

COUNTY OF KAUAI
DEPARTMENT OF WATER

2008 AMENDMENTS

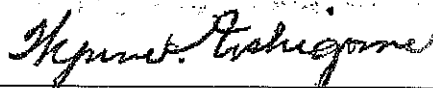
*to the 2002 Water System Standards
adopted by the
Hawaii County Department of Water Supply,
City and County of Honolulu Board of Water Supply,
Kauai County Department of Water, and
Maui County Department of Water Supply*

THESE AMENDMENTS to the 2002 Water System Standards adopted by the Hawaii County Department of Water Supply, City and County of Honolulu Board of Water Supply, Kauai County Department of Water, and Maui County Department of Water Supply revise and modify various provisions of the 2002 Standards and should therefore be considered part of the these Standards.

If any provision of these amendments or the application thereof to any person or circumstances is held invalid, the invalidity does not affect other provisions or applications of these amendments which can be given effect without the invalid provision, or application, and to this end the provisions of these amendments are severable.

EFFECTIVE DATE: December 5, 2008

WYNNE M. USHIGOME



ACTING MANAGER & CHIEF ENGINEER
Department of Water, County of Kaua'i, Hawai'i

AMENDMENTS

to the 2002 Water System Standards

As used in these Amendments:

“2002 Standards” means the 2002 Water System Standards adopted by the Hawaii County Department of Water Supply, City and County of Honolulu Board of Water Supply, Kauai County Department of Water, and Maui County Department of Water Supply.

“2005 Amendments” means the County of Kaua‘i Department of Water’s 2005 amendments and revisions to the 2002 Standards.

“Amendments” means

“Administrative rule” means the administrative rules and regulations of the Department of Water of the County of Kaua‘i, Hawai‘i.

“County” means the County of Kauai, Hawai‘i.

“Department” or “Water Department” means the Water Department of the County of Kaua‘i.

“K.C.C.” or “Kaua‘i County Code” means the Kaua‘i County Code 1987, as amended.

“H.R.S.” means Hawai‘i Revised Statutes, as amended.

“Manager” means the Kaua‘i County Water Department’s Manager and Chief Engineer.

“State” means State of Hawai‘i.

Further, the following rules of construction shall apply to these 2005 Amendments:

Number. Words in the singular or plural number signify both the singular and plural number.

The following section, tables, and other provisions within the 2002 Standards are hereby amended and revised as follows:

1. Table 100-10 “TYPES AND SIZE OF MAIN VALVES”: Table 100-10 is hereby revised by adding the following annotation:

For Kaua‘i only: Butterfly valves shall not be used as a standard type of main valve.

2. **Table 100-19 "FIRE FLOW REQUIREMENTS"**: Table 100-19 is hereby deleted from the 2002 Standards and replaced in its entirety as follows. Any and all references in the 2002 Standards to Table 100-19 shall mean this Table 100-19A:

**Table 100-19A FIRE FLOW REQUIREMENTS
FOR COUNTY OF KAUAI**

LAND USE	FLOW (GPM) / DURATION (HOURS) / FIRE HYDRANT SPACING (FEET)
Agriculture	250 / 1 / 500
Rural	
Single Family	<u>See</u> Note (b) below
Duplex	<u>See</u> Note (b)below
PUD Townhouses, Apartments	<u>See</u> Note (b)below
Schools, Retail Stores or Shops, Shopping Centers, Hotels, and Hospitals	2,000 / 2 / 350
Industry	3,000 / 3 / 350

ANNOTATIONS TO TABLE 100-19A:

- (a) "GPM" means gallons per minute.
- (b) Fire Flow, Duration, and Fire Hydrant Spacing shall be dictated by the following zoning district designations described in the Kaua'i County Code.

R-2: 500/1/500	R-20: 1500/2/350
R-4: 750/2/500	RR-10: 1500/2/350
R-6: 1000/2/500	RR-20: 2000/2/350
R-10: 1250/2/350	
- (c) On dead end streets, the last fire hydrant shall be located at one-half (½) the spacing distance for fire hydrants from the last house/unit (frontage property line or to the driveway or access for the property).
- (d) Spacing of fire hydrants shall be measured along the roadway.
- (e) The Department may utilize State and County statutes, codes, administrative rules and other authoritative sources of law in interpreting the land use classifications described in Table 100-19A. These legal authorities include, but are not limited to, chapters 8 (Comprehensive Zoning Ordinance) and 9 (Subdivision Ordinance) of the Kaua'i County Code, and H.R.S. chapter 205.

- (f) General applicability of Table 100-19A; exceptions thereto: Unless otherwise specifically adverted to in this annotation (f), the 2002 Standards, or the Department's administrative rules, the requirements of Table 100-19A shall apply to all County subdivision applications and actions, all County zoning and use permit applications, all requests for variances, all requests for building permit approval from the Department, all requests for water service from the Department, and all other actions which may fall under the jurisdiction of the Department.

As used in this annotation (f), the terms "dwelling unit" and "lot" shall have the meanings ascribed to them in K.C.C. Sec. 8-1.5.

The requirements of Table 100-19A are minimum standards; the Department may, in consultation with the Kaua'i County Fire Department, determine that additional or more stringent fire flow, flow duration, and hydrant spacing requirements are appropriate and necessary in certain cases because of heightened fire safety concerns.

- (i) Building permit approval for first and second dwelling units; Applications for first and second 5/8" water meters: When County building permit approval is sought from the Department for the first and second dwelling units only on an existing lot of record, the requirements of Table 100-19A shall not apply. However, the requirements of Table 100-19A shall apply when County building permit approval is sought from the Department for any dwelling unit in excess of the second dwelling unit on an existing lot of record.

When application is made for a first or second five-eighth inch (5/8") water meter only to serve an existing lot of record, the requirements of Table 100-19A shall not apply. However, the requirements of Table 100-19A shall apply when application is made for any five-eighth inch (5/8") water meter to serve an existing lot of record in excess of the second 5/8" water meter. The foregoing exception for 5/8" water meters shall not apply to applications for any other size water meters.

- (ii) Alternative methodology for satisfying fire protection requirements for non-residential structures: Where County building permit approval is sought from the Department for any structure other than a home, house, or dwelling unit, an applicant may utilize the alternative methodology described in this Paragraph (ii) of Annotation (f) in lieu of satisfying the requirements of Table 100-19A.

As used in this Paragraph (ii) of Annotation (f), "Fire Chief" or "Chief" means the Fire Chief of the County of Kaua'i. "On-site" means on the lot to which the building permit appertains. "Off-site" means off and away from the lot to which the building permit appertains.

Under this Paragraph (ii) of Annotation (f), an applicant need not satisfy the requirements of Table 100-19A if:

- (A) The applicant submits a written analysis signed by a professional engineer licensed under H.R.S. Chapter 464, in which the engineer certifies that the existing off-site water system, together with the addition of on-site fire mitigation measures, satisfy the fire protection

requirements of the National Fire Protection Association (hereafter "NFPA");

- (B) The professional engineer submitting the required certification possesses, at the time the certification is provided, a minimum of three years engineering experience as a licensed professional engineer in responsible charge of fire protection engineering work or has experience, in the Department's judgment, equivalent to such engineering work; and
- (C) The applicant submits the written analysis described in Subparagraph (A) of this Paragraph (ii) to both the Water Department and the County Fire Chief, and the Fire Chief approves [does not reject] the sufficiency of the applicant's fire mitigation measures.

The Chief may approve [reject] the sufficiency of the applicant's fire mitigation measures if the Chief determines that:

- The measures are sufficient [insufficient] relative to the structures to be built on the lot, or the uses which will occur in conjunction with the proposed structures, or both; or
- The measures are sufficient [insufficient] to prevent the spread of any potential on-site fire to off-site structures or uses, or both, surrounding or adjacent to the lot.

In evaluating the sufficiency of any mitigation measures, the Fire Chief may consider the *Fire Code of the County of Kaua'i*, the codes and standards of the NFPA, the International Code Council's *Uniform Fire Code* (as may be amended from time to time), and other nationally-recognized fire protection codes or standards, or both.

The Fire Chief may approve [reject] the sufficiency of the applicant's measures no later than one-hundred twenty (120) calendar days after the Chief has determined in writing that the applicant has submitted a complete written analysis to the Chief.¹ The burden shall be on the Applicant to provide the Chief with a complete written analysis.

If the Chief approves [reject] the sufficiency of the applicant's measures, the Chief shall so inform the Water Department, who shall in turn inform the applicant of the approval [rejection].

The Applicant shall have the burden of proving to the Water Department that the professional engineer submitting the certification described in this Paragraph (ii) of Annotation (f) has the necessary qualifications described in Subparagraph (B) of this Paragraph (ii).

¹ H.R.S. 91-13.5

(iii) Minor interior additions and alterations; changes in ownership or commercial use. The requirements of Table 100-19A shall not apply when an application is made under Chapter 8 of the Kaua'i County Code for a County use or zoning permit, or a variance, if:

- (A) The application is to permit a change from an existing, legal commercial use to another legal, commercial use;
- (B) The application is to allow a change in the ownership of a permittee; or
- (C) The application is to permit the minor repair, reconstruction, redesign, renovation, or renewal of any part of the interior of an existing building, which does not affect the structural integrity of the building, and which also does not add any square footage to the building or its footprint, or both.

3. Sec. 105.04 "ACCESS ROAD.": Item No. 2 only is hereby deleted and replaced in its entirety as follows:

2. Maximum grade of 15%. (for Kaua'i only).

4. Sec. 202.01 "GENERAL.": Paragraph F "Bolts and Nuts." of Sec. 202.01 is hereby deleted and replaced in its entirety as follows:

F. Bolts and Nuts. All bolts and nuts shall be either silicon bronze (ASTM F467 and F468) or "Cor-Ten", U.S.S. alloy, "Mayari", Bethlehem Steel, or approved equal, ASTM 325, Type 3. All bolts and nuts shall be silicon bronze only if submerged in water. Bolts and nuts installed shall be compatible in strength and material characteristics. Bolts shall protrude beyond the nuts and protrusion shall be a minimum of 1/8 inch but shall not exceed 1/2 inch.

5. Sec. 202.02 "MECHANICAL JOINT.": The fourth paragraph only of Paragraph A "General." of Sec. 202.02 is hereby deleted and replaced in its entirety as follows:

Silicon bronze (ASTM F467 and F468) or "Cor-Ten", U.S.S. alloy, "Mayari", Bethlehem Steel, or approved equal, ASTM 325, Type 3 bolts and nuts shall be used for all mechanical joints. All bolts and nuts shall be silicon bronze only if submerged in water.

6. Sec. 202.04 "FLANGED JOINT.": The fourth paragraph only of Paragraph A "General." of Sec. 202.04 is hereby deleted and replaced in its entirety as follows:

The bolts used for all flanged joints shall protrude beyond the nuts by a minimum of 1/8-inch but shall not exceed 1/2 inch. Should the bolts protrude more than 1/2 inch, the bolts shall be machine cut before installation. Bolts shall be with cut threads and American Standard heavy hexagon heads. Nuts shall be compatible with the bolts in strength and material characteristics. Nuts shall be hexagon. Bolts and nuts for flanges shall conform to one of the following:

1. Silicon bronze bolts and nuts shall conform to ASTM F467 and F468.
2. Hot-dipped galvanized nuts and bolts shall be "Cor-ten", U.S.S. alloy, "Mayari", Bethlehem Steel, or approved equal, ASTM 325, Type 3.

7. **Sec. 206.01 "GENERAL.":** The sixth and thirteenth(last) paragraphs only of Sec. 206.01 are hereby deleted and replaced in their entirety as follows:

(sixth paragraph)

Each hydrant body shall be furnished with a set of break-off bolts, and full face gasket. Bolts shall be hot-dipped galvanized steel 5/8" x 3" machine bolts with hexagon heads American Standard heavy. Bolts shall be break-off type drilled 11/32" x 1 3/8". Nuts shall be hot-dipped galvanized steel American Standard heavy cold punched, hexagon nuts. Gaskets shall be 1/8 inch cloth inserted rubber. Hydrant flange shall have six (6) 3/4 inch bolt holes on 9.375 inch diameter.

.....

(thirteenth paragraph)

Fire hydrants shall be provided with bonnets, stuffing boxes and other appurtenant features all made of silicon bronze conforming to ASTM B98 and as specified in the approved material list. Fire hydrants shall be provided with bolts and nuts made of silicon bronze (ASTM F467 and F468).

8. **Sec. 206.02 "WET-BARREL HYDRANTS.":** The first paragraph only of Sec. 206.02 is hereby deleted and replaced in its entirety as follows:

All hydrants shall comply with AWWA C503 "Wet-Barrel Fire Hydrants for Ordinary Water Works Service". All hydrants shall have one (1) 4 1/2 inch and one (1) 2 1/2 inch outlet with Type B valves. All hydrants shall have brass caps with stainless steel chains.

9. **DIVISION 400, Sec. 402 "APPROVED MATERIAL LIST", Subsection I. "PIPES AND APPURTENANCES", Subdivision K. "Gland":** The following Item No. 7 is added to Division 400, Sec. 402, Subsection I, Subdivision K:

DESCRIPTION		Applicable to:			
Manufacturer	Catalogue or Model No.	Kauai	Hawai'i	O'ahu	Maui
K. Gland					
7. U.S. Pipe	M J Field Lok	0			

10. DIVISION 400, Sec. 402 “APPROVED MATERIAL LIST”, subsection I. “PIPES AND APPURTENANCES”, Subdivision M. “Flanged Adapters”: The following Item no. 10 is added to Division 400, Sec. 402, Subsection I, Subdivision M:

DESCRIPTION		Applicable to:			
Manufacturer	Catalogue or Model No.	Kauai	Hawai'i	O'ahu	Maui
I. PIPES AND APPURTENANCES					
M. Flanged Adapters					
10. Romac Industries, Inc.	Style DJ 400 Ductile Iron Dismantling Joints (sizes 16-inch and larger)	O			

11. DIVISION 400, Sec. 402 “APPROVED MATERIAL LIST”, Subsection II. “VALVES AND APPURTENANCES”, Subdivision A. “Air Relief Valves/Combination Air Valves (ARV), further Subdivision 2. “High Pressure (Higher than 150 pse), Item g. “Val-Matic Valve & Manufacturing Corp.”: The following item is added to Division 400, Sec. 402, Subsection II, Subdivision A, further Subdivision 2, Item g:

DESCRIPTION		Applicable to:			
Manufacturer	Catalogue or Model No.	Kauai	Hawai'i	O'ahu	Maui
II. VALVES AND APPURTENANCES					
A. Air Relief Valves/ Combination Air Valves (ARV)					
2. High Pressure (Higher than 150 psi)					
g. Valve-Matic Valve & Manufacturing Corp.	Combination Air Valve 201C.2	O			

12. DIVISION 400, Sec. 402 “APPROVED MATERIAL LIST”, subsection III. “SERVICE LATERALS, FITTINGS, AND APPURTENANCES”, Subdivision D. “Service Lateral Fittings”, Item 2. “Elkhart Products Corp.”: The following item is approved for use for Kaua'i:

DESCRIPTION		Applicable to:			
Manufacturer	Catalogue or Model No.	Kauai	Hawai'i	O'ahu	Maui
III. SERVICE LATERALS, FITTINGS, AND APPURTENANCES					
H. Service Lateral Fittings					
2. Elkhart Products Corp.	Cast bronze threaded fittings, Cast copper alloy fittings for flared copper tube, bronze pipe flanges and flanged fittings	O	O	O	

13. DIVISION 400, Sec. 402 “APPROVED MATERIAL LIST”, subsection III. “SERVICE LATERALS, FITTINGS, AND APPURTENANCES”, Subdivision H. “Copper Pipe”, Item 2. “Kembla”: The following item is approved for use for Kaua‘i:

DESCRIPTION		Applicable to:			
Manufacturer	Catalogue or Model No.	Kauai	Hawai‘i	O‘ahu	Maui
III. SERVICE LATERALS, FITTINGS, AND APPURTENANCES					
H. Copper Pipe					
2. Kembla	Type K, seamless water tube	O		O	O

14. DIVISION 400, Sec. 402 “APPROVED MATERIAL LIST”, subsection V. “PAINTS AND COATINGS”: The following paint products, as further described in attached Exhibit “A”, are added to the various subdivisions within Subsection V of Sec. 402 of Division 400. Only *approved* paint products described in Exhibit “A” are added to the respective subdivisions:

- **Pratt and Lambert Products** (*see* attached January 27, 2004 Honolulu Board of Water Supply letter);
- **PPG Industries High Performance Products** (*see* attached July 11, 2002 Honolulu Board of Water Supply letter); and
- **Sherwin Williams Coatings** (*see* attached May 23, 2003 Honolulu Board of Water Supply letter).

Exhibit “A” is incorporated by reference into these 2005 Amendments:

15. DIVISION 400, Sec. 403 “STANDARD DETAILS”, Subsection II. “Chain Link Fence and Gate (F), Subdivision A. “Chain Link Fence”, Detail No. F2: Division 400, Sec. 403, Subsection II, Subdivision A, Detail No. F2 is hereby deleted and replaced in its entirety with attached Exhibit “B”, which is incorporated by reference into these 2005 Amendments.

16. DIVISION 400, Sec. 403 “STANDARD DETAILS”, Subsection III. “Fire Hydrants and Appurtenances (FH), Subdivision B. “Connection Layouts”, Detail No. FH4: Division 400, Sec. 403, Subsection III, Subdivision B, Detail No. FH4 is hereby deleted and replaced in its entirety with attached Exhibit “C”, which is incorporated by reference into these 2005 Amendments.

17. DIVISION 400, Sec. 403 “STANDARD DETAILS”, Subsection IV. “Service Laterals (L)”, Subdivision A. “Kaua‘i”, Detail No. L1: Division 400, Sec. 403, Subsection IV, Subdivision A, Detail No. L1 is hereby deleted and replaced in its entirety with attached Exhibit “D”, which is incorporated by reference into these 2005 Amendments.

18. **DIVISION 400, Sec. 403 "STANDARD DETAILS", Subsection IV. "Service Laterals (L)", Subdivision A. "Kaua'i", Detail No. L2:** Division 400, Sec. 403, Subsection IV, Subdivision A, Detail No. L2 is hereby deleted and replaced in its entirety with attached Exhibit "E", which is incorporated by reference into these 2005 Amendments.
19. **DIVISION 400, Sec. 403 "STANDARD DETAILS", Subsection IV. "Service Laterals (L)", Subdivision A. "Kaua'i", Detail No. L4:** Division 400, Sec. 403, Subsection IV, Subdivision A, Detail No. L4 is hereby deleted and replaced in its entirety with attached Exhibit "F", which is incorporated by reference into these 2005 Amendments.
20. **DIVISION 400, Sec. 403 "STANDARD DETAILS", Subsection IV. "Service Laterals (L)", Subdivision A. "Kaua'i", Detail No. L5:** Division 400, Sec. 403, Subsection IV, Subdivision A, Detail No. L5 is hereby deleted and replaced in its entirety with attached Exhibit "G", which is incorporated by reference into these 2005 Amendments.
21. **DIVISION 400, Sec. 403 "STANDARD DETAILS", Subsection IV. "Service Laterals (L)", Subdivision A. "Kaua'i", Detail No. L6:** Division 400, Sec. 403, Subsection IV, Subdivision A, Detail No. L6 is hereby deleted and replaced in its entirety with attached Exhibit "H", which is incorporated by reference into these 2005 Amendments.
22. **DIVISION 400, Sec. 403 "STANDARD DETAILS", Subsection VII. "Trench Details, and Concrete Cylinder Pipe and Appurtenances (P)", subdivision C. "Trench Details", detail no. P11:** Division 400, Sec. 403, Subsection VII, Subdivision C, Detail No. P11 is hereby deleted and replaced in its entirety with attached Exhibit "I", which is incorporated by reference into these 2005 Amendments.
23. **DIVISION 400, Sec. 403 "STANDARD DETAILS", subsection VIII. "Valves and Appurtenances (V)", subdivision D. "Valve Box Installation and Miscellaneous Details", Detail No. V11:** Division 400, Sec. 403, Subsection VIII, Subdivision D, Detail No. V11 is hereby deleted and replaced in its entirety with attached Exhibit "J", which is incorporated by reference into these 2005 Amendments.
24. **DIVISION 400, Sec. 403 "STANDARD DETAILS", Subsection VIII. "Valves and Appurtenances (V)", Subdivision D. "Valve Box Installation and Miscellaneous Details", Detail No. V13:** Division 400, Sec. 403, Subsection VIII, Subdivision D, Detail No. V13 is hereby deleted in its entirety as to Kaua'i only.
25. **DIVISION 400, Sec. 403 "STANDARD DETAILS", subsection VIII. "Valves and Appurtenances (V)", Subdivision D. "Valve Box Installation and Miscellaneous Details", Detail No. V14:** Division 400, Sec. 403, Subsection VIII, Subdivision D, Detail No. V14 is hereby deleted and replaced in its entirety with attached Exhibit "K", which is incorporated by reference into these 2005 Amendments.

26. DIVISION 400, Sec. 403 “STANDARD DETAILS”, Subsection VIII. “Valves and Appurtenances (V)”, Subdivision D. “Valve Box Installation and Miscellaneous Details”, Detail No. V15: Division 400, Sec. 403, Subsection VIII, Subdivision D, Detail No. V15 is hereby deleted and replaced in its entirety with attached Exhibit “L”, which is incorporated by reference into these 2005 Amendments.

27. DIVISION 400, Sec. 403 “STANDARD DETAILS”, Subsection VIII. “Valves and Appurtenances (V)”, Subdivision D. “Valve Box Installation and Miscellaneous Details”, Detail No. V16: Division 400, Sec. 403, Subsection VIII, Subdivision D, Detail No. V16 is hereby deleted and replaced in its entirety with attached Exhibit “M”, which is incorporated by reference into these 2005 Amendments.

28. DIVISION 400, Sec. 403 “STANDARD DETAILS”, Subsection VIII. “Valves and Appurtenances (V)”, Subdivision E. “Valve Marker and Nut Extension”, Detail No. V18: Division 400, Sec. 403, Subsection VIII, Subdivision E, Detail No. V18 is hereby deleted in its entirety as to Kaua‘i only.

29. NEW OR ALTERNATIVE MATERIALS: Although the 2002 Standards and 2005 Amendments specify the products and materials to be used in the construction of waterworks facilities under the Department’s jurisdiction, the Department recognizes that, over time, alternative or new products and materials may be developed, or that there may be advances in existing materials or products already approved for use in the 2002 Standards or 2005 Amendments. The Department recognizes that, as a matter of engineering practice, it may be advantageous to utilize such products or materials.

In recognition of these facts, the Department hereby establishes the following process for determining the use of such new or alternate products and materials.

- (i) A person requesting the use of a product or material not approved for use in the 2002 Standards or 2005 Amendments shall submit a written request addressed to the Department’s Manager asking for approval to use the product or material. The request shall be submitted on a form provided by the Department, and shall provide product information as may be required by the Department.
- (ii) The requesting party shall specify if the proposed product or material has been approved for use by the City & County of Honolulu Board of Water Supply, County of Hawai‘i Department of Water Supply, County of Maui Department of Water Supply and whether the proposed product or material satisfies the latest applicable standard specifications of the American Society of Testing Materials (“ASTM”), the American National Standards Institute (“ANSI”), the American Water Works Association (“AWWA”), or the U.S. General Services Administration Federal Specifications.
- (iii) The request shall be evaluated by the Department’s staff. The staff may, as deemed necessary, require the requesting party to submit additional information or documentation regarding the proposed product or material.

The Department’s staff shall then recommend to the Manager the appropriate action to take with respect to any such request. Such action may include, but shall

not be limited to, approval or disapproval of the request, approval or disapproval in part, or a recommendation that the request be modified.

- (iv) Products and materials approved for use by the Manager shall be published as further amendments to the 2002 Standards. All such amendments shall be posted in a designated area accessible to the public and shall be distributed by any means the Manager deems appropriate.

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