section 422 is added to read:

SECTION 422 – AGRICULTURAL BUILDINGS

422.1 Appendix C. Appendix C, Group U – Agricultural Buildings is by reference incorporated herein and made a part of this code.

A BILL FOR AN ORDINANCE

(86) Amending Section 501.2. Section 501.2 is amended to read:

501.2 Premises Identification. Numbers shall be provided for all new buildings as specified in ROH Chapter 2, Article 9.

(87) Amending Section 506.2.2. Section 506.2.2 is amended by adding the exception:

Exception: For the purposes of this section, an adjoining private right-of-way may be considered in determining open spaces if the owner of the premises for which the building permit application is filed owns a portion thereof.

(88) Adding Section 509.9. Section 509.9 is added to read:

509.9 Carport. A carport constructed of Type V-B construction on a hillside may exceed one story in height provided the space below the carport floor is unused or used for Group U occupancy only.

(89) Amending Section 603.1.2. Section 603.1.2 is amended by replacing "International Plumbing Code" with "Plumbing Code."

(90) Amending Section 603.1.3. Section 603.1.3 is amended by deleting the acronym "ICC."

(91) Amending Section 702. Section 702 is amended by amending the definition of FIRE SEPARATION DISTANCE to read:

FIRE SEPARATION DISTANCE. The distance measured from the building face to the closest boundary line, to the centerline of a street, alley or public way, or to an imaginary line between two buildings on the property. For the purposes of this section, lot lines established within a joint, cluster, or similar development under the Land Use Ordinance and boundary lines established for condominium ownership purposes only shall not be considered as boundary lines. The distance shall be measured at right angles from the face of the wall.

(92) Amending Section 704.8.2. Section 704.8.2 is amended by deleting the word "International."

A BILL FOR AN ORDINANCE

(93) Amending Section 706.1. Section 706.1 is amended by deleting the word "International."

(94) Amending Section 717.5. Section 717.5 is amended by amending Exception 5 to read:

5. Combustible piping within partitions or enclosed shafts installed in accordance with the International Mechanical Code and the Plumbing Code.

(95) Amending Section 719.1. Exception number 3 of Section 719.1 is amended to read:

3. Duct and pipe insulation and duct and pipe coverings and linings in plenums shall comply with either the International Mechanical or the Uniform Mechanical Codes.

(96) Amending Section 901.2. Section 901.2 is amended by deleting the word "International" and by adding a third paragraph to read:

All buried galvanized steel and other ferrous piping used in connection with fire-extinguishing systems shall be wrapped or otherwise protected against corrosion in accordance with the Plumbing Code provisions for protection of galvanized ferrous piping for potable water.

(97) Amending Section 901.3. Section 901.3 is amended by deleting the word "International."

(98) Amending Sections 901.5 and 901.6.2. Sections 901.5 and 901.6.2 are amended by deleting the words "International."

(99) Amending Section 903.1.1. Section 903.1.1 is amended to read:

903.1.1 Alternative protection. Alternate automatic fire-extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the building code official and the fire chief.

A BILL FOR AN ORDINANCE

(100) A new Section 903.1.2 is added to read:

903.1.2 Storage Height Signage. In any building requiring an automatic sprinkler system, with a ceiling height greater than 12 feet, a readily visible, metal sign, with letters painted or stenciled, not less than 1 inch (25 mm) high on a contrasting background that states the maximum storage height allowable for the installed sprinkler system, shall be placed next to the main shutoff valve of the automatic sprinkler riser.

(101) Amending Section 903.2.6.1. Section 903.2.6.1 is amended by deleting the word "International."

(102) Amending Section 903.2.7. Section 903.2.7 is amended by adding an Exception to read:

Exception: R-3 residential single- and two-family occupancies.

(103) Amending Section 903.2.10.1. Section 903.2.10.1 is amended by amending item number 2 to read:

2. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m^2) in each 50 linear feet (15,240 mm), or fraction thereof, of exterior wall in the story on at least one side. Such required openings shall be unobstructed by sunshades, louvers, grillwork, or other construction on the exterior wall which will prevent or hinder access to the openings by the fire department personnel.

(104) Amending Section 903.2.11. Section 903.2.11 is amended by deleting the word "International."

(105) Amending Section 903.3.1.1.1. Section 903.3.1.1.1 is amended by adding the following:

5. Closets having an area of less than 12 square feet (1.1 m^2) in individual dwelling units in R-2 occupancies, shall not be required to be sprinklered. Closets that contain equipment such as washers, dryers, furnaces or water heaters shall be sprinklered regardless of size.

A BILL FOR AN ORDINANCE

(106) Amending Section 903.3.5. Section 903.3.5 is amended by deleting the word "International."

(107) Deleting Section 903.3.5.2. Section 903.3.5.2 is deleted.

(108) Amending Section 903.4.1. Section 903.4.1 is amended by adding a sentence to the end of the first paragraph to read:

> Alarm, supervisory and trouble signals shall be monitored on the island of Oahu.

(109) Amending Section 903.5. Section 903.5 is amended by deleting the word "International."

(110) Amending Section 904.2.1. Section 904.2.1 is amended to read:

> **904.2.1 Hood System Suppression.** Each required commercial kitchen exhaust hood and duct system required by the Fire Code or the Mechanical Code to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with the Fire Code.

(111) Amending Section 904.3.1. Section 904.3.1 is amended by deleting the acronym "ICC."

(112) Amending Section 905.1. Section 905.1 is amended by:

> **905.1 General.** Standpipe systems shall be provided in new buildings and structures in accordance with this section. Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads. All hose connection outlets shall be installed so that a 12-inch long wrench may be used in connecting the hose with clearance for the wrench on all sides of the outlet. All horizontal runs of standpipe systems shall be sloped to a drain valve at the low point of the system, the drain valve shall be arranged to discharge at an approved location.

(113) Amending Section 905.3.6. Section 905.3.6 is amended by deleting the word "International."

(114) Amending Section 906.1. Section 906.1 is amended by deleting the word "International."

(115) Amending Section 907. Section 907 is amended to read:

907.1 General. Fire alarm systems and their components shall be as required by the Fire Code.

(116) Amending Section 909.3. Section 909.3 is amended by replacing "Section 1704" with "Section 913."

(117) Amending Section 909.11. Section 909.11 is amended by deleting the acronyms "ICC."

(118) Amending Section 909.12.1. Section 909.12.1 is amended by deleting the acronym "ICC."

(119) Amending Section 909.16.3. Section 909.16.3 is amended by deleting the acronym "ICC."

(120) Amending Section 909.20. Section 909.20 is amended by deleting the word "International."

(121) Amending Section 910.2.2. Section 910.2.2 is amended by deleting the word "International."

(122) Amending Section 911.1. Section 911.1 is amended to read:

911.1 Features. Where required by other sections of this code, a fire command center shall comply with the Fire Code and be approved by the fire chief.

(123) Amending Section 912.5. Section 912.5 is amended by deleting the word "International."

(124) Adding Section 913. Section 913 is added to read:

SECTION 913 – FIRE PROTECTION SYSTEMS SPECIAL INSPECTIONS

913.1 General. Where application is made for construction as described in this section, the owner or the licensed design professional in responsible charge, acting as the owner's agent shall employ one or more fire protection systems' special inspectors to provide inspections during construction on the types of work listed under Section 913. The fire protection system special inspector shall be approved by the building official. These inspections are in addition to the inspections specified in Section 109.

913.1.1 Building Permit Requirement. The submitted plans shall include a statement of fire protection system inspection prepared by the licensed engineer of record as a condition for permit issuance.

Exception: The building official may waive the requirements for the employment of a special inspector if the construction is of minor nature.

913.1.2 Report Requirement. Fire protection system inspectors shall keep records of inspections and shall review working drawings prior to installation. The fire protection system inspector shall furnish inspection reports to the owner, licensed engineer or architect of record, and other owner-designated persons. Reports shall indicate that work inspected was done in conformance to the applicable code and shall include, but not be limited to, working drawings and acceptance tests required by this section.

All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design professional and to the building official.

The special inspector shall submit a final signed report stating that they have reviewed the working drawings and whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of this code, this report shall include a copy of the working drawings provided to the building official prior to the final inspection.

913.2 Automatic Sprinkler Systems. Automatic systems shall be inspected and evaluated in accordance to the requirements of Section 903.

1. During installation.

   Exception: Special inspector need not be present continuously during the installation of the sprinkler system provided the special inspector has inspected for conformance with this code and approved plans prior to concealment.

2. During acceptance tests as required by NFPA 13, 13R and 13D.

913.3 Alternative Automatic Fire-Extinguishing Systems. Alternative automatic fire-extinguishing systems shall be inspected and evaluated in accordance to the requirements of Section 904.

1. During installation.

   Exception: Special inspector need not be present continuously during the installation of the alternate automatic fire extinguishing system provided the special inspector has inspected for conformance with this code and approved plans prior to concealment.

2. During tests as required by NFPA 11, 12, 12A, 16, 17, and 17A. Tests shall be conducted as required by the fire chief.

913.4 Standpipe Systems. Standpipe systems shall be inspected and evaluated in accordance to the requirements of Section 905.

1. During installation.

   Exception: Special inspector need not be present continuously during the installation of the standpipe system provided the special inspector has inspected for conformance with this code and approved plans prior to concealment.

2. During acceptance tests as required by NFPA 14. Tests shall be conducted in the presence of the fire department official.

913.5 Smoke Control Systems. Smoke control systems shall be inspected and evaluated in accordance to the requirements of Section 909.

1. During erection of ductwork and prior to concealment for the purposes of leakage testing and recording device location.

2. Prior to occupancy and after sufficient completion for the purposes of pressure difference testing, flow measurements, and detection and control verification. Testing shall be conducted in the presence of the fire department official.

(125) Amending Section 1001.3. Section 1001.3 is amended by deleting the word "International."

(126) Amending Section 1002.1. Section 1002.1 is amended by replacing "refuge" with "rescue assistance."

(127) Amending Section 1003.1. Section 1003.1 is amended as follows:

1003.1 Applicability. The general requirements specified in Sections 1003 through 1012 shall apply to the exit access and the exit elements of the means of egress system, in addition to those specific requirements detailed elsewhere in this chapter. The general requirements of Section 1008 shall apply to the exit discharge element of the means of egress system, in addition to the specific requirements detailed elsewhere in this chapter.

(128) Amending Section 1005.2. Section 1005.2 is amended as follows:

Exceptions:

1. The restrictions on a door swing shall not apply to doors within individual dwelling units and sleeping units of Group R-2 and dwelling units of Group R-3.

2. Exterior screen doors of Group R-2 and dwelling units of Group R-3.

(129) Amending Section 1006.3. Section 1006.3 is amended by adding a number 6 to read:

6. Enclosed stairways of buildings more than 2 stories in height.

(130) Amending Section 1007.2, Exception 2. Exception 2 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(131) Amending Section 1007.3. Section 1007.3 is amended by deleting all references to "refuge" and replacing with "rescue assistance."

(132) Amending Section 1007.4. Section 1007.4 is amended by deleting all references to "refuge" and replacing with "rescue assistance."

(133) Amending Section 1007.6. Section 1007.6 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(134) Amending Section 1007.6.1. Section 1007.6.1 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(135) Amending Section 1007.6.2. Section 1007.6.2 is amended by deleting all references to "refuge" and replacing with "rescue assistance."

(136) Amending Section 1007.6.3. Section 1007.6.3 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(137) Amending Section 1007.6.4. Section 1007.6.4 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(138) Amending Section 1007.6.5. Section 1007.6.5 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(139) Amending Section 1007.8. Section 1007.8 is amended by replacing all references to 10 feet (3084 mm) with 20 feet (6 m).

(140) Amending Section 1007.8.3. Section 1007.8.3 is amended by deleting the word "refuge" and replacing with "rescue assistance."

(141) Amending Section 1008.1.9. Section 1008.1.9 is amended by amending the exception after the second paragraph to read:

Exceptions:

1. A main exit of a Group A occupancy in compliance with Section 1008.1.8.3. Item 2.

2. Double-acting screen doors used in conjunction with exit doors having panic hardware in school cafetoriums.

(142) Amending Section 1008.2. Section 1008.2 is amended by amending the exception to read:

Exceptions:

1. Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation, are permitted in fences and walls surrounding a stadium.

2. Security gates may be permitted across corridors or passageways in school buildings if there is a readily visible durable sign on or adjacent to the gate, stating "THIS GATE IS TO REMAIN SECURED IN THE OPEN POSITION WHENEVER THIS BUILDING IS IN USE." The sign shall be in letters not less than one inch high on a contrasting background. The use of this exception may be revoked by the building official for due cause.

(143) Amending Section 1009.1. Section 1009.1 is amended by adding Exception 5:

5. Private stairways serving an occupant load of less than 5 shall not be less than 30 inches in width.

(144) Amending Section 1013.1. Section 1013.1 is amended by adding a second and third paragraph after the Exception to read:

Openings or portions of openings in exterior walls which are less than 30 inches above a floor shall be provided with at least one rail between 30 inches and 36 inches above the floor when such openings are located on floors more than 5 feet above the adjacent grade or finished floor and are not provided with structurally adequate safety glass installations or other barriers to prevent a person from falling through the openings.

Openable windows or portions of openable windows located on floors more than 5 feet above the adjacent grade or finished floor shall be provided with guards as specified in this section, when such windows are less than 42 inches above the floor in Group R, Division 1 and 2 Occupancies and less than 36 inches in Group R, Division 3 and 4 Occupancies. Guards are not required where such windows are provided

with securely installed "insect" screen or other equal or better barriers to young children falling through such openings and one rail between 30 inches and 36 inches above the floor.

(145) Amending Section 1013.3. Section 1013.3 is amended by adding a second paragraph after the exceptions to read:

Guardrails in Group R-1 and R-2 Occupancies shall not contain: (1) horizontal rails other than top and bottom rails, or (2) cutouts or indentations greater than 1-3/4 inches in width of protrusions that may provide a foothold for young children.

(146) Amending Section 1017.3. Section 1017.3 is amended by amending exception 2 to read:

2. In occupancies in Groups B, E, F, I-1, M, R-1, R-2, R-4, S and U, where the building is equipped with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridor shall not exceed 50 feet (15 240 mm).

(147) Amending Section 1019.2. Section 1019.2 is amended by adding Exception 4:

4. In Group R-2 and R-3 Occupancies, one means of egress is permitted within and from individual dwelling units with a maximum occupant load of 20 where the dwelling unit is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

(148) Amending Section 1026.2.1. Section 1026.2.1 is amended by adding an exception to read:

Exception: Glass jalousie bladed windows may be used for emergency escape or rescue.

(149) Amending Section 1026.3. Section 1026.3 is amended by adding an exception to read:

Exception: Escape or rescue windows in Group R, Division 1 and 2 Occupancies opening into an exit balcony serving more than two dwelling units or hotel guest rooms shall have a finished sill height not more than 68 inches above the floor.

(150) Amending Section 1101.1. Section 1101.1 is amended by replacing "shall control" with "are guidelines for."

(151) Amending Section 1102.2. Section 1101.2 is amended by adding a paragraph immediately following the first paragraph to read:

> Conformance with the design and construction requirements of the Americans with Disabilities Act Accessibility Guidelines administered by the Department of Justice or the Fair Housing Act Accessibility Guidelines administered by the Department of Housing and Urban Development shall be equivalent to meeting the accessibility of this code. Construction of public buildings or facilities in compliance with HRS 103-50 shall be equivalent to meeting the accessibility of this code. At the time of submittal of an application for a building permit, the applicant shall state on the plans that the project is subject to the above requirements.

(152) Amending Section 1203.1. Section 1203.1 is amended to read:

> **1203.1 General.** Buildings shall be provided with natural ventilation in accordance with Section 1203.4 or shall be provided with mechanical ventilation as specified by the Administrative Rules of the Department of Health, State of Hawaii.

(153) Amending Section 1203.2. Section 1203.2 is amended by deleting the first sentence and replacing it with:

> Attics and enclosed rafter spaces of combustible construction where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain.

(154) Adding Section 1203.2.2. Section 1203.2.2 is added to read:

> **1203.2.2 Unvented Attic Spaces.** The attic space shall be unvented when the design professional determines it would be beneficial to eliminate ventilation openings to reduce salt-laden air and to maintain relative humidity to 60 percent or lower to:
>
> 1. Avoid corrosion to steel components;

2. Avoid moisture condensation in the attic space; or

3. Minimize energy consumption in the attic space, or ventilation by maintaining satisfactory space conditions in both the attic and occupied space below.

(155) Amending Section 1203.4.1. Section 1203.4.1 is amended by replacing "4 percent" with "5 percent."

(156) Amending Section 1203.4.1.1. Section 1203.4.1.1 is amended by replacing all references to "8 percent" with "10 percent."

(157) Amending Section 1203.4.2. Section 1203.4.2 is amended to read:

1203.4.2 Contaminants Exhausted. Contaminant sources in naturally ventilated spaces shall be removed as specified by the Administrative Rules of the Department of Health, State of Hawaii, or the Fire Code.

(158) Amending Section 1203.4.2.1. Section 1203.4.2.1 is amended to read:

1203.4.2.1 Bathrooms. Rooms containing bathtubs, showers, spas and similar bathing fixtures shall be mechanically ventilated as specified by the Administrative Rules of the Department of Health, State of Hawaii.

(159) Amending Section 1203.5. Section 1203.5 is amended to read:

1203.5 Other Ventilation and Exhaust Systems. Ventilation and exhaust systems for occupancies and operations involving flammable or combustible hazards or other contaminant sources shall be provided as required by the Fire Code.

(160) Amending Section 1205.2. Section 1205.2 is amended by deleting "8 percent" and replacing with "10 percent."

(161) Amending Section 1205.4.1. Section 1205.4.1 is amended by deleting the acronym "ICC."

(162) Amending Section 1206.3.3. Section 1206.3.3 is amended by deleting the word "International."

(163) Deleting Section 1207. Section 1207 is deleted.

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(164) Amending Section 1301.1. Section 1301.1 is amended to read:

1301.1 Scope. Buildings shall be designed and constructed in accordance with ROH Chapter 32.

(165) Amending Section 1405.10.4. Section 1405.10.4 is amended by deleting the acronym "ICC."

(166) Amending Section 1503.4. Section 1503.4 is amended:

a. By deleting the words "the International Plumbing Code" and replacing with "this section."

b. By adding new Sections 1503.4.2 through 1503.4.6, to read as follows:

1503.4.2 General. Roof shall be sloped a minimum of 1 unit vertical in 48 units horizontal (2 percent slope) for drainage unless designed for water accumulation in accordance with Section 1611 and approved by the building official. Size of leaders, conductors, and storm drains shall be sized on the basis of Figure 1611.1 of Section 1611 and the Plumbing Code.

1503.4.3 Roof Drains. Unless roofs are sloped to drain over roof edges, roof drains shall be installed at each low point of the roof.

Roof drains discharge at the public way shall be in accordance with ROH Chapter 14. Roof drains shall conform to ROH Chapter 19 Plumbing Code.

1503.4.4 Overflow Drains and Scuppers. Where roof drains are required, overflow drains having the same size as the roof drains shall be installed with the inlet flow line located 2 inches (51 mm) above the low point of the roof, or overflow scuppers having three times the size of the roof drains and having a minimum opening height of 4 inches (102 mm) may be installed in the adjacent parapet walls with the inlet flow line located 2 inches (51 mm) above the low point of the adjacent roof or shall be designed in accordance to the Plumbing Code.

Overflow drains shall discharge to an approved location and shall not be connected to roof drain lines.

1503.4.5 Concealed Piping. Roof drains and overflow drains, where concealed within the construction of the building, shall be installed in accordance with the ROH Chapter 19, Plumbing Code.

1503.4.6 Over Public Property. Roof drainage water from a building shall not be permitted to flow over public property.

Exception: Group R, Division 3 and Group U Occupancies.

(167) Amending Section 1603.1. Section 1603.1 is amended to read:

1603.1 General. Construction documents shall show the size, section, and relative locations of structural members with floor levels, column centers and offsets adequately dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.8 shall be clearly indicated on the construction documents for parts of the building or structure.

EXCEPTION: Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:

1. Floor and roof live loads.

2. Basic wind speed (3-second gust), and effective wind speed (3-second gust), V_{eff} miles per hour (mph) (km/hr) and wind exposure.

3. Seismic design category and site class.

4. Flood design data, if located in flood hazard areas established in Section 1612.3.

(168) Amending Section 1603.1.1. Section 1603.1.1 is amended to read:

1603.1.1 Floor Live Load. The uniformly distributed, concentrated and impact floor live load used in the design shall be indicated for floor areas. Live load reduction of the uniformly distributed floor live loads, if used in the design, shall be indicated.

(169) Deleting Section 1603.1.3. Section 1603.1.3 is deleted.

(170) Amending Section 1603.1.4. Section 1603.1.4 is amended to read:

1603.1.4 Wind Design Data. The following information related to wind loads shall be shown, regardless of whether wind loads govern the design of the lateral-force-resisting system of the building:

1. Basic wind speed (3-second gust), miles per hour (km/hr), V, or effective windspeed V_{eff}.

2. Wind importance factor I_w and building category.

3. Topographic factor, K_{zt}, and Directionality factor, K_d.

4. Wind exposure, if more than one wind exposure is utilized, the wind exposure and applicable wind direction shall be indicated.

5. The applicable internal pressure coefficient.

6. Components and cladding. The design wind pressures in terms of psf (kN/m²) used for the design of exterior components, and cladding not specifically designed by the registered design professional.

(171) Amending Section 1603.1.8. Section 1603.1.8 is amended to read:

1603.1.8 Work Requiring Special Inspections. Construction documents shall identify the work requiring special inspection as specified in Sections 1704 and 1707.

(172) Amending Section 1603.3. Section 1603.3 is amended to read:

1603.3 Live Loads Posted. Where the live loads for which each floor or portion thereof of a commercial or industrial building is or has been designed to exceed 100 psf (4.80 kN/m²), such design live loads shall be conspicuously posted by the owner in that part of each story in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.

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(173) Amending Table 1604.5. Table 1604.5 is amended to read:

Table 1604.5
CLASSIFICATION OF BUILDINGS AND OTHER STRUCTURES FOR IMPORTANCE FACTORS

OCCUPANCY CATEGORY	SEISMIC USE GROUP SEC. 1616.2	NATURE OF OCCUPANCY	SEISMIC FACTOR I_E	WIND FACTOR I_W
I	I	Buildings and other structures that represent a low hazard to human life in the event of failure including, but not limited to: • Agricultural facilities • Certain temporary facilities • Minor storage facilities	1.00	0.87
II		Buildings and other structures except those listed in Categories I, III and IV	1.00	1.00
III	II	Buildings and other structures that represent a substantial hazard to human life in the event of failure including, but not limited to: • Buildings and covered structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures with elementary school, secondary school or day care facilities with an occupant load greater than 250 • Buildings and other structures with an occupant load greater than 500 for colleges or adult education facilities • Health care facilities with an occupant load of 50 or more resident patients but not having surgery or emergency treatment facilities • Jails and detention facilities • Any other occupancy with an occupant load greater than 5,000 • Power-generating stations, water treatment for potable water, waste water treatment facilities and other public utility facilities not included in Category IV • Buildings and other structures not included in Category IV containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released	1.25	1.15
IV	III	Buildings and other structures designed as essential facilities including, but not limited to: • Hospitals and other health care facilities having surgery or emergency treatment facilities • Fire, rescue and police stations and emergency vehicle garages • Designated earthquake, hurricane and other emergency shelters • Designated emergency preparedness, communication, and operation centers and other	1.50	1.15

		facilities required for emergency response • Power-generating stations and other public utility facilities required as emergency backup facilities for Category IV structures • Structures containing highly toxic materials as defined by Section 307 where the quantity of the material exceeds the maximum allowable quantities of Table 307.7(2) • Aviation control towers, air traffic control centers and emergency aircraft hangars • Buildings and other structures having critical national defense functions • Water treatment facilities required to maintain water pressure for fire suppression		

(174) Amending Section 1605.2.1. Section 1605.2.1 is amended to read:

1605.2.1 Basic Load Combinations. Where strength design or load and resistance factor design is used, structures and portions thereof shall resist the most critical effects from the following combinations of factored loads:

$1.4\ (D + F)$ (Equation 16-1)

$1.2\ (D + F + T) + 1.6\ (L + H) + 0.5\ (L_r \text{ or } R)$ (Equation 16-2)

$1.2D + 1.6\ (L_r \text{ or } R) + (f_1L \text{ or } 0.8W)$ (Equation 16-3)

$1.2D + 1.6W + f_1L + 0.5\ (L_r \text{ or } R)$ (Equation 16-4)

$1.2D + 1.0E + f_1L$ (Equation 16-5)

$0.9D + 1.6W + 1.6H$ (Equation 16-6)

$0.9D + 1.0E + 1.6H$ (Equation 16-7)

f_1 = 1.0 for floors in places of public assembly, for live loads in excess of 100 pounds per square foot (4.79 kN/m^2), and for parking garage live load.

f_1 = 0.5 for other live loads.

Exception: Where other factored load combinations are specifically required by the provisions of this code, such combinations shall take precedence.

(175) Amending Section 1605.3.1. Section 1605.3.1 is amended to read:

1605.3.1 Basic Load Combinations. Where allowable stress design (working stress design), as permitted by this code, is used, structures and portions thereof shall resist the most critical effects resulting from the following combinations of loads:

D + F	(Equation 16-8)
D + H + F + L + T	(Equation 16-9)
D + H + F + (L_r or R)	(Equation 16-10)
D + H + F + 0.75 (L + T) + 0.75 (L_r or R)	(Equation 16-11)
D + H + F + (W or 0.7E)	(Equation 16-12)
D + H + F + 0.75 (W or 0.7E) + 0.75L + 0.75 (L_r or R)	(Equation 16-13)
0.6D + W + H	(Equation 16-14)
0.6D + 0.7E + H	(Equation 16-15)

Exception: Crane loads need not be combined with roof live load or one-half of the wind load.

(176) Amending Section 1609.1.1. Section 1609.1.1 is amended to read:

1609.1.1 Determination of Wind Loads. Wind loads on every building or structure shall be determined in accordance with Section 6 of ASCE 7-05. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

Exceptions:

1. Minimum values for Directionality Factor, K_d, Velocity Pressure Exposure Coefficient, K_z, and Topographic Factor, K_{zt}, shall be determined in accordance with Section 1609.

2. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of the AF & PA Wood Frame Construction Manual for One- and Two-Family Dwellings.

3. Designs using National Association of Architectural Metal Manufacturers FP 1001 Guide Specification for Design of Metal Flagpoles.

4. Designs using Telecommunications Industry Association/Electronics Industries Association-222 Structural Standards for Steel Antenna Towers and Supporting Structures.

1609.1.1.1 Applicability. The provisions of the AF & PA Wood Frame Construction Manual for One- and Two-Family Dwellings, NAAM FP 1001 Guide Specification for Design of Metal Flagpoles, and TIA/EIA-222 shall be based on an effective wind speed, V_{eff}, shown in Figure 1609.1.1.1.

(177) Amending Section 1609.1.2. Section 1609.1.2 is amended to read:

1609.1.2 Protection of Openings. In windborne debris regions, glazing in building shall be impact-resistant or protected with an impact-resistant covering meeting the requirements of an approved impact-resisting standard or ASTM E 1996 and of ASTM E 1886 referenced therein as follows:

1. Glazed openings located within 30 feet (9144 mm) of grade shall meet the requirements of the Large Missile Test of ASTM E 1996.

2. Glazed openings located more than 30 feet (9144 mm) above grade shall meet the provisions of the Small Missile Test of ASTM E 1996.

Exceptions:

1. Wood structural panels with a minimum thickness of 7/16 inch (11.1 mm) and a maximum panel span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings. Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall

be secured with the attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7. Attachment in accordance with Table 1609.1.2 is permitted for buildings with a mean roof height of 33 feet (10 058 mm) or less where wind speeds do not exceed 130 mph (57.2 m/s).

2. Glazing in Occupancy Category I buildings as defined in Section 1604.5, including greenhouses that are occupied for growing plants on a production or research basis, without public access shall be permitted to be unprotected.

3. Glazing in Occupancy Category II, III or IV buildings located over 60 feet (18 288) mm) above the ground and over 30 feet (9144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building shall be permitted to be unprotected.

4. Glazing in Occupancy Category II and III buildings that can receive positive external pressure in the lower 60 feet (18 288 mm) shall be assumed to be openings unless such glazing is impact-resistant or protected with an impact-resistant system.

   Exception: Glazing in Occupancy Category III buildings defined by Table 1604.5 of the following occupancies shall be provided with windborne debris protection:

   a. Covered structures whose primary occupancy is public assembly with an occupant load greater than 300.

   b. Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities.

   c. Any other public building with an occupant load greater than 5,000.

1609.1.2.1 Building with Openings. Where glazing is assumed to be an opening in accordance with Section 1609.1.2, the building shall be evaluated to determine if the openings are of sufficient area to constitute an open or partially enclosed building as defined in ASCE 7. Open and partially enclosed buildings shall be designed in accordance with the applicable provisions of ASCE 7. Occupancy R-4 Residential Assisted Living Facilities and Occupancy R-3 (including their components and cladding) designed as a partially enclosed structure shall also include a residential safe room in accordance with Article 13, Hawaii Residential Safe Room.

(178) Amending Section 1609.2. Section 1609.2 is amended by amending the definition of "WINDBORNE DEBRIS REGION" to read:

WINDBORNE DEBRIS REGION. Portions of hurricane-prone regions that are within 1 mile (1.61 km) of the coastal mean high water line where the effective basic wind speed is 110 mph (48 m/s) or greater; or portions of hurricane-prone regions where the effective basic wind speed is 120 mph (53 m/s) or greater.

(179) Amending Section 1609.3. Section 1609.3 is amended to read:

1609.3 Basic Wind Speed and Topographic and Directionality Factors. The basic wind speed, in mph, for the determination of the wind loads shall be determined by Figure 1609. Special wind regions near mountainous terrain and valleys are accounted within the Topographic Factor defined in Section 1609.3.3. Wind speeds derived from simulation techniques shall only be used in lieu of the basic wind speeds given Figure 1609 when, (1) approved simulation or extreme-value statistical-analysis procedures are used (the use of regional wind speed data obtained from anemometers is not permitted to define the hurricane wind speed risk in Hawaii) and (2) the design wind speeds resulting from the study shall not be less than the resulting 700-year return period wind speed divided by $\sqrt{1.6}$.

1609.3.1 Fastest-Mile Wind Speed Conversion. When required, the 3-second gust wind speeds of Figure 1609 shall be converted to fastest-mile wind speeds using Table 1609.3.1, or the following equation: $V_{fm} = (V_{3S} - 10.5)/1.05$

TABLE 1609.3.1
EQUIVALENT BASIC WIND SPEEDS

V_{3s}	85	90	95	100	105	110	120	125	130	140	145	150	160	170
V_{fm}	71	76	80	85	90	95	104	109	114	123	128	133	142	152

1609.3.2 Effective Basic Wind Speed Conversion. For the Simplified Wind Load Method of Section 1609.6, Wind uplift connectors of Section 2308.10.1, the provision of ASCE Section 6.4, and the AF & PA Wood Frame Construction Manual for One- and Two-Family Dwellings, the basic wind speed value used for determination of the wind loads, shall be the Effective Basic Wind Speed, V_{eff}, determined by Figure 1609.1.1.1, which adjusts the basic wind speed for special topographic wind regions of Oahu.

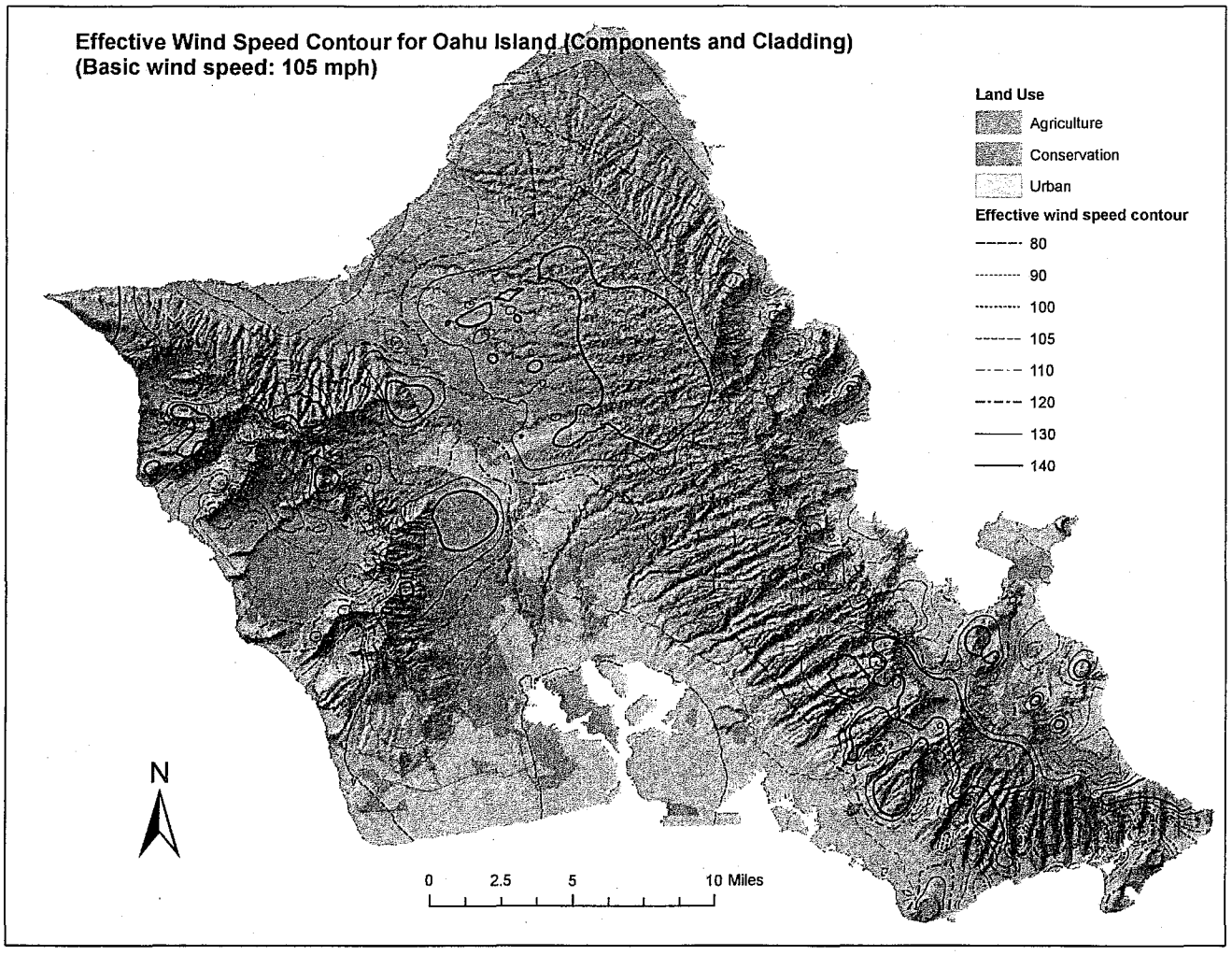

Figure 1609.1.1.1 Effective Basic Wind Speed, V_{eff}, for Components and Cladding for Buildings less than 60 feet tall.

1609.3.3 Topographic Effects. Wind speed-up effects caused by topography shall be included in the calculation of wind loads by using the factor K_{zt}, where K_{zt} is given a Figure 1609.3.3.

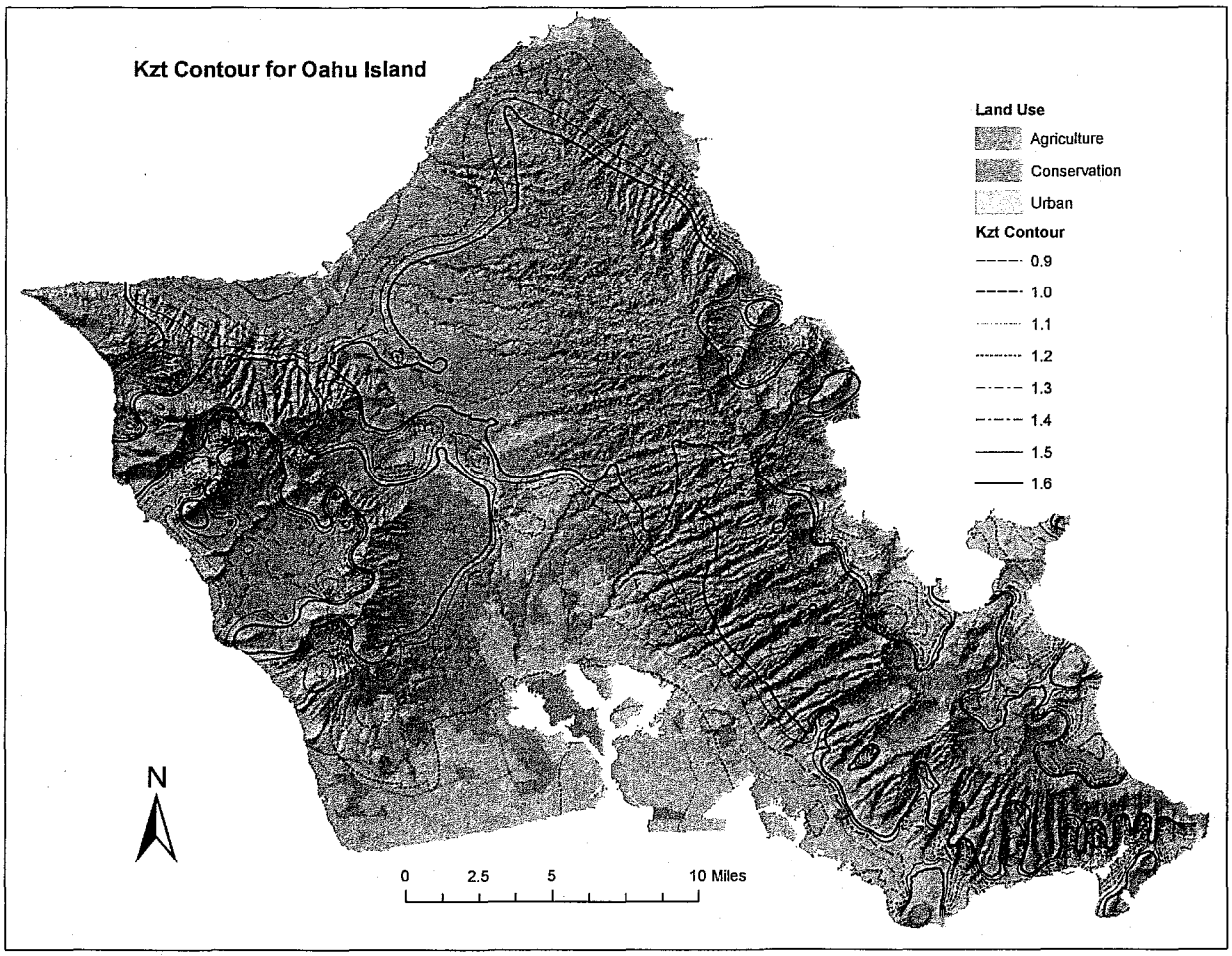

Figure 1609.3.3 Peak Topographic Factor K_{zt} for Building Heights up to 100 feet.

Notes:

1. At Exposure B sites with ground elevations less than 500 feet, K_{zt} values ≥ 1.2 shall be permitted to be reduced for building heights greater than 100 feet by multiplying K_{zt} mapped in Figure 1609.3.3 by the height adjustments given in the following table. Interpolation is permitted.

Height Adjustment of Mapped K_{zt} Values at Sites with Ground Elevation less than 500 feet								
Building roof height above ground (ft)	≤100	120	140	160	180	200	220	≥240
Adjustment factor K_{zt} ≥ 1.2	100%	98%	96%	94%	92%	90%	92%	94%

2. Site-specific probabilistic analysis of directional K_{zt} based on wind-tunnel testing of topographic speed-up shall be permitted to be submitted for approval by the building official. For buildings taller than 160 feet, this submittal shall include peak gust velocity profiles for all wind direction sectors.

1609.3.4 Directionality Factor. The wind directionality factor, K_d, shall be determined from Tables 1609.3.4 (a) and 1609.3.4 (b).

Table 1609.3.4 (a)
K_d Values for Main Wind Force Resisting Systems Sited on Oahu, Hawaii [1, 2]

Topographic Location on Oahu, Hawaii	Main Wind Force Resisting Systems		Main Wind Force Resisting Systems with Totally Independent Systems in Each Orthogonal Direction		Biaxially Symmetric and Axisymmetric Structures of any Height and Arched Roof Structures
	Mean Roof Height Less Than or Equal to 100 ft.	Mean Roof Height Greater Than 100 ft.	Mean Roof Height Less Than or Equal to 100 ft.	Mean Roof Height Greater Than 100 ft.	
Sites within valleys at an elevation of at least 50 ft. but not greater than 500 ft.	0.65	0.70	0.70	0.75	0.85
Central Oahu above an elevation of 500 ft., the Ewa and Kapolei Plains, and coastal areas with K_{zt} (10m) no greater than 1.2	0.75	0.80	0.75	0.80	0.95
All other areas, including Hills, Hillsides, Ridges, Bluffs, and Escarpments at any elevation or height; coastal and inland areas with K_{zt} (10m) greater than 1.2	0.70	0.75	0.75	0.80	0.90

Notes:

1. The values of K_d for other non-building structures indicated in ASCE-7 Table 6-4 shall be permitted.

2. Site-specific probabilistic analysis of K_d based on wind-tunnel testing of topography and peak gust velocity shall be permitted to be submitted for approval by the building official, but K_d shall have a value not less than 0.65.

Table 1609.3.4 (b)
K_d Values for Components and Cladding of Buildings Sited on Oahu, Hawaii [1, 2].

Topographic Location on Oahu	Components and Cladding		
	Mean Roof Height Less Than or Equal to 100 ft.	Mean Roof Height Greater Than 100 ft.	Occupancy Category IV Buildings and Structures
Sites within valleys at an elevation of at least 50 ft. but not greater than 500 ft.	0.65	0.70	0.75
Central Oahu above an elevation of 500 ft., the Ewa and Kapolei plains, and coastal areas with K_{zt} (10m) no greater than 1.2	0.75	0.80	0.85
All other areas, including Hills, Hillsides, Ridges, Bluffs, and Escarpments at any elevation or height; coastal and inland areas with K_{zt} (10m) greater than 1.2	0.70	0.75	0.80

Notes:

1. The values of K_d for other non-building structures indicated in ASCE-7 Table 6-4 shall be permitted.

2. Site-specific probabilistic analysis of K_d based on wind-tunnel testing of topography and peak gust velocity profile may be submitted for approval by the building official, but in any case subject to a minimum value of 0.65.

(180) Amending Section 1609.4. Section 1609.4 is amended to read:

1609.4 Exposure Category. For each wind direction considered, an exposure category that adequately reflects the characteristics of ground surface irregularities shall be determined for the site at which the building or structure is to be constructed. An intermediate exposure between categories is permitted in a transition zone provided it is determined in accordance with ASCE 7-05. Account shall be taken of variations in ground surface roughness that arise from natural topography and vegetation as well as from constructed features.

1609.4.1 Wind Directions and Sectors. For any given wind direction, the exposure in which a specific building or other structure is sited shall be assessed as being one of the following categories. For each selected wind direction at which the wind loads are to be evaluated, the exposure of the building or structure shall be determined for the two upwind sectors

extending 45 degrees either side of the selected wind direction. The exposures in these two sectors shall be determined and the exposure resulting in the highest wind loads shall be used or represent the winds from that direction.

Exceptions:

1. Exposure categories shall be permitted to be determined using Figure 1609.4.

2. Components and cladding shall be designed using the exposure resulting in the highest wind loads for any wind direction at the site.

Exposure B. Urban and suburban areas, wooded areas or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger, prevailing in the upwind direction from the building site for a distance of at least 2,600 feet (792 m), or 20 times the height of the building, whichever is greater.

Exception: For buildings whose mean roof height is less than or equal to 30 feet (9.1 m), the upwind distance may be reduced to 1,500 feet (457 m).

Exposure C. Open terrain with scattered obstructions, including surface undulations or other irregularities, having heights generally less than 30 feet (9144 mm). This category includes flat open country, grasslands, water surfaces, and the areas shown within Exposure B-type terrain where the building is directly adjacent to open areas of Exposure C-type terrain in any quadrant for a distance of more than 600 feet (182.9 m).

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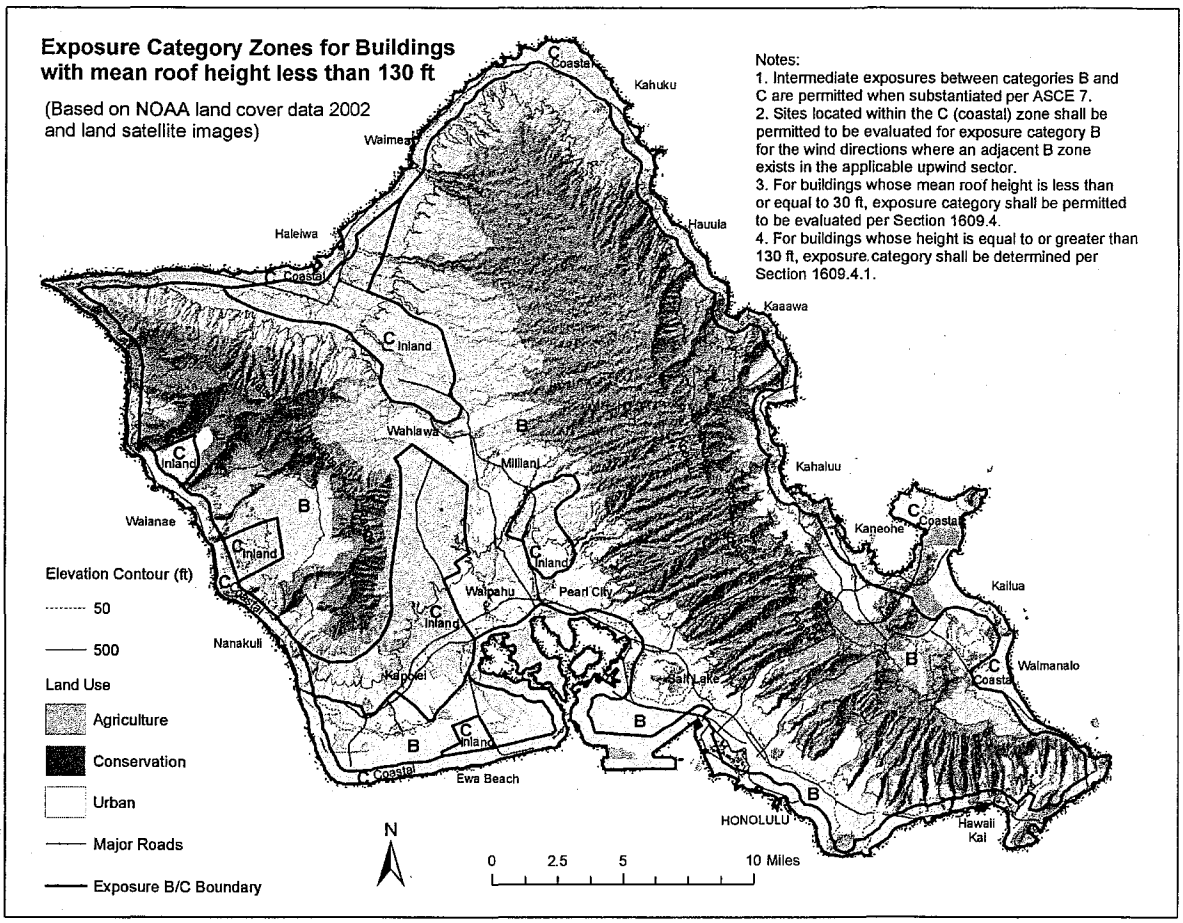

Figure 1609.4 Exposure Category Zones for Oahu

(181) Amending Section 1611.1. Section 1611.1 is amended to read:

1611.1 Design Rain Loads. Each portion of a roof shall be designed to sustain the load of rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow. The design rainfall rate shall be based on the 100-year 1-hour rainfall rate indicated in Figure 1611.1 as published by the National Weather Service or on other rainfall rates determined from approved local weather data.

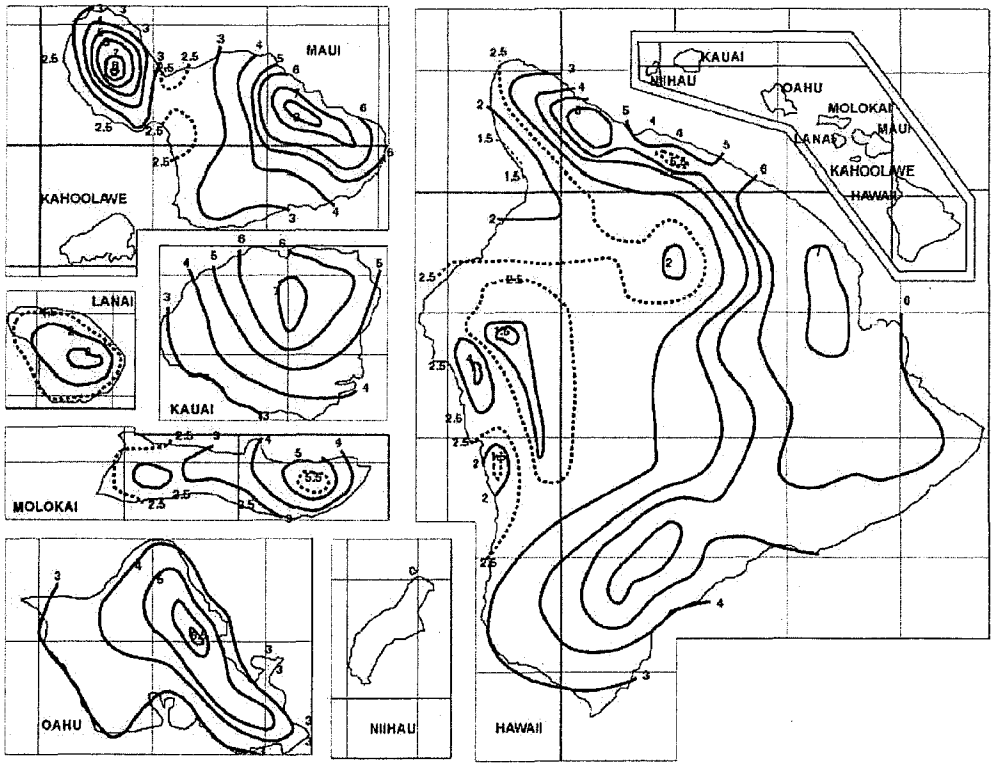

FIGURE 1611.1—continued
100-YEAR, 1-HOUR RAINFALL (INCHES) HAWAII

For SI: 1 inch = 25.4 mm.
Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.

(182) Amending Section 1612.3. Section 1612.3 is amended to read:

1612.3 Flood Hazard Areas. See ROH Chapter 21, Article 9.

(183) Amending Section 1612.4. Section 1612.4 is amended to read:

1612.4 Design and Construction. See ROH Chapter 16, Article 11.

(184) Amending Section 1612.5. Section 1612.5 is amended to read:

1612.5 Flood Hazard Documentation. The following documentation shall be prepared and sealed by a surveyor, architect, or engineer licensed in the State of Hawaii and submitted to the building official:

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1. For construction in flood hazard areas not subject to high-velocity wave action:

   1.1 The elevation of the lowest floor, including basement, as required by the lowest floor elevation inspection in Section 109.3.3.

   1.2 Floor fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of flood waters do not meet the minimum requirements in Section 2.6.2.1, ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.6.2.2, ASCE 24.

   1.3 For dry flood proofed nonresidential buildings, construction documents shall include a statement that the dry flood proofing is designed with ASCE 24.

2. For construction in flood hazard areas subject to high-velocity wave action:

   2.1 The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Section 109.3.3.

   2.2 Construction documents shall include a statement that the building is designed in accordance with ROH, Chapter 16, Article 11, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.

   2.3 For breakaway walls designed to resist a nominal load of less than 10 psf (0.48 kN/m^2) or more than 20 psf (0.96 kN/m^2). Construction documents shall include a statement that the breakaway wall is designed in accordance with ASCE 24.

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(185) Amending Section 1613.3. Section 1613.3 is amended to read:

1613.3 Additions to Existing Buildings. An addition that is structurally independent from an existing structure shall be designed and constructed as required for a new structure in accordance with the seismic requirements for new structures. An addition that is not structurally independent from an existing structure shall be designed and constructed such that the entire structure conforms to the seismic-force resistance requirements for new structures unless the following conditions are satisfied:

1. The addition conforms with the requirements for new structures;

2. The addition does not increase the seismic forces in any structural element of the existing structure by more than 10 percent, unless the element has the capacity to resist the increased forces determined in accordance with Sections 1613 and 1622; and

3. Additions do not decrease the seismic resistance of any structural element of the existing structure by more than 10 percent cumulative since the original construction, unless the element has the capacity to resist the forces determined in accordance with Sections 1613.

(186) Amending Tables 1613.5.6(1) and 1613.5.6(2). Tables 1613.5.6(1) and 1613.5.6(2) are amended to read:

TABLE 1613.5.6 (1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD RESPONSE ACCELERATION

VALUE OF S_{DS}	Occupancy Category		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50 \leq S_{DS} < 0.60g$	C	D	D
$0.60g \leq S_{DS}$	D[a]	D[a]	D[a]

TABLE 1613.5.6 (2)
SEISMIC DESIGN CATEGORY BASED ON
1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{DI}	Occupancy Category		
	I or II	III	IV
$S_{DI} < 0.067g$	A	A	A
$0.067g \leq S_{DI} < 0.133g$	B	B	C
$0.133g \leq S_{DI} < 0.20g$	C	C	D
$0.20g \leq S_{DI} < 0.25g$	C	D	D
$0.25g \leq S_{DI}$	D[a]	D[a]	D[a]

(187) Amending Section 1702. Section 1702, definition of "STRUCTURAL OBSERVATION" is amended to read:

STRUCTURAL OBSERVATION: Structural "observation of construction" means making visits to the site by a licensed engineer in the structural branch or architect, or qualified representatives working under the supervision of a licensed engineer in the structural branch or architect, as the case may require, to observe the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the contract documents. It is not required that they make exhaustive or continuous on-site observations to check the quality or quantity of work, nor is it intended that the engineer be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work. Structural observation does not include or waive the responsibility for the inspection required by Section 109, 1704 or other sections of this code.

(188) Amending Section 1704. Section 1704 is amended:

a. By amending Section 1704.1 to read:

1704.1 General. Where application is made for construction as described in this section, the owner shall employ one or more special inspectors independent of the contractors performing the work, to provide inspections during construction on the types of work listed under Sections 1704 and 1707. These inspections are in addition to the inspections specified in Section 109. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. The special inspector shall provide written

documentation to the building official demonstrating his or her competence and relevant experience or training. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity to the same type of special inspection activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code. The building official may impose reasonable fees to cover the cost to conduct examination in licensing of special inspectors and issuance of registration cards.

Exceptions:

1. The building official may waive the requirements for the employment of a special inspector if the construction is of minor nature.

2. The employment of a special inspector shall not be required for construction work for any government agency that provides for its own inspections.

3. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by HRS 464.

4. Unless otherwise required by the building official, special inspections are not required for Group U occupancies that are accessory to a residential occupancy including, but not limited to those listed in Section 312.1.

b. By amending Section 1704.1.1 to read:

1704.1.1 Building Permit Requirement. The construction drawings shall have all special inspections listed as a condition for permit issuance.

c. By amending Section 1704.1.2 to read:

1704.1.2 Report Requirement. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the owner, licensed engineer or architect of record, and other owner-designated persons. Reports shall indicate that work inspected was done

in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the licensed engineer or architect of record and to the building official. The special inspector shall submit a final signed report to the owner and licensed engineer or architect of record, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of this code. Prior to the final inspection required under Section 109.3.10 the licensed engineer or architect of record shall submit a written statement verifying receipt of the final inspection reports and documenting that there are no known unresolved code requirements that create significant public safety deficiencies.

d. By adding Section 1704.3.4. Section 1704.3.4 is added to read:

1704.3.4 Structural Steel for Seismic Resistance. Continuous special inspection for structural welding of seismic-resisting systems in accordance with AISC 341, Seismic Provisions for Structural Steel Buildings, in structures assigned to Seismic Design Category C, D, E, or F as determined in Section 1616.

Exceptions:

1. Single-pass fillet welds not exceeding 5/16 inch (7.9 mm) in size.

2. Floor and roof deck welding.

e. By amending Section 1704.4 to read:

1704.4 Concrete Construction. The special inspections and verifications for concrete construction shall be as required by this section and Table 1704.4.

Exceptions: Special inspections shall not be required for:

1. Foundation concrete for structures permitted to be designed under the International Residential Code.

2. Concrete footings supporting buildings three stories or less in height that are fully supported on earth or rock where the structural design is based on a specified compressive strength f'c no greater than 2,500 pounds per square inch (psi) (17.2 Mpa), regardless of the compressive strength specified in the construction documents or used in the footing construction. Periodic inspection of the reinforcing of all concrete footings shall be required.

3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 Mpa).

4. Concrete foundation walls constructed in accordance with Tables 1805.5 (1), 1805.5 (2), 1805.5 (3) or 1805.5 (4).

5. Concrete patios, driveways and sidewalks, on grade.

f. By amending Section 1704.5 to read:

1704.5 Masonry Construction. Masonry construction shall be inspected and evaluated in accordance with the requirements of Sections 1704.5.1 through 1704.5.3, depending on the classification of the building or structure or nature of occupancy, as defined by this code.

Exceptions: Special inspections shall not be required for:

1. Empirically designed masonry, glass unit masonry, or masonry veneer designed by Section 2109, 2110, or Chapter 14, respectively, or by Chapters 5, 7, or 6, of ACI 530/ASCE 5/TMS 402, respectively, when they are part of structures classified as Seismic Use Group I or II.

2. Masonry foundation walls with permanent lateral support at the top and bottom constructed in accordance with Table 1805.5 (2), 1805.5 (3), or 1805.5 (4).

3. Structures permitted to be designed under the International Residential Code.

1704.5.1 Empirically Designed Masonry, Glass Unit Masonry and Masonry Veneer in Seismic Use Group III Facilities. The minimum inspection program for empirically designed masonry, glass unit masonry or masonry veneer designed by Section 2109, 2110, or Chapter 14, respectively, or by Chapter 5, 7, or 6 of ACI 530/ASCE 5/TMS 402, respectively, in building classified as Seismic Use Group III shall comply with Table 1704.5.1.

1704.5.2 Engineered Masonry in Seismic Use Group I or II Facilities. The minimum special inspection program for masonry designed by Section 2107 or 2108, or by chapters other than Chapters 5, 6, or 7 of ACI 530/ASCE 5/TMS 402, in Seismic Use Group I or II facilities (see Table 1604.5 and Section 1616.2), shall comply with Table 1704.5.1.

1704.5.3 Engineered Masonry in Seismic Use Group III Facilities. The minimum special inspection program for masonry designed by Section 2107 or 2108, or by chapters other than Chapter 5, 6, 7 or ACI 530/ASCE 5/TMS 402, in Seismic Use Group III facilities (see Table 1604.5 and Section 1616.2), shall comply with Table 1704.5.3.

g. By adding Section 1704.6.2. Section 1704.6.2 is added to read:

1704.6.2 Structural Wood. Continuous special inspection during field gluing operations of elements of the lateral-force-resisting system. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the lateral-force-resisting system, including drag struts, braces, sheathed shear walls, shear panels, diaphragms, and hold-downs.

Exception: Fastening of wood sheathing used for wood shear walls, shear panels and diaphragms where the fastener spacing is more than 4 inches (102 mm) on center (o.c.).

h. By amending Section 1704.14 to read:

1704.14 Fire-Protection Systems. Special inspection for fire-protection systems shall be as required by Section 913.

i. By adding Section 1704.15 to read:

1704.15 Complete Load Path and Uplift Ties. Metal connectors, anchors, or fasteners for wood and cold-formed steel construction at the following locations: roof ridges, roof rafters to beam or wall supports, beams to posts, posts or walls to floor framing or foundation below, ground anchors, and all other connections that are part of the load path to resist uplift forces.

Exception: The special inspector need not be present during the installation of all of the connectors, provided that the special inspector verifies that all of the connectors are installed in conformance with the requirements of this code.

j. By adding Section 1704.16 to read:

1704.16 Cold-Formed Steel Framing. Periodic special inspections during welding operations of elements of the lateral-force-resisting system. Periodic special inspections for screw attachment, bolting, anchoring and other fastening of components within the lateral-force-resisting system, including struts, braces, and hold-downs.

k. By adding Section 1704.17 to read:

1704.17 Termite Protection. Termite barrier, treated structural lumber and pipe penetrations for new wood frame residential buildings.

(189) Amending Section 1706.1. Section 1706.1 is amended to read:

1706.1 Contractor Responsibility. When special inspection is required, a contractor's statement shall be submitted containing an acknowledgement of awareness of the special inspection requirements contained on the drawings and that the construction requiring special inspections will be made accessible for inspections.

(190) Amending Section 1707. Section 1707 is amended to read:

1707.1 Special Inspections for Seismic Resistance of Mechanical and Electrical Components. Special inspection as specified in this section is required for the following:

1. Where required in Section 1704.1.

2. Special inspections itemized in Sections 1707.2 for mechanical and electrical components in structures assigned to Seismic Design Category C, D, E or F.

1707.2 Mechanical and Electrical Components. Periodic special inspection is required during the anchorage of electrical equipment for emergency or standby power systems in structures assigned to Seismic Design Category C, D, E or F. Periodic special inspection is required during installation of piping systems intended to carry flammable, combustible or highly toxic contents and their associated mechanical units in structures assigned in Seismic Design Category C, D, E or F. Periodic special inspection is required during the installation of HVAC ductwork that will contain hazardous materials in structures assigned to Seismic Design Category C, D, E or F.

1707.2.1 Component Inspection. Special inspection required for the installation of the following components, where the component has a Component Importance Factor of 1.5 in accordance with Section 9.6.1.5 of ASCE 7-02, shall maintain an approved quality control program. Evidence of the quality control program shall be permanently identified on each piece of equipment by a label.

1. Equipment using combustible energy sources.

2. Electrical motors, transformers, switchgear unit substations and motor control centers.

3. Reciprocating and rotating-type machinery.

4. Piping distribution systems 3 inches (76 mm) and larger.

5. Tanks, heat exchangers and pressure vessels.

1707.2.2 Component and Attachment Testing. The component manufacturer shall test or analyze the component and the component mountain system or anchorage for the design forces in Chapter 16 for those components having a Component Importance Factor of 1.5 in accordance with Chapter 16. The manufacturer shall submit a certificate of compliance for review and acceptance by the registered design professional responsible for the design, and for approval by the registered design professional responsible for the design, and for approval by the

building official. The basis of certification shall be by test on a shaking table, by three-dimensional shock tests, by an analytical method using dynamic characteristics and forces from Chapter 16 or by more rigorous analysis. The special inspector shall inspect the component and verify that the label, anchorage or mounting conforms to the certificate of compliance.

(191) Amending Section 1709.1. Section 1709.1 is amended to read:

1709.1 Structural Observations. Structural observations shall be performed in accordance with Hawaii Revised Statutes, Chapter 464.

(192) Amending Section 1801.1. Section 1801.1 is amended by adding a second paragraph to read:

Reference is made to ROH Chapter 14, for requirements governing excavation, grading, and earthwork construction, including fills and embankments.

(193) Amending Section 1807.4.3. Section 1807.4.3 is amended by deleting the word "International."

(194) Amending Section 1808.2.7. Section 1808.2.7 is amended to read:

1808.2.7 Splices. Splices shall be constructed so as to provide and maintain true alignment and position of the component parts of the pier or pile during installation and subsequent thereto and shall be of adequate strength to transmit the vertical and lateral loads and moments occurring at the location of the splice during driving and under service loading. Splices occurring in the upper 10 feet (3048 mm) of the embedded portion of the pier or pile shall be capable of resisting at allowable working stresses the moment and shear that would result from an assumed eccentricity of the pier or pile load of 3 inches (76 mm), or the pier or pile shall be braced in accordance with Section 1808.2.5 to other piers or piles that do not have splices in the upper 10 feet (3048 mm) of embedment.

(195) Adding Section 2104.1.9. Section 2104.1.9 is added to read:

2104.1.9 Cleanouts. Cleanouts shall be provided for all grout pours over 5 feet 4 inches in height.

Special provisions shall be made to keep the bottom and sides of the grout spaces, as well as the minimum total clear area required by ACI 530.1-05/ASCE 6-05/TMS 602-05 clean and clear prior to grouting.

Exception: Cleanouts are not required for grout pours 8 feet or less in height providing all of the following conditions are met:

1. The hollow masonry unit is 8-inch nominal width or greater with specified compressive strength f'm less than or equal to 1,500 psi;

2. Fine grout is used complying with ASTM C-476 minimum compressive strength of 2,500 psi; and

3. Special inspection is provided.

(196) Amending Section 2303.1.8. Section 2303.1.8 is amended to read:

2303.1.8 Preservative –Treated Wood. Structural lumber, including plywood, posts, beams, rafters, joists, trusses, studs, plates, sills, sleepers, roof and floor sheathing, flooring and headers of new wood-frame buildings and additions shall be:

1. Treated in accordance with AWPA Standards C1-03, C2-02, and C9-03 (UC1 through UC4B) for AWPA Standardized Preservatives, all marked or branded by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met; or

2. Treated in accordance with AWPA Standards C-31-02 and C-9-03 (UC1 and UC2) for SBX disodium octaborate tetrahydrate (DOT), amended as follows: retention shall be not less than 0.28 pcf B_2O_3 (0.42 pcf DOT) for exposure to Formosan termites, all marked and monitored by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met. All such lumber shall be protected from direct weather exposure as directed in AWPA UC1 and UC2.

3. For structural glued laminated members made up of dimensional lumber, engineered wood products, or structural composite lumber, pressure treated in accordance with AWPA C28-03 and C33-03

(UC1 through UC3B) or by Light Oil Solvent Preservative (LOSP) treatment standard as approved by the building official. Water based treatment processes as listed in paragraphs 1 and 2 are not allowed to be used on these products unless specified by a structural engineer for use with reduced load values.

4. For structural composite wood products by non-pressure process treated in accordance with AWPA Standard N2-04 (UC1, UC2 and UC3A) or approved by the building official.

2303.1.8.1 Treatment. Wood treatment shall include the following:

1. A quality control and inspection program which meets or exceeds the current requirements of AWPA Standards M2-01 and M3-03;

2. Inspection and testing for the treatment standards as adopted by this code shall be an independent agency approved by the building official accredited by the American Lumber Standards Committee (ALSC) and contracted by the treating company; and

3. Field protection of all cut surfaces with a preservative, which shall be applied in accordance with AWPA Standard M-4-02 or in accordance with the approved preservative manufacturer's ICC-Evaluation Services report requirements.

2303.1.8.2 Labeling. Labeling shall be applied to all structural lumber 2 inches or greater nominal thickness, with the following information provided on each piece as permanent ink stamp on one face on a durable tab permanently fastened to ends with the following information:

1. Name of treating facility;

2. Type of preservative;

3. AWPA use category;

4. Quality mark of third party inspection agency;

5. Retention minimum requirements; and

6. Year of treatment.

All lumber less than 2 inches in nominal thickness, shall be identified per bundle by means of a label consisting of the above requirements. Labels measuring no less than 6 inches by 8 inches shall be placed on the lower left corner of the strapped bundle.

2303.1.8.3 Moisture Content of Treated Wood. When wood pressure treated with a water-borne preservative is used in enclosed locations where drying in service cannot readily occur, such wood shall be at a moisture content of 19 percent or less before being covered with insulation, interior wall finish, floor covering or other material.

(197) Amending Section 2304.9.5. Section 2304.9.5 is amended to read:

2304.9.5 Fasteners in Non-Borate-Preservative-Treated and Fire-Retardant Treated Wood. Fasteners for preservative-treated and fire-retardant-treated wood, other than Borate (SBX, ZB) or LSOP treatments as approved in Section 2303.1.8 Preservative-Treated Wood, shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicone bronze or copper. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A 153.

Exception: Fasteners other than nails, timber rivets, wood screws and lag screws shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum. Fastenings for wood foundations shall be as required in AF and PA Technical Report No. 7.

(198) Amending Section 2304.11. Section 2304.11 is amended to read:

2304.11 Protection Against Decay and Termites.

2304.11.1 General. Where required by this section, protection from decay and termites shall be provided by the use of naturally durable or preservative-treated wood.

2304.11.2. Where the plates, sills and structural lumber of new wood frame buildings are supported directly on the ground by:

1. A concrete slab or foundation, the soil beneath the building shall be either:

   1.1 Chemically treated at the maximum label rate for control of Formosan subterranean termites by a licensed pest control operator, or

   1.2 Basaltic Termite Barrier (BTB), stainless steel termite barrier mesh, or other termite barrier approved by the building official, installed according to the manufacturer's installation instructions.

2. The perimeter of the structure must be protected by either:

   2.1 A continuous chemical barrier applied at the maximum label rates, by an operator licensed to control ground termites, to the finished grade in a band extending at least 12 inches beyond the concrete; or

   2.2 A continuous barrier of BTB at least 4 inches in thickness extending at least 6 inches beyond the concrete slab.

3. A poured-in-place concrete foundation wall, the foundation wall must be protected from the adjacent soil by either:

   3.1 A continuous chemical barrier applied at the maximum label rates, by an operator licensed to control ground termites, to the backfill in 12-inch lifts in a band extending at least 12 inches beyond the concrete; or

   3.2 A continuous barrier of BTB at least 6 inches in thickness extending the full height of the retained soil; or

   3.3 An approved stainless steel termite barrier mesh must protect all cracks and joints.

4. A CMU foundation wall, the foundation wall must be protected from the adjacent soil by either:

4.1 A continuous barrier of BTB at least 6 inches in thickness extending the full height of the retained soil; or

4.2. An approved stainless steel termite barrier mesh between the top of the CMU and all wood framing; or

4.3 A continuous cap or reinforced concrete at least 4 inches in thickness between the top of the CMU and all wood framing.

Exception: When a CMU foundation wall forms a retaining wall which is part of a wood frame structure, the CMU must be protected from the soil by a full barrier of BTB or stainless steel termite barrier.

2304.11.3 Wood Used Above Ground. Wood installed above ground in the locations specified in this paragraph shall be preservative-treated in accordance with AWPA C2-02or C9-03 (UC1 thru UC3B) or other applicable AWPA standards for above-ground use. For structural glued laminated members made up of dimensional lumber, engineered wood products or structural composite lumber will follow the requirements of paragraph 3 in Section 2303.1.8, Preservative-Treated Wood.

1. Joists, girders, beams, and sub-floor.

2. Framing.

3. Sleepers and sills.

4. Wood siding. Clearance between wood siding and earth on the exterior of a building shall not be less than 6 inches (152 mm).

5. Posts or columns. Posts or columns supporting permanent structures and supported by concrete or masonry slab or footing that is in direct contact with the earth.

6. Glued laminated, engineered or composite structural members. The portions of these structural members that form the structural supports of a building or other structure.

2304.11.4 Wood in Contact with the Ground. Wood in contact with the ground (exposed earth) shall be preservative-treated in accordance with

AWPA C2-02, C9-03 (UC4 and UC4B) or other applicable AWPA standard for soil contact.

1. Posts and columns supporting permanent structures that are embedded in concrete in direct contact with the earth or embedded in concrete exposed to the weather or in direct contact with the earth.

2. Wood structural members in direct contact with the ground.

3. Wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances in direct contact with the ground.

4. Wood used in retaining walls and cribs.

5. Where wood is used with less than 6-inch vertical separation from earth (finished grade), it shall be treated for ground-contact use.

6. Where planter boxes are installed adjacent to wood frame walls, a 2-inch-wide (51 mm) air space shall be provided between the planter and the wall. Flashings shall be installed when the air space is less than 6 inches (152 mm) in width. Where flashing is used, provisions shall be made to permit circulation of air in the air space. The wood-frame wall shall be provided with an exterior wall covering conforming to the provisions of Section 2304.6.

2304.11.5 Under-Floor Clearance. Minimum clearance between the bottom of floor joists or bottom of floors without joists and the ground beneath shall be 24 inches; the minimum clearance between the bottom of girders and the ground shall be 18 inches.

> **Exception:** Open slat wood decks shall have ground clearance of at least 6 inches for any wood member. Accessible under-floor areas shall be provided with a minimum 14 inches x 24 inches access opening.

2304.11.6 Under-Floor Ventilation. For under-floor ventilation (crawl space), see Section 1203.3.

2304.11.7 Attic Ventilation. For attic ventilation, see Section 1203.2.

2304.11.8 Pipe and Other Penetrations. Openings around pipes or similar penetrations in a concrete or masonry slab which is in direct contact with earth, shall be filled with non-shrink grout, basaltic termite barrier, or other approved barrier. Insulation around pipes and conduits shall not pass through ground floor slabs.

(199) Amending Section 2308.1. Section 2308.1 is amended to read:

2308.1 General. The requirements of this section are intended for conventional light-frame construction. Other methods are permitted to be used, provided a satisfactory design is submitted showing compliance with other provisions of this code. Interior nonload-bearing partitions, ceilings and curtain walls of conventional light-frame construction are not subject to the limitations of this section. Alternatively, compliance with AF&PA WFCM shall be permitted subject to the limitations therein and the limitations of this code. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than two stories above grade plane in height with a separate means of egress and their accessory structures shall be permitted to comply with the International Residential Code.

(200) Amending Section 2403.5. Section 2403.5 is amended to read:

2403.5 Louvered Windows or Jalousies. Regular plate, sheet, or patterned glass louvered windows and jalousies shall be no thinner than nominal 7/32 inch and no longer than 36 inches. When other glass types are used, design shall be submitted to the building official for approval. Exposed glass edges shall be smooth. Wired glass with wire exposed on longitudinal edges shall not be used in jalousies or louvered windows.

(201) Amending Section 2701.1. Section 2701.1 is amended by deleting the acronym "ICC."

(202) Amending Section 2702.1. Section 2702.1 is amended by deleting the word "International."

(203) Amending Section 2702.2.9. Section 2702.2.9 is amended by deleting the word "International."

(204) Amending Section 2702.2.11. Section 2702.2.11 is amended by deleting the word "International."

(205) Amending Section 2702.2.12. Section 2702.2.12 is amended by deleting the word "International."

(206) Amending Section 2702.2.13. Section 2702.2.13 is amended by deleting the word "International."

(207) Amending Section 2702.3. Section 2702.3 is amended by deleting the word "International."

(208) Amending Section 2901.1. Section 2901.1 is amended to read:

2901.1 Scope. Plumbing systems shall comply with the Plumbing Code.

(209) Amending Section 2901.2. Section 2901.2 is amended by adding a new sentence to the beginning of the paragraph to read:

The provisions of this Chapter shall apply to new construction.

(210) Deleting Chapter 30. Chapter 30 is deleted.

(211) Amending Section 3103.1. Section 3103.1 is amended to read:

3103.1 General. See ROH Section 18-3.4.

(212) Amending Section 3105.3. Section 3105.3 is amended to read:

3105.3 Design and Construction. Awnings and canopies shall be designed and constructed to withstand wind or other lateral loads and live loads as required by Chapter 16 with due allowance for shape, open construction and similar features that relieve the pressures or loads. Structural members shall be protected to prevent deterioration. Awnings shall have frames of noncombustible material, fire-retardant-treated wood, wood of Type IV sizes, or 1-hour construction with combustible or noncombustible covers and shall be either retractable, folding or collapsible. When collapsed, retraced or folded, the design shall be such that the awning does not block any required exit.

Exceptions:

1. A fixed awning not more than 10 feet in length may be erected over a doorway to the building.

2. Fixed awnings at the first floor projecting not more than 6 feet from the face of the building may be erected over windows along the street.

(213) Amending Section 3106. Section 3106 is amended to read:

SECTION 3106 – MARQUEES

3106.1 General. For the purpose of this section, a marquee shall include any object or decoration attached to or a part of said marquee, except a sign as defined in ROH Section 21-7.20.

3106.2 Construction. A marquee shall be supported entirely from the building and shall be constructed entirely of noncombustible materials.

Exception: Drop-off curtains may be suspended below the exterior periphery provided a minimum clearance of 7 feet from the sidewalk below is maintained.

3106.3 Roof Construction. Where the roof or any part thereof is a skylight, the skylight shall comply with the requirements of Chapter 24 of this code. Plastic skylights shall comply with Section 2610.

Every roof and skylight of a marquee over a public right-of-way shall be sloped to downspouts which shall conduct any drainage from the marquee under the sidewalk to the curb.

3106.4 Location Prohibited. Every marquee shall be so located as not to interfere with the operation of any exterior standpipe or to obstruct the clear passage of stairways or exits from the building or the installation or maintenance of street lighting.

3106.5 Thickness. The maximum height or thickness of a marquee measured vertically from its lowest to its highest point shall not exceed 3 feet.

A BILL FOR AN ORDINANCE

(214) Amending Section 3107.1. Section 3107.1 is amended by adding the following sentence:

Signs shall conform to ROH Chapter 21.

(215) Amending Section 3109.1. Section 3109.1 is amended by adding the following:

These provisions are applicable to the design and construction of public swimming and wading pools. Those pools covered by these regulations include municipal, institutional, hotel, apartment and similar type occupancies; and hydrotherapy spas, therapeutic pools and special pools of similar type usage. Also covered are swimming pools, spas and hot tubs for one-family and two-family dwelling, and similar type pools; and ornamental pools.

(216) Amending Section 3109.4. Section 3109.4 is amended to read:

Section 3109.4 Residential Swimming Pools. Residential swimming pools are accessory to R-3 residential occupancies. Residential swimming pools shall conform to Sections 3109.4.1 through 3109.4.3 and to ROH Chapter 16, Article 6.

(217) Amending Section 3109.5. Section 3109.5 is amended to read:

Section 3109.5 Entrapment Avoidance. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

(218) Amending 3202. Section 3202 is amended to read:

SECTION 3202 – ENCROACHMENTS

3202.1 Balconies, Sun-Control Devices and Appendages. Roof eaves, cornices, sun-control devices, belt courses, and appendages such as water tables, sills, capitals, bases, and architectural projections which cannot be occupied or used, may project over the public street of the building site a distance as determined by the clearance of the lowest point of the projection above the grade immediately below, as follows:

Clearance above grade less than 8 feet – no projection is permitted.

Clearance above the grade 8 feet and over – one inch of projection is permitted for each additional inch of clearance provided that no such projection shall exceed a distance of 4 feet.

Roof eaves shall be sloped to downspouts and/or gutters leading back to the building which shall conduct any drainage under the sidewalk area through the curb to the street gutter. A drain connection permit may be required.

3202.2 Awnings. Awnings may extend over public property not more than 7 feet (2134 mm) from the face of a supporting building, but no portion shall extend nearer than 2 feet 6 inches to the face of the nearest curb line measured horizontally. In no case shall the awning extend over the public property greater than two thirds of the distance from the property line to the nearest curb in front of the building.

All portions of any awning shall be at least 8 feet (2438 mm) above any public walkway.

> **Exception:** Any valance attached to an awning shall not project above the roof of the awning at the point of attachment and shall not extend more than 12 inches (305 mm) below the roof of the awning at the point of attachment, but in no case shall any portion of a valance be less than 7 feet (2134 mm) in height above a public way.

3202.3 Marquees. Marquees shall project not more than three fourths of the distance from the property line to the face of the curb but in no case reach within 2 feet 6 inches of the face of the curb.

There shall be a minimum of 8 feet vertical clearance between the lowest point of any marquee to the sidewalk below.

3202.4 Doors. No doors, either fully opened or when opening, shall project beyond the property line.

(219) Deleting Section 3305. Section 3305 is deleted.

(220) Amending Section 3306.1. Section 3306.1 is amended by adding the following exception:

Exception: Not applicable to construction in preservation, agricultural and residential districts except when required by the building official.

(221) Amending Section 3306.5. Section 3306.5 is amended by replacing "8 feet (2438 mm)" with "6 feet (1829 mm)."

(222) Adding Section 3306.10. Section 3306.10 is added to read:

3306.10 Watchman. A watchman shall be employed to warn the general public when intermittent hazardous operations are conducted on or above the sidewalk.

(223) Amending Section 3307.1. Section 3307.1 is amended by adding a second and third paragraph to read:

The owner and contractor doing the excavation or fill shall be responsible to implement safety measures, to include but not be limited to, safety nets, retaining walls or fences, and berms or trenches, to prevent falling rocks, boulders, soil, debris and other dangerous objects from falling, sliding or flowing onto adjoining properties, streets or natural watercourses, or otherwise causing injury or damage to persons or property.

If proposed excavation and backfill work does not require a grading permit under ROH Chapter 14, the building official, if deemed necessary to protect or promote public safety, may require the submittal of an engineering slope hazard report.

(224) Adding Section 3308.1.2. Section 3308.1.2 is added to read:

3308.1.2 Lighting. Any material or structure temporarily occupying public property, including fences and walkways, which creates a hazard to the public, shall be adequately lighted between sunset and sunrise.

(225) Amending Section 3308.2. Section 3308.2 is amended to read:

3308.2 Utility Fixtures. Building materials, fences, sheds or any obstruction of any kind shall not be placed so as to obstruct free approach to any fire hydrant, fire department connection, utility pole, manhole, fire alarm box, or catch basin, or so as to interfere with the passage of water in the gutter, without permission from the agency having jurisdiction. Protection against damage shall be provided to such utility fixtures during

the progress of the work, but sight of them shall not be obstructed. This protection shall be maintained while such work is being done and shall not obstruct the normal functioning of the device.

(226) Amending Section 3309.2. Section 3309.2 is amended by deleting the word "International."

(227) Deleting Section 3401.3. Section 3401.3 is deleted.

(228) Amending Section 3403.1.1. Section 3403.1.1 is amended by amending the exception to read:

Exception: For existing buildings and structures in flood hazard areas, see ROH Chapter 21, Article 9.

(229) Amending Section 3405.1. Section 3405.1 is amended to read:

3405.1 Conformance. The installation or replacement of glass shall be as required by Chapter 24 of this code for new installations.

(230) Amending Section 3409.1. Section 3409.1 is amended by adding a second paragraph after the exception to read:

Conformance with the design and construction requirements of the Americans with Disabilities Act Accessibility Guidelines administered by the Department of Justice or the Fair Housing Act Accessibility Guidelines administered by the Department of Housing and Urban Development shall be equivalent to meeting the accessibility of this code. At the time of submittal of an application for a building permit, the applicant shall state on the plans that the project is subject to the above requirements.

Sec. 16-1.2 International Residential Code for One- and Two-Family Dwellings

The "International Residential Code for One- and Two-Family Dwellings, 2006 Edition," as published in 2006 by the International Code Council, Inc., 500 New Jersey Avenue, 6th Floor, Washington, DC 20001, is by reference incorporated herein and made a part hereof, subject to the following amendments:

(1) Amending Section R101.1. Section R101.1 is amended to read:

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R101.1 Title. These provisions shall be part of the Building Code of the City and County of Honolulu, and will be referred to herein as "this code."

(2) Amending Section R101.2. Section R101.2 is amended to read:

R101.2 Scope. The provisions of the International Residential Code for One- and Two-Family Dwellings shall be permitted as an exception to the International Building Code to apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than two stories in height with a separate means of egress and their accessory structures. A townhouse is a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.

(3) Amending Section R102.7. Section R102.7 is amended to read:

R102.7 Existing Structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code or the Fire Code, or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.

(4) Amending Section R103. Section R103 is amended to read:

SECTION R103 – ORGANIZATION AND ENFORCEMENT

R103.1 General. Code enforcement agency shall be in accordance with International Building Code Section 103.

(5) Deleting Section R104.10.1. Section R104.10.1 is deleted.

(6) Amending Section R105. Section R105 is amended to read:

SECTION R105 – PERMITS

R105.1 General. A building permit is required to perform work covered by this code as provided in ROH Chapter 18.

R105.2 Responsibility. It shall be the duty of every person who performs work for the installation, alteration, or repair of building, structure, electrical, gas, mechanical or plumbing systems, for which this code is applicable, to comply with this code.

(7) Amending Section R106. Section R106. is amended to read:

R106 Submittal Documents. See ROH Chapter 18. In addition to the requirements of the plot plan required in ROH Chapter 18, the construction documents submitted with the application for permit shall be accompanied by a site plan showing to scale the size and location of new construction and exiting structures on the site plan showing to scale the size of and location of the new construction and distances from lot lines. In the case of demolition, the site plans shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot.

R106.1 Information for Construction in Flood Hazard Areas. For buildings and structures in flood hazard areas as established by ROH Chapter 21, construction documents shall include:

1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood elevation, as appropriate;

2. The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO zones), the height of the proposed lowest floor, including basement, above the highest adjacent grade;

3. The elevation of the bottom of the lowest horizontal structural member in coastal high hazard areas (V Zone); and

4. If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the applicant shall submit a flood study, flood data, and other pertinent information as required by ROH Section 21, prepared by a licensed design professional to the director.

(8) Deleting Section R107. Section R107 is deleted.

(9) Deleting Section R108. Section R108 is deleted.

(10) Amending Section R109. Section R109 is amended to read:

SECTION R109 – INSPECTIONS AND LOT SURVEY

R109.1 General. Inspections and lot survey shall be in accordance with the International Building Code Section B109.

R109.2 Final Inspections. Final inspections shall be called and made after the permitted work is complete.

R109.3 Required Inspections. The building official, upon notification from the permit holder or the permit holder's agent, shall make the following inspections and shall either approve that portion of the construction as completed or shall notify the permit holder or the permit holder's agent if the same fails to comply with this code.

R109.3.1 Floodplain Inspections. For construction in areas prone to flooding as established by ROH Chapter 21, Section 21-9.10-2, upon placement of the lowest floor, including basement, and prior to further vertical construction, the building official shall require submission of documentation, prepared and sealed by a land surveyor, licensed in the State of Hawaii, of the elevation of the lowest floor, including basement, required in Section R106.

R109.3.2 Fire-Resistance-Rated Construction Inspection. When fire-resistance-rated construction is required between dwelling units or due to locate on property, an inspection of such construction, after all lathing and/or wallboard is in place, but before any plaster is applied, or before, wallboard joints and fasteners are taped and finished.

R109.3.3 Final Inspections. Final inspections shall be made after the permitted work is complete and prior to final occupancy.

R109.4 Special Inspections. The submitted plans shall have all special inspections listed as a condition for permit issuance. For special inspections, see Sections B913, B1704, B1707 and M1201.

SECTION B913 – FIRE PROTECTION SYSTEMS SPECIAL INSPECTIONS

B913.1 General. Where application is made for construction as described in this section, the owner or the licensed design professional in responsible charge acting as the owner's agent shall employ one or more fire protection systems special inspectors to provide inspections during construction on the types of work listed under Section B913. The fire protection system special inspector shall be approved by the building official. These inspections are in addition to the inspections specified in Section R109.

B913.1.1 Building Permit Requirement. The submitted plans shall include a statement of fire protection system inspection prepared by the licensed engineer of record as a condition for permit issuance.

B913.1.2 Report Requirement. Fire protection system inspectors shall keep records of inspections and shall review working drawings prior to installation. The fire protection system inspector shall furnish inspection reports to the owner, licensed engineer or architect of record, and other owner-designated persons. Reports shall indicate that work inspected was done in conformance to the applicable code and shall include, but not be limited to, working drawings and acceptance tests required by this section. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design professional and to the building official.

The special inspector shall submit a final signed report stating that they have reviewed the working drawings and whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of this code. This report shall include a copy of the working drawings provided to the building official prior to the final inspection.

B913.2 Automatic Sprinkler Systems. Automatic systems shall be inspected and evaluated in accordance to the requirements of Section B903.

1. During installation.

   Exception: Special inspector need not be present continuously during the installation of the sprinkler system provided the special inspector has inspected for conformance with this code and approved plans prior to concealment.

2. During acceptance tests as required by NFPA 13, 13D and 13R.

B1704.1 General. Where application is made for construction as described in this section, the owner shall employ one or more special inspectors independent of the contractors performing the work, to provide inspections during construction on the types of work listed under Sections B1704 and B1707. These inspections are in addition to the inspections specified in Section R109. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection. The building official may impose reasonable fees to cover the cost to conduct examination in licensing of special inspectors and issuance of registration cards.

Exceptions:

1. The building official may waive the requirements for the employment of a special inspector if the construction is of minor nature.

2. The employment of a special inspector shall not be required for construction work for any government agency that provides for its own inspections.

3. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by HRS 464.

B1704.1.1 Building Permit Requirement. The submitted plans shall have all special inspections listed as a condition for permit issuance.

B1704.1.2 Report Requirement. Special inspectors shall keep records of inspections. The special inspector shall furnish inspection reports to the owner, licensed engineer or architect of record, and other owner-

designated persons. Reports shall indicate that work inspected was done in conformance to approved construction documents. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority and to the building official.

The licensed engineer or architect of record shall submit a final signed report stating that they have received all the special inspection reports and documenting that there are no known unresolved code requirements that create significant public safety deficiencies.

B1704.3.4 Structural Steel for Seismic Resistance. Continuous special inspection for structural welding of seismic-force-resisting systems in accordance with AISC 341, Seismic Provisions for Structural Steel Buildings, in structures assigned to Seismic Design Category C, D, E, or F as determined in Section B1616.

Exceptions:

1. Single-pass fillet welds not exceeding 5/16 inch (7.9 mm) in size.

2. Floor and roof deck welding.

B1704.4 Concrete Construction. The special inspections and verifications for concrete construction shall be as required by this section and Table B1704.4.

Exceptions: Special inspections shall not be required for:

1. Foundation concrete for structures permitted to be designed under the International Residential Code.

2. Concrete footings supporting buildings three stories or less in height that are fully supported on earth or rock where the structural design is based on a specified compressive strength f'c no greater than 2,500 pounds per square inch (psi) (17.2 Mpa), regardless of the compressive strength specified in the construction documents or used in the footing construction. Periodic inspection of the reinforcing for all concrete footings shall be required.

3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 Mpa).

4. Concrete foundation walls constructed in accordance with Table B1805.5 (1), B1805.5 (2), B1805.5 (3) or B1805.5 (4).

5. Concrete patios, driveways and sidewalks, on grade.

B1704.6.2 Structural Wood. Continuous special inspection during field gluing operations of elements of the lateral-force-resisting system. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the lateral-force-resisting system, including drag struts, braces, sheathed shear walls, shear panels, diaphragms, and hold-downs.

> **Exception:** Fastening of wood sheathing used for wood shear walls, shear panels and diaphragms where the fastener spacing is more than 4 inches (102 mm) on center (o.c.).

B1704.14 Fire-Protection Systems. Special inspection for fire-protection system shall be as required by Section B913.

B1704.15 Complete Load Path and Uplift Ties. Metal connectors, anchors, or fasteners for wood and cold-formed steel construction at the following locations: roof ridges, roof rafters to beam or wall supports, beams to posts, posts or walls to floor framing or foundation below, ground anchors, and all other connections that are part of the load path to resist uplift forces.

> **Exception:** The special inspector need not be present during the installation of all of the connectors, provided that the special inspector verified that all of the connectors are installed in conformance with the requirements of this code.

B1704.16 Cold-formed Steel Framing. Periodic special inspections during welding operations of elements of the lateral-force-resisting system. Periodic inspections for screw attachment, bolting, anchoring and other fastening of components within the lateral-force-resisting system, including struts, braces, and hold-downs.

B1704.17 Termite Protection. Termite barrier, treated structural lumber and pipe penetrations for new wood frame residential buildings.

(11) Amending Section R110. Section R110 is amended to read:

SECTION R110 – CERTIFICATE OF OCCUPANCY

R110.1 Use and Occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the building official has issued a certificate of occupancy therefore as provided herein. Issuance of a certificate of occupancy shall not be construed as approval of a violation of the provisions of this code or other ordinances of the jurisdiction.

R110.2 Certified Issued. After the building official inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the department, the building official shall issue a certificate of occupancy which shall contain the following:

1. The building permit number.

2. The address of the structure.

3. The name and address of the owner.

4. A description of the structure or portion thereof for which the certificate is issued.

5. A statement that the described structure or portion thereof has been inspected for compliance with the requirements of this code.

6. The name of the building official.

7. The edition of the building code under which the permit was issued.

8. If an automatic sprinkler system is provided.

9. Any special conditions for this permit.

R110.3 Temporary Occupancy. The building official is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the permit, provided that such portion or portions shall be occupied safely and is in compliance with the requirements of this code. The building official shall set a time period during which the temporary certificate of occupancy is valid.

R110.4 Revocation. The building official may suspend or revoke a certificate of occupancy issued under the provisions of this code whenever the certificate is issued in error, or on the basis of incorrect information provided, or where it is determined that the structure or portion thereof violates any ordinance or regulation or any of the provisions of this code.

(12) Amending Section R112. Section R112 is amended to read:

SECTION R112 – BOARD OF APPEALS

R112.1 General. Board of Appeals shall be in accordance with International Building Code Section 112.

(13) Amending Section R113. Section R113 is amended to read:

SECTION R113 – VIOLATIONS AND PENALTIES

For violation and penalty provisions, see ROH Chapter 16, Article 10.

(14) Amending Section R202. Section R202 is amended to read:

a. By amending the definition of "BUILDING, EXISTING" to read:

BUILDING, EXISTING is a building for which a legal building permit has been issued, or one which complied with the Building Code in effect at the time the building was erected.

b. By amending the definition of "BUILDING OFFICIAL" to read:

BUILDING OFFICIAL shall mean the director of planning and permitting of the city or the director's authorized representative.

c. By adding the definition after "**BUILT-UP ROOF COVERING**" to read:

CARPORT is a private garage which is at least 100 percent open on one side and with 50 percent net openings on another side or which is provided with an equivalent of such openings on two or more sides.

A private garage which is 100 percent open on one side and 25 percent open on another side with the latter opening so located to provide adequate cross ventilation may be considered a carport when approved by the building official.

d. By amending the definition of "KITCHEN" to read:

KITCHEN shall be as defined in the Land Use Ordinance, ROH Chapter 21.

e. By amending the definition of "TOWNHOUSE" to read:

TOWNHOUSE. A townhouse is a single family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to roof and with open space on at least two sides.

(15) Amending Section R301. Section R301 is amended by adding Section R301.1.2.1 to read:

R301.1.2.1 COMPLETE LOAD PATH AND UPLIFT TIES

General. Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of galvanized steel or other approved corrosion-resistant material not less than 0.040 inch (1.01 mm) nominal thickness. Uplift resistance shall be in accordance with Table R802.11.

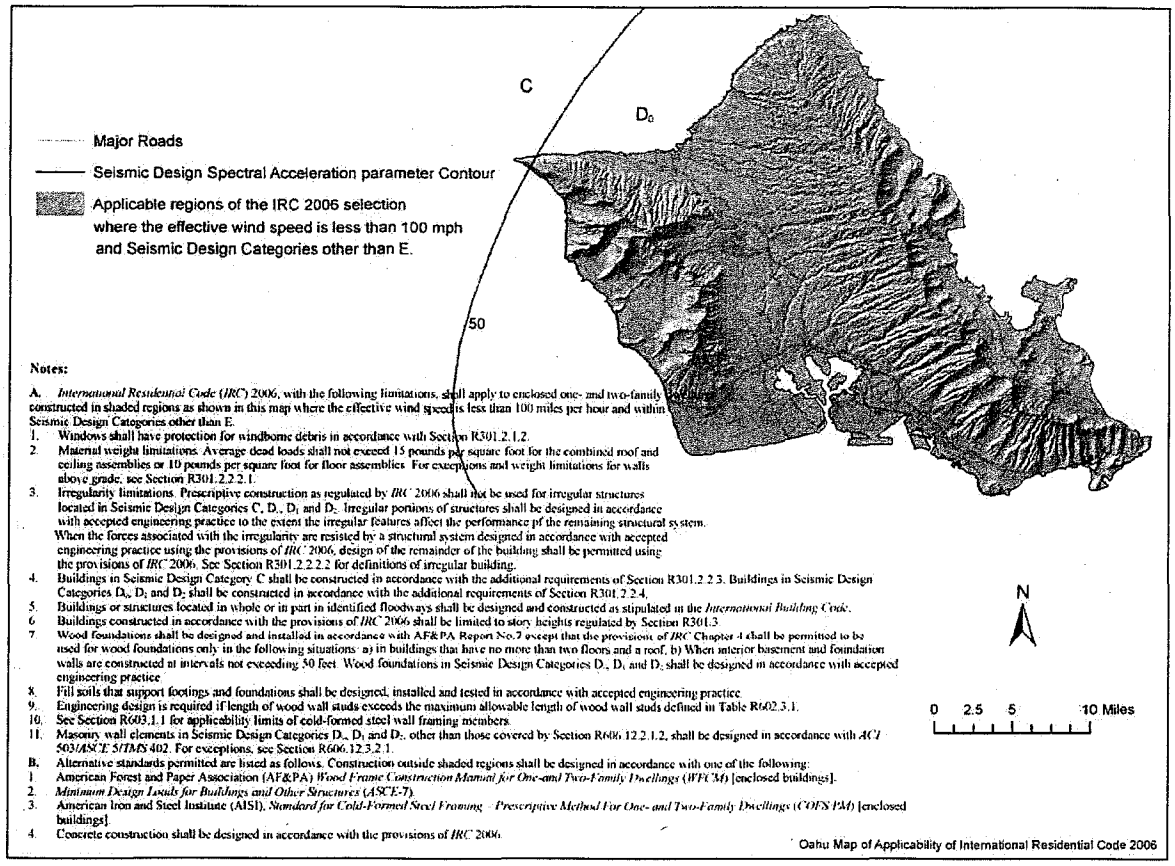

Figure R301.2 (8) City and County of Honolulu Map Showing Where the IRC is Applicable without an Engineered Structural Design Using the International Building Code or the Referenced Wind and Seismic Standards

(16) Amending Section R301.2.1. Section R301.2.1 is amended to read:

R301.2.1 Wind Limitations. Buildings and portions thereof shall be limited by wind speed and construction methods in accordance with Table R301.2 (1), Figure R301.2 (8), and this code. Wherever the basic wind speed is used for determination of the wind loads, the value shall be the Effective Basic Wind Speed, V_{eff}, determined from Figure R301.2 (9), which adjusts the basic wind speed for special topographic wind regions. Wherever the basic wind speed is used for determination of the wind loads, the value shall be the Effective Basic Wind Speed, V_{eff}, determined by Figure R301.2 (9), which adjusts the basic wind speed for special topographic wind regions. Where different construction methods and

structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where loads for components and cladding, windows, skylights and exterior doors are not otherwise specified, the loads listed in Table R301.2 (2) adjusted for height and exposure per Table R301.2 (3), shall be used to determine design load performance requirement for these building elements.

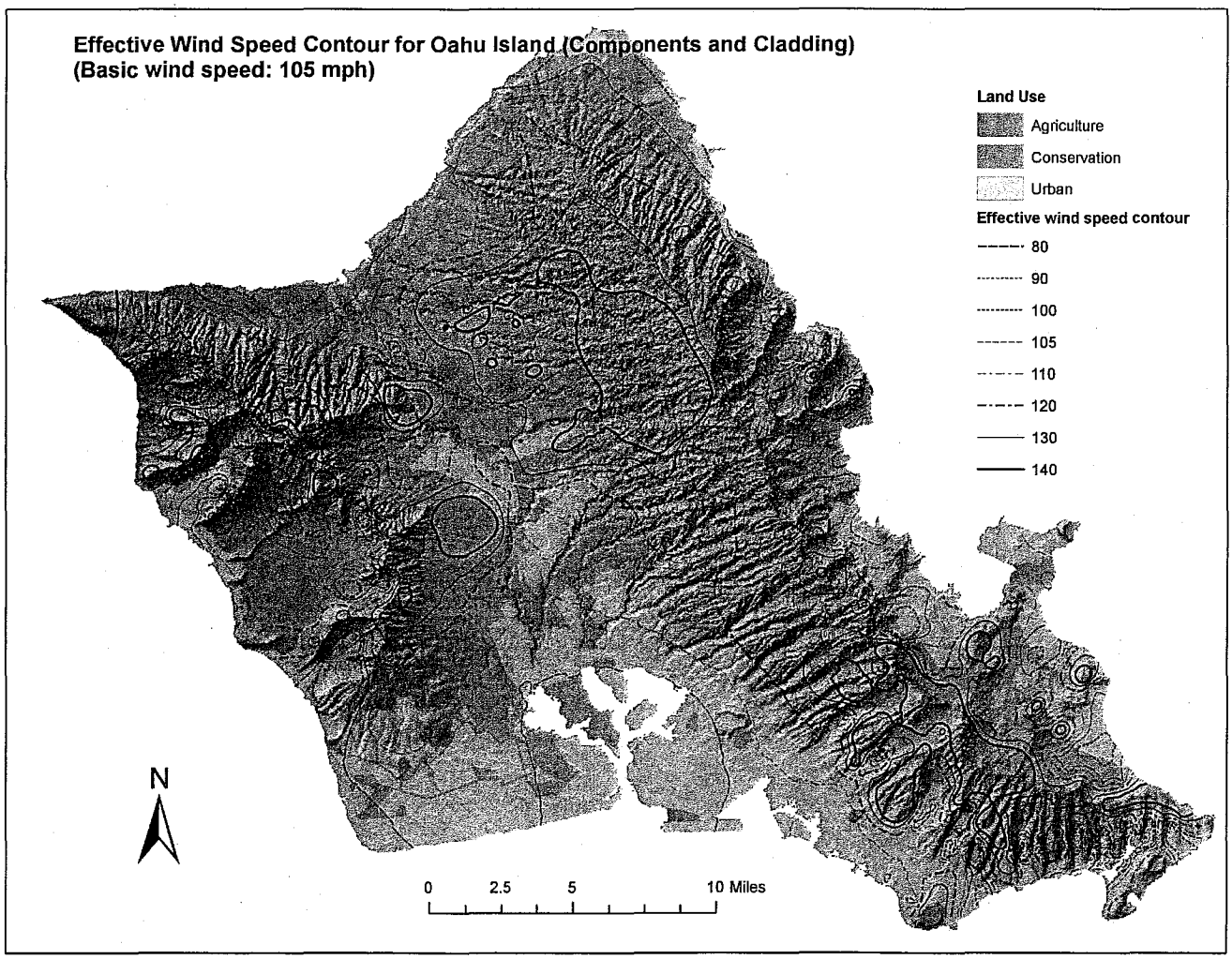

Figure R301.2 (9) Effective Basic Wind Speed (mph) for Components and Cladding for Buildings less than 60-feet tall

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(17) Amending Section R301.2.1.1. Section R301.2.1.1 is amended to read:

R301.2.1.1 Design Criteria. Construction in regions where the effective wind speed, V_{eff}, from Figure R301.2 (9), equal or exceed 100 miles per hour (45 m/s) shall be designed in accordance with one of the following:

1. American Forest and Paper Association (AF&PA) Wood Frame Construction Manual for One- and Two-Family Dwellings (WFCM) for enclosed buildings; or

2. Minimum Design Loads for Buildings and Other Structures (ASCE-7); or

3. American Iron and Steel Institute (AISI), Standard for Cold-Formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings (COFS/PM) with Supplement to Standard for Cold-Formed Steel Framing – Prescriptive Method for One- and Two-Family Dwellings, for enclosed buildings.

4. Concrete construction shall be designed in accordance with the provisions of this code.

R301.2.1.2 Protection of Openings. Windows in buildings located in windborne debris regions shall have glazed openings protected from windborne debris. Glazed opening protection for windborne debris shall meet the requirements of the Large Missile Test of ASTM E 1996 and of ASTM E 1886 referenced therein.

Exception:

1. Wood structural panels with a minimum thickness of 7/16-inch (11.1 mm) and a maximum span of 8 feet (2438 mm) shall be permitted for opening protection in one- and two-story buildings. Panels shall be precut to cover the glazed openings with attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with either Table R301.2(2) or Section 1609.6.5 of the International Building Code. Attachment in accordance with Table R301.2.1.2 is permitted for buildings with a mean roof height of 33 feet (10

058 mm) or less where the effective wind speeds do not exceed 130 miles per hour (58 m/s).

2. Occupancy R-3 and R-4 Residential Assisted Living Facilities (including their components and cladding) designed as a partially enclosed structure in accordance with the International Building Code shall also include a residential safe room in accordance with Article 13, Hawaii Residential Safe Room.

TABLE R301.2.1.2
WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE FOR WOOD STRUCTURAL PANELS [a, b, c, d]

FASTENER TYPE	FASTENER SPACING		
	Panel span ≤ 4 foot	4 foot < panel span ≤ 6 foot	6 foot < panel span ≤ 8 foot
No. 6 Wood screws	16"	12"	9"
No. 6 Wood screws	16"	16"	12"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = 0.454 kg, 1 mile per hour = 0.447 m/s.

[a] This table is based on 130 mph wind speeds and a 33-foot mean roof height.
[b] Fasteners shall be installed at opposing ends of the wood structural panel.
[c] Fasteners shall be long enough to penetrate through the exterior wall covering and a minimum of 1-1/4 inches into wood wall framing and a minimum of 1-1/4 inches into concrete block or concrete, and into steel framing a minimum of 3 exposed threads. Fasteners shall be located a minimum of 2-1/2 inches from the edge of concrete block or concrete.
[d] Where screws are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistant anchors having a minimum ultimate withdrawal capacity of 490 pounds.

(18) Amending Table R301.2 (1). Table R301.2 (1) is amended to read:

TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

WIND SPEED (mph)	SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			FLOOD HAZARDS
		Weathering	Termite	Decay	
Per Figure R301.2(9)	C	Negligible	Very heavy	Moderate to severe	FEMA

(19) Amending Section R301.2.1.3. Section R301.2.1.3 is amended to read:

R301.2.1.3 Wind Speed Conversion. When referenced documents are based on fastest mile wind speeds, the three-second gust effective wind velocities of Figure R301.2 (9) shall be converted to fastest mile wind velocities using Table R301.2.1.3.

TABLE R301.2.1.3
CONVERSION OF EQUIVALENT BASIC WIND SPEEDS

V_{3s}	85	90	95	100	105	110	120	125	130	140	145	150	160	170
V_{fm}	71	76	80	85	90	95	104	109	114	123	128	133	142	152

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(20) Amending Section R301.2.1.4. Section R301.2.1.4 is amended to read:

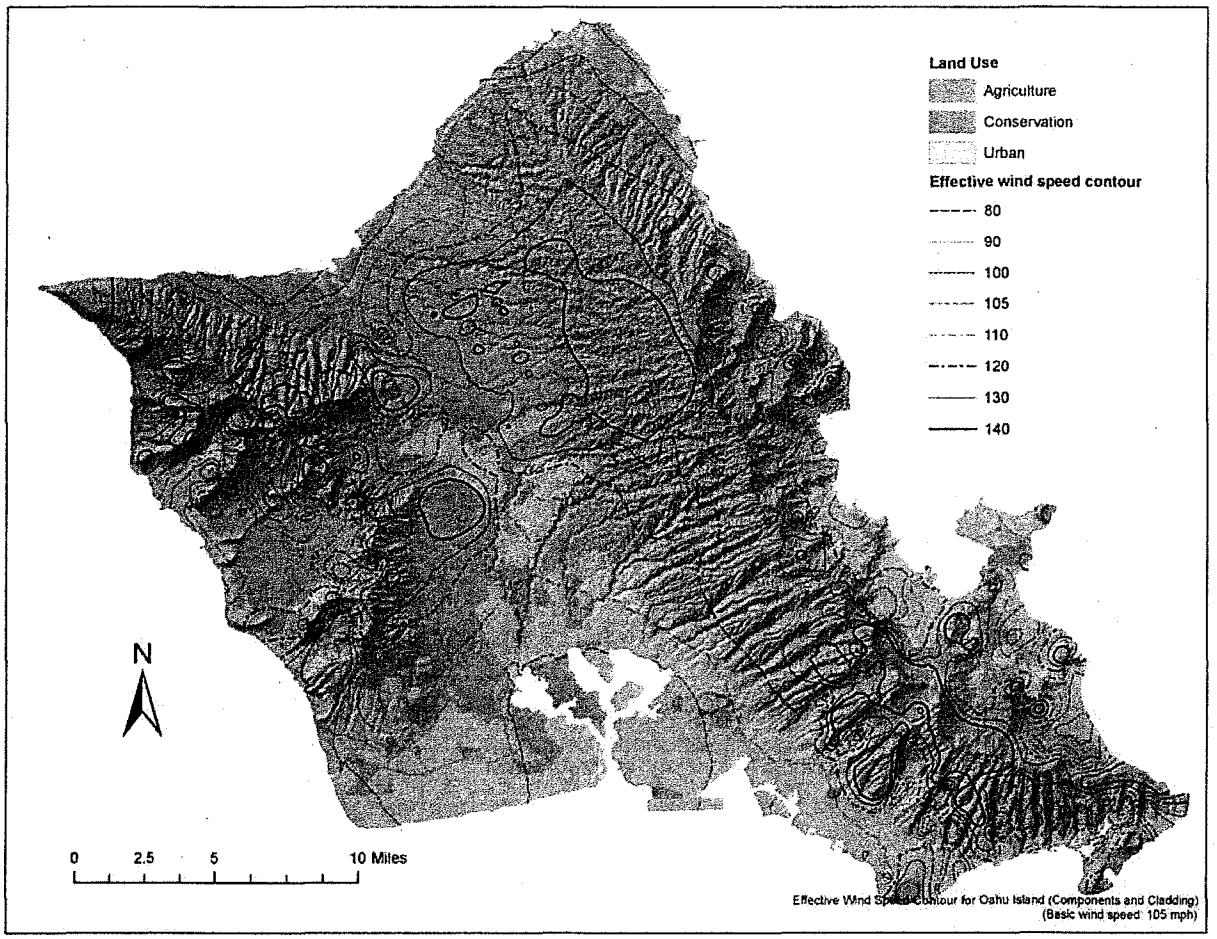

Figure R301.2 (9) City and County of Honolulu Effective Basic Wind Speed V_{eff} for Components and Cladding for Buildings less than 60-Feet Tall

R301.2.1.4 Exposure Category. For each wind direction considered, an exposure category that adequately reflects the characteristics of ground surface irregularities shall be determined for the site at which the building or structure is to be constructed. For a site located in the transition zone between categories, the category resulting in the largest wind forces shall apply. Account shall be taken of variations in ground surface roughness that arise from natural topography and vegetation as well as from constructed features. For any given wind direction, the exposure in which a specific building or other structure is sited shall be assessed as being one of the following categories:

1. Exposure B. Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger, extending at least 1,500 feet (457 m) from the building site in any quadrant.

2. Exposure C. Open terrain with scattered obstructions, including surface undulations or other irregularities, having heights generally less than 30 feet (9144 mm). This category includes flat open country, grasslands and shorelines and areas shown in figure R301.2 (10), and all water surfaces. This exposure shall also apply to any building located within Exposure B type terrain where the building is directly adjacent to open areas of Exposure C type terrain in any quadrant for a distance of more than 600 feet (183 m).

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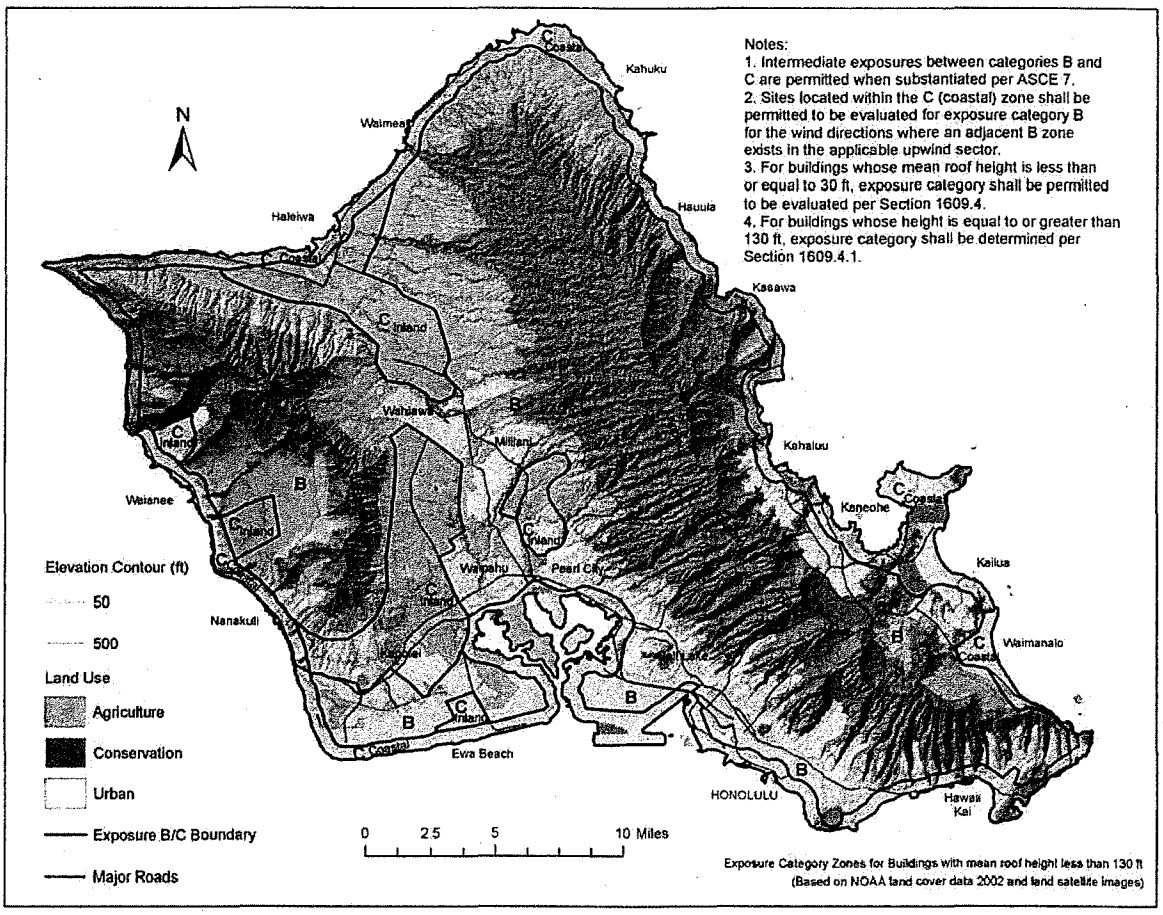

Figure R301.2 (10) Exposure Category Zones for the City and County of Honolulu

(21) Amending Section R302.1. Section R302.1 is amended by adding a sentence to end of the first paragraph to read:

> Dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904 or NFPA 13D shall comply with Table R302.2.

(22) Adding a new Table R302.2 to read as follows:

TABLE R302.2
EXTERIOR WALLS – DWELLINGS WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 3 feet
	(Not fire-resistance rated)	0 hours	≥ 3 feet
Projections	(Fire-resistance rated)	1 hour on the underside	< 2 feet
	(Not fire-resistance rated)	0 hours	3 feet
Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet
Penetrations	All	Comply with Section R317.3	< 3 feet
		None required	3 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

(23) Amending Section R303.1. Section R303.1 is amended to read:

Section R303.1 Natural Light and Ventilation. Natural light and ventilation shall be as specified in the Housing Code.

(24) Amending Section R303.2. Section R303.2 is amended to read:

Section R303.2 Mechanical Ventilation. Mechanical ventilation shall be as specified in the Housing Code.

(25) Amending Section R303.3. Section R303.3 is amended to read:

Section R303.3 Bathrooms. Light and ventilation for bathrooms shall be as specified in the Housing Code.

(26) Amending Section R306. Section R306 is amended to read:

SECTION R306 – SANITATION

Sanitation shall be as specified in the Housing Code.

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(27) Amending Section R309.4. Section R309.4 is amended to read:

R309.4 Carports. Carport floor surfaces shall be of approved noncombustible material.

Exceptions:

1. Asphalt surfaces shall be permitted at ground level in carports.

2. A carport on a hillside lot serving a detached single-family dwelling may have wood floor planking at least 2 inches (51 mm) in nominal thickness laid with at least ¼-inch (6.4 mm) spacing between the planks.

The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.

(28) Amending Section R309.5. Section R309.5 is amended to read:

R309.5 Flood Hazard Areas. See ROH Chapter 16, Article 11.

(29) Amending Section R310.1.1. Section R310.1.1 is amended by amending the exception to read:

Exceptions:

1. Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465 m^2).

2. Glass jalousie bladed windows may be used for emergency escape or rescue.

(30) Amending Section R311.5.1. Section R311.5.1 is amended by amending the exception to read:

Exceptions:

1. The width of spiral stairways shall be in accordance with Section R311.5.8.

2. Private stairways serving an occupant load of less than 5 shall not be less than 30 inches in width.

(31) Amending Section R319.3. Section R319.3 is amended to read:

R319.3 Fasteners. Fasteners for non-borate pressure preservative and fire-retardant-treated wood shall be of hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. The coating weights for zinc-coated fasteners shall be in accordance with ATSM A 153.

Exceptions:

1. One-half-inch (12.7 mm) diameter or greater steel bolts.

2. Fasteners other than nails and timer rivets shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B695, Class 55 minimum.

(32) Amending Section R320. Section R320 is amended to read:

SECTION R320 – PROTECTION AGAINST TERMITES

R320.1 General. Protection against termites shall be in accordance with building code Sections 2303.1.8, 2304.9.5, and 2304.11, reproduced below as Sections B2303.1.8, B2304.9.5, and B2304.11.

B2303.1.8 Preservative –Treated Wood. Structural lumber, including plywood, posts, beams, rafters, joists, trusses, studs, plates, sills, sleepers, roof and floor sheathing, flooring and headers of new wood-frame buildings and additions shall be:

1. Treated in accordance with AWPA Standards C1-03, C2-02, and C9-03 (UC1 through UC4B) for AWPA Standardized Preservatives, all marked or branded by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met; or

2. Treated in accordance with AWPA Standards C-31-02 and C-9-03 (UC1 and UC2) for SBX disodium octaborate tetrahydrate (DOT), amended as follows: retention shall be not less than 0.28 pcf B_2O_3

(0.42 pcf DOT) for exposure to Formosan termites, all marked and monitored by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met. All such lumber shall be protected from direct weather exposure as directed in AWPA UC1 and UC2.

3. For structural glued laminated members made up of dimensional lumber, engineered wood products, or structural composite lumber, pressure treated in accordance with AWPA C28-03 and C33-03 (UC1 through UC3B) or by Light Oil Solvent Preservative (LOSP) treatment standard as approved by the building official. Water based treatment processes as listed in paragraphs 1 and 2 are not allowed to be used on these products unless specified by a structural engineer for use with reduced load values.

4. For structural composite wood products by non-pressure process treated in accordance with AWPA Standard N2-04 (UC1, UC2 and UC3A) or approved by the building official.

B2303.1.8.1 Treatment. Wood treatment shall include the following:

1. A quality control and inspection program which meets or exceeds the current requirements of AWPA Standards M2-01 and M3-03;

2. Inspection and testing for the treatment standards as adopted by this code shall be an independent agency approved by the building official, accredited by the American Lumber Standards Committee (ALSC) and contracted by the treating company; and

3. Field protection of all cut surfaces with a preservative, which shall be applied in accordance with AWPA Standard M-4-02 or in accordance with the approved preservative manufacturer's ICC-Evaluation Services report requirements.

B2303.1.8.2 Labeling. Labeling shall be applied to all structural lumber 2 inches or greater nominal thickness, with the following information provided on each piece as permanent ink stamp on one face on a durable tab permanently fastened to ends with the following information:

1. Name of treating facility;

2. Type of preservative;

3. AWPA use category;

4. Quality mark of third party inspection agency;

5. Retention minimum requirements; and

6. Year of treatment.

All lumber less than 2 inches in nominal thickness shall be identified per bundle by means of a label consisting of the above requirements. Labels measuring no less than 6 inches by 8 inches shall be placed on the lower left corner of the strapped bundle.

B2303.1.8.3 Moisture Content of Treated Wood. When wood pressure treated with a water-borne preservative is used in enclosed locations where drying in service cannot readily occur, such wood shall be at a moisture content of 19 percent or less before being covered with insulation, interior wall finish, floor covering or other material.

B2304.9.5 Fasteners in Non-Borate-Preservative-Treated and Fire-Retardant Treated Wood. Fasteners for preservative-treated and fire-retardant-treated wood, other than Borate (SBX, ZB) or LSOP treatments as approved in Section 2303.1.8 Preservative-Treated Wood, shall be of hot dipped zinc-coated galvanized steel, stainless steel, silicone bronze or copper. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A 153.

> **Exception:** Fasteners other than nails, timber rivets, wood screws and lag screws shall be permitted to be of mechanically deposited zinc-coated steel with coating weights in accordance with ASTM B 695, Class 55 minimum. Fastenings for wood foundations shall be as required in AF & PA Technical Report No. 7.

B2304.11 Protection Against Decay and Termites.

B2304.11.1 General. Where required by this section, protection from decay and termites shall be provided by the use of naturally durable or preservative-treated wood.

B2304.11.2 Where the plates, sills and structural lumber of new wood frame buildings are supported directly on the ground by:

1. A concrete slab or foundation, the soil beneath the building shall be either:

   1.1 Chemically treated at the maximum label rate for control of Formosan subterranean termites by a licensed pest control operator, or

   1.2 Basaltic Termite Barrier (BTB), stainless steel termite barrier mesh, or other termite barrier approved by the building official, installed according to the manufacturer's installation instructions.

2. The perimeter of the structure must be protected by either:

   2.1 A continuous chemical barrier applied at the maximum label rates, by an operator licensed to control ground termites, to the finished grade in a band extending at least 12 inches beyond the concrete; or

   2.2 A continuous barrier of BTB at least 4 inches in thickness extending at least 6 inches beyond the concrete slab.

3. A poured-in-place concrete foundation wall, the foundation wall must be protected from the adjacent soil by either:

   3.1 A continuous chemical barrier applied at the maximum label rates by an operator licensed to control ground termites to the backfill in 12-inch lifts in a band extending at least 12 inches beyond the concrete; or

   3.2 A continuous barrier of BTB at least 6 inches in thickness extending the full height of the retained soil; or

   3.3 An approved stainless steel termite barrier mesh must protect all cracks and joints.

4. A CMU foundation wall, the foundation wall must be protected from the adjacent soil by either:

4.1 A continuous barrier of BTB at least 6 inches in thickness extending the full height of the retained soil; or

4.2. An approved stainless steel termite barrier mesh between the top of the CMU and all wood framing; or

4.3 A continuous cap or reinforced concrete at least 4 inches in thickness between the top of the CMU and all wood framing.

Exception: When a CMU foundation wall forms a retaining wall which is part of a wood frame structure, the CMU must be protected from the soil by a full barrier of BTB or stainless steel termite barrier.

B2304.11.3 Wood Used Above Ground. Wood installed above ground in the locations specified in this paragraph shall be preservative-treated in accordance with AWPA C2-02 or C9-03 (UC1 thru UC3B) or other applicable AWPA standards for above-ground use. For structural glued laminated members made up of dimensional lumber, engineered wood products or structural composite lumber will follow the requirements of paragraph 3 in Section 2303.1.8, Preservative-Treated Wood.

1. Joists, girders, beams, and sub-floor.

2. Framing.

3. Sleepers and sills.

4. Wood siding. Clearance between wood siding and earth on the exterior of a building shall not be less than 6 inches (152 mm).

5. Posts or columns. Posts or columns supporting permanent structures and supported by concrete or masonry slab or footing that is in direct contact with the earth.

6. Glued laminated, engineered or composite structural members. The portions of these structural members that form the structural supports of a building or other structure.

B2304.11.4 Wood in Contact with the Ground. Wood in contact with the ground (exposed earth) shall be preservative-treated in accordance with AWPA C2-02, C9-03 (UC4 and UC4B) or other applicable AWPA standard for soil contact.

1. Posts and columns supporting permanent structures that are embedded in concrete in direct contact with the earth or embedded in concrete exposed to the weather or in direct contact with the earth.

2. Wood structural members in direct contact with the ground.

3. Wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances in direct contact with the ground.

4. Wood used in retaining walls and cribs.

5. Where wood is used with less than 6-inch vertical separation from earth (finished grade), it shall be treated for ground-contact use.

6. Where planter boxes are installed adjacent to wood frame walls, a 2-inch-wide (51 mm) air space shall be provided between the planter and the wall. Flashings shall be installed when the air space is less than 6 inches (152 mm) in width. Where flashing is used, provisions shall be made to permit circulation of air in the air space. The wood-frame wall shall be provided with an exterior wall covering conforming to the provisions of Section 2304.6.

B2304.11.5 Under-Floor Clearance. Minimum clearance between the bottom of floor joists or bottom of floors without joists and the ground beneath shall be 24 inches; the minimum clearance between the bottom of girders and the ground shall be 18 inches.

Exception: Open slat wood decks shall have ground clearance of at least 6" for any wood member. Accessible under-floor areas shall be provided with a minimum 14 inches x 24 inches access opening.

A BILL FOR AN ORDINANCE

(33) Amending Section R319. Section R319 is amended to read:

SECTION R319 – PROTECTION AGAINST DECAY

R319.1 Location Required. Protection from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative treated in accordance with AWPA U1 for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA U1.

1. Wood joists or the bottom of a wood structural floor when closer than 18 inches (457 mm) or wood girders when closer than 12 inches (305 mm) to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.

2. All wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches (203 mm) from the exposed ground.

3. Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.

4. The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 0.5 inch (12.7 mm) on tops, sides and ends.

5. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches (152 mm) from the ground.

6. Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.

7. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below grade except where an approved vapor retarder is applied between the wall and the furring strips or framing members.

Preservative-Treated Wood. Structural lumber, including plywood, posts, beams, rafters, joists, trusses, studs, plates, sills, sleepers, roof and floor sheathing, flooring and headers of new wood-frame buildings and additions shall be:

1. Treated in accordance with AWPA Standard U1 (UC1 thru UC4B) for AWPA Standardized Preservatives, all marked or branded and monitored by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met.

2. For SBX disodium octaborate tetrahydrate (DOT), retention shall be not less than 0.28 pcf B2O3 (0.42 pcf DOT) for exposure to Formosan termites. All such lumber shall be protected from direct weather exposure as directed in AWPA UC1 and UC2.

3. For structural glued laminated members made up of dimensional lumber, engineered wood products, or structural composite lumber, pressure treated in accordance with AWPA U1 (UC1 thru UC4B) or by Light Oil Solvent Preservative (LOSP) treatment standard as approved by the building official. Water based treatment processes as listed in paragraphs 1 and 2 are not allowed to be used on these products unless specified by a structural engineer for use with reduced load values and permitted by the product manufacturer.

4. For structural composite wood products, treated by non-pressure processes in accordance with AWPA Standard U1 (UC1, UC2 and UC3A) or approved by the building official.

Moisture Content of Treated Wood. When wood pressure treated with a water-borne preservative is used in enclosed locations where drying in service cannot readily occur, such wood shall be at a moisture content of 19 percent or less before being covered with insulation, interior wall finish, floor covering or other material.

Such wood shall be at a moisture content of 19 percent or less before being covered with insulation, interior wall finish, floor covering or other material.

R319.1.1 Field Treatment. Field-cut ends, notches and drilled holes of preservative-treated wood shall be treated in the field in accordance with AWPA M4, or in accordance with the approved preservative manufacturer's ICC-Evaluation Services report requirements.

R319.1.2 Ground Contact. All wood in contact with the ground, embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather that supports permanent structures intended for human occupancy shall be approved pressure-preservative-treated wood suitable for ground contact use, except untreated wood may be used where entirely below groundwater level or continuously submerged in fresh water.

R319.1.3 Appurtenances. Geographical Areas. In geographical areas where experience has demonstrated a specific need, approved naturally durable or pressure-preservative-treated wood shall be used for those portions of wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances. When those members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering that would prevent moisture or water accumulation on the surface or at joints between members. Depending on local experience, such members may include:

1. Horizontal members such as girders, joists and decking.

2. Vertical members such as posts, poles and columns.

3. Both horizontal and vertical members.

R319.1.4 Wood Columns. Wood columns shall be approved wood of natural decay resistance or approved pressure-preservative-treated wood.

Exceptions:

1. Columns exposed to the weather or in basements when supported by concrete piers or metal pedestals projecting 1 inch (25.4 mm) above a concrete floor or 6 inches (152 mm) above exposed earth and the earth is covered by an approved impervious moisture barrier.

2. Columns in enclosed crawl spaces or unexcavated areas located within the periphery of the building when supported by a concrete pier or metal pedestal at a height more than 8 inches (203mm) from exposed earth and the earth is covered by an impervious moisture barrier.

R319.1.5 Exposed Glued Laminated Timbers. The portions of glued laminated timbers that form the structural supports of a building or other structure and are exposed to weather and not properly protected by a roof, eave or similar covering shall be pressure treated with preservative, or be manufactured from naturally durable or preservative-treated wood.

R319.2 Quality Mark. Lumber and plywood required to be pressure-preservative-treated in accordance with Section R319.1 shall bear the quality mark of an approved inspection agency that maintains continuing supervision, testing and inspection over the quality of the product and that has been approved by an accreditation body that complies with the requirements of the American Lumber Standard Committee treated wood program. The quality control and inspection program shall meet or exceed the requirements of AWPA Standards M2 and M3.

R319.2.1 Required Information. The required quality mark on each piece of pressure preservative-treated lumber or plywood shall contain the following information:

1. Identification of the treating plant.

2. Type of preservative.

3. The minimum preservative retention.

4. End use for which the product was treated.

5. Standard to which the product was treated.

6. Identity of the approved inspection agency.

7. The designation "Dry," if applicable.

Exception: Quality marks on lumber less than 1 inch (25.4 mm) nominal thickness, or lumber less than nominal 1 inch by 5 inches

(25.4 mm by 127 mm) or 2 inches by 4 inches (51 mm by 102 mm) or lumber 36 inches (914 mm) or less in length shall be applied by stamping the faces of exterior pieces or by end labeling not less than 25 percent of the pieces of a bundled unit.

R319.3 Fasteners in non-borate-preservative-treated and fire-retardant-treated wood. Fasteners for pressure-preservative and fire-retardant-treated wood, other than Borate (SBX, ZB) or LSOP treatments as approved in R319 Protection Against Decay, shall be of hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. The coating weights for zinc-coated fasteners shall be in accordance with ASTM A153.

Exceptions:

1. One-half-inch (12.7 mm) diameter or larger steel bolts.

2. Fasteners other than nails and timber rivets, wood screws and lag screws shall be permitted to be of mechanically deposited zinc coated steel with coating weights in accordance with ASTM B 695, Class 55, minimum.

Fastenings for wood foundations shall be as required in AF&PA Technical Report No. 7.

(34) Amending Section R320. Section R320 is amended to read:

SECTION R320 – PROTECTION AGAINST SUBTERRANEAN TERMITES

R320.1 Subterranean Termite Control Methods. Protection from decay and termites shall be provided by the use of naturally durable or preservative-treated wood.

1. **Wood Used Above Ground.** Structural lumber installed above ground shall be preservative-treated wood in accordance with Section R319.

2. **Soil Treatment and Termite Barriers.** Where structural lumber of wood frame buildings or structures are supported directly on the ground by a concrete slab, or concrete and/or masonry foundation,

Formosan subterranean termite protection shall be provided by either chemically treating the soil beneath and adjacent to the building or structure by a Hawaii licensed pest control operator, or stainless steel termite barrier, or other termite protection measures approved by the Building Official.

All soil treatment, stainless steel termite barrier, and termite protection measures shall be installed according to manufacturer's recommendations for control of Formosan subterranean termites.

3. **Wood in Ground Contact.** Wood supporting permanent buildings and structures, which is in direct soil contact or is embedded in concrete or masonry in direct contact with earth shall be treated to the appropriate commodity specification of AWPA Standard U1.

   Wood in direct soil contact but not supporting any permanent buildings or structures shall be treated to the appropriate commodity specification of AWPA Standard U1 for ground contact.

4. **Retaining Walls.** Wood in retaining or crib wall shall be treated to AWPA Standard U1.

5. **Wood and Earth Separation.** Where wood is used with less than 6-inch vertical separation from earth (finish grade), it shall be treated for ground-contact use.

   Where planter boxes are installed adjacent to wood frame walls, a 2-inch-wide (51 mm) air space shall be provided between the planter and the wall. Flashings shall be installed when the air space is less than 6 inches (152 mm) in width. Where flashing is used, provisions shall be made to permit circulation of air in the air space. The wood-frame wall shall be provided with an exterior wall covering.

R320.1.1 Quality Mark. Lumber and plywood required to be pressure-preservative-treated in accordance with Section R320.1 shall bear the quality mark of an approved inspection agency which maintains continuing supervision, testing and inspection over the quality of the product and which has been approved by an accreditation body which complies with the requirements of the American Lumber Standard Committee treated wood program.

R320.1.2 Field Treatment. Field-cut ends, notches, and drilled holes of pressure preservative-treated wood shall be retreated in the field in accordance with AWPA M4, or in accordance with the approved preservative manufacturer's ICC-Evaluation Services report requirements.

R320.2 Chemical Termiticide Treatment. Chemical termiticide treatment shall include soil treatment and/or field applied wood treatment. The concentration, rate of application and method of treatment of the chemical termiticide shall be in strict accordance with the termiticide label.

R320.3 Naturally Resistant Wood. Heartwood of redwood and eastern red cedar shall be considered termite resistant.

R320.4 Barriers. Approved physical barriers, such as metal or plastic sheeting or collars specifically designed for termite prevention, shall be installed in a manner to prevent termites from entering the structure. Shields placed on top of an exterior foundation wall are permitted to be used only if in combination with another method of protection.

R320.5 Foam Plastic Protection. In areas where the probability of termite infestation is "very heavy" as indicated in Figure R301.2(6), Extruded and expanded polystyrene, polyisocyanurate and other foam plastics shall not be installed on the exterior face or under interior or exterior foundation walls or slab foundations located below grade. The clearance between foam plastics installed above grade and exposed earth shall be at least 6 inches (152 mm).

Exceptions:

1. Buildings where the structural members of walls, floors, ceilings and roofs are entirely of noncombustible materials or pressure-preservative-treated wood.

2. When in addition to the requirements of Section R320.1, an approved method of protecting the foam plastic and structure from subterranean termite damage is used.

3. On the interior side of basement walls.

R320.6 Under-Floor Clearance for Access and Inspection. Minimum clearance between the bottom of floor joists or bottom of floors without joists and the ground beneath shall be 24 inches; the minimum clearance between the bottom of girders and the ground beneath shall be 18 inches.

Exception: Open slat wood decks shall have ground clearance of at least 6 inches for any wood member.

Accessible under-floor areas shall be provided with a minimum 18-inch by 24- inch access opening, effectively screened or covered. Pipes, ducts and other construction shall not interfere with the accessibility to or within under-floor areas. See section M1305.1.4 for access requirements where mechanical equipment is located under floors.

R320.7 Weather Exposure. All portions of timbers (over 5-inch nominal width) and glued laminated timbers that form structural supports of a building or other structure shall be protected by a roof, eave, overhangs, flashings, or similar coverings. All wood or wood composite panels, in weather-exposed applications, shall be of exterior type.

R320.8 Water Splash. Where wood-frame walls and partitions are covered on the interior with plaster, tile or similar materials, and are subject to water splash, the framing shall be protected with approved waterproof paper.

R320.9 Pipe and Other Penetrations. Insulations around plumbing pipes shall not pass through ground floor slabs. Openings around pipes or similar penetrations in a concrete or masonry slab, which is in direct contact with earth, shall be filled with non-shrink grout, or other approved physical barrier.

(35) Amending Section R321. Section R321 is amended to read:

R321 – SITE ADDRESS

See ROH Section 2.9.1.

A BILL FOR AN ORDINANCE

(36) Amending Section R322. Section R322 is amended to read.

R322.1 Scope. Where there are four or more dwelling units or sleeping units in a single structure the following provisions for Group R-3 shall apply:

1. For construction of buildings or facilities of the State and County Governments, compliance with HRS 103-50, administered by the Disability and Communication Access Board, State of Hawaii.

2. American with Disabilities Act, administered and enforced by the U.S. Department of Justice.

3. Fair Housing Act, administered and enforced by the U.S. Department of Housing and Urban Development.

4. Other pertinent laws relating with disabilities shall be administered and enforced by agencies responsible for their enforcement.

Prior to the issuance of a building permit, the owner (or the owner's representative, professional architect, or engineer), shall submit a statement that all requirements, relating to accessibility for persons with disabilities, shall be complied with.

(37) Amending Section R323. Section R323 is amended to read:

SECTION R323 – FLOOD-RESISTANT CONSTRUCTION

See ROH Chapter 16, Article 11.

(38) Adding Section R324. Section R324 is added to read:

SECTION R324 – COMPLETE LOAD PATH AND UPLIFT TIES

R324.1 General. Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of galvanized steel or other approved corrosion-resistant material not less than 0.040-inch (1.01 mm) nominal thickness. Uplift resistance shall be in accordance with Table R802.11.

(39) Adding Section R325. Section R325 is added to read:

R325 Hawaii Residential Safe Room. Residential safe room shall be in accordance with ROH Chapter 16, Article 13.

(40) Adding Section R408.8. Section R408.8 is added to read:

R408.8 Under-Floor Clearance. Minimum clearance between the bottom of floor joists or bottom of floors without joists and the ground beneath shall be 24 inches (610 mm); the minimum clearance between the bottom of girders and the ground shall be 18 inches (457 mm).

Exception: Open slat wood decks shall have ground clearance of at least 6 inches (152 mm) for any wood member.

(41) Amending Section R613.2. Section R613.2 is amended by adding a second and third paragraph after the exceptions to read:

Openings or portions of openings in exterior walls which are less than 30 inches above a floor shall be provided with at least one rail between 30 inches and 36 inches above the floor when such openings are located on floors more than 5 feet above the adjacent grade or finished floor and are not provided with structurally adequate safety glass installations or other barriers to prevent a person from falling through the openings.

Openable windows or portions of openable windows located on floors more than 5 feet above the adjacent grade or finished floor shall be provided with guards as specified in this section, when such windows are less than 36 inches. Guards are not required where such windows are provided with securely installed "insect" screen or other equal or better barriers to young children falling through such openings and one rail between 30 inches and 36 inches above the floor.

(42) Adding Section R614. Section R614 is added to read:

SECTION R614 – WALLS WITHOUT STUDS

R614.1 General. For Type V-B buildings, single-wall construction without studs may be used in accordance with this section for repairs to existing buildings of single-wall construction.

One-story and the uppermost story of wood frame Type V-B buildings may be of single-wall construction with board thickness specified in this section, without studs, when requirements of this section are met. Floor to ceiling height shall not exceed 8 feet (2438 mm).

Any provision of this code to the contrary notwithstanding, studding of not less than 2-inch by 3-inch (51 mm by 76.2 mm) may be used on one-story buildings of double-wall construction.

When wood-frame dwellings are supported by posts, 2-inch by 4-inch (51 mm by 102 mm) foundation bracing shall be provided.

For one-story conventional residential structures, the local practice of using foundation blocks with termite shields will be acceptable in all areas except in flood hazard areas and developments adjacent to drainage facilities as specified in ROH Section 16.11.1.

R614.2 Board for Single-Wall Construction

R614.2.1 One and One-Eighth Inch Boards. Single-wall construction with boards of 1-1/8 inch (28.6 mm) net thickness are not required to have girts.

R614.2.2 One-Inch Boards. Where single-wall construction is with boards of one-inch thickness (25.4 mm), no girt is required, provided approved stiffeners for any section of such wall are spaced not more than 10 feet (3048 mm) along the wall.

R614.2.3 Three-Fourths-Inch Boards. Single-wall construction with boards of ¾-inch (19.1 mm) net thickness shall have girts and cross partitions at least every 30 feet (9144 mm).

R614.2.4 Approved Stiffeners. Approved stiffeners shall be studs at least 2-inches by 4-inches (51 mm by 102 mm), full height window or door jambs, posts, walls or partitions at right angles to the section of wall under construction.

R614.2.5 Girts. Girts for single-wall construction shall be not less than 2-inch by 6-inch (51 mm by 152 mm) belt course or other approved strengthening about mid height between the floor and ceiling on all exterior walls.

R614.2.6 Complete Load Path. Blocking, bridging, straps, approved framing anchors or mechanical fasteners shall be designed and installed to provide continuous ties from the roof to the foundation system. Sheet metal clamps, ties or clips, shall be formed of ASTM A153 G90 galvanized steel or other approved corrosion-resistant material not less than 0.040-inch (1.01 mm) nominal thickness. Uplift resistance shall be in accordance with Table R802.11.

(43) Amending Section R802.10.5. Section R802.10.5 is amended to read:

R802.10.5 Truss to Wall Connection. Trusses shall be connected to wall plates by the use of approved connectors having a resistance to uplift of not less than 400 pounds (1779 N) and shall be installed in accordance with the manufacturer's specifications. For roof assemblies subject to wind uplift pressures of 20 pounds per square foot (960 Pa) or greater, as established in Table R301.2(2), adjusted for height and exposure per Table R301.2(3), see section R802.11.

(44) Amending Table R802.11. Table R802.11 is amended to read:

TABLE R802.11
REQUIRED STRENGTH OF TRUSS OR RAFTER CONNECTIONS TO RESIST WIND UPLIFT FORCES (pounds per connection)

Effective Basic Wind Speed,	Roof Span (feet)							Overhangs (pounds/ foot)
V_{eff}, 3-sec gust	***12***	***20***	***24***	***28***	***32***	***36***	***40***	
85	-72	-120	-144	-168	-192	-216	-240	-38.55
90	-91	-152	-182	-213	-243	-274	-304	-43.22
100	-131	-218	-262	-305	-349	-392	-436	-53.36
110	-175	-292	-350	-409	-467	-526	-584	-64.56
120	-240	-400	-480	-560	-640	-720	-800	-76.83
130	-304	-506	-607	-708	-810	-911	-1012	-90.17

For SI: 1 inch = 25.4 mm, 1 foot = 305 m, 1 mile per hour = 1.61 km/hr, 1 pound/foot = 14.5939 N/m, 1 pound = 0.454g.

a. The uplift connection requirements are based on a 30-foot mean roof height located in Exposure B.

b. The uplift connection requirements are based on the framing being spaced 24 inches on center. Multiply by 0.67 for framing spaced 16 inches on center and multiply by 0.5 for framing spaced 12 inches on center.

c. The uplift connection requirements include an allowance for 10 pounds of dead load.

d. The uplift connection requirements do not account for the effects of overhangs. The magnitude of the above loads shall be increased by adding the overhang loads found in the table. The overhang loads are also based on framing spaced 24 inches on center. The overhang loads given shall be multiplied by the overhang projection and added to the roof uplift value in the table.

e. The uplift connection requirements are based upon wind loading on end zones as defined in Section M1609.6 of the International Building Code. Connection loads for connections located a distance of 20% of the least horizontal dimension of the building from the corner of the building are permitted to be reduced by multiplying the table connection value by 0.7 and multiplying the overhang load by 0.8.

f. V_{eff} is given by Figure R301.2(9).

g. The uplift connection requirements are based on 30-foot mean roof height located in Exposure B. For Exposure C and for other mean roof heights, multiply the above loads by the adjustment coefficients below.

	Mean Roof Height (feet)									
EXPOSURE	15	20	25	30	35	40	45	50	55	60
B	1.00	1.00	1.00	1.00	1.05	1.09	1.12	1.16	1.19	1.22
C	1.21	1.29	1.35	1.40	1.45	1.49	1.53	1.56	1.59	1.62

(45) Amending Section R903.4.1. Section R903.4.1 is amended by deleting the last sentence of the first paragraph.

(46) Amending Chapter 11. Chapter 11 is amended to read:

CHAPTER 11 – ENERGY EFFICIENCY

See ROH Chapter 32

(47) Amending Section M1201.1. Section M1201.1 is amended to read:

M1201.1 Scope. The provisions of Chapters 12 through 24 shall regulate the mechanical installation which are permanently installed and used to control environmental conditions within buildings, mechanical systems, system components, equipment and appliances specifically addressed in this code. Where application is made for construction as described in these chapters, the owner or the licensed design professional in responsible charge, acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on the work in these chapters. These inspections are in addition to the inspections specified in Section 109.

(48) Amending Section M1201.2. Section M1201.2 is amended by adding a second paragraph to read:

Whenever in the code reference is made to the International Mechanical Code and International Fuel Gas Code, the provisions of the International Mechanical Code and International Fuel Gas Code shall be deemed guidelines and not mandatory.

(49) Amending section M1301.1.1. Section M1301.1.1 is amended by replacing "Section R323.1.5" with "Section R324.1.5."

(50) Amending section M1306. Section M1306.1 is amended by adding an exception to read:

Exception: For walls constructed in accordance to Section R614, the minimum horizontal clearance from the burner head(s) of a top (or surface) cooking unit to combustible walls within 12 inches (305 mm) shall be permitted, provided there is protection equivalent to 1/2–inch (12.7 mm) gypsum wallboard covered with laminated plastic on wood backing.

(51) Amending section M1502. Section M1502 is amended by addition of a new Section M1502.7 to read:

M1502.7 Makeup Air. When a closet is designed for the installation of a clothes dryer, a minimum opening of 100 square inches for makeup air shall be provided in the door or by other approved means.

(52) Amending Section M2301.5. Section M2301.5 is amended by deleting "Section P2902.4.5" and replacing with "Plumbing Code."

(53) Deleting Chapters 27 and 28. Chapters 27 and 28 are deleted."

SECTION 4. Section 16-2.3, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-2.3 Performance security.

Upon filing of an application for a relocation permit, the applicant shall deposit with the city the sum of [$500.00,] $1,000.00, either in cash or in a certified or cashier's check, as security for the faithful performance by the applicant in obtaining the required [traffic] permits [and] to transport this structure, any police escort, and [in repairing or in paying damages] to repair or pay for any property owned by the city or by others which has been damaged in the process of moving such building or structure. Upon the faithful performance of such obligation by the applicant or by any person on behalf of the applicant, to the satisfaction of the building office, and if no such damage has resulted thereby, the sum so deposited shall be returned to the applicant. Applicant shall forfeit the performance security if building or structure is moved without the required [traffic] permits or police escort. If the applicant fails or refuses to repair or pay for such damage within 30 days after written notification thereof by the building official, the building official shall use such sums deposited or any portion thereof to cause the repair of such property so damaged. Any money remaining after such repair has been completed and has not been forfeited shall be returned to the applicant. In lieu of the aforementioned [$500.00] $1,000.00 security deposit, the applicant may establish with the city a revolving fund for the amount of [$2,000.00.] $5,000.00."

SECTION 5. Section 16-3.1, Revised Ordinances of Honolulu 1990, as amended ("Applicability"), is amended by amending subsection (a) to read as follows:

"(a) These provisions are applicable to the design, construction, installation, and transportation of factory-built [buildings] building (FBB) within the city. Unless otherwise specified, this article shall be applicable only to FBB which [are] is sold or offered for sale to first users[.] as defined in Section 16-3.2.

Exception: Manufactured homes manufactured and certified in accordance with the Manufactured Home Construction and Safety Standards as promulgated by the United States Department of Housing and Urban Development. Foundations, exterior stairs, additions and accessory structures shall comply with Article 1[.], Adoption of the International Building Code and International Residential Code for One- and Two-Family Dwellings."

SECTION 6. Section 16-3.2, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"**Sec. 16-3.2 Definitions.**

The following terms are defined for specialized use within this article.

"Factory-built building" or "FBB" means any structure or portion thereof designed primarily for occupancy by human beings, which is either entirely prefabricated or assembled at a place other than the building site.

"First user" means a person, firm, or corporation who initially installs FBB within [the] this state. A person who subsequently purchases an installed FBB is not a first user within the meaning of this definition.

"Insignia of approval" means a [tag,] tab, stamp, label, or other device issued by the building official to indicate compliance with [this article.] the statutes and these rules.

"Installation" means the assembly of [an] FBB on site and the process of affixing [an] FBB to land, a foundation, or an existing building.

"Manufacture" means the process of making, fabricating, constructing, forming, or assembling a product from raw, unfinished, or semifinished materials to produce [an] FBB.

"Site" means the parcel of land on which [an] FBB is installed."

SECTION 7. Section 16-3.3, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"**Sec. 16-3.3 Building permit required.**

No person shall install [an] FBB or cause the foregoing to be done without first obtaining a building permit from the building official for each FBB."

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SECTION 8. Section 16-3.4, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-3.4 Building permit fee.

A fee for each building permit as set forth in Table 18-A[,] of Chapter 18, ROH 1990, as amended, shall be paid to the building official. The fee shall be based on the valuation of the building in place complete including the cost of carport, fences, walls, etc."

SECTION 9. Section 16-3.5, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-3.5 Insignia of approval.

(a) [An] FBB manufactured in [the] this city[,] which is sold or offered for sale to first users within [the] this city[,] shall bear the insignia of approval issued by the building official indicating that the FBB is in compliance with this article.

(b) [An] FBB manufactured outside the city shall bear the insignia of approval issued by any governmental or inspectional agency approved by the building official."

SECTION 10. Section 16-3.6, Revised Ordinances of Honolulu 1990, as amended ("Performance of plumbing and electrical work"), is amended by amending subsection (a) to read as follows:

"(a) All electrical and plumbing work performed within [the] this state shall comply with State of Hawaii contracting and licensing laws and regulations."

SECTION 11. Section 16-3.8, Revised Ordinances of Honolulu 1990, as amended ("Inspections"), is amended by amending subsections (a) and (b) to read as follows:

"(a) [An] FBB manufactured outside of the city shall be inspected by an approved third party inspectional agency.

(b) The building official may make periodic in-plant inspections to verify that the FBB produced [complies] comply with the plans as approved by the building official."

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SECTION 12. Section 16-3.10, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-3.10 Transporting factory-built buildings.

(a) The transportation of [an] FBB shall be governed by the provisions of the city and state traffic codes.

(b) Article 2, Relocation of Buildings, shall be applicable to [an] FBB once it has been installed on a zoning lot."

SECTION 13. Article 5 of Chapter 16, Revised Ordinances of Honolulu 1990 ("Energy Conservation") is repealed.

SECTION 14. Chapter 16, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Article 5 to read as follows:

"Article 5. Energy Conservation

See Chapter 32, "Building Energy Conservation Code.""

SECTION 15. The title of Chapter 16, Article 6, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Article 6. <u>Residential</u> Swimming Pools"

SECTION 16. Section 16-6.2, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-6.2 [Fences and other protective devices—Required—Specifications.] <u>Fences and Other Protective Devices.</u>

[(a) Every person in possession of land, either as owner, lessee, tenant or licensee, upon which is situated a swimming, dipping or wading pool which contains water 18 inches or more in depth at any point shall erect and maintain thereon a fence, wall or other enclosure completely surrounding such pool or the property on which the pool is situated, sufficient to make the pool inaccessible to small children; provided, that a dwelling or other building which may serve as a barrier may be used as a part of such enclosure. Such fence, wall or other enclosure, including gates, shall be at least four and one-half feet high.

(b) All gates or doors must be self-closing and equipped with a self-latching device capable of keeping such gate or door securely closed, with latches placed at least four feet aboveground or otherwise made inaccessible from the outside to small children; provided, that the door of any dwelling forming any part of the enclosures as required by this section need not be so equipped.

(c) In lieu of maintaining such fence, wall or other enclosure, said person may provide a competent person to keep the pool under observation at all times while water is kept in the pool; and when the pool is not under observation of a competent person, a pool cover or other protective device approved by the building official capable of preventing small children from falling into the water shall be provided.]

See Sections 3109.4 and 3109.5 of the International Building Code, as amended. All provisions of the building, electrical and plumbing codes shall be applicable unless otherwise indicated in this section."

SECTION 17. Section 16-6.6, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-6.6 Violation—Penalty.

[(a) Criminal Prosecution. Any person, firm or corporation violating any of the provisions of this article shall be deemed guilty of a misdemeanor, and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violations of any provisions of this article is committed, continued or permitted, and upon conviction of any such violation such person shall be punishable by a fine of not more than $1,000.00, or by imprisonment for not more than one year, or by both fine and imprisonment.

(b) Administrative Enforcement. In lieu of or in addition to enforcement pursuant to Section 16-6.6 (a), if a person, firm or corporation is not complying with a notice of violation, the building superintendent may have the party responsible for the violation served, by mail or delivery, with an order pursuant to this section.

(1) Contents of Order.

(A) The order may require the party responsible for the violation to do any or all of the following:

(i) Correct the violation within the time specified in the order;

(ii) Pay a civil fine not to exceed $1,000.00 in the manner, at the place and before the date specified in the order, after an opportunity for a hearing before the building board of appeals as provided in subsection (b)(2) of this section;

(iii) Pay a civil fine not to exceed $1,000.00 per day for each day in which the violation persists, in the manner and at the time and place specified in the order, after an opportunity for a hearing before the building board of appeals as provided for in subsection (b)(2) of this section.

(B) The order shall advise the party responsible for the violation that the order shall become final 30 calendar days after the date of its delivery. The order shall also advise that the building superintendent's action may be appealed to the building board of appeals.

(2) Effect of Order—Right to Appeal. The provisions of the order issued by the building superintendent under this section shall become final 30 calendar days after the date of the delivery of the order. The party responsible for the violation may appeal the order to the building board of appeals as provided in Section 16-1.1 ROH 1990, as amended. The appeals must be received in writing on or before the date the order becomes final.

(3) Judicial Enforcement of Order. The building superintendent may institute a civil action in any court of competent jurisdiction for the enforcement of any order issued pursuant to this section. Where the civil action has been instituted to enforce the civil fine imposed by said order, the building superintendent need only show that the notice of violation and order were served, that a civil fine was imposed, the amount of the civil fine imposed and that the fine imposed has not been paid.]

For violation and penalty provisions, see Article 10."

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SECTION 18. Section 16-7.1, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-7.1 Applicability.

[(a) These provisions are applicable to the design and construction of public swimming and wading pools.

(b) Those pools covered by these regulations include municipal, institutional, hotel, apartment and pools of similar type usage; and hydrotherapy spas, therapeutic pools and special pools of similar type usage. Not covered are swimming pools, spas and hot tubs for one-family and two-family dwelling, and similar type pools; and ornamental pools.

(c)] <u>See Section 3109.1 of the International Building Code, as amended.</u> All provisions of the building, electrical and plumbing codes shall be applicable unless indicated otherwise in this [article. Although exempted from this article, private residential pools shall also comply with the building, electrical and plumbing codes.] <u>section.</u>"

SECTION 19. Section 16-7.3, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-7.3 Construction details.

[(a) Materials.

(1) All pools and all appurtenances thereto shall be constructed of impervious and durable materials which are nontoxic, which can withstand the design stresses, and which will provide a watertight structure with a smooth and easily cleaned surface.

(2) The surfaces within the pool intended to provide footing for bathers shall be designed to provide a slip-resistant surface.

EXCEPTION. Tile, manufactured rock, stone or similar materials may be applied over the pool structure as a decoration treatment. Materials to be allowed under this exception shall conform to other provisions of this section except they need not be impervious or watertight.

(b) Water Depth.

(1) Swimming pools shall have a minimum depth of water in the shallow end of three feet. Wading pools shall have a maximum water depth of 24 inches. The water depth at the perimeter of wading pools shall not exceed 18 inches. Exceptions to depth requirements may be made for hydrotherapy spas, therapeutic pools and other special condition pools as approved by the building official.

(2) The depth of water in feet and inches shall be plainly marked above the water surface on the vertical pool wall and/or on top of the deck edge within 18 inches of the water edge at all major deviations of pool depth. Depth marking shall have a four-inch minimum height, be slip-resistant and spaced at not more than 25-foot intervals.

(c) Slope of Pool Floor. The slope of the pool floor from the shallow end wall towards the deep end shall not exceed one in 10 (1:10) to the point of the first slope change. The slope of the floor from the first slope change to the deep end shall not exceed one in three (1:3).

(d) Pool Shape. No limits are specified for the shape of swimming pools except that consideration shall be given to the shape from the standpoint of safety and adequate circulation of the swimming pool water. There shall be no protrusions, means of entanglement or other obstructions in the swimming pool which can cause the entrapment of the bather.

(e) Handholds, Egress and Entry.

(1) All swimming pools shall be provided with handholds (coping edge, rings, ledges, secured rope or similar devices) around the perimeter installed in areas where depths exceed three feet six inches, no further apart than four feet and not greater than 12 inches above the waterline. Where perimeter overflow systems are not provided, a handhold, cantilevered deck edge or materials equivalent in strength and durability with rounded, slip-resistant edges shall be provided.

(2) Adequate means of entry to and egress from swimming pools shall be provided utilizing stairs, ladders, ledges, recessed steps or other approved means.

(f) Decks, Walkways and Ramps. Decks, walkways, ramps and similar surfaces shall be slip-resistant and sloped to provide adequate drainage away from the pool.]

Public swimming pools are under the purview of the State Department of Health, Hawaii Administrative Rules, Title 11, Chapter 10."

SECTION 20. Section 16-7.5, Revised Ordinances of Honolulu 1990, as amended, is repealed.

["**Sec. 16-7.5 Filtration and circulation.**

(a) All pools shall be provided with a recirculation system adequate in its design to provide uniform circulation of the water and rated flows for proper filtration.

(b) At least one drain shall be provided at the lowest point of pool floor and shall be of the anti-vortex type or otherwise designed to prevent being blocked by a bather.

(c) The materials utilized in the recirculation system shall be of nontoxic material, resistant to corrosion and able to withstand operating pressures.

(d) The recirculation and filtration equipment for swimming pools shall be sized to turn over the entire pool water capacity at least once every six hours. The equipment for wading pools shall be sized for a two-hour turnover. The equipment for hydrotherapy spas, therapeutic pools and special pools of similar type usage shall be sized for a 30-minute turnover.

(e) A pressure gauge and rate of flow indicator as a means of indicating system condition shall be provided in the circulation system at easily readable locations.

(f) An overflow collection system (gutters), automatic surface skimmers or other approved collection systems shall be installed on all pools covered by these regulations.

(g) Filtration backwash water shall be discharged to sanitary sewer, dry well or injection well. Pool drain water shall be discharged to storm drain, dry well, injection well or surface areas within owner's property."]

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SECTION 21. Chapter 16, Article 7, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Section 16-7.5 to read as follows:

"**Sec. 16.7-5 Operation and maintenance.**

Operation and maintenance of public swimming pools shall be in accordance to the State Department of Health, Hawaii Administrative Rules, Title 11, Chapter 10, as the same may be amended from time to time."

SECTION 22. Section 16-7.6, Revised Ordinances of Honolulu 1990, as amended, is repealed.

["**Sec. 16-7.6 Chemical feeding and regulating equipment.**

(a) All swimming pools shall be provided with adequate and appropriate chemical feeding and regulating equipment capable of precisely feeding the required quantity of disinfecting agent to the pool water. Chemical feeders shall be installed downstream of the pool filtration and heating equipment and shall be electrically wired so they cannot operate unless the pool recirculating pump is running.

(b) When compressed chlorine gas is used, the chlorine cylinders and chlorine mechanical proportioning equipment shall be housed in a separate, corrosion-resistant, mechanically-vented enclosure, which is reasonably resistant to gas leakage. Access to the chlorination room shall be from the exterior. The mechanical ventilation system shall exhaust at least four CFM per square foot of floor space with exhaust intake at floor level. Automatic louvers near the top and bottom of the room for admitting air shall be provided. The chlorine exhaust vent shall terminate at least 10 feet above the ground and pool deck area. Electrical switches for the control of artificial lighting and ventilation equipment shall be located on the outside of the enclosure adjacent to the door. Gas masks approved by the National Institute for Occupational Safety and Health shall be accessible outside the chlorine enclosure."]

SECTION 23. Chapter 16, Article 7, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Section 16-7.6 to read as follows:

"**Sec. 16.7-6 Entrapment avoidance.**

See Section 3109.5 of the International Building Code, as amended."

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SECTION 24. Section 16-7.8, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-7.8 Heaters.

Heaters shall comply with the electrical, [and] plumbing, and building energy conservation codes and shall be installed in accordance with the manufacturer's instructions. Water heaters exceeding 200,000 Btus per hour shall comply with Chapters 220-223, Title 12, Boiler and Pressure Vessel Code, State of Hawaii."

SECTION 25. Section 16-7.9, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-7.9 Fences and other protective devices.

[(a) Every person in possession of land, either as owner, lessee, tenant or licensee, upon which is situated a swimming or wading pool which contains water 18 inches or more in depth at any point shall erect and maintain thereon a fence, wall, building or other enclosure completely surrounding such pool or the property on which the pool is situated, sufficient to make the pool inaccessible to small children. Such fence, wall or other enclosure, including gates, shall be at least four and one-half feet high.] See Section 3109.3 of the International Building Code, as amended.

EXCEPTION: The provisions of this section shall not apply to any swimming, dipping, or wading pool on the premises of a hotel as defined in the land use ordinance.

[(b) All gates or doors must be self-closing and equipped with a self-latching device capable of keeping such gate or door securely closed, with latches placed at least four feet above ground or otherwise made inaccessible from the outside to small children.]"

SECTION 26. Chapter 16, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Article 9 to read as follows:

"Article 9. Adoption of the International Existing Building Code

Sec. 16-9.1 Existing Building Code.

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The 2006 edition of the International Existing Building Code as published by the International Code Council, Inc., 500 New Jersey Avenue, NW, 6th Floor, Washington, DC 20001 is by reference incorporated herein and made a part hereof, subject to the following amendments.

(1) Amending Section 101.2. Section 101.2 is amended to read:

In lieu of Chapter 34 of the International Building Code, the International Existing Building Code shall be permitted to be used for the repair, alteration, change of occupancy, and addition to existing buildings.

(2) Amending Section 103. Section 103 is amended to read:

SECTION 103 PERMITS

See ROH Chapter 18.

(3) Amending Section 104. Section 104 is amended to read:

SECTION 104 REFERENCE CODES

Where references are made to electrical, plumbing, and fire codes, the references shall be to ROH 1990, Chapter 17, Electrical Code, Chapter 19, Plumbing Code, and Chapter 20 Fire Code.

(4) Deleting Sections 105 through 117. Sections 105 through 117 are deleted.

(5) Amending Section 509.2. Section 509.2 is amended by deleting the exception."

SECTION 27. Section 16-10.3, Revised Ordinances of Honolulu 1990, as amended ("Criminal prosecution"), is amended by amending subsection (a) to read as follows:

"(a) General. Any person, firm or corporation violating any of the provisions of this code shall be deemed guilty of a misdemeanor, and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any provisions of this code is committed, continued or permitted, and upon conviction of any such violation such person shall be punishable by a fine of not more than [$1,000.00,] <u>$2,000.00,</u> or by imprisonment for not more than one year, or by both fine and imprisonment."

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SECTION 28. Section 16-10.4, Revised Ordinances of Honolulu 1990, as amended, is amended to read as follows:

"Sec. 16-10.4 Administrative enforcement.

In lieu of or in addition to enforcement pursuant to Section 16-10.3, if the building official determines that any person, firm or corporation is not complying with a notice of violation, the building official may have the party responsible for the violation served, by certified mail or delivery, with an order pursuant to this section.

(a) Contents of the Order.

(1) The order may require the party responsible for the violation to do any or all of the following:

(A) Correct the violation within the time specified in the order;

(B) Pay a civil fine not to exceed [$1,000.00] $2,000.00 in the manner, at the place and before the date specified in the order;

(C) Pay a civil fine not to exceed [$1,000.00] $2,000.00 per day for each day in which the violation persists, in the manner and at the time and place specified in the order.

(2) The order shall advise the party responsible for the violation that the order shall become final 30 calendar days after the date of its delivery. The order shall also advise that the building official's action may be appealed to the building board of appeals.

(b) Effect of Order–Right to Appeal. The provisions of the order issued by the building official under this section shall become final 30 calendar days after the date of the delivery of the order. The party responsible for the violation may appeal the order to the building board of appeals as provided [by Section 16-1.1, with reference to UBC Section 105.] in Chapter 16. The appeal must be received in writing on or before the date the order becomes final. However, an appeal to the building board of appeals shall not stay any provisions of the order.

(c) Judicial Enforcement of Order. The building official may institute a civil action in any court of competent jurisdiction for the enforcement of any order issued pursuant to this section. Where the civil action has been instituted to enforce the civil fine imposed by said order, the building official need only show that the

notice of violation and order were served, that a civil fine was imposed, the amount of the civil fine imposed and that the fine imposed has not been paid."

SECTION 29. Section 16-11.3, Revised Ordinances of Honolulu 1990, as amended ("Floodproofing requirements in certain areas"), is amended by amending subsection (c) to read as follows:

"(c) Waterproofing of Buildings Below Regulatory Flood Elevation. Any building or portion thereof, not used for human habitation, and which is permitted to be below the regulatory flood elevation shall either have the space below the regulatory flood elevation free of obstructions or shall be designed and constructed so that below the regulatory flood elevation, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy due to the regulatory flood. Compliance with the [waterproofing provisions of the "Flood-Proofing Regulations," pamphlet No. EP1165 2 314, published for the Office of the Chief Engineers, U.S. Army, Washington, D.C.,] requirements of ASCE 24 shall be deemed to be in compliance with this section. Within coastal high hazard districts, however, any usable enclosed space below the regulatory flood elevation shall be constructed with breakaway walls intended to collapse under stress without jeopardizing the structural support of the building. Areas enclosed by such breakaway walls shall not be used for human habitation."

SECTION 30. Section 16-11.5, Revised Ordinances of Honolulu 1990, as amended ("Structural requirements"), is amended by amending subsection (a) to read as follows:

"(a) General. All buildings and structures to be constructed under the provisions of this article shall be [capable of resisting all loads required under this chapter and, in addition, all loads prescribed in] in accordance with ASCE 24 or this section."

SECTION 31. Article 12 of Chapter 16, Revised Ordinances of Honolulu 1990, as amended ("Indigenous Hawaiian Architecture"), is repealed.

SECTION 32. Chapter 16, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Article 12 to read as follows:

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"Article 12. Indigenous Hawaiian Architecture

Sec. 16-12.1 Policy.

This code shall be administered with due consideration given to the policy of the city that indigenous Hawaiian architecture furthers the city's compelling interest in cultural, environmental, and historic preservation; energy efficiency; economic development; aesthetic beauty; and public safety. For purposes of this article, indigenous Hawaiian architecture includes any of the predominant architectural practices, customs, styles, and techniques historically employed by the native residents of the Hawaiian Islands, including structures comprised of either rock walls or wood frames for the bottom portion of structures and thatch of different native grasses and leaves for the roof.

Sec. 16-12.2 Scope.

The provisions of this article shall apply exclusively to Indigenous Hawaiian Architecture Structures.

Sec. 16-12.3 Publications incorporated by reference.

The following publications are incorporated by reference and made a part of these provisions. Where there is a conflict between the references and these provisions, these provisions shall prevail.

(1) "Hawaiian Thatched House" (1971), by Russell A. Apple, published by the United States Department of the Interior,

(2) "Hale Construction Standards" (2000), by Francis Sinenci and Bill Sides,

(3) "The Hawaiian Grass House in Bishop Museum" (1988), by Catherine C. Summers, and

(4) "Arts and Crafts of Hawaii, Section II, Houses" (1957) by Te Rangi Hiroa (Peter H. Buck).

Sec. 16-12.4 Definitions.

For purposes of this article, the following words and terms shall have the meanings shown herein.

"Certified Hale Builder" means a person who has obtained a certificate of completion for satisfactorily completing a course in Hawaiian hale construction from the University of Hawaii, or any of its community colleges, or as approved by the Building Official.

"Group of Structures" means a group of indigenous Hawaiian architecture structures that are in close proximity to each other and have an aggregate floor area of 1,800 square feet or less.

"Indigenous Hawaiian Architecture Structure or Hale" means a structure that is consistent with the design, construction methods and uses of structures built by Hawaiians in the 1800's, which uses natural materials found in the Hawaiian islands, and complies with this article and references.

"Separation" means the clear distance between two structures.

"Setback" means the clear distance between a structure and a property line.

Sec. 16-12.5 Material requirements.

(a) Hale shall be constructed using only materials grown and harvested in the State of Hawaii.

(b) Wood Framing Material. The wood members for the hale, such as posts and rafters, shall be, but not limited to hardwoods of unmilled, straight sections of trunks or branches of the following species:

(1) Casaurina equisitafolia (ironwood).

(2) Prosopis pallida (kiawe).

(3) Eucalyptus robusta (eucalyptus).

(4) Psidium cattleianum (strawberry guava).

(5) Metrosideros polymorpha (ohia).

(6) Rizophora mangle (mangrove).

Exception: Ardisia elliptica (inkberry) may be used only for roof purlins as an alternative to specified woods listed in subdivisions (1) through (6).

(c) Roofing and Siding. Thatched roofing and siding materials for the hale may be any grass or leaf material grown and harvested in the State of Hawaii, to include but not be limited to pili, kualohia, pueo, kawelu, sugarcane leaves, and ti leaves.

(d) Cord. Natural or synthetic cord used for lashing structural members of the hale shall be 400 pound test. Cord used for tying floating purlins and thatched materials shall be 100 pound test. All cord used on the hale shall be shades of green, tan, brown or black.

(e) Metal Prohibited. Metal shall not be used for the construction of the hale.

Sec. 16-12.6 Size and location.

(a) Height and Size Limitation. Hale shall be one-story, detached structure(s) not to exceed 1,800 square feet. The maximum allowable size for each type of hale shall be as follows:

MAXIMUM ALLOWABLE SIZES (IN FEET) FOR EACH HALE TYPE			
hale halawai	hale kuai	hale noa	hale waa
30'X 60'	14'X 20'	14'X 24'	30'X 60'

(b) Zoning Requirements. Hale shall comply with minimum yard requirements in the Land Use Ordinance, ROH Chapter 21.

(c) Minimum Separation. The minimum separation between a hale and another structure shall be at least 10 feet for a one-story structure; 15 feet for a two-story structure; or a distance equal to the height of the hale, whichever is more. The minimum separation between two hale shall be at least 10 feet or a distance equal to the height of the taller hale.

(d) Hale Noa. Hale noa structures for sleeping may be constructed only on property where a separate residence exists on the property.

Sec. 16-12.7 Allowable prohibited uses.

(a) Allowable Uses. To the extent permitted by other applicable law, the various types of hale shall be used as follows:

ALLOWABLE USES FOR EACH HALE TYPE			
Hale Halawai	Hale Kuai	Hale Noa	Hale Waa
eating (ai)	eating (ai)		eating (ai)
assembling (halawai)	assembling (halawai)		assembling (halawai)
		sleeping (moe)	
retailing (e.g., fruits) (ku`ai)	retailing (e.g., fruits) (ku`ai)		retailing (e.g., fruits) (ku`ai)
	storage (papa`a)		storage (e.g., canoe) (papa`a)

(b) Prohibited Uses and Activities. The following uses and activities shall be prohibited from occurring within or near the hale:

(1) Cooking.

(2) Open flames.

(3) Generators.

(4) Extension cords.

(5) Electrical switches, fixtures, or outlets.

(6) Plumbing faucets, fixtures, or drains.

(7) Power tools.

(8) No screen, mesh, plastic or any other similar material shall be attached to the hale.

(9) Hale shall not be used as a food establishment as defined in the administrative rules adopted by the State of Hawaii, Department of Health.

(c) Maintenance. The hale shall be periodically maintained by the owner to ensure structural integrity. Repairs for maintenance of the hale shall not require additional building permits.

Sec. 16-12.8 Fire protection.

(a) Fire Protection Classifications. Indigenous Hawaiian architecture structures shall be categorized into the following two classes for fire protection requirements:

CLASS	SETBACK REQUIREMENTS	FIRE PROTECTION REQUIREMENTS

Class A	The structure (or a group of structures) is: 1. Located at least 100 feet from any existing structure on the same or neighboring properties; and 2. Located at least 100 feet from any property line, except as follows: a. if the property line abuts a public way, the 100 feet minimum setback for that property line shall be reduced by the width of the public way, b. if the property line abuts the shoreline, the minimum setback for that property line shall be the shoreline setback, or c. for any hale ku`ai in the agricultural district that is less than 200 square feet, that is completely open on three sides, and that is used as an agricultural products stand and if the property line abuts a public way, the minimum setback for that property line shall be 15 feet.	No fire protection is required for the structure.
Class B	The structure (or a group of structures) that conforms to applicable zoning setback requirements but does not satisfy Class A setback requirements.	Automatic fire sprinkler system shall be installed in accordance with design standards in Section 16-12.8.2. An electrical permit is required for fire sprinklers systems.

A BILL FOR AN ORDINANCE

(b) Automatic Fire Sprinklers. The design standards for automatic fire sprinklers for Class B indigenous Hawaiian architecture structures shall be in accordance with NFPA 13.

Exception: The design standards for automatic fire sprinklers for Class B indigenous Hawaiian architecture structures shall be permitted as follows:

(1) 18 gallons per minute for a single head at 140 square feet maximum coverage of roof area.

(2) 13 gallons per minute for each subsequent head at 140 square feet maximum coverage of roof area per head.

(3) The minimum supply pressure at the base of the riser shall not be less than 40 pounds per square inch.

(4) The minimum residual pressure at the highest sprinkler shall be not less than 12 pounds per square inch.

(5) Sprinkler heads spacing shall not exceed 14 feet.

(6) Sprinkler heads shall be open type upright, pendent, or sidewall with 1/2-inch or 17/32- inch orifice and have a wax corrosion resistant coating.

(7) The total number of sprinklers on a branch shall not exceed 6 heads.

(8) The total number of sprinklers shall not exceed the following schedule:

1-inch diameter	2 sprinklers
1-1/4 inch diameter	3 sprinklers
1-1/2 inch diameter	5 sprinklers
2-inch diameter	10 sprinklers
2-1/2 inch diameter	30 sprinklers

3-inch diameter	60 sprinklers

(9) The above pipe schedule shall not apply to hydraulically designed systems.

(10) The water density for hydraulically designed systems shall not be less than 0.10 gpm per square foot.

(11) The source of water may be by domestic water meters, detector check meter, underground well, storage tank, swimming pool, ponds, etc., but must meet the design requirements for adequate pressure and duration.

(12) Water supply shall be sufficient to provide 30 minutes duration.

(13) If domestic water meters are used as the source of water for the fire sprinklers, without a storage tank and booster pump, the maximum number of heads shall not exceed the following table:

5/8-inch water meter	1 sprinkler
3/4-inch water meter	2 sprinklers
1-inch water meter	3 sprinklers
1-1/2 inch water meter	7 sprinklers
2-inch water meter	11 sprinklers
3-inch water meter	27 sprinklers

(14) The piping material shall be hard drawn copper with silver solder or brazed fittings, or carbon steel with corrosion-resistant coatings. Plastic pipes shall not be allowed, except for below grade supply pipes.

(15) Fire sprinkler system shall be actuated by smoke detectors located at the highest points of the roof and spaced as recommended by the manufacturer.

(16) Flow control valves shall be either hydraulically or electrically operated with a manual override switch.

(17) Where the width of a roof exceeds the width allowed for one row of sprinklers, two or more rows of sprinklers shall be placed such that the entire roof area is protected.

(18) Prevailing wind direction shall be considered in the placement of sprinklers.

(19) Deflectors for sprinklers shall be parallel with the roof surface or tilted slightly towards the peak of the roof.

(20) Fire sprinkler systems shall have a local alarm activated by a smoke detector.

(c) For any hale that requires fire protection pursuant to Sec.16-12.8(b), the applicant shall provide a certification from a licensed engineer or a licensed C-20 contractor that the water supply for the fire sprinkler system has been tested and is capable of delivering the required fire flow for a duration of 30 minutes.

(d) Smoke Detector. Any hale used for sleeping shall have an approved battery operated smoke detector installed in the hale.

Sec. 16-12.9 Design standards.

(a) General Design Standards. All types of hale shall be designed and constructed in accordance with the standards set out in this section.

(1) The minimum diameter size of all structural members shall be measured at the member's midpoint, except that the minimum diameter size of posts shall be measured at the smaller end. For structure sizes not specifically shown in the tables, the requirements in the next larger width size shall be applicable.

(2) The specifications for structural members were estimated based on no wind loads. Hale shall be constructed to allow all thatching materials to separate from the structure prior to adding significant loads.

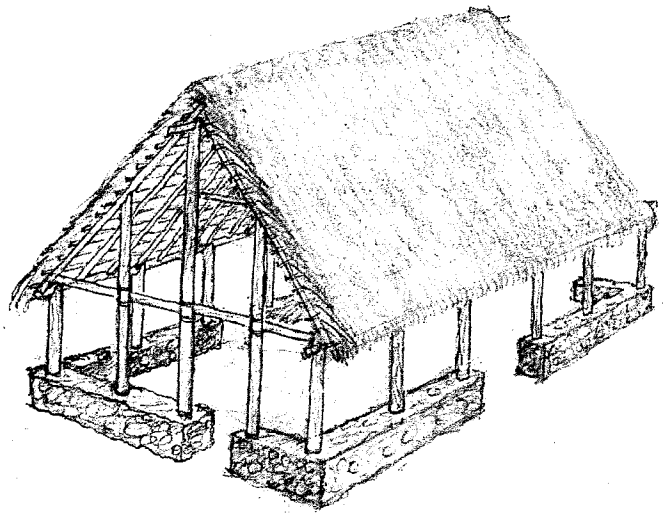
(3) The mix formula for mortar specified in these rules shall be one part portland cement, four parts clean sand, and sufficient fresh water to make the mixture workable.

(4) Every hale, except hale noa, shall have at least two sides completely open.

(5) Lashing and thatching methods shall comply with illustrations found in "Arts and Crafts of Hawaii" or "The Hawaiian Grass House in Bishop Museum."

(b) Allowable Designs. Hale shall be designed and constructed in accordance with the schematic designs and illustrations that follow:

(1) Hale Halawai. Each end of the Hale Halawai may be open or thatched. The ends may also be constructed with a thatched roof hip as an alternate design.



HALE HALAWAI
Open End Style

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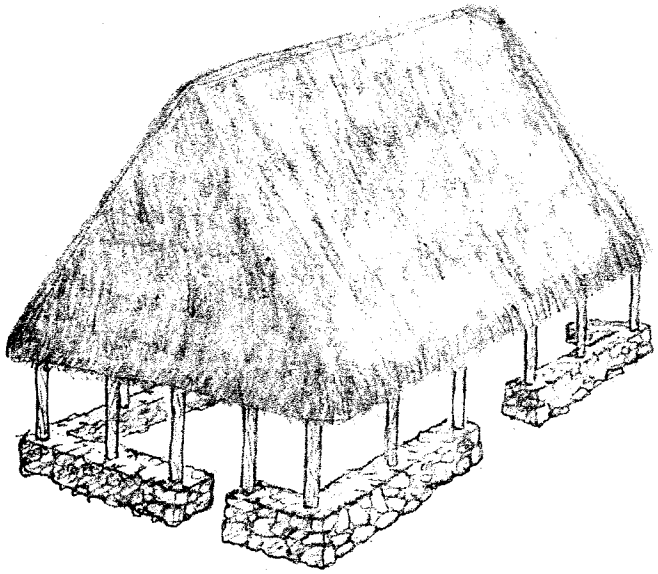
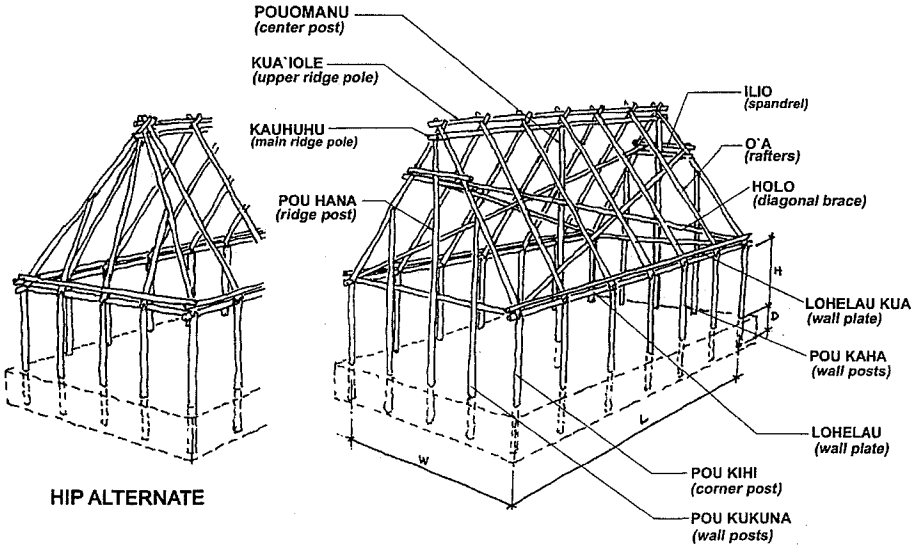


HALE HALAWAI
Thatched End Style



FRAMING SCHEMATIC

A BILL FOR AN ORDINANCE

HALE HALAWAI										
W x L x H	*Pou Kihi* minimum diameter	*Pou Kukuna & Pou Kaha* minimum diameter	*Pou Hana* minimum diameter	*Pouomanu* minimum diameter	*O'a* minimum diameter	*Kuaiole & Holo* minimum diameter	*Kauhuhu* minimum diameter	*Iohelau* minimum diameter	Post Spacing maximum spacing	Rafter Spacing maximum spacing
12'x 20'x 7'	4"	3 "	4"	4"	3 "	2 "	3"	3"	5'	3'
14'x 24'x 7'	4"	4"	4 "	4 "	3 "	2 "	3"	3 "	5'	3'
24'x 30'x 7'	5"	4 "	4 "	4 "	4"	2 "	3"	3 "	5'	3'
25'x 50'x 7'	5 "	5"	5 "	5 "	4"	2 "	3"	32"	5'	3'
30'x 60'x 7'	6"	5 "	6"	6"	4 "	2 "	3"	4"	5'	3'

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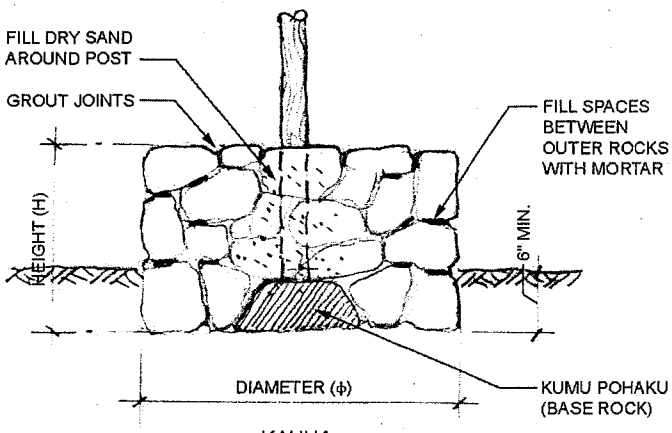
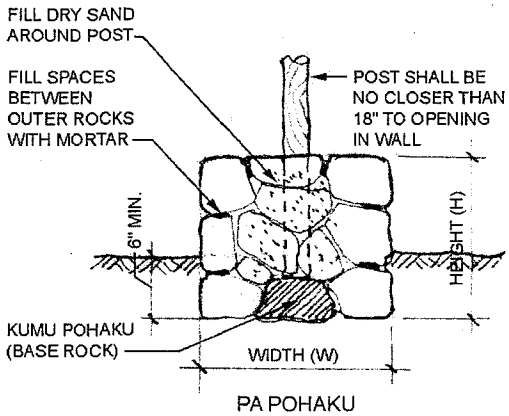
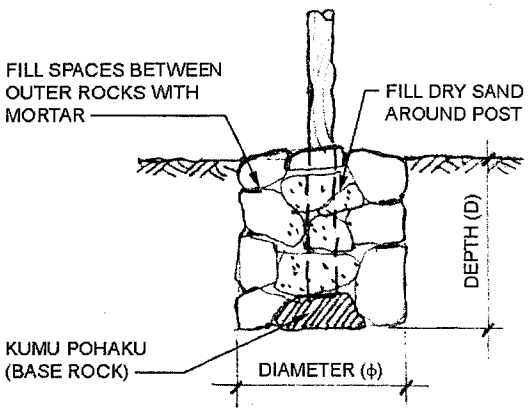


KAHUA
(PEDESTAL)



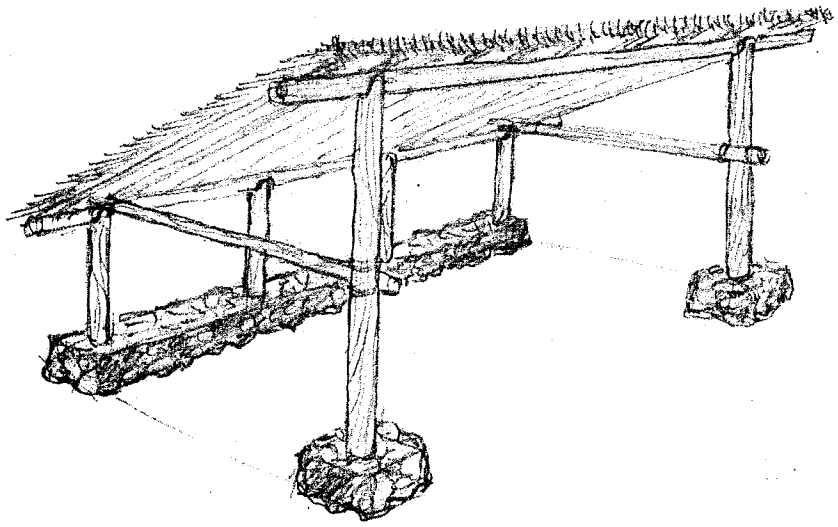
PA POHAKU
(FOUNDATION WALL)



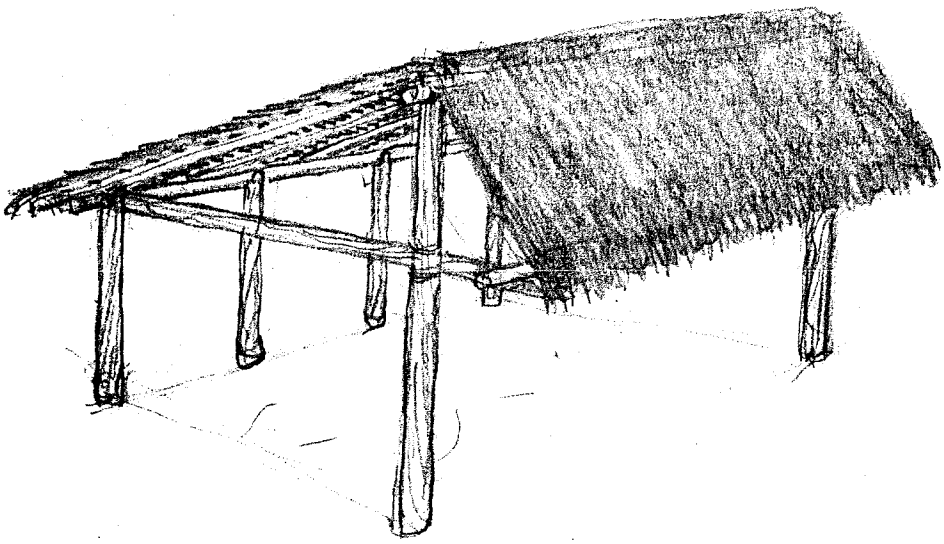
POU KANU
(BURIED POST)

SIZE OF ***HALE HALAWAI*** W x L x H	FOUNDATION TYPE		
	Kahua Diameter x Height	***Pa Pohaku*** Width x Height x Length	***Pou Kanu*** Diameter x Depth
12'x 20'x 7'	3'6"φ x 24"H	2'6"W x 2'8"H x 4'0"L	30"φ x 2'8"D
14'x 24'x 7'	3'8"φ x 24"H	2'6"W x 2'8"H x 4'0"L	30"φ x 2'9"D
24'x 30'x 7'	4'0"φ x 30"H	3'0"W x 3'0"H x 4'0"L	36"φ x 3'0"D
25'x 50'x 7'	4'0"φ x 30"H	3'0"W x 3'0"H x 4'0"L	36"φ x 3'0"D
30'x 60'x 7'	4'0"φ x 30"H	3'0"W x 3'3"H x 4'0"L	36"φ x 3'3"D

(2) Hale Ku`ai.



HALE KU`AI
SHED STYLE



HALE KU`AI
GABLE STYLE

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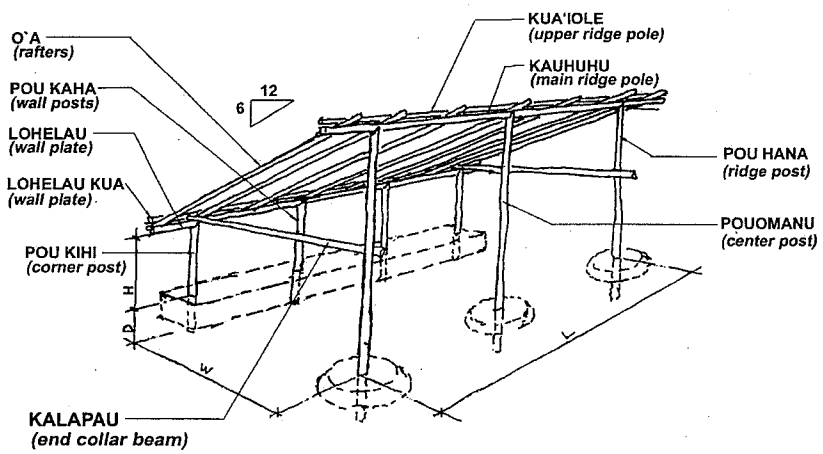
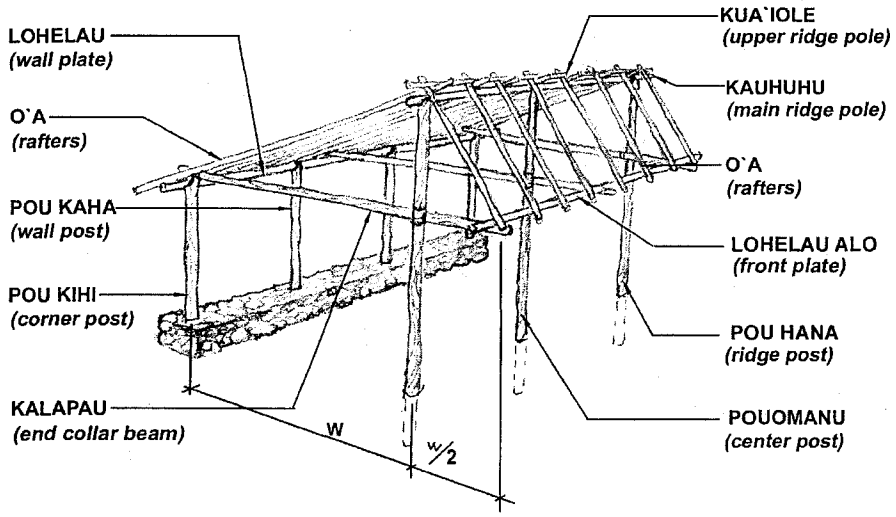


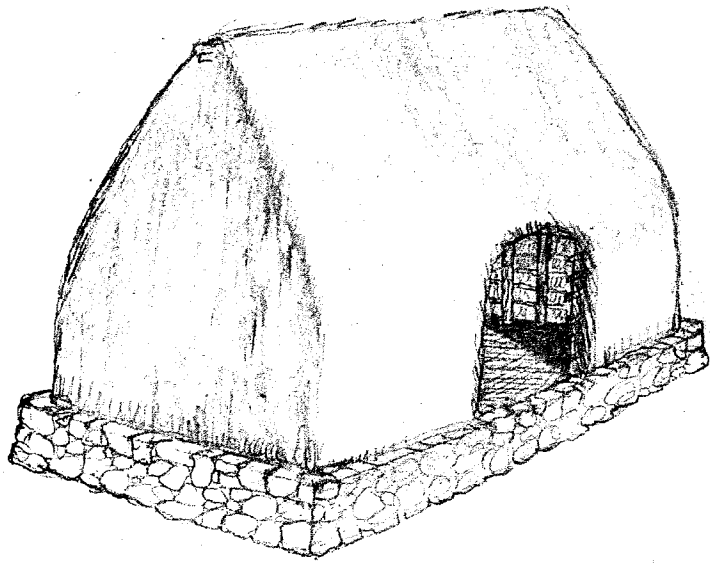


FRAMING SCHEMATIC

A BILL FOR AN ORDINANCE

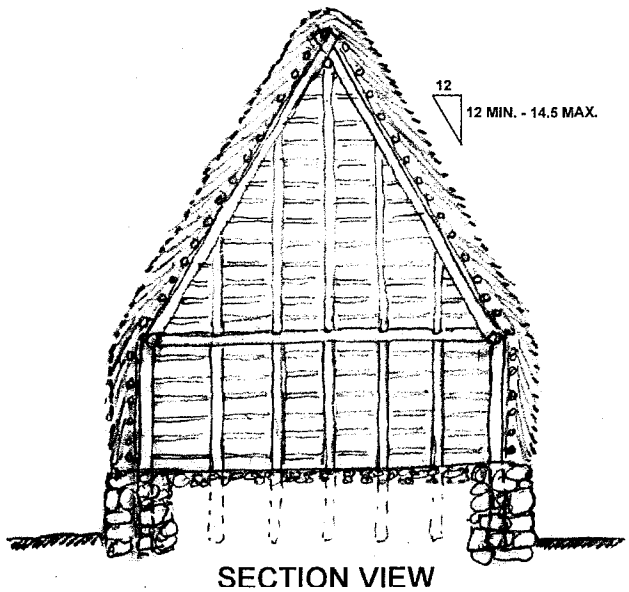
HALE KU`AI									
	Pou Kihi	*Pou Kaha*	*Pou Hana*	*Pouomanu*	*O`a*	*Kuaiole & Holo*	*Kauhuhu*	*Lohelau*	Rafter Spacing
W x L x H	minimum diameter	minimum diameter	minimum diameter	minimum diameter	minimum diameter	minimum diameter	minimum diameter	minimum diameter	maximum spacing
5'x10'x5'	4"	3"	3"	4"	3"	2"	3"	2"	4'
9'x12'x5'	4"	3"	3"	4"	3"	2"	3"	2"	4'
12'x16'x5'	4"	3"	4"	4"	3"	2"	4"	2"	4'
14'x20'x5'	4"	3"	4"	4"	3"	2"	4"	2"	4'
NOTE: The maximum post spacing for Pou Kihi and Pou Kaha is five feet. The maximum post spacing for Pou Hana and Pouomanu is twelve feet.									

(3) Hale Noa. Hale Noa shall have at least two openings. One opening shall be at least 3 feet wide and 5 feet high, and the other opening shall be at least 2 feet wide and 3 feet high.

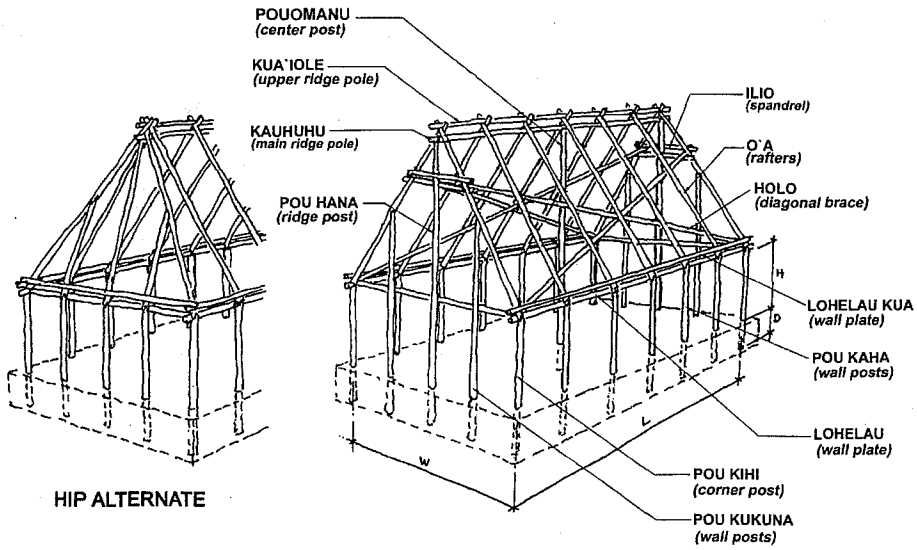


A BILL FOR AN ORDINANCE

HALE NOA



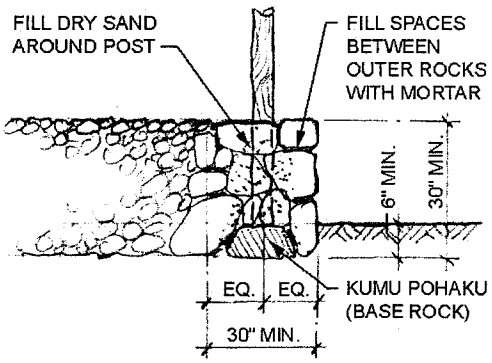
SECTION VIEW



FRAMING SCHEMATIC

A BILL FOR AN ORDINANCE

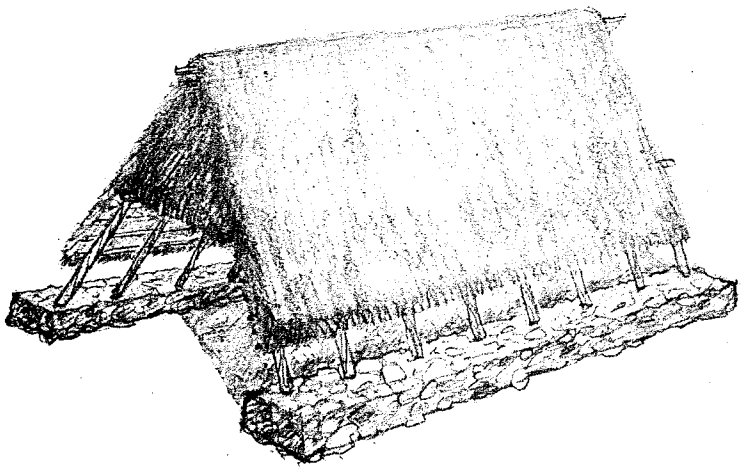
HALE NOA										
W x L x H	***Pou Kihi*** minimum diameter	***Pou Kukuna & Pou Kaha*** minimum diameter	***Pou Hana*** minimum diameter	***Pouomanu*** minimum diameter	***O`a*** minimum diameter	***Kuaiole & Holo*** minimum diameter	***Kauhuhu*** minimum diameter	***Lohelau*** minimum diameter	Post Spacing maximum spacing	Rafter Spacing maximum spacing
9'x12'x7'	3"	3"	4"	3"	3"	2"	3"	2"	6'	4'
12'x20'x7'	4"	4"	4"	3"	3"	2"	3"	2"	6'	4'
4'x24'x7'	5"	4"	4"	3"	3"	2"	3"	3"	6'	4'



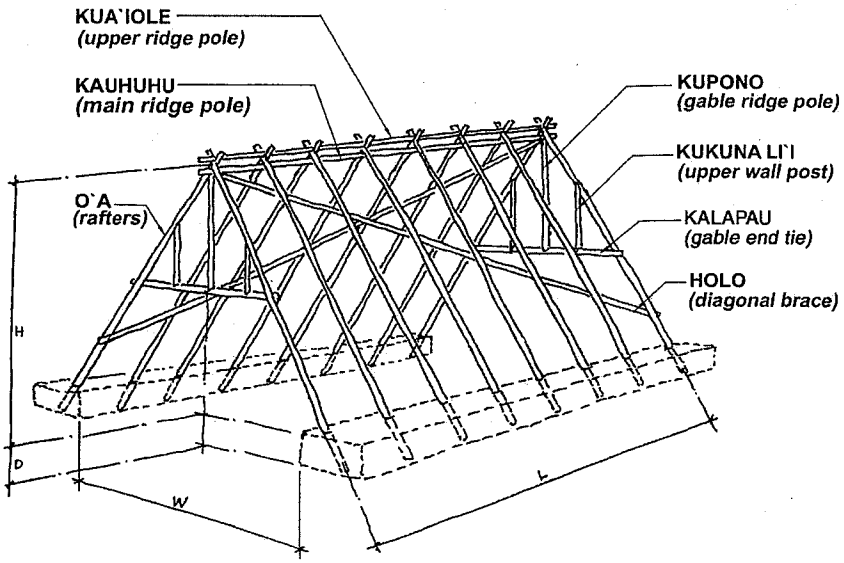
PAEPAE
(HOUSE PLATFORM)

A BILL FOR AN ORDINANCE

(4) Hale Wa`a.



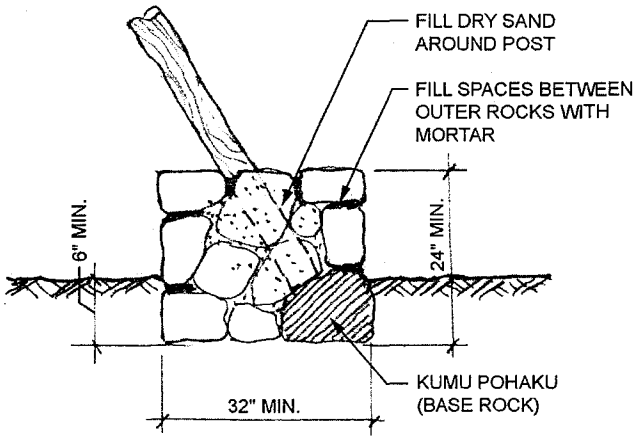
HALE WA`A



FRAMING SCHEMATIC

A BILL FOR AN ORDINANCE

HALE WA`A					
W x L	*O`a* minimum diameter	*Kuaiole* & *Holo* minimum diameter	*Kauhuhu* minimum diameter	Rafter Spacing maximum spacing	Ridge Height minimum height, H
20'x 60'	4"	3"	4"	4'to 5'	22'
25'x 60'	5"	3"	4"	4'to 5'	27 '
30'X 60'	5 "	3"	4"	4'to 5'	27 '



PA POHAKU
(FOUNDATION WALL)

"

A BILL FOR AN ORDINANCE

SECTION 33. Chapter 16, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Article 13 to read as follows:

"Article 13. Hawaii Residential Safe Room

Sec. 16-13.1 Performance-based design criteria.

The Residential Safe Room shall meet the minimum performance specifications of this article.

Sec. 16-13.2 Intent and scope.

The intent of the Residential Safe Room is to temporarily provide an enhanced protection area, fully enclosed within a dwelling or within an accessory structure to a residence, which is designed and constructed to withstand the wind pressures, windborne debris impacts, and other requirements of this section.

Sec. 16-13.3 Alternative standards.

(a) Manufactured Safe Room Designs Subject to Approval: A manufactured safe room or safe room kit may be substituted if documentation is submitted and approved by the building official. The safe room shall be engineered, tested, and manufactured to meet or exceed the criteria of this section.

(b) FEMA In-Residence Shelter Designs Permitted: It shall be permissible to build FEMA In-Residence Shelters of up to 64 square feet of floor area with walls up to 8 feet long that are built in accordance with construction details of FEMA 320.

Sec. 16-13.4 Site criteria.

Residential Safe Rooms shall not be constructed within areas subject to stream flooding, coastal flooding, or dam failure inundation within any of the following areas:

(1) FEMA Special Flood Hazard Areas (SFHA) subject to rainfall runoff flooding or stream or flash flooding;

(2) Coastal zones "V" or "A" identified in the Flood Insurance Rate Map (FIRM) issued by FEMA for floodplain management purposes, in which the flood hazard are tides, storm surge, waves, tsunamis, or a combination of these hazards;

(3) Areas subject to dam failure inundation as determined by the Department of Land and Natural Resources.

Sec. 16-13.5 Maximum occupancy.

The safe room is permitted to be used for a maximum occupancy based on at least 15 square feet per person with a maximum of 8 persons in a room of up to 128 square feet of floor area.

Sec. 16-13.6 Provisions for exiting.

The room shall be equipped with an inward-swinging door and an impact-protected operable window suitable for a means of alternative exiting in an emergency.

Sec. 16-13.7 Design for dead, live, wind, rain, and impact loads.

(a) Structural Integrity Criteria.

(1) The safe room shall be built with a complete structural system and a complete load path for vertical and lateral loads caused by gravity and wind.

(2) The building that the safe room is built within shall be assumed to be destroyed by the storm and shall not be taken as offering any protective shielding to the safe room enclosure.

(3) The ceiling structure and wall shall be capable of supporting a superimposed debris load of the full weight of any building floors and roof above, but not less than 125 psf.

(4) The safe room enclosure shall be capable of simultaneously resisting lateral and uplift wind pressures corresponding to a 160 mph 3-second peak gust, determined in accordance with ASCE Standard 7, Minimum Design Loads for Buildings and Other Structures, calculated using load and importance factors of 1.0. The site exposure factor shall be based on exposure C. The gust factor and the directionality factor shall be taken as 0.85. Topographic wind amplification caused by mountainous terrain shall be considered in accordance with the building code. Internal pressure shall be determined in accordance with ASCE–7.

(5) The safe room shall be anchored to a foundation system capable of resisting the above loading conditions.

(b) Windborne debris impact protection of building enclosure elements.

The entire enclosure of the safe room, including all walls, ceilings, and openings, fixed or operable windows, and all entry doors into the safe room, shall meet or exceed Level D requirements of ASTM E 1996 (Table 16.5-1). Any wall or ceiling penetration greater than 4 square inches shall be considered an opening.

Exception: Electrical outlet boxes and interior lighting switches not penetrating more than 2.5 inches into the interior wall surface and a plumbing piping or conduit not greater than 1.5-inch in diameter shall be exempted from this requirement.

Approved Debris Impact Resistant Wall Assemblies. Wall assemblies constructed in accordance with Table 16-13.7(b) shall be deemed to comply with the Level D windborne debris impact protection of building-enclosure elements.

Table 16-13.7(b) Wall Assemblies Complying with Level D Windborne Debris Requirements

Wall Assemblage
¾-inch plywood on wood studs at 16-inches on-center with #8 X 3-inch wood screws at 6-inches o.c.
¾-inch plywood attached to double studs at 16-inches o.c. with #8 X 3-inch wood screws at 6-inches o.c.
8-1/4" cementitious lap siding over 22ga sheet metal attached to 350S162-33 studs at 24" or 16" o.c.
8-1/4" cementitious lap siding attached to 350S162-33 studs at 24" o.c. studs with interior 3/4" ply interior sheathing
8-1/4" cementitious lap siding attached to 35US1b2-33 studs at 24" o.c. with 1/2" interior 22-gage sheet metal composite gypsum wallboard
8-1/4" cementitious lap siding attached to 2 x4 wood studs at 16" o.c. with 1/2" interior 22-gage sheet metal composite gypsum wallboard
8-1/4" cementitious lap siding attached to 2 x4 wood studs at 16" o.c. with 22-gage sheet metal and ½" interior gypsum wallboard
Cementitious lap siding attached to 5/8 inch structural plywood on 2 X 4 wood studs @16 inches a/c.
Cementitious-panel siding attached to 5/8 inch structural plywood on 2 X 4 or 362S-137-43 steel studs @ 16 inches o.c.

EFS with ½-inch dens-glass gold exterior sheathing on 362S-137-43 steel studs @ 16 inches and ½-inch interior gypboard
Interior or Exterior wall with laterally braced (sheathed) 2 x 4 wood studs at 16" o.c. with 22-gage sheet metal on either side attached directly to the studs
Interior or Exterior wall with laterally braced (sheathed) 2 x 4 wood studs at 16" o.c. with 1/2" interior 22-gage sheet metal composite gypsum wallboard on either side attached directly to the studs
24 gage steel sheet (50 ksi) on girts
4-inch-thick concrete with reinforcing
6-inch CMU with partial grouting at reinforcing spaced at 24 inches o.c.
8-inch CMU with partial grouting at reinforcing spaced at 24 inches o.c.

Notes: Sheathing shall be attached to studs at 6-inches on center edge and field fastening. 22 gage sheet metal shall be galvanized and attached to studs with screws

(c) Cyclic pressure loading of glazing and protective systems.

Impact protective systems shall meet the ASTM E 1996 cyclic pressure requirement for the loading given in Table 16.13-1.

Table 16.13-1: Windborne Debris Protection and Cyclic Pressure Criteria for Residential Safe Rooms

ASTM E 1996 Missile Level Rating	Debris Missile Size	Debris Impact Speed	Enclosure Wall Ceiling, and Floor Cyclic Air Pressure Testing - maximum inward and maximum outward pressures
D	2 x 4 weighing 9.0 lb. +- 0.25 lb., and with min. length 8 ft. +- 4-inch	50 ft./sec. or at least 34 mph	35 psf inward 45 psf outward

Sec. 16-13.8 Ventilation.

The room shall be naturally ventilated to allow the enclosure to have approximately one air change every 2 hours. This requirement may be satisfied by 12 square inches of venting per occupant. There shall be at least two operable vents. The vents shall be protected by a cowling or other device that shall be impact tested to comply with ASTM E 1996 Level D. Alternatively, the room shall be evaluated to

determine if the openings are of sufficient area to constitute an open or partially enclosed condition as defined in ASCE 7.

Sec. 16-13.9 Communications.

The safe room shall be equipped with a phone line and telephone that does not rely on a separate electrical power outlet. Alternatively, a wireless telephone shall be permitted to rely on an Uninterruptible Power Supply (UPS) battery device.

Sec. 16-13.10 Construction documents.

Construction documents for the Residential Safe Room shall be directly prepared by a Hawaii licensed professional structural engineer.

Sec. 16-13.11 Notification.

The owner of the safe room shall notify the State Department of Defense and county civil defense agency of the property's Tax Map Key or Global Positioning System coordinates.

Sec. 16-13.12 Special inspection.

The construction or installation of the safe room shall be verified for conformance to the drawings in accordance with International Building Code Chapter 17."

SECTION 34. Chapter 16, Revised Ordinances of Honolulu 1990, as amended, is amended by adding a new Article 14 to read as follows:

"Article 14. State- and City-Owned High Occupancy Buildings—Design Criteria for Enhanced Hurricane Protection Areas

Sec. 16-14.1 Intent and scope.

The purpose of this article is to establish minimum life safety design criteria for enhanced hurricane protection areas within high occupancy state- or county-owned buildings permitted to be occupied during hurricanes of up to Saffir Simpson Category 3. This article shall apply to Occupancy Category III and IV buildings defined by ROH Section 16-1.1 (173), Table 1604.5, of the following specific occupancies:

(1) Covered structures whose primary occupancy is public assembly with an occupant load greater than 300.

(2) Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities.

(3) Any other state- or county-owned building with an occupant load greater than 5,000.

(4) Hospitals and other health care facilities having surgery or emergency treatment facilities.

Exception: Facilities located within flood zone V and flood zone A that are designated by the owner to be evacuated during hurricane warnings declared by the National Weather Service, shall not be subject to these requirements.

Sec. 16-14.2 Site criteria.

(a) Flood and Tsunami Zones. Comply with ASCE 24-05, Flood Resistant Design and Construction, based on provisions for Occupancy Category III.

(1) Floor slab on grade shall be 1.5 feet above the Base Flood Elevation of the county's flood hazard map, or at higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation, including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane.

(2) Locate outside of V and Coastal A flood zones unless justified by site-specific analysis or designed for vertical evacuation in accordance with a method approved by the building official. When a building within a V or Coastal A zone is approved, the bottom of the lowest structural framing member of any elevated first floor space shall be 2 feet above the Base Flood Elevation of the county's flood hazard map, or at a higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation, including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane.

(3) Locate outside of Tsunami evacuation zones unless justified by site-specific analysis or designed for vertical evacuation in accordance with a method approved by the building official.

(b) Emergency vehicle access. Provide at least one route for emergency vehicle access. The portion of the emergency route within the site shall be above the 100-year flood elevation.

(c) Landscaping and utility laydown impact hazards. Landscaping around the building shall be designed to provide standoff separation sufficient to maintain emergency vehicle access in the event of mature tree blowdown. Trees shall not interfere with the functioning of overhead or underground utility lines, nor cause laydown or falling impact hazard to the building envelope or utility lines.

(d) Adjacent buildings. The building shall not be located within 1,000 feet of any hazardous material facilities defined by ROH Section 16-1.1(173), Table 1604.5. Unanchored light-framed portable structures shall not be permitted within 300 feet of the building.

Sec. 16-14.3 Enhanced hurricane protection area program requirements.

(a) Applicable net area. At least fifty percent of the net square feet of a facility shall be constructed to qualify as an enhanced hurricane protection area. The net floor area shall be determined by subtracting from the gross square feet the floor area of excluded spaces, exterior walls, columns, fixed or movable objects, equipment or other features that, under probable conditions, cannot be removed or stored during use as a storm shelter.

(b) Excluded spaces. Spaces such as mechanical and electrical rooms, storage rooms, attic and crawl spaces, shall not be considered as net floor area permitted to be occupied during a hurricane.

(c) Occupancy capacity. The occupancy capacity shall be determined by dividing the net area of the enhanced hurricane protection area by 15 square feet net floor area per person.

(d) Toilets and hand washing facilities. Provide minimum water closets and lavatories as required by International Building Code Chapter 29, these facilities shall be accessed within the building and located within the perimeter of the enhanced hurricane protection area.

(e) Accessibility. Where the refuge occupancy accommodates more than 50 persons, provide an ADA-accessible route to a shelter area at each facility with a minimum of one wheelchair space for every 200 enhanced hurricane protection area occupants determined per ROH Section 16-14.3(c).

Sec. 16-14.4 Design wind, rain, and impact loads.

(a) Structural design criteria. The building Main Wind Force Resisting System and structural components shall be designed per ASCE 7 for a 115 mph minimum peak 3-second gust design speed with a load factor of 1.6, and an Importance Factor for Occupancy Category III. Topographic and directionality factors shall be the site-specific values determined per Article 1, Section 1609. Design for interior pressure based on the largest opening in any exterior façade or roof surface.

(b) Windborne debris missile impact for building enclosure elements. Exterior glazing and glazed openings, louvers, roof openings and doors shall be provided with windborne debris impact resistance or protection systems conforming to ASTM E1996-05 Level D, i.e., 9 lb. 2 X 4 @ 50 fps (34 mph).

(c) Cyclic pressure loading of impact resistive glazing or windborne impact protective systems. Resistance to the calculated maximum inward and outward pressure shall be designed to conform to ASTM E1996-05.

(d) Windows. All unprotected window assemblies and their anchoring systems shall be designed and installed to meet the wind load and missile impact criteria of this section.

(e) Window protective systems. Windows may be provided with permanent or deployable protective systems, provided the protective system is designed and installed to meet the wind load and missile impact criteria and completely covers the window assembly and anchoring system.

(f) All exterior and interior doors subject to possible wind exposure and/or missile impact shall have doors, frames, anchoring devices, and vision panels designed and installed to resist the wind load and missile impact criteria or such doors, frames, anchoring devices, and vision panels shall be provided with impact protective systems designed and installed to resist the wind load and missile impact criteria of this section.

(g) The building enclosure, including walls, roofs, glazed openings, louvers and doors, shall not be perforated or penetrated by windborne debris, as determined by compliance with ASTM E1996-05 Level D.

(h) Parapets shall satisfy the wind load and missile impact criteria of the exterior envelope.

(i) Roofs.

(1) Roof openings. Roof openings (e.g., HVAC fans, ducts, skylights) shall be provided with protection for the wind load and missile impact criteria of ROH Sections 16-14.4(b) and 16-14.4(c).

(2) High wind roof coverings. Roof coverings shall be specified and designed according to the latest ASTM Standards for high wind uplift forces.

(3) Roof drainage. Roofs shall have adequate slope, drains and overflow drains or scuppers sized to accommodate 100-year hourly rainfall rates in accordance with ROH Section 16-1.1(181), but not less than 2-inches per hour for 6 continuous hours.

Sec. 16-14.5 Ventilation.

(a) Mechanical ventilation. Mechanical ventilation as required per the International Mechanical Code. Air intakes and exhausts shall be designed and installed to meet the wind load and missile impact criteria of ROH Section 16-14.4(b).

(b) HVAC equipment anchorage. HVAC equipment mounted on roofs and anchoring systems shall be designed and installed to meet the wind load criteria. Roof openings for roof-mounted HVAC equipment shall have a 12-inch-high curb designed to prevent the entry of rain water.

Sec. 16-14.6 Standby electrical system capability.

(a) Provide a standby emergency electrical power system per International Building Code Chapter 27 and NFPA 70 Article 700 Emergency Systems and Article 701 Legally Required Standby Systems, which shall have the capability of being connected to an emergency generator or other temporary power source. The emergency system capabilities shall include:

(1) An emergency lighting system,

(2) Illuminated exit signs,

(3) Fire protection system(s), alarm and sprinkler, and

(4) Minimum mechanical ventilation for health/safety purposes.

(b) Emergency generator. When emergency generators are pre-installed, the facility housing the generator, permanent or portable, shall be an enclosed area designed to protect the generators from wind and missile impact. Generators hardened by the manufacturer to withstand the area's design wind and missile impact criteria shall be exempt from the enclosed area criteria requirement.

Sec. 16-14.7 Quality assurance.

(a) Information on construction documents. Construction documents shall include design criteria, the occupancy capacity of the enhanced hurricane protective area, and project specifications shall include opening protection devices. Floor plans shall indicate all enhanced hurricane protection area portions of the facility and exiting routes there from. The latitude and longitude coordinates of the building shall be recorded on the construction documents.

(b) Special inspection. In addition to the requirements of International Building Code Chapter 17, special inspections shall include at least the following systems and components:

(1) Roof cladding and roof framing connections.

(2) Wall connections to roof and floor diaphragms and framing.

(3) Roof and floor diaphragm systems, including collectors, drag struts and boundary elements.

(4) Vertical wind force-resisting systems, including braced frames, moment frames and shear walls.

(5) Wind force-resisting system connections to the foundation.

(6) Fabrication and installation of systems or components required to meet the impact-resistance requirements of ROH Section 16-1.1(177).

Exception: Fabrication of manufactured systems or components that have a label indicating compliance with the wind-load and impact-resistance requirements of this code.

(c) Quality assurance plan. A construction quality assurance program shall be included in the construction documents, including:

(1) The materials, systems, components and work required to have special inspection or testing by the building official or by the registered design professional responsible for each portion of the work.

(2) The type and extent of each special inspection.

(3) The type and extent of each test.

(4) Additional requirements for special inspection or testing for seismic or wind resistance.

(5) For each type of special inspection, identification as to whether it will be continuous special inspection or periodic special inspection.

(d) Peer review. Construction Documents shall be independently reviewed by a Hawaii-licensed Structural Engineer. A written opinion report of compliance shall be submitted to the State Civil Defense, Building Official, and owner.

Sec. 16-14.8 Maintenance.

The building shall be periodically inspected every three years and maintained by the owner to ensure structural integrity and compliance with this section. A report of inspection shall be furnished to the State Civil Defense.

Sec. 16-14.9 Compliance re-certification if altered, deteriorated, or damaged.

Alterations shall be reviewed by a Hawaii-licensed structural engineer to determine whether any alterations would cause a violation of this section. Deterioration or damage to any component of the building shall require an evaluation by a Hawaii-licensed structural engineer to determine repairs necessary to maintain compliance with this section."

SECTION 35. Ordinance material to be repealed is bracketed and new material is underscored. When revising, compiling, or printing this ordinance for inclusion in the Revised Ordinances of Honolulu, the reviser of ordinances need not include the brackets, the bracketed material or the underscoring.

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE _____

BILL 35 (2012), CD2

A BILL FOR AN ORDINANCE

SECTION 36. This ordinance shall take effect upon its approval.

INTRODUCED BY:

Ernest Martin (BR)

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DATE OF INTRODUCTION:

April 3, 2012
Honolulu, Hawaii

Councilmembers

APPROVED AS TO FORM AND LEGALITY:

_____
Deputy Corporation Counsel

APPROVED this _____ day of _____, 20____.

_____
PETER B. CARLISLE, Mayor
City and County of Honolulu