



## CITY OF KIRKLAND

### Fire & Building Department

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## MEMORANDUM

**To:** Dave Ramsay, City Manager

**From:** Ken Carlson, Building Services Manager

**Date:** October 21, 2005

**Subject:** 2005 National Electrical Code & Title 21 updates

### **RECOMMENDATION:**

The City Council approve the attached ordinance which adopts the 2005 National Electrical Code; deletes prohibition that precluded inclusion of building structures with Land Surface Modification permits; adds scoping provisions to our swimming pool regulations; codifies a standing practice of charging a lower fee for less complex fire plan review and corrects a fee error.

### **BACKGROUND DISCUSSION:**

#### Electrical Code

The City of Kirkland has had an Electrical Code in effect since 1996 (Ordinance #3545). Washington State Law Regulating Installation of Electric Wires and Equipment (RCW 19.28.010) permits cities to enact *any ordinance, rule, or regulation requiring an equal, higher, or better standard of construction and an equal, higher, or better standard of materials, devices, appliances, and equipment than that required by this chapter [RCW19.28]*, the proposed ordinance which adopts and amends the 2005 National Electrical Code is within those parameters.

The proposed amendments reflect the combined efforts of staff from the cities of Bellevue, Kirkland, Mercer Island, Renton, Seattle and SeaTac. NEMA (National Electrical Manufacturers Association) was also involved in the process. Our customers will ultimately be the biggest benefactors of our regional efforts they'll find our regulations more consistent.

#### Land Surface Modification

Currently Land Surface Modification (LSM) permits cannot include retaining walls or other structures. Frequently grading work requires the installation of drainage vaults or retaining structures. Provided sufficient documentation is provided with a LSM application there is no reason that structures could not be included. Deleting this provision will create efficiencies in the permit process.

## Swimming Pools

The International Building Code (IBC) contains regulations for swimming pools while the International Residential Code (IRC) does not. This scoping provision will eliminate the conflict between the IBC and our swimming pool ordinance identifying that the regulations only apply to 1 & 2 family dwellings.

## Fee Changes

Fire plan review is identified as \$79.00 hourly charge with a one hour minimum. There are a number of simple plan reviews that take less than one hour. This change codifies our current practice of charging a ½ hour minimum charge when appropriate. The second change corrects an error.

## ORDINANCE 4017

AN ORDINANCE OF THE CITY OF KIRKLAND RELATING TO MODIFICATIONS TO TITLE 21 OF THE KIRKLAND MUNICIPAL CODE REGARDING BUILDING AND CONSTRUCTION.

The City Council of the City of Kirkland do ordain as follows:

Section 1. Section 21.04.010 of the Kirkland Municipal Code is hereby amended to read as follows:

### **21.04.010 Copies of codes on file.**

(a) Pursuant to state law (Chapters 19.27 and 19.27A RCW), the Kirkland building code is the Washington State Building Code as modified in this title. The Washington State Building Code is composed of the following elements, and the city shall at all times keep on file with the city clerk, for reference by the general public, not less than three copies of the codes and resolutions, or parts thereof, as herein adopted by reference, together with the amendments and supplements thereto herein made a part of this title:

(1) International Building Code, issued by the International Code Council, Inc., 2003 Edition;

(2) International Residential Code, issued by the International Code Council, Inc., 2003 Edition;

(3) International Mechanical Code, issued by the International Code Council, Inc., 2003 Edition;

(4) International Fire Code, issued by the International Code Council, Inc., 2003 Edition;

(5) Uniform Plumbing Code, issued by the International Association of Plumbing and Mechanical Officials, 2003 Edition;

(6) National Fuel Gas Code (NFPA 54), issued by the National Fire Protection Association, 2002 Edition;

(7) Liquefied Petroleum Gas Code (NFPA 58), issued by the National Fire Protection Association, 2001 Edition;

(8) International Fuel Gas Code, issued by the International Code Council, Inc., 2003 Edition;

(9) Uniform Housing Code, issued by the International Conference of Building Officials, 1997 Edition;

(10) Uniform Code for the Abatement of Dangerous Buildings, issued by the International Conference of Building Officials, 1997 Edition;

(11) National Electrical Code, issued by the National Fire Protection Association, ~~2002~~ 2005 Edition;

(12) All amendments, supplements, modifications, exclusions, exemptions and additions to the codes identified in subsections (a)(1) through (8) of this section adopted by the Washington State Building Code Council and published in WAC Title 51, including, but not by way of limitation, Chapters 51-11, 51-13, 51-50, 51-51, 51-52, 51-54, 51-56 and 51-57 WAC.

(b) The copies of codes on file may be placed by the city clerk in the custody of the office of the building official in order to make them more readily available to inspection and use by the general public.

Section 2. Section 21.06.020 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.06.020 Scope.**

(a) This code establishes the administrative, organizational and enforcement rules and regulations for the technical codes which regulate site preparation and construction, alteration, moving, demolition, repair, use and occupancy of buildings, structures and building service equipment within the corporate limits of the city. The provisions of this code shall apply to the administration of the technical codes as adopted by the state of Washington and as listed:

- (1) 2003 International Building Code—Chapter 51-50 WAC;
- (2) 2003 International Residential Code—Chapter 51-51 WAC;
- (3) 2003 International Mechanical Code—Chapter 51-52 WAC;
- (4) 2002 National Fuel Gas Code (NFPA 54)—Chapter 51-52 WAC;
- (5) ~~2002~~ 2005 National Electrical Code;
- (6) 2001 Liquefied Petroleum Gas Code (NFPA 58)—Chapter 51-52 WAC;
- (7) 2003 International Fuel Gas Code—Chapter 51-52 WAC;
- (8) 2003 Uniform Plumbing Code—Chapters 51-56 and 51-57 WAC.

(b) The provisions of this code shall not apply to work located primarily in a public way, public utility towers and poles and hydraulic flood control structures; however, this shall not apply to electrical work.

(c) The provisions of this code shall not apply to the installation, alteration or repair of electrical wiring, apparatus or equipment or the generation, transmission, distribution or metering of electrical energy or in the operation of signals or the transmission of intelligence by a public or private utility in the exercise of its function as a serving utility.

Section 3. Section 21.06.085 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.06.085 Electrical.**

The provisions of the ~~2002~~ 2005 National Electrical Code (NEC) shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

Section 4. Section 21.06.210 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.06.210 Electrical permit required.**

In accordance with Chapter 19.28 RCW, an electrical permit is required for the following installations:

- (1) The installation, alteration, repair, replacement, modification or maintenance of all electrical systems, wire and electrical equipment regardless of voltage.
- (2) The installation and/or alteration of low voltage systems defined as:
  - (A) NEC, Class 1 power limited circuits at thirty volts maximum.
  - (B) NEC, Class 2 circuits powered by a Class 2 power supply as defined in NEC 725.41(A).
  - (C) NEC, Class 3 circuits powered by a Class 3 power supply as defined in NEC 725.41(A).
- (3) Telecommunications Systems.

- A. Installation of telecommunications systems on the customer side of the network demarcation point for projects greater than ten telecommunications outlets.
- B. All backbone installations, regardless of size and all telecommunications cable or equipment installations involving penetrations of fire barriers or passing through hazardous locations.
- C. The installation of greater than ten outlets and the associated cables along any horizontal pathway from a telecommunications closet to work areas during any continuous ninety-day period requires a permit and inspection.
- D. Backbone installations in multifamily residential dwellings which require penetration of fire barriers, or installation of more than ten outlets in common areas.

~~(A) All installations of telecommunications systems on the customer side of the network demarcation point for projects greater than ten telecommunications outlets.~~

~~(B) All backbone installations regardless of size and all telecommunications cable or equipment installations involving penetrations of fire barriers or passing through hazardous locations require permits and inspections.~~

~~(C) The installation of greater than ten outlets and the associated cables along any horizontal pathway from a telecommunications closet to work areas during any continuous ninety-day period requires a permit and inspection.~~

~~(D) In R-1 and R-2 occupancies as defined in the building code, permits and inspections are required for all backbone installations, all penetrations of fire resistive walls, ceilings and floors; and installations of greater than ten outlets in common areas.~~

(E) Definitions of telecommunications technical terms will come from Chapter 19.28 RCW, the currently adopted WAC rules, EIA/TIA standards, and the National Electrical Code.

Section 5. Section 21.06.215 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.06.215 Work exempt from permit.**

Exemptions from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

(1) Building.

(A) One-story detached accessory structures used as tool and storage sheds, tree-supported play structures, playhouses and similar uses, provided the floor area does not exceed two hundred square feet (11.15 square meters).

(B) Fences not over six feet (one thousand eight hundred twenty-nine millimeters) high.

(C) Oil derricks.

(D) Retaining walls which are not over four feet (one thousand two hundred nineteen millimeters) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or III-A liquids.

(E) Water tanks supported directly on grade if the capacity does not exceed five thousand gallons (eighteen thousand nine hundred twenty-five liters) and the ratio of height to diameter or width does not exceed two to one.

(F) Sidewalks, decks and driveways not more than thirty inches (seven hundred sixty-two millimeters) above grade and not over any basement or story below and which are not part of an accessible route or means of egress.

(G) In-kind re-roofing of one- and two-family dwellings provided the roof sheathing is not removed or replaced.

(H) Painting, nonstructural wood or vinyl siding, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

(I) Temporary motion picture, television and theater stage sets and scenery.

(J) Prefabricated swimming pools accessory to a one- and two-family dwelling, which are less than twenty-four inches (six hundred ten millimeters) deep, do not exceed five thousand gallons (eighteen thousand nine hundred twenty-five liters) and are installed entirely above ground.

(K) Shade cloth structures constructed for nursery or agricultural purposes and not including service systems.

(L) Swings, slides and other similar playground equipment.

(M) Window awnings supported by an exterior wall of one- and two-family dwellings which do not project more than fifty-four inches (one thousand three hundred seventy-two millimeters) from the exterior wall and do not require additional support.

(N) Movable cases, counters and partitions not over five feet, nine inches (one thousand seven hundred fifty-three millimeters) in height.

(O) Satellite earth station antennas six and one-half feet (two meters) or less in diameter or diagonal in zones other than residential zones.

(P) Satellite earth station antennas three and one-quarter feet (one meter) or less in diameter in residential zones.

(Q) Video programming service antennas three and one-quarter feet (one meter) or less in diameter or diagonal dimension, regardless of zone.

(2) Electrical.

(A) Portable motors or other portable appliances energized by means of a cord or cable having an attachment plug end to be connected to an approved receptacle when that cord or cable is permitted by the National Electrical Code;

(B) Repair or replacement of fixed motors, transformers or fixed approved appliances or devices rated fifty amps or less which are like-in-kind in the same location;

(C) Temporary decorative lighting; when used for a period not to exceed ninety days and removed at the conclusion of the ninety-day period;

(D) Repair or replacement of current-carrying parts of any switch, conductor or control device which are like-in-kind in the same location;

(E) Repair or replacement of attachment plug(s) and associated receptacle(s) rated fifty amperes or less which are like-in-kind in the same location;

(F) Repair or replacement of any over current device which is like-in-kind in the same location;

(G) Repair or replacement of electrodes or transformers of the same size and capacity for signs or gas tube systems;

(H) Removal of electrical wiring;

(I) Telecommunications Systems.

(i) Telecommunications outlet installations within the individual dwelling units of group R-1 and R-2 occupancies as defined by the building code;

(ii) All telecommunications installations within R-3 and R-4 occupancies as defined in the building code;

(iii) The installation or replacement of cord and plug connected telecommunications equipment or for patch cord and jumper cross-connected equipment;

(J) Listed wireless security systems where power is supplied by a listed Class 2 plug in transformer installed in R-3 and R-4 occupancies;

(K) ~~A permit shall not be required for~~The installation, alteration or repair of electrical wiring, apparatus or equipment or the generation, transmission, distribution or metering of electrical energy or in the operation of signals or the transmission of intelligence by a public or private utility in the exercise of its function as a serving utility

(L) Portable generators rated at 4000 Watts or less

(M) Travel trailers

(N) Like-in-kind replacement of a: contactor, relay, timer, starter, circuit board, or similar control component; household appliance; circuit breaker; fuse; residential luminaire; lamp; snap switch; dimmer; receptacle outlet; thermostat; heating element; luminaire ballast with an exact same ballast; component(s) of electric signs, outline lighting, skeleton neon tubing when replaced on-site by an appropriate electrical contractor and when the sign, outline lighting or skeleton neon tubing electrical system is not modified; ten horsepower or smaller motor; and induction detection loops described in WAC 296-46B-300(2) and used to control gate access devices.

(3) Mechanical.

(A) Portable heating, cooking, or clothes drying appliances.

(B) Portable ventilation equipment.

(C) Portable cooling unit.

(D) Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.

(E) Replacement of any part which does not alter its approval or make it unsafe.

(F) Portable evaporative cooler.

(G) Self-contained refrigeration system containing ten pounds (4.54 kg) or less of refrigerant and actuated by motors of one horsepower (seven hundred forty-six W) or less.

(H) Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected.

(4) Plumbing.

(A) The stopping and/or repairing of leaks in drains, water, soil, waste or vent pipe; provided, however, that should any concealed trap, drain pipe, water, soil, waste or vent pipe become defective and it becomes necessary to remove and replace the same with new material, the same shall be considered as new work and a permit shall be procured and inspection made as provided in this code.

(B) The clearing of stoppages.

(C) Reinstallation or replacement of prefabricated fixtures that do not involve or require the replacement or rearrangement of valves or pipes.

Section 6. Section 21.06.255 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.06.255 Expiration.**

(a) Every permit issued shall expire one year from the date of issuance. The building official is authorized to approve a request for an extended expiration date where a construction schedule is provided by the applicant and approved prior to permit issuance.

(b) Every permit which has been expired for less than one year may be renewed for a period of one year for an additional fee as long as no changes have been made to the originally approved plans. For permits that have been expired for longer than one year, a new permit must be obtained and full new fees paid. No permit shall be renewed more than once.

(c) Electrical, mechanical and plumbing permits shall expire at the same time as the associated building permit except that if no associated building permit is issued, the electrical, mechanical and/or plumbing permit shall expire one hundred eighty days from issuance.

Section 7. Section 21.08.110 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.08.110 IBC Section J103 amended.**

Section J103 of the International Building Code is amended and supplemented to read:

Section J103. PERMITS REQUIRED. Except as exempted in Section J103.2, no land surface modification shall be performed without first having obtained a permit from the building official. ~~A land surface modification permit does not include the construction of retaining walls or other structures.~~

Section J103.2. Exemptions. A land surface modification permit shall not be required for the following:

1. Land surface modification performed in the normal course of maintaining existing landscaping on a lot associated with an existing building or buildings, provided such work does not modify any drainage course.
2. Any excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid Building Permit. This shall not exempt any fill made with the material from such excavation when the material is removed from the lot or any fill material which is placed on the lot.
3. Cemetery graves.
4. Fill deposited on previously approved disposal sites under the control of other City Administrative Departments.

5. Excavations for wells or tunnels, or utilities or other work supervised by the City of Kirkland.
6. Mining, quarrying, excavating, processing, stockpiling of rock, sand, gravel, aggregate or clay where a permit has been issued by the State of Washington, Department of Natural Resources.
7. Exploratory excavations under the direction of soil engineers or engineering geologists.
8. Normal maintenance and repair of the facilities of a common carrier by rail in interstate commerce within its existing right-of-way.
9. Excavations for utility service connections to serve existing and/or new structures.
10. Correction of drainage problems when supervised by the Department of Public Works; and the installation of approved preliminary plat and short plat improvements as permitted by Section J103.3.

Exemption from the permit requirements of this Chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction.

Section 8. Chapter 21.40 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.40.005 to read as follows:

**21.40.005 Scope.**

The provisions of this chapter apply only to swimming pools associated with structures regulated by the International Residential Code. For other swimming pools, refer to International Building Code Section 3109.

Section 9. Section 21.70.010 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.010 National Electrical Code—Adopted as amended, added to and excepted.**

(a) The following are hereby adopted by reference as part of this chapter, and shall be applicable within the city, ~~as amended, added to or excepted in this chapter: the National Electrical Code (NFPA 70), 2002 Edition including Annex B and C, but excluding Article 80; the most current edition of Centrifugal Fire Pumps (NFPA 20); Health Care Facilities (NFPA 99); Emergency and Standby Power Systems (NFPA 110); and the National Electrical Safety Code (NESC C2-2002 excluding Appendices A and B).~~

~~(b) The requirements of this chapter will be observed where there is any conflict between this chapter and the National Electrical Code (NFPA 70), Centrifugal Fire Pumps (NFPA 20), Health Care Facilities (NFPA 99), and Emergency and Standby Power Systems (NFPA 110).~~

~~(c) The National Electrical Code will be followed where there is any conflict between Centrifugal Fire Pumps (NFPA 20), Health Care Facilities (NFPA 99), Emergency and Standby Power Systems (NFPA 110), or the National Electrical Safety Code (NESC C2-2002) and the National Electrical Code (NFPA 70).~~

The 2005 edition of the National Electrical Code (NFPA 70 - 2005 including Annex A, B, and C; the 2003 edition of standard for the Installation of Stationary Pumps for Fire Protection (NFPA 20 - 2003); the 2002 edition of standard for Emergency and Standby Power Systems (NFPA 110 - 2002); Commercial Building Telecommunications Cabling Standard (ANSI/TIA/EIA 568-B.1-May 2001 including Annex 1 through 5); Commercial Building Standard for Telecommunications Pathway and Spaces (ANSI/TIA/EIA 569-A-7 December 2001 including Annex 1 through 4); Commercial Building Grounding and Bonding Requirements for Telecommunications (ANSI/TIA/EIA 607 - A - 2002); Residential Telecommunications Cable Standard (ANSI/TIA/EIA 570-A-December 2001); and the National Electrical Safety Code (NESC C2-2002 excluding Appendixes A and B) are hereby adopted by reference as part of this chapter. Other codes, manuals, and reference works referred to in this chapter are available for inspection and review in the Olympia office of the electrical section of the department during business hours.

The requirements of this chapter will be observed where there is any conflict between this chapter and the National Electrical Code (NFPA 70), Centrifugal Fire Pumps (NFPA 20), the Emergency and Standby Power Systems (NFPA 110), ANSI/TIA/EIA 568-A, ANSI/TIA/EIA 569-A, ANSI/TIA/EIA 607, ANSI/TIA/EIA 570, or the NESC C2-2002.

The National Electrical Code will be followed where there is any conflict between standard for Installation of Stationary Pumps for Fire Protection (NFPA 20), standard for Emergency and Standby Power Systems (NFPA 110), ANSI/TIA/EIA 568- B, ANSI/TIA/EIA 569-A, ANSI/TIA/EIA 607, ANSI/TIA/EIA 570, or the NESC C2-2002 and the National Electrical Code (NFPA 70).

Section 10. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.027 to read as follows:

**21.70.027 National Electrical Code Article 85.5 – Amended – Moved buildings and structures.**

- A. Nonresidential buildings or structures moved into the City must be inspected to ensure compliance with current requirements of this Code.
- B. Residential buildings or structures wired in the U.S., to NEC requirements, and moved into the City must be inspected to ensure compliance with the NEC requirements in effect at the time and place the original wiring was made. The building or structure must be inspected to ensure compliance with all current requirements of chapter 19.28 RCW and the rules developed by the department if:

1. The original occupancy classification of the building or structure is changed as a result of the move; or
  2. The building or structure has been substantially remodeled or rehabilitated as a result of the move.
- C. Residential buildings or structures wired in Canada to Canadian Electrical Code (CEC) standards and moved into the City must be inspected to ensure compliance with the following minimum safety requirements:
1. Service, service grounding, and service bonding must comply with this Code.
  2. Canadian Standards Association (CSA) listed Type NMD cable is allowed with the following qualifications:
    - a. CSA listed Type NMD cable, American Wire Gauge #10 and smaller installed after 1964 utilizing an equipment grounding conductor smaller than the phase conductors, must be:
      - i. Replaced with a cable utilizing a full-size equipment grounding conductor; or
      - ii. Protected by a ground fault circuit interrupter protection device.
    - b. CSA listed Type NMD cable, #8 AWG and larger, must:
      - i. Utilize an equipment grounding conductor sized according to the requirements of the NEC in effect at the time of the installation;
      - ii. Be protected by a ground fault circuit interrupter protection device; or
      - iii. Be replaced.
  3. Other types of wiring and cable must be:
    - a. Replaced with wiring listed or field evaluated in accordance with U.S. standards by a laboratory approved by the department; or
    - b. Protected by a ground fault circuit interrupter protection device and arc fault circuit protection device.
  4. Equipment, other than wiring or panelboards, manufactured and installed prior to 1997 must be listed and identified by laboratory labels approved by the department or CSA labels.
  5. All panelboards must be listed and identified by testing laboratory labels approved by the department with the following qualifications:
    - a. CSA listed panelboards labeled "Suitable for Use as Service Equipment" will be considered to be approved as "Suitable for Use only as Service Equipment."
    - b. CSA listed panelboards must be limited to a maximum of 42 circuits.
    - c. CSA listed panelboards used as lighting and appliance panelboards as described in the NEC, must meet all current requirements of the NEC and this chapter.

6. Any wiring or panelboards replaced or changed as a result of the move must meet current requirements of chapter 19.28 RCW and this chapter.
7. The location, type, and ground fault circuit interrupter protection of receptacles and equipment in a bathroom, kitchen, basement, garage, or outdoor area must meet the Washington requirements in effect at the time the wiring was installed.
- 8.4, 15-ampere, kitchen small appliance circuits will be accepted in lieu of 2, 20-ampere, kitchen small appliance circuits. Receptacles will not be required to be added on kitchen peninsular or island counters.
9. Spacing requirements for all other receptacles must meet the Washington requirements in effect at the time the wiring was installed.
10. Receptacles installed above baseboard or fixed wall space heaters must be removed and the outlet box covered with a blank cover. The receptacle is required to be relocated as closely as possible to the existing location.
11. Lighting outlet and switch locations must meet the Washington requirements in effect at the time the wiring was installed.
12. Dedicated 20-ampere small appliance circuits are not required in dining rooms.
13. Electric water heater branch circuits must be adequate for the load.
14. The location, type, and circuit protection of feeders must meet the Washington requirements in effect at the time the wiring was installed.

Section 11. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.033 to read as follows:

**21.70.033 National Electrical Code Article 90.7 amended – Examination of equipment for safety.**

Article 90.7 of the National Electrical Code is amended to read as follows:

**Examination of equipment for safety.** For specific items of equipment and materials referred to in this Code, examinations for safety made under standard conditions, to a recognized United States or harmonized international standard, provide a basis for approval where the record is made generally available through promulgation by organizations properly equipped and qualified for experimental testing, inspections of the run of goods at factories, and service-value determination through field inspections. This avoids the necessity for repetition of examinations by different examiners, frequently with inadequate facilities for such work, and the confusion that would result from conflicting reports on the suitability of devices and materials examined for a given purpose.

It is the intent of this Code that factory-installed internal wiring or the construction of equipment need not be inspected at the time of installation of the equipment, except to detect alterations or damage, if the equipment has been listed by a qualified electrical testing laboratory that is recognized as having the facilities

described in the preceding paragraph and that requires suitability for installation in accordance with this Code.

Section 12. Section 21.70.040 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.040 National Electrical Code Article 110.2 amended—Approval.**

Article 110.2 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of Article 110.2:

All materials, devices, appliances, and equipment, not exempted in state law Chapter 19.28 RCW, must conform to applicable standards recognized by the Building Official, be listed, or field evaluated by an accredited electrical products testing laboratory. Equipment must not be energized until such standards are met, unless specific permission has been granted by the Building Official.

FPN: ~~WAC 296-46B-010(9)~~

Section 13. Section 21.70.045 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.045 National Electrical Code 110.3 amended—Examination, identification, installation, and use of equipment.**

Article 110.3 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 110.3(C), to read as follows:

(C) Industrial control panels and utilization equipment. Control panels and utilization equipment installed in industrial plants will be determined to meet the minimum electrical safety standards for installations by one of the following methods:

- (a) Listing and Labeling by an accredited electrical products testing laboratory.
- (b) Field evaluation by an accredited electrical products testing laboratory;
  - (i) If the equipment usage is changed to other than industrial utilization equipment or electrical modifications are made to the equipment, the equipment must be successfully listed or field evaluated by a laboratory approved by the department.
  - (ii) The equipment must be permanently installed at the owner's facility and inspected per the requirements of this Chapter.
- (c) Normal inspection as part of the electrical inspection process included with the general wiring inspection of a building, structure, or other electrical installation for compliance with codes and rules adopted under this chapter. Normal inspection will only be made for equipment using listed components and wired to the requirements of the NEC.

Use of industrial control panel(s) or equipment before its evaluation or final inspection, must be authorized by the Building Official or designated representative prior to its being energized.

~~FPN: WAC 296-46B-030(2)~~

Section 14. Section 21.70.055 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.055 National Electrical Code Article 110.16 amended—Flash protection.**

Article 110.16 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the first paragraph, to read as follows:

The flash protection marking must be an identification plate or label meeting ANSI Standards Z535.4-1998 or be of a type approved by the Building Official, or designated representative. The plate or label may be installed at the factory or in the field. The plate or label may be mounted using adhesive.

~~FPN: WAC 296-46B-110(4)~~

Section 15. Section 21.70.060 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.060 National Electrical Code Article 110.22 amended—Identification of disconnecting means.**

Article 110.22 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the first paragraph, to read as follows:

In other than dwelling units, an identification plate or label is required unless the disconnect is a circuit breaker or fused switch installed within a panelboard and its purpose is indicated by the panelboard schedule. The identification plate or label must include the identification designation of the circuit source panelboard that supplies the disconnect.

~~FPN: WAC 296-46B-110(5)~~

Section 16. Section 21.70.065 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.065 National Electrical Code Article 110.22 further amended—Identification of disconnecting means.**

Article 110.22 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the second paragraph, to read as follows:

The marking must be in the form of an identification plate or label that is substantially yellow in color. The words "CAUTION - SERIES COMBINATION RATED SYSTEM" must be on the plate or label in letters at least 13 mm (1/2") high.

~~FPN: WAC 296-46B-110(6)~~

Section 17. Section 21.70.070 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.070 National Electrical Code 210.8 amended—Ground fault circuit-interrupter protection for personnel.**

Article 210.8(B) of the National Electrical Code is amended and supplemented by the addition of new subsections (4) and (5), to read as follows:

(4) Outdoors.

FPN: ~~WAC 296-46B-210(2)~~

(5) Crawl spaces - at or below grade.

Section 18. Section 21.70.075 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.075 National Electrical Code 210.8 further amended—Ground fault circuit-interrupter protection for personnel.**

Article 210.8 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as 210.8~~(C)~~(D) to read as follows:

~~(C)~~ (D) All Occupancies.

(1) All 125-volt, single phase, 15 and 20 ampere receptacles installed within 1.8 m (6 ft) of any sink, fixed water source, or a normally wet or damp location shall be provided with ground fault circuit-interrupter protection for personnel.

~~Exception: The laundry receptacle when installed within the dedicated wall space occupied by the clothes washer.~~

FPN: ~~WAC 296-46B-410(1)~~

~~(2) All luminaires (lighting fixtures) permitted to be installed within the zone defined in Article 410.4(D) shall be ground fault circuit-interrupter protected and shall be fully enclosed.~~

FPN: ~~WAC 296-46B-410(1)~~

Section 19. Section 21.70.080 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.080 National Electrical Code 210.11 amended—Branch circuits required.**

Article 210.11 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 210.11(C)(4), to read as follows:

(4) Unfinished spaces. In addition to the number of branch circuits required by other parts of this section, ~~at least one~~ an additional branch circuit(s) shall be provided for unfinished spaces adaptable to future dwelling unit living areas that are not readily accessible to the service or branch circuit panelboard. The circuit(s) must terminate in a suitable box(es). The box must contain an identification of the intended purpose of the circuit(s). The branch circuit panelboard must have adequate space and capacity for the intended load(s).

FPN: ~~WAC 296-46B-210(2)~~

Section 20. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.082 to read as follows:

**21.70.082 National Electrical Code 210.12 amended – Arc-Fault Circuit-Interrupter Protection.**

Section 210.12(B) of the National Electrical Code is amended to read as follows:

**(B) Dwelling Unit Bedrooms.** All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets installed in dwelling unit bedrooms shall be protected by a listed arc-fault circuit interrupter, combination type installed to provide protection of the branch circuit. For the purpose of NEC 210.12(B), dwelling unit bedrooms include spaces that are:

- (1) Accessed only through the bedroom:
- (2) Ancillary to the bedroom's function; and
- (3) Contain branch circuits that supply 125 volt, 15 and 20 ampere outlets must be protected by an arc-fault circuit interrupter listed to provide protection per 210.12.

For the purposes of this section, such spaces will include, but not be limited to, spaces such as closets and sitting areas, but will not include bathrooms.

Branch/feeder AFCIs shall be permitted to be used to meet the requirements of 210.12(B) until January 1, 2008.

*Exception: The location of the arc-fault circuit interrupter shall be permitted to be at other than the origination of the branch circuit in compliance with (a) and (b):*

- (a) The arc-fault circuit interrupter installed within 1.8 m (6 ft) of the branch circuit overcurrent device as measured along the branch circuit conductors.*
- (b) The circuit conductors between the branch circuit overcurrent device and the arc-fault circuit interrupter shall be installed in a metal raceway or a cable with a metallic sheath.*

Section 21. Section 21.70.085 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.085 National Electrical Code 215.10 amended—Ground fault protection of equipment.**

Article 215.10 of the National Electrical Code is amended and supplemented by the addition of a new paragraph following the first paragraph of Article 215.10 to read as follows:

Equipment ground fault protection systems shall be performance tested prior to being placed into service to verify proper installation and operation of the system as determined by the manufacturer's published instructions. This test or a subsequent test shall include all system feeders. A firm having qualified personnel and proper equipment must perform the tests required. A copy of the manufacturer's performance testing instructions and a written performance acceptance test record signed by the person performing the test must be provided for the inspector's records at the time of inspection. The performance acceptance test record shall include test details including, but not limited to all trip settings and measurements

taken during the test. The equipment being tested shall be labeled identifying the date of the test, the firm performing the test, and all settings for the equipment tested.

~~FPN: WAC 296-46B-215(1)~~

Section 22. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.087 to read as follows:

**21.70.087 National Electrical Code 220.12 amended – Lighting Loads for Specified occupancies.**

Article 220.12 of National Electrical Code is amended and supplemented by the addition of an exception to read as follows:

*Exception: In determining feeder and service entrance conductor sizes and equipment ratings, the currently adopted Washington State Energy Code unit lighting power allowance table and footnotes may be used in lieu of NEC 220.12.*

Section 23. Section 21.70.090 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.090 National Electrical Code 220.35 ~~87~~ amended—Optional calculations for determining existing loads.**

Article 220.~~35~~ 87 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of subsection (1), Exception:, to read as follows:

In addition to the 30 day demand data, the following information must be provided:

- (a) The date of the measurements.
- (b) A statement attesting to the validity of the demand data, signed by a professional electrical engineer or the electrical administrator of the electrical contractor performing the measurements.
- (c) A diagram of the electrical system identifying the point(s) of the measurements.

~~FPN: WAC 296-46B-010(22)~~

Section 24. Section 21.70.095 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.095 National Electrical Code 225.32 amended—Location.**

Article 225.32 of the National Electrical Code is amended and supplemented by the addition of a new paragraph following the first paragraph of Article 225.32 to read as follows:

Feeder disconnects, panelboards, subpanels, and similar electrical equipment must be installed so that they are readily accessible and may not be installed in bathrooms, clothes closets, or shower rooms. All indoor feeder disconnects,

panelboards and subpanels and similar electrical equipment must have adequate working space and be adequately illuminated.

~~FPN: WAC 296-46B-230(11)~~

Section 25. Section 21.70.100 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.100 National Electrical Code 225.32 further amended—Location.**

Article 225.32 of the National Electrical Code is amended and supplemented by the addition of new subsections to be known as subsections 225.32(1) and 225.32(2), to read as follows:

(1) Outside locations: Where the feeder disconnecting means is installed outside of a building or structure it must be on the building or structure supplied. The building disconnecting means may supply only 1 building or structure unless the secondary building(s) or structure(s) has a separate building disconnecting means meeting the requirements of this subsection. The disconnecting means must have an identification plate with at least 1/2" high letters identifying:

- (a) The building or structure served; and
- (b) Its function as the building or structure main disconnect(s).

~~FPN: WAC 296-46B-230(13)~~

(2) Inside location: Where the feeder disconnecting means is installed inside the building or structure, it must be located so that the feeder raceway or cable extends no more than 15' inside the building or structure.

Section 26. Section 21.70.105 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.105 National Electrical Code Article 230.2 amended—Number of services.**

Article 230.2 of the National Electrical Code is amended and supplemented by the addition of a new paragraph following the first paragraph to read as follows:

Each portion of a building or structure separated by one or more Fire Walls that comply with Section 705 of the International Building Code may be considered a separate building. Fire Walls shall not be less than 2 hr fire-resistance rated. The extent and location of such Fire Walls shall provide a complete separation.

~~FPN: WAC 296-46B-230(2)~~

Section 27. Section 21.70.110 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.110 National Electrical Code Article 230.2 further amended—Number of services.**

Article 230.2 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 230.2(A)(6), to read as follows:

(6) Transient voltage surge suppressor.

~~FPN: WAC 296-46B-230(4)~~

Section 28. Section 21.70.115 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.115 National Electrical Code Article 230.28 amended—Service mast as support.**

Article 230.28 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the first paragraph to read as follows:

Where a raceway-type service mast is used as support for service-drop conductors the following conditions must be met:

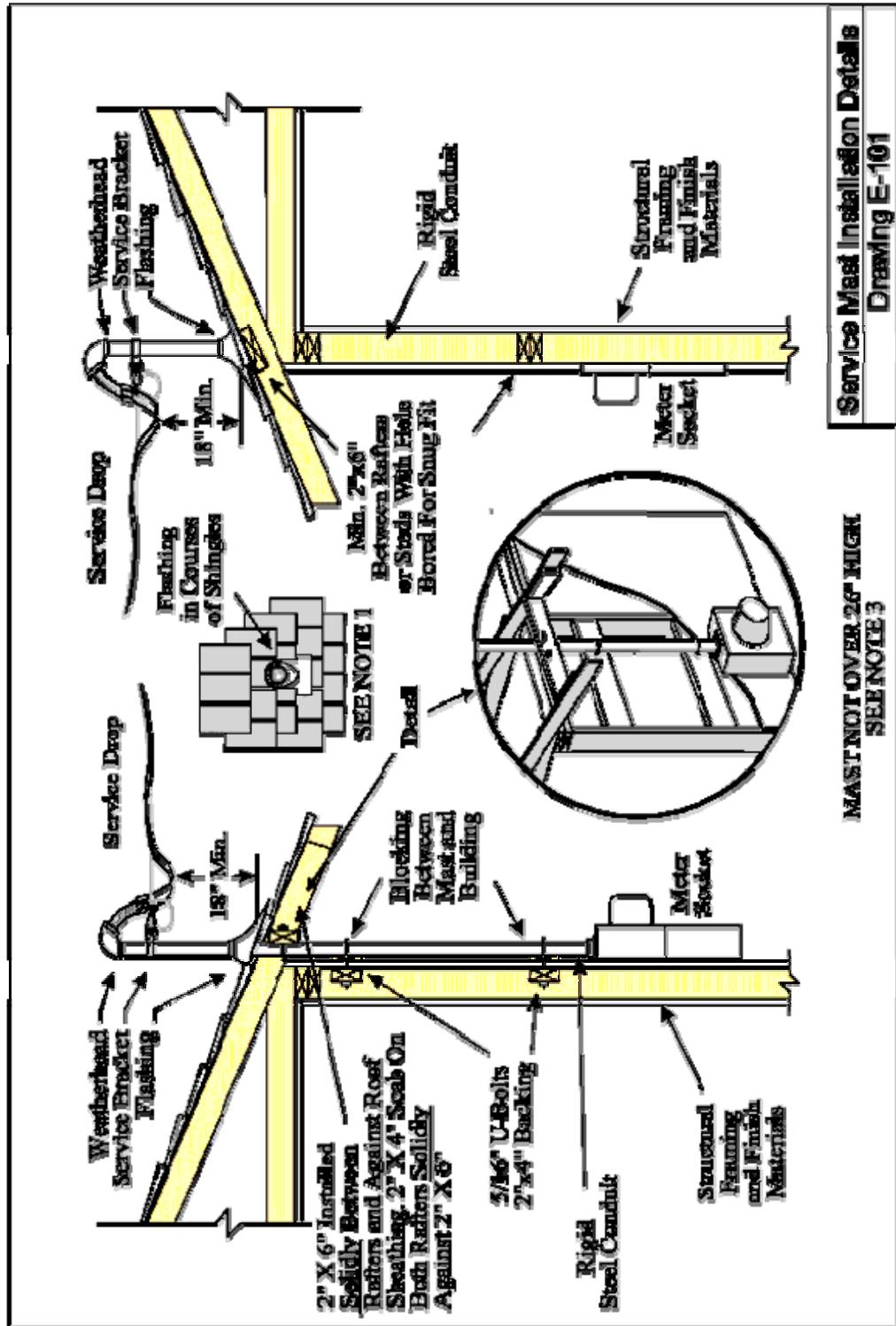
- (1) Raceway type service mast shall be a minimum of 2 inch rigid metal conduit.
- (2) An approved roof flashing shall be installed on each mast where it passes through a roof. Plastic, non-hardening mastic shall be placed between lead-type flashings and the conduit. Approved neoprene type roof flashings may be permitted.
- (3) Masts shall be braced, secured, and supported in such a manner that no pressure from the attached conductors will be exerted on a roof flashing, meter base, or other enclosures.
- (4) Utilization of couplings for a mast shall not be permitted above the point the mast is braced, secured, or supported.
- (5) Except as otherwise required by the serving utility, service mast support guys shall be installed if the service drop attaches to the mast more than 600 mm (24 in.) above the roof line or if the service drop is greater than 100' in length from the pole or support. Masts for support of other than service drops shall comply with this requirement as well.
- (6) Intermediate support masts shall be installed in an approved manner with methods identical or equal to those required for service masts.
- (7) For altered services, where it is impractical to install U-bolt mast supports due to interior walls remaining closed, it may be permissible to use other alternate mast support methods such as heavy gauge, galvanized, electrical channel material that is secured to 2 or more wooden studs with 5/16" diameter or larger galvanized lag bolts.
- (8) Conductors shall extend a minimum of 450 mm (18 in.) from all mastheads to permit connection to the connecting overhead wiring.

~~FPN: See WAC 296-46B-230(5) Drawings E-101 through E-103~~

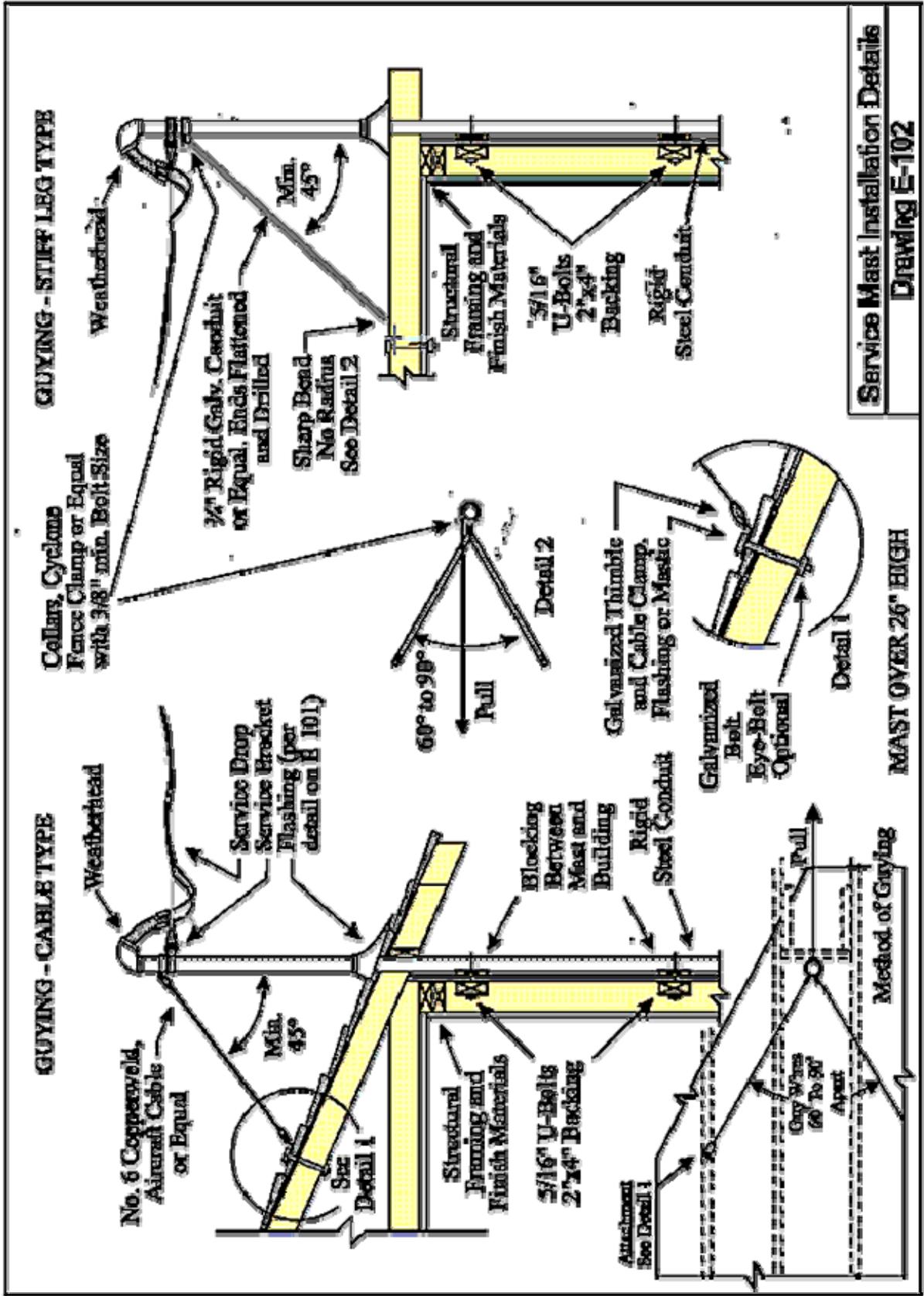
~~FPN: WAC 296-46B-230(5)~~

FIGURES AND DRAWINGS

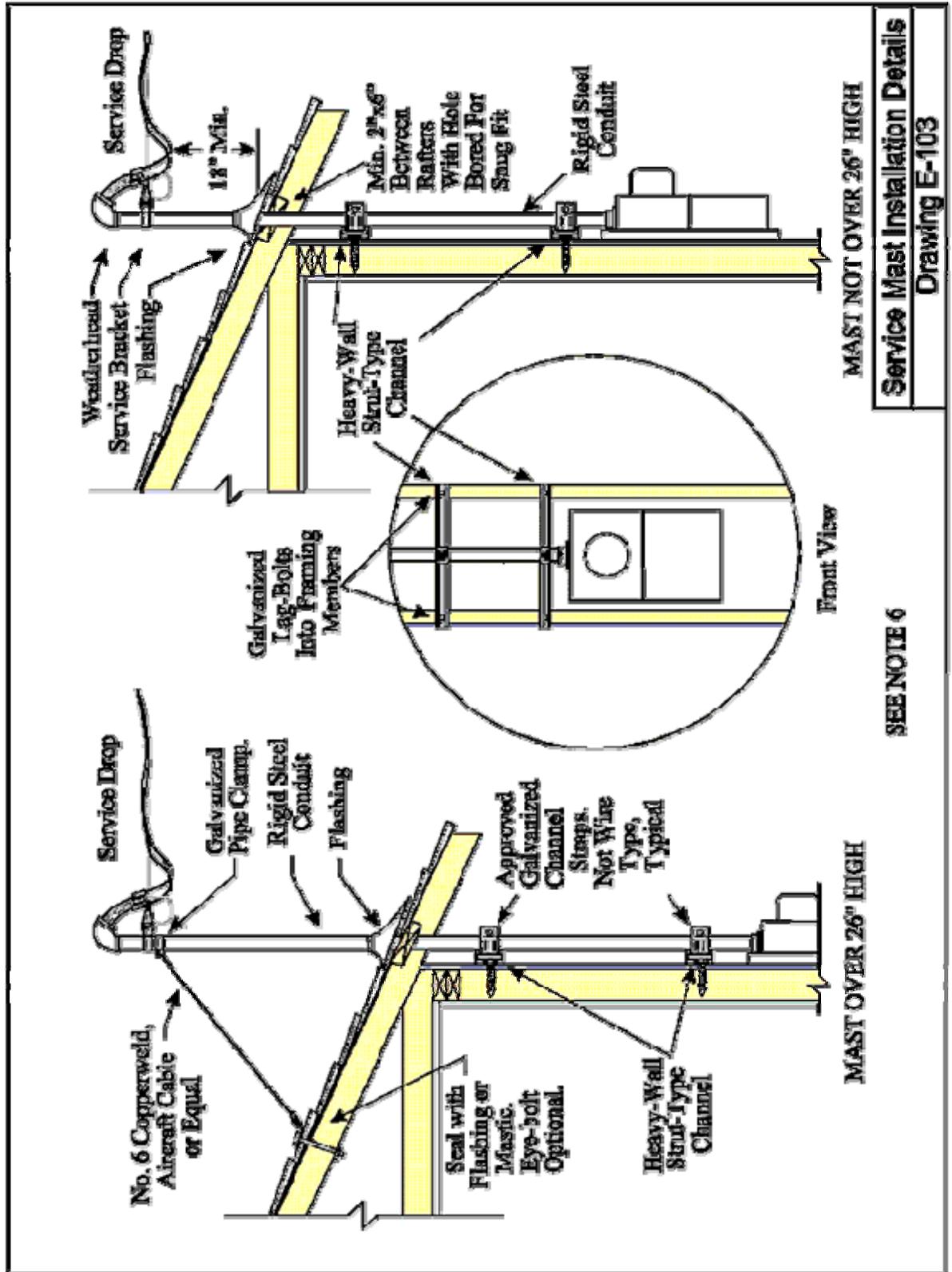
WAC 296-46B-230 Drawing E-101



WAC 296-46B-230 Drawing E-102



**Service Mast Installation Details**  
**Drawing E-102**



Service Mast Installation Details

Drawing E-103

SEE NOTE 6

Section 29. Section 21.70.120 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.120 National Electrical Code 230.43 amended—Wiring methods for 600 volts, nominal, or less.**

Article 230.43 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of Article 230.43, to read as follows:

Wiring methods for service conductors not exceeding 600 volts, nominal, within a building or structure is limited to the following methods: Rigid metal conduit; Intermediate metal conduit; Wireways; Busways; Auxiliary gutters; Rigid nonmetallic conduit; Cablebus; or Mineral-insulated, metal-sheathed cable (type MI).

~~FPN: WAC 296-46B-230(8)~~

Exception: With the approval of the Building Official existing electrical metallic tubing used for service entrance conductors may be permitted to remain, provided it meets all of the following conditions:

- a. It was installed prior to October 1984.
- b. It is properly grounded.
- c. The conduit is installed in a non-accessible location.
- d. It is the proper size for the installed conductors.

~~FPN: WAC 296-46B-230(9)~~

Section 30. Section 21.70.125 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.125 National Electrical Code 230.70 amended—General.**

Article 230.70 of the National Electrical Code is amended and supplemented by the addition of new subsections to be known as 230.70(A)(1)(a) and 230.70(A)(1)(b), to read as follows:

(a) Outside location: The service disconnect means shall be installed on the building or structure it serves. The service disconnection means shall be labeled with a plate with 1/2 inch letters providing the following information:

- (i) The building or structure served; and
- (ii) Its function as the building or structure main service disconnect(s).

~~FPN: WAC 296-46B-230(13)~~

(b) Inside location: Where the service disconnect is installed inside the building or structure, it shall be located so that the service raceway extends no more than 15 feet inside the building or structure served. Service disconnecting means,

panelboards, subpanels and similar electrical equipment shall be adequately illuminated.

~~FPN: WAC 296-46B-230(11)~~

Section 31. Section 21.70.130 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.130 National Electrical Code 230.70 further amended—General.**

Subsection (2) of Article 230.70(A) of the National Electrical Code is amended and supplemented to read as follows:

(2) Bathrooms. Service disconnection means, panelboards, subpanels and similar electrical equipment shall not be installed in bathrooms, clothes closets, or shower rooms.

~~FPN: WAC 296-46B-230(11)~~

Section 32. Section 21.70.135 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.135 National Electrical Code 230.90 amended—Service equipment— Overcurrent protection.**

Article 230.90 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of Article 230.90(A) Exception No. 3 to read as follows:

Where the service conductors have a lesser ampacity than the overcurrent protection or the equipment rating that they terminate in or on, an identification plate showing the ampacity of the conductors must be installed on the service equipment.

~~FPN: WAC 296-46B-230(7)~~

Section 33. Section 21.70.140 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.140 National Electrical Code 230.95 amended—Ground fault protection of equipment.**

Article 230.95 of the National Electrical Code is amended and supplemented by the addition of the following paragraph to follow the first paragraph to read as follows:

Equipment ground fault protection systems shall be performance tested prior to being placed into service to verify proper installation and operation of the system as determined by the manufacturer's published instructions. This test or a subsequent test shall include all system feeders. A firm having qualified personnel and proper equipment must perform the tests required. A copy of the manufacturer's performance testing instructions and a written performance acceptance test record signed by the person performing the test must be provided for the inspector's records at the time of inspection. The performance acceptance test record shall include test details including, but not limited to all trip settings and measurements taken during the test. The equipment being tested shall be labeled identifying the

date of the test, the firm performing the test, and all settings for the equipment tested.

FPN: ~~WAC 296-46B-230(14)~~

Section 34. Section 21.70.145 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.145 National Electrical Code 230.202 amended—Service-entrance conductors.**

Article 230.202 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of Article 230.202, subsection (B), to read as follows:

Wiring methods for service conductors exceeding 600 volts, nominal, within a building or structure is limited to the following methods: Rigid metal conduit; Intermediate metal conduit; Busways; Schedule 80 rigid nonmetallic conduit; Cablebus; metal-clad cable that is exposed for its entire length.

FPN: ~~WAC 296-46B-230(15)~~

Section 35. Section 21.70.150 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.150 National Electrical Code 250.32 amended—Two or more buildings or structures supplied from a common service.**

Subsection 250.32(B)(2) of the National Electrical Code is deleted in its entirety and replaced with the following:

FPN: ~~WAC 296-46B-250(1032)~~

An equipment grounding conductor must be installed with the circuit conductors between buildings and/or structures. A grounded conductor (i.e., neutral) is not permitted to be used in place of a separate equipment grounding conductor between buildings and/or structures. It shall be sized in accordance with NEC Table 250.122.

Section 36. Section 21.70.155 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.155 National Electrical Code 250.50 amended—Grounding electrode system.**

Article 250.50 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 250.50(1), to read as follows:

(1) At each new building or structure served a concrete-encased grounding electrode consisting of at least 6.0 m (20 ft) of bare copper conductor not smaller than #4 AWG meeting the requirements of Article 250.52(A)(3) shall be required as part of the grounding electrode system. Other electrodes of bare or zinc coated steel reinforcing bars or rods meeting the requirements of 250.52(A)(3) may be used if approved by the Building Official prior to installation, complying with 250.52(A)(3) of the 2005 Edition of the National Electrical Code® shall be installed.

All electrodes shall be inspected prior to covering, concealing or the placing of concrete.

Exception: ~~Job site construction trailers, mobile homes and manufactured homes, when not installed on a permanent foundation.~~ Buildings or structures without a permanent concrete foundation.

Section 37. Section 21.70.160 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.160 National Electrical Code 250.56 amended—Resistance of rod, pipe and plate electrodes.**

~~Article 250.56 of the National Electrical Code is amended and supplemented by amending the last sentence of Article 250.56 and the addition of a new exception, to read as follows:~~

~~Where multiple rod, pipe, or plate electrodes are installed to meet requirements of this section, they shall not be less than 4.9 m (16 ft) apart.~~

Exception: A Temporary construction power services is not required to have more than one made electrode of 100 amperes or less.

FPN: The paralleling efficiency of rods longer than 8' is improved by spacing greater than 6'.

Section 38. Section 21.70.165 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.165 National Electrical Code 250.104 amended—Bonding of piping systems and exposed structural steel.**

Article 250.104 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the first paragraph of Article 250.104(A), to read as follows:

1. Hot and cold metal water piping systems are not required to be bonded together if, at the time of inspection, the inspector can determine that the ~~lines metal water piping systems~~ are mechanically and electrically joined by 1 ~~one~~ or more metallic mixing valves.
2. Metallic stubs or valves used in nonmetallic plumbing systems are not required to be bonded to the electrical system unless required by the equipment manufacturer's instructions.

~~FPN: WAC 296-46B-250(5) and WAC 296-46B-250(4)~~

Section 39. Section 21.70.170 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.170 National Electrical Code 250.184 amended—Grounding of Systems and Circuits of 1kV and Over (High Voltage) Solidly grounded neutral systems.**

Article 250.184(A) of the National Electrical Code is amended and supplemented by the addition of new subsections to be known as subsection 250.184(A)(1) and subsection 250.184(A)(2), to read as follows:

(1) Existing installations.

a. The use of a concentric shield will be allowed for use as a neutral conductor for extension, replacement, or repair, if all of the following are complied with:

(i) The existing system uses the concentric shield as a neutral conductor;

(ii) Each individual conductor contains a separate concentric shield sized to no less than 33 1/2% of the ampacity of the phase conductor for 3-phase systems or 100% of the ampacity of the phase conductor for single-phase systems;

(iii) The new or replacement cable's concentric shield is enclosed inside an outer insulating jacket; and

(iv) Existing cable (i.e., existing cable installed directly in the circuit between the work and the circuit's overcurrent device) successfully passes the following tests:

(1) A cable maintenance high potential dielectric test. The test must be performed in accordance with the cable manufacturer's instruction or the 2001 NETA maintenance test specifications; and

(2) A resistance test of the cable shield. Resistance must be based on the type, size, and length of the conductor used as the cable shield using the conductor properties described in NEC Table 8 Conductor Properties.

An electrical engineer must provide a specific certification to the Building Official or designated representative in writing that the test results of the maintenance high potential dielectric test and the resistance test have been reviewed by the electrical engineer and that the cable shield is appropriate for the installation. The electrical engineer must stamp the certification document with the engineer's stamp and signature. The document may be in the form of a letter or electrical plans.

Testing results are valid for a period of 7 years from the date of testing. Cable will not be required to be tested at a shorter interval.

(b). A concentric shield used as a neutral conductor in a multi-grounded system fulfills the requirements of an equipment grounding conductor.

~~FPN: WAC 296-46B-250(5)~~

(c) Where a separate conductor is used as the neutral for an extension, replacement, or repair, the conductor must pass a resistance test. Resistance must be based on the type, size, and length of the conductor used as the cable shield using the conductor properties described in NEC Table 8 Conductor Properties.

~~FPN: WAC 296-46B-250(5)~~

(2) New installations.

(a) New installations shall not include extensions of existing circuits.

(b) The use of the concentric shield will not be allowed for use as a neutral conductor for new installations. A listed separate neutral conductor meeting the requirements of NEC 250.184(A) must be installed.

~~FPN: WAC 296-46B-250(5)~~

Section 40. Section 21.70.175 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.175 National Electrical Code 250.184 further amended—Solidly grounded neutral systems Multiple grounding.**

Article 250.184 of the National Electrical Code is amended and supplemented by the deletion of the text of subsection 250.184(B) and replacing it with the following text to read as follows:

The neutral of a solidly grounded neutral system may be grounded at more than one point.

(1) Multiple grounding is permitted at the following locations:

(a) Services;

(b) Underground circuits where the neutral is exposed; and

(c) Overhead circuits installed outdoors.

(2) Multiple grounding is not allowed:

(a) For new systems where single-point and multigrounded circuits form a single system (e.g., where a single-point circuit is derived from a multigrounded circuit); or

(b) In new single phase (i.e., single phase to ground) installations.

~~FPN: WAC 296-46B-250(6)~~

Section 41. Section 21.70.180 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.180 National Electrical Code 250.184 further amended—Solidly grounded neutral systems Multigrounded neutral conductor.**

Article 250.184 of the National Electrical Code is amended and supplemented by the deletion of the text of subsection 250.184(DC) and replacing it with the following text to read as follows:

Where a multigrounded neutral system is used, the following will apply for new balanced phase to phase circuits and extensions, additions, replacements; and repairs to all existing systems of 1 kV and over:

(1) For existing systems:

(a) The cable's concentric shield must be used as the neutral and all the requirements for neutral conductors described in WAC 296-46B-250-6(a) must be met; or

(b) The cable's concentric shield must be effectively grounded to a separate bare copper neutral conductor at all locations where the shield is exposed to personnel contact.

(2) For new systems:

(a) A separate copper neutral must be installed and the cable's concentric shield is effectively grounded to the separate neutral at all locations where the shield is exposed to personnel contact.

(3) In addition to (1) and (2) of this subsection, the following is required:

(a) A minimum of 2 made electrodes, separated by at least 6', must be installed at each existing and new transformer and switching/overcurrent location and connected to the neutral conductor at that location;

(b) At least 1 grounding electrode must be installed and connected to the multigrounded neutral every 400 m (1,300 ft.). The maximum distance between adjacent electrodes must not be more than 400 m (1,300 ft.);

(c) In a multigrounded shielded cable system, the shielding must be grounded at each cable joint that is exposed to personnel contact;

(d) All exposed noncurrent carrying metal parts (e.g., mounting brackets, manhole covers, equipment enclosures, etc.) must be effectively grounded to the neutral conductor; and

(e) An electrical engineer must provide a specific certification to the electrical plan review supervisor in writing that the design of the multiple grounding installation has been reviewed by the electrical engineer and the design is in accordance with the requirements of Chapter 19.28 RCW, this chapter, and normal standards of care. The electrical engineer must stamp the certification document with the engineer's stamp and signature. The document may be in the form of a letter or electrical plans.

~~FPN: WAC 296-46B-250(7)~~

Section 42. Section 21.70.185 of the Kirkland Municipal Code is hereby repealed.

Section 43. Section 21.70.190 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.190 National Electrical Code 300.11 amended—Securing and supporting.**

Article 300.11 of the National Electrical Code is amended ~~and supplemented by the addition of the following text to the end of Article 300.11(A),~~ to read as follows:

**(A) Secured in Place.** Raceways, cable assemblies, boxes, cabinets, and fittings shall be securely fastened in place Where permitted by the Building Official

raceways, cables, or boxes may be supported by wires independent of the ceiling support system under the following conditions:

- (i) The support wires must be independent of the ceiling support systems and be capable of securing and supporting the raceways, cables or boxes without reducing the integrity of the suspended ceiling system;
- (ii) The independent support wires shall be a minimum #12 AWG and adequate to carry the weight and are securely fastened to the building structure and to the ceiling grid;
- (iii) Raceways and/or cables are not larger than 3/4" trade size;
- (iv) No more than 2 raceways or cables may be supported by independent support wires and are secured to the support wires by fittings designed and manufactured for the purpose;
- (v) Where support wires are installed exclusively for telecommunications cables, Class 2, or Class 3 cables the maximum number of cables allowed shall not be more than 1 1/2 inch diameter when bundled together.

~~FPN: WAC 296-46B-300(5)~~

Section 44. Section 21.70.195 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.195 National Electrical Code Article 310.12 amended—Conductor identification.**

Article 310.12 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 310.12(D), to read as follows:

- (D) Each cable operating at over 600 volts and installed on customer owned systems must be legibly marked in a permanent manner at each termination point and at each point the cable is accessible. The required marking must use phase designation, operating voltage, and circuit number if applicable.

~~FPN: WAC 296-46B-110(7)~~

Section 45. Section 21.70.200 of the Kirkland Municipal Code is hereby repealed.

Section 46. Section 21.70.205 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.205 National Electrical Code Article 314.29 amended—Boxes and conduit bodies to be accessible.**

Article 314.29 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the first paragraph of Article 314.29, to read as follows:

Conduit bodies, junction, pull and outlet boxes must be installed so that the wiring contained in them is accessible without removing any part of the building structure,

~~including insulation material. Boxes and conduit bodies shall not be covered with insulation material and shall remain visible and outside of or above the insulation material.~~

~~FPN: WAC 296-46B-314(2)~~

Section 47. Section 21.70.210 of the Kirkland Municipal Code is hereby repealed.

Section 48. Section 21.70.215 of the Kirkland Municipal Code is hereby repealed.

Section 49. Section 21.70.220 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.220 National Electrical Code Article 358.12 amended—Uses not permitted.**

Article 358.12 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 358.12(7), to read as follows:

(7) Installed in direct contact with the earth or in concrete on or below grade.

~~FPN: WAC 296-46B-358~~

Section 50. Section 21.70.225 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.225 National Electrical Code Article 394.12 amended—Uses not permitted.**

Article 394.12 of the National Electrical Code is amended and supplemented by the addition of a new exception to Article 394.12(5), to read as follows:

Exception: Hollow spaces containing existing knob-and-tube wiring may be allowed to remain provided that all of the following conditions are met:

(i) The wiring shall be surveyed by an appropriately licensed electrical contractor who must certify in writing to the Building Official that the wiring is in good condition with no evidence of improper overcurrent protection, conductor insulation failure or deterioration, and with no improper connections or splices. The electrical inspector must inspect all repairs, alterations, or extensions to the electrical system;

(ii) The insulation shall meet Class I specifications as identified in the Uniform Building Code, with a flame spread factor of 25 or less as tested using ASTM E84-81a. Foam insulation may not be used with knob-and-tube wiring;

(iii) All knob-and-tube circuits shall have overcurrent protection in compliance with NEC Table 310.16, 60 degree centigrade, Column C. Overcurrent protection shall be circuit breakers or Type S fuses.

~~FPN: WAC 296-46B-394~~

Section 51. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.227 to read as follows:

**21.70.227 National Electrical Code Article 406 amended – Tamper Resistant Receptacles.**

Article 406 of the National Electrical Code is amended and supplemented by the addition of a Section to be known as Section 406.15, to read as follows:

406.15 Tamper-Resistant Receptacles. Listed tamper-resistant receptacles or listed tamper-resistant receptacle cover plates are required in all licensed day care centers, all licensed children group care facilities and psychiatric patient care facilities where accessible to children five years of age and under. Listed tamper-resistant receptacles are required in psychiatric patient care facilities where accessible to psychiatric patients over five years of age.

Section 52. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.228 to read as follows:

**21.70. 228 National Electrical Code Article 410.04 amended – Bathtub and Shower Areas.**

Section (D) of Article 410.4 of the National Electrical Code is amended to read as follows:

(D) Bathtub and Shower Areas No parts of cord-connected luminaires (fixtures), chain-cable-, or cord-suspended-luminaires (fixtures), lighting track, pendants, or ceiling-suspended (paddle) fans shall be located within a zone measured five feet horizontally and eight feet vertically from the top of the bathtub rim or shower stall threshold. This zone is all encompassing and includes the zone directly over the tub or shower stall. Luminaires (lighting fixtures) located in this zone shall be listed for damp locations, or listed for wet locations where subject to shower spray. These fixtures must be GFCI protected where there are exposed metal parts.

Section 53. Section 21.70.230 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.230 National Electrical Code Article 410.30 amended—Cord-connected lampholders and luminaires.**

Article 410.30 of the National Electrical Code is amended and supplemented by the addition of a new subsection to be known as subsection 410.30(C)(1) (3), to read as follows:

(3) The flexible cord connection must comply with the following:

(1) Connection to a suspended pendant box must utilize an integral threaded hub;

- (2) The length of the cord for a suspended pendant drop from a permanently installed junction box to a suitable tension take-up device must not exceed 1.8 m (6 ft);
- (3) The flexible cord must be supported at each end with an approved cord grip or strain relief connector fitting/device that will eliminate all stress on the conductor connections;
- (4) The flexible cord must be a minimum #14 AWG copper;
- (5) The flexible cord ampacity must be determined in NEC Table 400.5(A) column A;
- (6) The flexible cord must be hard or extra hard usage; and
- (7) A vertical flexible cord supplying electric discharge luminaires must be secured to the luminaire support as per NEC 334.30(A).

FPN: ~~WAC 296-46B-410(2)~~

Section 54. Section 21.70.235 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.235 National Electrical Code Article 422.10 amended—Branch-circuit rating.**

Article 422.10 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of Article 422.10(A), to read as follows:

Water heaters with a rated circuit load in excess of 3,500 watts, but less than 4900 watts, at 208 or 240 volts shall be provided with branch circuit conductors not smaller than #10 AWG copper or equal. Overcurrent protection shall comply with NEC 422.11(E).

FPN: ~~WAC 296-46B-422~~

Section 55. Section 21.70.240 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.240 National Electrical Code Article 450.27 amended—Oil-insulated transformers installed outdoors.**

Article 450.27 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the last paragraph of Article 450.27 to read as follows:

Oil-insulated transformers located adjacent to building(s) or structures shall comply with the following:

- (1) Transformers shall not be located closer than 2.5 m (8 ft) to any part of a building or structure constructed of combustible material including any eaves, overhangs or decks;
- (2) Transformers shall not be located closer than 900 mm (2 ft) to any part of a building or structure constructed of non-combustible material including any eaves,

overhangs or decks and must be outside a line extended vertically from the ends of the eaves, overhangs or rooflines of the building or structure;

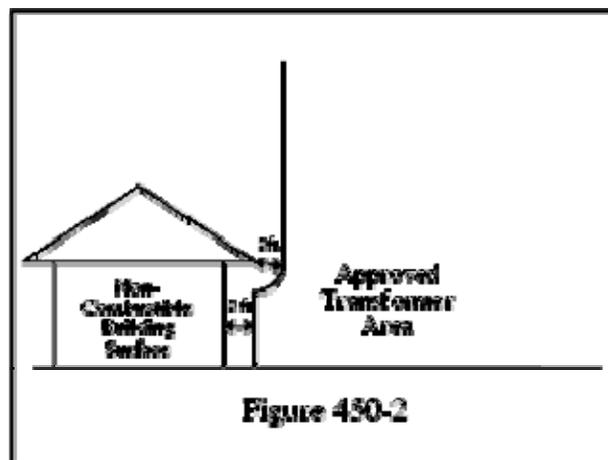
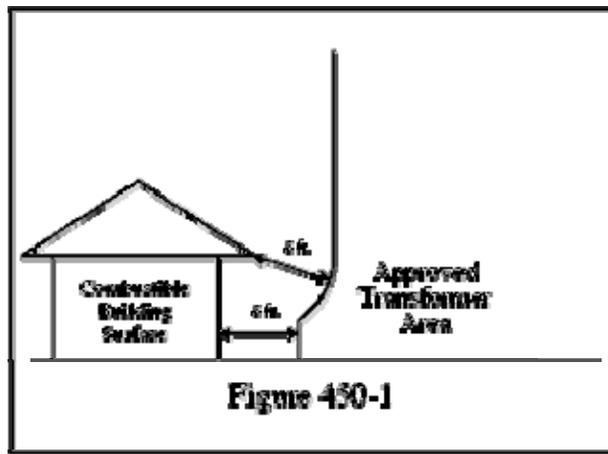
(3) Transformers shall not be located closer than 2.5 m (8 ft) to any part of doors, windows, stairways, ventilation openings, other types of openings of all buildings or structures;

(4) Transformers shall be located such that any oil leaking from the transformer will flow away from the building or structure and will not pool; and

(5) Transformers located in areas subject to vehicular traffic shall be provided with adequate guarding.

(6) Enclosures for total underground oil filled transformers shall not be located closer than 2.5 m (8 ft) to any part of a doorway, window, stairway or fire escape. Adequate space must be maintained above the enclosure so that a boom may be used to lift the transformer from the enclosure.

FPN:-WAC 296-46B-450(1) see also WAC 296-46B-450 Figures 450-1 and 450-2.



Section 56. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.242 to read as follows:

**21.70.242 National Electrical Code Article 501 amended – Sewage Disposal Systems.**

Article 501 of the National Electrical Code is amended and supplemented by the addition of a new Section 501.200, to read as follows:

**501.200 Sewage Disposal Systems.**

(1) Pumping chambers for sewage, effluent, or grinder pumps in on-site and septic tank effluent pump (S.T.E.P.) disposal systems will be considered unclassified when not more than five residential units are connected to the system, residential units are connected to a utility sewage system, or when nonresidential systems have residential loading characteristics and all of the following general installations requirements are complied with:

- (a) The pumping chamber must be adequately vented. Venting may be accomplished through the building or structure plumbing vents where the system venting has been approved by the local jurisdiction authority or by a direct two-inch minimum vent to the atmosphere;
- (b) Equipment that in normal operation may cause an arc or spark must not be installed in any pumping chamber;
- (c) Float switches installed in a pumping chamber must be hermetically sealed to prevent the entrance of gases or vapors; (d) Junction boxes, conduits and fittings installed in the septic atmosphere must be of a noncorrosive type, installed to prevent the entrance of gases or vapors;
- (e) Where a conduit system is installed between the pumping chamber and the control panel, motor disconnect, or power source, an approved sealing method must be installed to prevent the migration of gases or vapors from the pumping chamber, and must remain accessible; and
- (f) Wire splices in junction boxes installed in pumping chambers must be suitable for wet locations.

(2) Residential wastewater loading characteristics in a nonresidential installation:

- (a) For systems that process less than three thousand five hundred gallons of wastewater per day may be certified by:
  - (i) An on-site wastewater designer licensed under chapter 18.210 RCW; or
  - (ii) A professional engineer, engaged in the business of on-site wastewater system design, licensed under chapter 18.43 RCW.
- (b) For systems that process three thousand five hundred gallons or more of wastewater per day may be certified by a professional engineer, engaged in the business of on-site wastewater system design, licensed under chapter 18.43 RCW.

Written documentation must be signed and stamped by the designer or engineer and provided to the electrical inspector prior to inspection.

- (3) Any residential or nonresidential system that has building or structure floor drains being discharged into the system is classified as Class I Division I. Drains from any commercially made tub, shower, basin, sink, or toilet are not considered floor drains.
- (4) Pumping chamber access covers can be covered by gravel, light aggregate, or noncohesive granulated soil, and must be accessible for excavation. Access covers that are buried must have their exact location identified at the electrical panel or other prominent location by an identification plate. The authority having jurisdiction for performing electrical inspections must approve the identification plate location.
- (5) Indoor grinder pumps installed in chambers with less than fifty gallons capacity are not required to meet the requirements of this section, except for the venting requirements in subsection (1)(a) of this section. Indoor grinder pumps installed in chambers with less than fifty gallons capacity are not classified systems as described in Article 500 NEC.
- (6) Secondary treatment effluent pumping chambers such as sand filters are unclassified, and require no special wiring methods.
- (7) Inspection approval is required prior to covering or concealing any portion of the septic electrical system, including the pump. New septic and effluent tanks containing electrical wires and equipment must be inspected and approved prior to being loaded with sewage.

Section 57. Section 21.70.245 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.245 National Electrical Code Article 514.11 amended—Circuit disconnects.**

Article 514.11 of the National Electrical Code is amended and supplemented by the addition of the following text to the last paragraph of Article 514.11(A), to read as follows:

The disconnecting means shall disconnect all conductors of the circuit supplying all station dispensers and/or pumps (including the grounded conductor) simultaneously from the source(s) of supply.

~~FPN: WAC 296-46B-514(2)~~

For multi-circuit installations, an electrically held normally open contactor operated by a push-button or other suitable device may serve as the disconnecting means. The push button or disconnecting device shall not function as the resetting mechanism for the electrically held contactor. The resetting means shall meet the following:

- (1) Located at least 4.5 m (15 ft) or out of sight of the pushbutton; and
- (2) Protected by a suitable cover or guard; and
- (3) Identified with an approved identification plate that is substantially black in color.

FPN: WAC 296-46B-514(4)

The disconnecting means shall be labeled with an identification plate, with letters at least 1" high, as the emergency disconnecting means.

The disconnecting means or operator must be:

- (1) Substantially red in color; and
- (2) For attended facilities—Must be readily accessible and must be located outdoors and within sight of the pump or dispensing equipment it controls; or
- (3) For unattended facilities—Must be readily accessible and must be located within sight, but at least 20' from the pump or dispensing equipment it controls.

FPN: WAC 296-46B-514(5)

Section 58. Section 21.70.250 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.250 National Electrical Code Article 517.30 ~~31~~ amended—  
Emergency systems.**

Article 517.30 ~~31~~ of the National Electrical Code is amended and supplemented by the addition of the following new text to follow the last paragraph of Article 517.30(D)~~1~~, to read as follows:

**(D) Capacity of System** In health care facilities, the following methods must be used to determine adequate capacity and ratings of equipment providing electrical power for the essential electrical systems.

- (1) Systems in new facilities:
  - (a) Emergency system: The emergency branch must consist of 2 branches known as:
    - (i) Life safety system: The feeder conductors and equipment used to supply electrical power to the life safety branch must be determined by summation of the connected loads as determined by Article 220 NEC and may not be subjected to any reduction due to the diversity of the loads. Feeder and equipment will be subject to a 125% multiplier for continuous loads in accordance with Article 220 NEC.
    - (ii) **Critical branch system:** The feeder conductors and equipment must be calculated in accordance with Article 220 NEC, including a level of diversity as determined by such article.
  - (b) **Equipment branch:** The feeder conductors and equipment used to supply electrical power to the equipment branch of the essential electrical system must be calculated in accordance with Article 220 NEC, including a level of diversity as determined by such article.

(c) **Generator sizing:** The rating of the generator(s) supplying electrical power to the essential system of a health care facility must meet or exceed the summation of the loads determined in (a) and (b) of this subsection with no additional demand factors applied. Momentary X-ray loads may be ignored if the generator is rated at least 300% of the largest momentary X-ray load connected.

FPN: WAC 296-46B-517(1)

(2) Existing essential systems in facilities to which additional load is to be added:

(a) **Existing loads:** The existing loads of the separate branches of the essential electrical system may be determined by NEC Article 220.35(1).

(b) **Added loads:** Added loads to the separate branches of the essential electrical system must be determined by subsection (a) of this section.

(c) **Generator sizing:** The rating of the generator(s) supplying electrical power to the essential electrical system must meet or exceed the summation of the loads determined by (a) and (b) of this subsection with no additional demand factors applied.

FPN: WAC 296-46B-517(2)

Section 59. Section 21.70.255 of the Kirkland Municipal Code is hereby repealed.

Section 60. Section 21.70.260 of the Kirkland Municipal Code is hereby repealed.

Section 61. Section 21.70.265 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.265 National Electrical Code Article 553.4 amended—Location of service equipment.**

Article 553.4 of the National Electrical Code is amended and supplemented by amending Article 553.4 to read as follows:

The service equipment for floating buildings and similar facilities shall have a readily accessible service rated disconnect located on the shoreline within sight of the shoreline connection of the dock, wharf or similar structure to which the floating building or similar facility is moored.

FPN: ~~WAC 296-46B-553(1)~~

Section 62. Section 21.70.270 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.270 National Electrical Code Article 553.6 amended—Feeder conductors.**

Article 553.6 of the National Electrical Code is amended and supplemented by the addition of new text to follow the first paragraph of Article 553.6, to read as follows:

Floating buildings or similar facilities shall have a disconnecting means located within sight of each floating building or similar facility. The disconnecting means shall be installed adjacent to but not in or on, the floating building or similar facility.

~~FPN: WAC 296-46B-553(2)~~

Section 63. Section 21.70.275 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.275 National Electrical Code Article 553.7(B) amended—Wiring methods.**

Article 553.7(B) of the National Electrical Code is amended and supplemented by the addition of new text to follow the first paragraph of Article 553.7(B), to read as follows:

Where flexible cables or cords are used they shall comply with Article 555.13(2). Conductors operating in excess of 600 volts, nominal, shall not be installed on floating portions of a floating building or similar facility.

~~FPN: WAC 296-46B-553(3) and (4)~~

Section 64. Section 21.70.280 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.280 National Electrical Code Article 555.1 amended—Scope.**

Article 555.1 of the National Electrical Code is amended and supplemented by amending the last paragraph of Article 555.1 to read as follows:

Private, non-commercial docking facilities constructed or occupied for the use of the owner or residence of the associated single family dwelling are covered by this article.

~~FPN: WAC 296-46B-555(1)~~

Section 65. Section 21.70.285 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.285 National Electrical Code Article 555.5 amended—Transformers.**

Article 555.5 of the National Electrical Code is amended and supplemented by amending the last paragraph of Article 555.5 to read as follows:

Transformers and enclosures shall be specifically approved for the intended location. The bottom of enclosures for transformers shall be located a minimum of 12" above the deck of a dock.

~~FPN: WAC 296-46B-555(2)~~

Section 66. Section 21.70.290 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.290 National Electrical Code Article 555.7 amended—Location of service equipment.**

Article 555.7 of the National Electrical Code is amended and supplemented by amending the last paragraph of Article 555.7 to read as follows:

The service equipment for floating docks or marinas shall be located adjacent to and within sight but not on or in, the floating structure.

~~FPN: WAC 296-46B-555(3)~~

Section 67. Section 21.70.295 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.295 National Electrical Code Article 555.9 amended—Electrical connections.**

Article 555.9 of the National Electrical Code is amended and supplemented by the addition of a new exception to read as follows:

Exception: Connections approved for wet locations.

~~FPN: WAC 296-46B-555(4)~~

Section 68. Section 21.70.300 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.300 National Electrical Code Article 555.10 amended—Electrical equipment enclosures.**

Article 555.10 of the National Electrical Code is amended and supplemented by the addition of a second sentence to Subsection (B), to read as follows:~~the following text to follow the first sentence of subsection (B) of Article 555.10 to read as follows:~~

(B) Location. All enclosures must be corrosion resistant, gasketed enclosures must be arranged with a weep hole to discharge condensation.

~~FPN: WAC 296-46B-555(65)~~

Section 69. Section 21.70.305 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.305 National Electrical Code Article 555.13 amended—Wiring methods and installation.**

Article 555.13 of the National Electrical Code is amended and supplemented by amending the first paragraph of subsection (B)(1) of Article 555.13 to read as follows:

(1) Overhead Wiring. Overhead wiring shall be installed to avoid possible contact with masts and other parts of boats being moored, stored, serviced or moved.

~~FPN: WAC 296-46B-555(7)~~

Section 70. Section 21.70.310 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.310 National Electrical Code Article 555.19 amended—Receptacles.**

Article 555.19 of the National Electrical Code is amended and supplemented by the addition of the following text to follow the first sentence of Article 555.19 to read as follows:

Shore Power Receptacles that provide shore power for boats must be rated not less than 20 amperes and must be single outlet type and must be of the locking and grounding type or pin and sleeve type.

~~FPN: WAC 296-46B-555(8)~~

Section 71. Section 21.70.315 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.315 National Electrical Code Article 555.21 amended—Gasoline dispensing stations—Hazardous (classified) locations.**

Article 555.21 of the National Electrical Code is amended and supplemented by labeling the first paragraph subsection (A) and the addition of new subsection to the first paragraph of Article 555.21 to be known as Article 555.21(B) and 555.21(C), the addition of new subsections to follow the first sentence of Article 555.21 to be known as Article 555.21(A) and 555.21(B), to read as follows:

(B)(A) Boundary classifications.

(1) Class I, Division 1. The area under the dispensing unit is a Class I, Division 1 location. If a dock has one or more voids, pits, vaults, boxes, depressions, or similar spaces where flammable liquid or vapor can accumulate below the dock surface and within 20' horizontally of the dispensing unit, then the area below the top of the dock and within 20' horizontally of the dispensing unit is a Class I, Division 1 location.

~~FPN: WAC 296-46B-Figure 555-1~~

(2) Class I Division 2. The area 18" above the water line and within 20' horizontally of the dispensing unit is a Class I, Division 2 location. If a dock has one or more voids, pits, vaults, boxes, depressions, or similar spaces where flammable liquid or vapor can accumulate below the dock surface and within 20' horizontally of the dispensing unit, then the area to 18" above the top and adjacent to the sides of the dock and within 20' horizontally of the dispensing unit is a Class I, Division 2 location.

~~FPN: WAC 296-46B-Figure 555-2~~

~~FPN: WAC 296-46B-555(9)~~

(B) Portable power cable. Portable power cable will be allowed as a permanent wiring method in Class 1, Division 2 locations when protected from physical damage.

~~FPN: WAC 296-46B-555(9)(b)~~

Section 72. Section 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.317 to read as follows:

**21.70.317 National Electrical Code Article 590.1 amended – Scope.**

Article 590.1 of the National Electrical Code is amended and supplemented by the addition of new sentence to follow the first paragraph of Article 590.1, to read as follows:

For the purposes of this section, any circuit used for construction purposes is considered to be temporary.

Section 73. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.319 to read as follows:

**21.70.319 National Electrical Code Article 590.4(G) amended—General Splices.**

Article 590.4(G) of the National Electrical Code is amended and supplemented by amending the first sentence of Article 590.4(G), to read as follows:

(G) On construction sites, a box shall be required for splices or junction connections where splices of conductors are less than 2.5 m (8 ft) from grade or floor level or where subject to contact from personnel.

Section 74. Section 21.70.320 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.320 National Electrical Code Article 600.3 amended—Listing.**

Article 600.3 of the National Electrical Code is amended and supplemented by the addition of the following new text to follow the first paragraph of Article 600.3, to read as follows:

Electric signs within the scope of Underwriters Laboratories Standards for Electric Signs UL 48, shall be listed. Electric signs not covered under the Standards for Electric Signs UL 48 shall be required to be installed in conformance with this Code or be field evaluated by an accredited electrical products testing laboratory.

~~EPN: WAC 296-46B-600(1) and (7)~~

Section 75. Section 21.70.325 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.325 National Electrical Code Article 600.10 amended—Portable or mobile signs.**

Article 600.10 of the National Electrical Code is amended and supplemented by the addition of a new subsection (C) to Article 600.3, to read as follows:

~~(C) Wet or Damp Location. Portable or mobile signs in wet or damp locations shall comply with 600.10(C)(1) and (C)(2). Each portable or mobile sign shall have a receptacle outlet, which complies with 406.8(B), installed within 1.8 m (6 ft) of the sign.~~

600.10 Portable and Mobile Signs

(A) Support Portable or mobile signs shall be adequately supported and readily movable without the use of tools.

(B) Attachment Plug An attachment plug shall be provided for each portable or mobile sign.

(C) Outdoor locations. Portable or mobile signs in outdoor locations shall comply with 600.10(C)(1) and (C)(2).

(1) A weatherproof receptacle outlet that is weatherproof with the supply cord connected must be installed within six feet of each electrical sign. Extension cords are not permitted to supply portable outdoor signs.

(2) Ground-Fault Circuit Interrupter Portable or mobile signs shall be provided with factory-installed ground-fault circuit-interrupter protection for personnel. The ground-fault circuit interrupter shall be an integral part of the attachment plug or shall be located in the power-supply cord within 300 mm (12 in.) of the attachment plug.

~~FPN: WAC 296-46B-600(5)~~

Section 76. Section 21.70.330 of the Kirkland Municipal Code is hereby repealed.

Section 77. Section 21.70.335 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.335 National Electrical Code Article 600.21 amended—Ballasts, transformers, and electronic power supplies.**

Article 600.21 of the National Electrical Code is amended and supplemented by the addition of a new subsection (G) to Article 600.21, to read as follows:

(G) Outside Awnings. Luminaires installed in outdoor awnings shall be of a type that is suitable for wet locations and be connected by a wiring method suitable for wet locations. Fluorescent luminaires shall be installed so that no part of the luminaire is located closer than 6" to the awning fabric. Incandescent luminaires shall be installed so that no part of the luminaire is located closer than 18" to the awning fabric. Luminaires installed in outside awnings shall be controlled by a disconnect installed in conformance with 600.6.

~~FPN: WAC 296-46B-600(2) and (3)~~

Section 78. Section 21.70.340 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.340 National Electrical Code Article 600.30 amended—Applicability.**

Article 600.30 of the National Electrical Code is amended and supplemented by amending Article 600.30 to read as follows:

Applicability. Part II of this article shall apply to all field-installed skeleton tubing and neon circuit conductors. These requirements are in addition to the requirements in Part I.

~~FPN: WAC 296-46B-600(8)~~

Section 79. Section 21.70.345 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.345 National Electrical Code Article 680.4 amended—Approval of equipment.**

Article 680.4 of the National Electrical Code is amended and supplemented by the addition of the following new text to follow the first paragraph of Article 680.4, to read as follows:

Electrical components which have failed and require replacement shall be replaced with identical products unless the replacement part is no longer available; in which case, a like-in-kind product may be substituted provided the mechanical and grounding integrity of the equipment is maintained.

~~FPN: WAC 296-46B-680(8)~~

Section 80. Section 21.70.350 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.350 National Electrical Code Article 680.12 amended—Maintenance disconnecting means.**

Article 680.12 of the National Electrical Code is amended and supplemented by the addition of a new subsection (A) to Article 680.12, to read as follows:

(A) Location. The maintenance disconnect for a swimming pool, hot tub, spa, or swim spa shall not be located closer than 5' from the inside wall of the pool, hot tub, spa, or swim spa.

~~FPN: WAC 296-46B-680(4)~~

Section 81. Section 21.70.355 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.355 National Electrical Code Article 680.13 new—Field installed equipment.**

Article 680 of the National Electrical Code is amended and supplemented by the addition of a new section to be known as Section 680.13, to read as follows:

680.13 Field Installed Equipment. Field installed electrical equipment for a swimming pool, hot tub, spa or swim spa shall not be located closer than 5' from inside wall of the swimming pool, hot tub, spa or swim spa. The 5' separation may be reduced by the installation of a permanent barrier, such as a solid wall, fixed glass windows or doors, etc. The 5' separation shall be determined by the shortest path or route that a cord can travel from the spa, hot tub, swim spa, or swimming pool to the equipment.

Field installed electrical equipment must meet the following additional requirements:

- (1) Heaters are listed as a “swimming pool heater or a spa heater”;
- (2) Pumps are listed as a “swimming pool pump” or “spa pump” or “swimming pool/spa pump”;
- (3) Other equipment such as panelboards, conduit, and wire are suitable for the environment and comply with the applicable codes;

(4) The field assembly or installation of “recognized components” shall not be permitted.

~~FPN: WAC 296-46B-680(4)~~

Section 82. Section 21.70.360 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.360 National Electrical Code Article 680.40 amended—General.**

Article 680.40 of the National Electrical Code is amended and supplemented by the addition of a new subsection (A) and a new subsection (B) to Article 680.40, to read as follows:

(A) Modular, Self-Contained Spas or Hot Tubs. Equipment assemblies for self-contained spas or hot tubs shall be installed within 1.5 m (5 ft.) from the inside wall of the spa or hot tub. Equipment assemblies shall be listed or field evaluated as a unit with the spa or hot tub.

~~FPN: WAC 296-46B-680(1)~~

(B) Packaged Spa or Hot Tub Equipment Assemblies. Equipment assemblies (skid pack) pre-packaged by a factory shall not be installed closer than 1.5 m (5 ft.) from the inside wall of the spa or hot tub and shall be listed as a package unit.

~~FPN: WAC 296-46B-680(2)~~

Section 83. Section 21.70.370 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.370 National Electrical Code Article 680.70 amended—General.**

Article 680.70 of the National Electrical Code is amended and supplemented by the addition of the following text to the end of the first paragraph, to read as follows:

Hydromassage bathtubs must be listed as a unit and bear a listing mark which reads “Hydromassage bathtub.”

~~FPN: WAC 296-46B-680(6)~~

Section 84. Section 21.70.375 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.375 National Electrical Code Article 700.9 amended—Wiring, emergency systems.**

Article 700.9 of the National Electrical Code is amended and supplemented by amending Article 700.9(A) to read as follows:

(A) Identification. All boxes and enclosures larger than 150 mm (6 in.) by 150 mm (6 in.) (including transfer switches, generators and power panels) for emergency circuits shall be permanently marked with an identification plate that is orange in color so they will be readily identified as a component of the emergency circuit or system. All other device and junction boxes for emergency systems and circuits must be orange in color, both inside and outside.

~~FPN: WAC 296-46B-700(4)~~

Section 85. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new section 21.70.378 to read as follows:

**21.70.378 National Electrical Code 725.54 amended – Installation of Conductors and Equipment in Cables, Compartments, Cable Trays, Enclosures, Manholes, Outlet Boxes, Device Boxes, and Raceways for Class 2 and Class 3 Circuits.**

Article 725.54 of the National Electrical Code is amended to read as follows:

**725.54 Installation of Conductors and Equipment in Cables, Compartments, Cable Trays, Enclosures, Manholes, Outlet Boxes, Device Boxes, and Raceways for Class 2 and Class 3 Circuits.** Conductors and equipment for Class 2 and Class 3 circuits shall be installed in accordance with 334.30 and 725.55 through 725.58.

Section 86. Section 21.70.380 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.70.380 National Electrical Code Article 760.10 amended—Fire alarm circuit identification.**

Article 760.10 of the National Electrical Code is amended and supplemented by the addition of new text to follow the end of the first paragraph, to read as follows:

Device and junction boxes for fire alarm systems other than the surface raceway type shall be red in color, both inside and outside. Power-limited fire protective signaling circuit conductors shall be durably and plainly marked in or on junction boxes or other enclosures to indicate that it is a power-limited fire protective signaling circuit.

FPN: ~~WAC 296-46B-700(3)~~

Section 87. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.385 to read as follows:

**21.70.385 National Electrical Code Article 800.2 amended – Definitions.**

Article 800.2 of the National Electrical Code is amended and supplemented by the addition of the following definition to read as follows:

**"Telecommunications network demarcation point"** means the point or interconnection between the service provider's communications cabling, terminal equipment, and protective apparatus and the customer's premises telecommunications cabling system. The location of this point for regulated carriers is determined by federal and state regulations. The carrier should be contacted to determine the location policies in effect in the area.

Section 88. Chapter 21.70 of the Kirkland Municipal Code is hereby amended by the addition of a new Section 21.70.390 to read as follows:

**21.70.390 National Electrical Code Article 800 amended – Communication Circuits.**

Article 800 of the National Electrical Code is amended and supplemented by the addition of a new Section 800.30 to read as follows:

**800.30 Designation of Telecommunications Network Demarcation Point.**

At the point of telecommunications network demarcation, the telecommunications installer must install an identification plate with the following information:

- (a) "Point of demarcation";
  - (b) Name of telecommunications utility; and
  - (c) Name of customer/end user of the system.
- (3) The telecommunications installer must confer with the telecommunications utility when determining the point of demarcation.

Section 89. Section 21.74.030 of the Kirkland Municipal Code is hereby amended to read as follows:

**21.74.030 General provisions for construction permit fees.**

(a) Scope. These general provisions apply to all permits issued by the fire and building department.

(b) Miscellaneous Inspections and Other Fees. Table 2 is used to calculate fees for miscellaneous inspections and additional plan review.

<b>Table 2—Miscellaneous Inspections and Other Fees</b>			
Type	Per Hour	Minimum Fee	Due
Inspection or plan review outside normal hours (in addition to the normal inspection fee)	\$118.50	2 hours	Within 5 days of notification
Plan review resulting from changes to approved plans (in addition to the normal fees associated with a change in scope of work)	\$79.00	.5 hour	At revision issuance
Energy/Indoor Air Quality Code		\$75.00 + \$.01/square foot	At issuance
Washington State Building Code Council surcharge: building, spa and satellite dish permits		\$4.50	
Multifamily permits		\$4.50 for 1st dwelling unit +	

		\$2.00 each additional unit	
Permit renewals		1/2 the original permit fee	
Reinspection fee (in addition to the normal inspection fee)	\$79.00	1 hour	Within 5 days of notification
Landlord/tenant inspections conducted pursuant to RCW 59.18.115		\$15.00	At submittal
Interdepartmental presubmittal conferences. Fee is applied as a credit towards the plan review fees on complete applications filed within 180 days of the conference. Fee is forfeited if applicant fails to make appointment		\$350.00	At submittal

(c) Building Permits.

(1) Scope. The fees and provisions established here apply to the installation, relocation, addition, demolition, or repair of construction work that requires a permit.

(2) Determination of Value or Valuation. The determination of the value or valuation under any of the provisions of this chapter, unless otherwise noted, will be made on the basis of building valuation data published by a nationally recognized code organization or other valuation criteria approved by the appropriate director. The valuation to be used in computing the plan review and permit fees will be the total value of all construction work, including labor and materials, for which the permit is issued, as well as all finish work, painting, roofing, electrical, plumbing, heating, air conditioning, elevators, fire-extinguishing systems, or any other permanent work or permanent equipment. The “gross area” used in conjunction with the building valuations, means the total areas of all floors—measured from the exterior face, outside dimensions, or exterior column line of a building—including basements, cellars, and balconies but not including unexcavated areas. Where walls and columns are omitted in the construction of a building, such as an open shed or marquee, the exterior wall of the open side or sides will be considered the edge of the roof. When the value is unknown it will be determined by the appropriate director.

(3) Building Permit Fee Schedule. Table 3 is used to calculate the building inspection fee once the determination of value has been made. The inspection fee is due at issuance.

<b>Table 3—Building Inspection Fees Based on Valuation</b>	
<b>Total Valuation</b>	<b>Fee</b>
\$1.00 to \$500.00	<b>\$23.50</b>
\$501.00 to \$2,000	\$23.50 for the first \$500.00 plus \$3.05 for each additional \$100.00 or fraction thereof, to and including \$2,000
\$2,001 to \$25,000	\$69.25 for the first \$2,000 plus \$14.00 for each additional \$1,000 or fraction thereof, to and including \$25,000
\$25,001 to \$50,000	\$391.75 for the first 25,000 plus \$10.10 for each additional \$1,000 or fraction thereof, to and including \$50,000
\$50,001 to \$100,000	\$643.75 for the first \$50,000 plus \$7.00 for each additional \$1,000 or fraction thereof, to and including \$100,000
\$100,001 to \$500,000	\$993.75 for the first \$100,000 plus \$5.60 for each additional \$1,000 or fraction thereof, to and including \$500,000
\$500,001 and up	\$3,233.75 for the first \$500,000 plus \$4.75 for each additional \$1,000 or fraction thereof

(4) Plan Review Fees. When the plans and/or specifications describing the proposed construction are reviewed by the building official, the fee will be sixty-five percent of the building inspection fee as shown on Table 3. A plan review deposit is due at submittal, and any excess of the deposit over the plan review fee owed will be credited to the issuance fees. If the deposit is insufficient to cover the plan review fee, the applicant will pay the amount of the insufficiency at the time of issuance.

(5) State Building Code Fee. The state building code fee is collected at issuance for the state on all building, spa, satellite dish, antenna, and demolition permits at the rate of four dollars and fifty cents each. The fee for multifamily building permits is four dollars and fifty cents for the first unit and two dollars for each additional unit. The fee is due at issuance.

(6) Single-Family Combination New Construction Permits. The fee for the mechanical and plumbing permits of a single-family, new construction permit are each eight percent of the building inspection fee. The fee for the electrical permit is nine and one-half percent of the inspection fee. These fees are due at issuance and are in addition to the building inspection fee.

(7) Fees for Sign Permits. Table 4 is used to calculate fees for sign permits. The plan review fee is due at submittal and the inspection fee is due at issuance.

(8) Fees for Moving Buildings. Table 5 is used to calculate fees for moving buildings. The fee is due at issuance.

<b>Table 4—Sign Permits</b>	
	Fee
Plan Review	
Nonilluminated signs (each sign)	Table 3—minimum fee \$40.00
Illuminated signs (each sign)	Table 3—minimum fee \$79.00
Inspection Fees	
Marquee or building mounted sign (each sign)	Table 3—minimum fee \$40.00
Freestanding or pole mounted sign (each sign)	Table 3—minimum fee \$65.00

<b>Table 5—Moving Buildings</b>		
Application Filing Fee		
Move Type	Fee	
Class I & II	\$100.00	
Class III & IV	\$75.00	
Inspection Fee—Class I or II only		
Distance from City Hall		
Up to 10 miles	\$130.00	
Over 10 miles	\$130.00 plus \$1.00/mile	

Right-of-Way Inspection Fee		
Dimensional Combinations	Normal Business Hours	After Hours
1	\$55.20	\$81.05
2	\$110.40	\$162.05
3 or more	\$55.20/hour	\$81.05/hour

(d) Electrical Permits.

(1) Scope. The fees established here apply to the installation, relocation, addition, or repair of electrical work that requires a permit.

(2) Electrical Permit Fee Schedule. Table 6 is used to calculate inspection fees for the installation, replacement, relocation, or repair of each electrical service, system, circuit, appliance and other electrical work once the determination of value has been made. Valuation is determined based on the prevailing fair market value of the materials, labor, and equipment needed to complete the work.

<b>Table 6 Section I—Electrical Inspection Fees Based on Valuation</b>	
Total Valuation	Fee
Up to \$250.00	\$45.00
\$251.00 to \$2,000	\$45.00 for the first \$250.00 plus \$7.48 per \$100.00 or fraction thereof
\$2,001 to \$25,000	\$176.00 for the first \$2,000 plus \$16.50 per \$1,000 or fraction thereof
\$25,001 to \$50,000	\$555.50 for the first \$25,000 plus \$14.90 per \$1,000 or fraction thereof
\$50,001 to \$100,000	\$928.00 for the first \$50,000 plus \$10.10 per \$1,000 or fraction thereof
\$100,001 or above	\$1,433 for the first \$100,000 plus \$8.70 per \$1,000 or fraction thereof
<b>Table 6 Section II—Low Voltage Electrical Inspection Fees for Security, Telephone and Computer Wiring</b>	

Total Valuation	Fee
Up to \$2,000	\$45.00
\$2,001 to \$25,000	\$176.00 for the first \$2,000 plus \$16.50 per \$1,000 or fraction thereof x 25%
\$25,001 to \$50,000	\$555.50 for the first \$25,000 plus \$14.90 per \$1,000 or fraction thereof x 25%
\$50,001 to \$100,000	\$928.00 for the first \$50,000 plus \$10.10 per \$1,000 or fraction thereof x 25%
\$100,001 or above	\$1,433 for the first \$100,000 plus \$8.70 per \$1,000 or fraction thereof x 25%

(3) Electrical Plan Review Fee. When submittal documents are required by Section 21.70.090, a plan review fee shall be collected at submittal of the electrical permit. Said plan review fee shall be twenty percent of the electrical permit fee. The plan review fees specified in this subsection are separate fees from the permit fees shown in Table 6. When submittal documents are incomplete or changed so as to require additional plan review or when the project involves deferred submittal items, an additional plan review fee shall be charged at the rate of seventy-nine dollars per hour.

(4) Miscellaneous Electrical Inspection Fees. Table 7 is used to calculate permit fees for miscellaneous electrical permits. The fees are due at issuance.

<b>Table 7—Miscellaneous Electrical Inspection Fees</b>		
Type	Fee	
Carnivals—including art and street fairs, haunted houses, amusement rides, and other temporary events	Base fee	— \$79.00
	Per concession	— \$20.00
	Maximum fee	— \$250.00
Signs—new circuit installation (for electrical connection. A separate sign permit is required)	\$65.00	

Portable Classrooms and Mobile Home Service	\$79.00	
Swimming Pools, Hot Tubs, Spas, and Saunas (for electrical connection. A separate building and/or plumbing permit is also required)	\$79.00	
Temporary Power	\$65.00	1–200 amperes
	\$110.00	201–400 amperes
	Table 6	over 400 amperes

(e) Mechanical Permits.

(1) Scope. The fees established here apply to the installation, relocation, addition, or repair of mechanical work that requires a permit.

(2) Wiring. The fees established in this subsection do not include the electrical wiring, which requires a separate permit.

(3) New One- and Two-Family Dwelling Inspection Fee Schedule. Table 8 is used to calculate the fees for miscellaneous single-family mechanical permits. The fees are due at issuance.

<b>Table 8—Mechanical Inspection Fees—One- and Two-Family Dwellings</b>	
Type	Fee
Air conditioners with or without duct work	\$29.00 for each dwelling
Appliance vents	\$7.25 per vent
Furnace—up to and including 100,000 B.T.U.s—including duct work, piping and thermostat wiring	\$29.00
Furnace—over 100,000 B.T.U.s—including duct work, piping, and thermostat wiring	\$38.00
Gas piping only—no fixture installation	\$29.00 per permit

Gas appliances with gas piping	\$29.00 each appliance
Heat pumps with or without duct work	\$29.00 for each dwelling
Minimum permit fee	\$29.00
Permit issuance fee	\$5.00
Wood stoves or heaters including gas piping	\$21.00

(4) Commercial and Multifamily Inspection Fee Schedule. Table 9 is used to calculate inspection fees for the installation, replacement, relocation, or repair of each commercial heating, ventilation, air-conditioning, or freezing unit or system, and other mechanical equipment once the determination of value has been made. Valuation is determined based on the prevailing fair market value of the materials, labor, and equipment needed to complete the work. The inspection fee is due at issuance.

<b>Table 9—Mechanical Permit Fees Based on Valuation</b>	
Total Valuation	Fee
Up to \$1,000	\$45.00
\$1,001 to \$100,000	\$45.00 for the first \$1,000 plus \$16.00 for each additional \$1,000 or fraction thereof to and including \$100,000
\$100,001 and above	\$1,612 for the first \$100,000 plus \$14.00 for each additional \$1,000 or fraction thereof

(5) Plan Review Fee. When plans and/or specifications describing the mechanical installation are reviewed by the building official, the fee is twenty-five percent of the fee calculated for the mechanical permit based on such plans and/or specifications. The plan review fee is due at submittal and is in addition to the permit fee.

(f) Plumbing Permits.

(1) Scope. The fees established here apply to the installation, relocation, addition, or repair of plumbing work that requires a permit.

(2) Fixtures. For the purposes of this chapter, “fixture” means and includes any appliance which connects to water, drain, or vent.

(3) Fee Schedule. Table 10 is used to calculate plumbing fees. The plan review fees are due at issuance and are in addition to the inspection fee.

<b>Table 10—Plumbing Inspection Fees</b>
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	Fee	Due At
Permit issuance fee	\$5.00	Issuance
Minimum permit fee	\$29.00	Issuance
Each plumbing fixture on one trap or a set of fixtures on one trap (including water, drainage piping and backflow protection therefor)	\$9.50	Issuance
Rainwater systems—per drain (inside building)	\$9.50	Issuance
For each water heater and/or vent	\$9.50	Issuance
For each industrial waste pretreatment interceptor including its trap and vent, excepting kitchen-type grease interceptors functioning as fixture traps	\$9.50	Issuance
For each installation, alteration or repair of water piping and/or water treating equipment, each	\$9.50	Issuance
For each repair or alteration of drainage or vent piping, each fixture	\$9.50	Issuance
For each lawn sprinkler system on any one meter including backflow protection devices therefor	\$9.50	Issuance
For each backflow preventer not included in above item:		Issuance
2-inch diameter and smaller	\$9.50	
over 2-inch diameter	\$19.00	
For repiping domestic water lines within existing structures:		Issuance

Single-family	\$20.00	
Multifamily	\$20.00/unit	
For each medical gas piping system serving one to five inlet(s)/outlet(s) for a specific gas	\$85.00	Issuance
For each additional medical gas inlet(s)/outlet(s)	\$5.00	Issuance

(4) Plan Review Fee. When plans and/or specifications describing the plumbing installation are reviewed by the building official, the fee is sixty-five percent of the fee calculated for the plumbing permit based on such plans and/or specifications. The plan review fee is due at submittal and is in addition to the permit fee.

(g) Land Surface Modification Permit Fees.

(1) Scope.

(2) Plan Review Fee. Table 11 is used to calculate the plan review fee on land surface modification permits. The plan review fee is due at submittal.

<b>Table 11—Grading Plan Review Fee</b>	
	Fee
1,000 cubic yards or less	\$79.00
1,001 to 10,000 cubic yards	\$158.00
10,001 to 100,000 yards	\$158.00 for the first 10,000 cubic yards, plus \$24.50 for each additional 10,000 cubic yards or fraction thereof
100,001 to 200,000 cubic yards	\$269.75 for the first 100,000 cubic yards, plus \$13.25 for each additional 10,000 cubic yards or fraction thereof
200,001 cubic yards or more	\$402.25 for the first 200,000 cubic yards, plus \$7.25 for each additional 10,000 cubic yards or fraction thereof

(3) Grading Inspection Fee Schedule. Table 12 is used to calculate fees for clearing and grading inspections. The grading inspection fee is due at issuance of the permit.

<b>Table 12—Grading Inspection Fees</b>
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	Fee
50 cubic yards or less	\$39.50
51 to 100 cubic yards	\$79.00
101 to 1,000 cubic yards	\$79.00 for the first 100 cubic yards, plus \$17.50 for each additional 100 cubic yards or fraction thereof
1,001 to 10,000 cubic yards	\$194.50 for the first 1,000 cubic yards, plus \$14.50 for each additional 1,000 cubic yards or fraction thereof
10,001 to 100,000 cubic yards	\$325.00 for the first 10,000 cubic yards, plus \$66.00 for each additional 10,000 cubic yards or fraction thereof
100,001 cubic yards or more	\$919.00 for the first 100,000 cubic yards, plus \$36.50 for each additional 10,000 cubic yards or fraction thereof

(h) Fire Prevention Fees.

(1) Scope. The fees established here apply to development services by the fire prevention office of the fire department.

(2) Review Fee Schedule. Table 13 is used to calculate the fees for the bureau of fire prevention review and inspection of applications.

<b>Table 13—Fire Prevention Review and Inspection Fees</b>			
Type	Hourly Rate	Minimum	Due At
Flammable or combustible liquid tank	\$79.00	2 hours	Issuance
Temporary membrane structures	\$79.00	1 hour	Issuance
Recreational fires	\$79.00	1 hour	Issuance
Plan review <sup>a</sup>	\$79.00	$\frac{1}{2}$ –1 hour	Issuance

<sup>a</sup>This fee is charged when the scope of work requires fire review.

(3) Fire Protection Sprinkler Systems. Table 14 is used to calculate permit fees for water and chemical nozzle systems. The permit fee is due at issuance.

<b>Table 14 Section I—New Fire Protection Sprinkler Systems</b>	
<b>Size</b>	<b>Fee</b>
1 to 100 heads	\$330.00
101 to 200 heads	\$410.00
201 to 300 heads	\$500.00
301 or more heads	\$500.00 for the first 300 and \$50.00 per 100 devices or fraction thereof
<b>Table 14 Section II—NFPA 13D Systems (SFR)</b>	
1 to 40 heads	\$180.00
41 or more heads	\$240.00
<b>Table 14 Section III—Risers or Supplies</b>	
Per riser <sup>1</sup>	\$25.00
Per supply (post/wall indicator valve, double detector check valve, connection) <sup>2</sup>	<u>\$25.00</u> \$410.00

<sup>1</sup> One “supply” shall consist of a post or wall indicator valve, a double detector check valve assembly, and a fire department connection (one each).

<sup>2</sup> One “riser” shall consist of an interior zone supply with all accompanying trim with flow switch or pressure switch. It may be either a stand alone vertical riser, one vertical riser of a manifold system, or where zones are controlled at floors, one floor control valve and all accompanying trim and flow switch.

<b>Table 14 Section IV—Tenant Improvement or Modification of Fire Sprinkler Systems</b>	
1 to 5 heads	\$110.00
6 to 10 heads	\$150.00

11 to 20 heads	\$200.00
21 to 40 heads	\$260.00
41 to 100 heads	\$330.00
101 to 200 heads	\$410.00
201 to 300 heads	\$500.00
301 or more heads	\$500.00 for the first 300 plus \$50.00 per 100 devices or fraction thereof
<b>Table 14 Section V—New Fire Suppression System Other than Sprinklers (e.g., Hood and Duct, FM200, etc.)</b>	
1 to 20 heads	\$160.00
21 to 40 heads	\$200.00
41 or more heads	\$200.00 for the first 40 plus \$40.00 per each 40 additional devices or portion thereof
<b>Table 14 Section VI—Tenant Improvement or System Modification to Fire Suppression System Other than Sprinklers (e.g., Hood and Duct, FM200, etc.)</b>	
1 to 5 heads	\$100.00
6 to 10 heads	\$120.00
11 to 20 heads	\$160.00
21 or more	\$160.00 for the first 20 plus \$40.00 per each 20 additional

heads	devices or portion thereof
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(4) Fire Alarm Systems. Table 15 is used to calculate permit fees for fire alarm systems. The permit fee is due at issuance.

<b>Table 15 Section I—New Fire Alarm or Detection System Devices</b>	
1 to 100 devices	\$330.00
101 to 200 devices	\$410.00
201 or more devices	\$410.00 for the first 200 devices plus \$50.00 per 100 devices or fraction thereof
<b>Table 15 Section II—Tenant Improvement of Fire Alarm or Detection System Devices</b>	
1 to 5 devices	\$110.00
6 to 10 devices	\$150.00
11 to 20 devices	\$200.00
21 to 40 devices	\$260.00
41 to 100 devices	\$330.00
101 to 200 devices	\$410.00
201 or more devices	\$410.00 for the first 200 devices plus \$50.00 per 100 devices or fraction thereof
<b>Table 15 Section III—New Fire Alarm Monitoring System—In Addition to Fees in Sections I or II</b>	
FACP	\$150.00

Transmitter	\$150.00
FACP and Transmitter	\$200.00
<b>Table 15 Section IV—Replace Fire Alarm Monitoring System and/or Components—In Addition to Fees in Section II</b>	
FACP	\$110.00
Transmitter	\$110.00
FACP and Transmitter	\$120.00

Section 90. If any provision of this ordinance or its application to any person or circumstance is held invalid, the remainder of the ordinance, or the application of the provision to other persons or circumstances is not affected.

Section 91. This ordinance shall be in force and effect five days from and after its passage by the Kirkland City Council and publication pursuant to Section 1.08.107, Kirkland Municipal Code in the summary form attached to the original of this ordinance and by this reference approved by the City Council.

Passed by majority vote of the Kirkland City Council in open meeting this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

Signed in authentication thereof this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

\_\_\_\_\_  
MAYOR

Attest:

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City Clerk

Approved as to Form:

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City Attorney

PUBLICATION SUMMARY  
OF ORDINANCE NO. 4017

AN ORDINANCE OF THE CITY OF KIRKLAND RELATING TO MODIFICATIONS TO TITLE 21 OF THE KIRKLAND MUNICIPAL CODE REGARDING BUILDING AND CONSTRUCTION.

SECTION 1. Amends Section 21.04.010 of the Kirkland Municipal Code by updating the National Electrical Code used from the 2002 edition to the 2005 edition.

SECTION 2. Amends Section 21.06.020 of the Kirkland Municipal Code by updating the National Electrical Code used from the 2002 edition to the 2005 edition.

SECTION 3. Amends Section 21.06.085 of the Kirkland Municipal Code by updating the National Electrical Code used from the 2002 edition to the 2005 edition.

SECTION 4. Amends Section 21.06.210 of the Kirkland Municipal Code as to when electrical permits are required.

SECTION 5. Amends Section 21.06.215 as to when permits will not be required.

SECTION 6. Amends Section 21.06.255 of the Kirkland Municipal Code provide for the expiration of electrical permits as well as mechanical and plumbing permits.

SECTION 7. Amends Section 21.08.110 to delete the sentence which provides that a land surface modification permit does not include the construction of retaining walls or other structures.

SECTION 8. Amends Chapter 21.40 of the Kirkland Municipal Code by adding a new Section 21.40.005 that clarifies which swimming pools are governed by Chapter 21.40.

SECTION 9. Amends Section 21.70.010 of the Kirkland Municipal Code to adopt the 2005 edition of the National Electrical Code and associated standards.

SECTION 10. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.027 that addressees electrical requirements for moved buildings.

SECTION 11. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.033 that addressees examination of equipment for safety.

SECTION 12. Amends Section 21.70.040 of the Kirkland Municipal Code to provide that material, devices, appliances and equipment not exempted in state law must conform to applicable recognized standards.

SECTION 13. Amends Section 21.70.045 of the Kirkland Municipal Code to provide that certain equipment must meet minimum electrical safety standards.

SECTION 14. Amends Section 21.70.055 of the Kirkland Municipal Code to provide that flash protection marking must meet ANSI standards.

SECTION 15. Amends Section 21.70.060 of the Kirkland Municipal Code regarding identification plate or label for means of disconnection.

SECTION 16. Amends Section 21.70.065 of the Kirkland Municipal Code regarding further identification of markings for means of disconnection.

SECTION 17. Amends Section 21.70.070 of the Kirkland Municipal Code regarding ground fault circuit interrupter protection for personnel.

SECTION 18. Amends Section 21.70.075 of the Kirkland Municipal Code regarding further ground fault circuit interrupter protection for personnel.

SECTION 19. Amends Section 21.70.080 of the Kirkland Municipal Code regarding the requirement of branch circuits.

SECTION 20. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.082 regarding arc fault circuit interrupter protection.

SECTION 21. Amends Section 21.70.085 of the Kirkland Municipal Code regarding ground fault protection of equipment.

SECTION 22. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.087 regarding lighting loads for specified occupancies.

SECTION 23. Amends Section 21.70.090 of the Kirkland Municipal Code regarding optional calculations for determining existing loads.

SECTION 24. Amends Section 21.70.095 of the Kirkland Municipal Code regarding locations for feeder disconnects, panelboards, subpanels and similar electrical equipment.

SECTION 25. Amends Section 21.70.100 of the Kirkland Municipal Code regarding further location of feeder disconnecting means.

SECTION 26. Amends Section 21.70.105 of the Kirkland Municipal Code regarding number of services for separate buildings.

SECTION 27. Amends Section 21.70.110 of the Kirkland Municipal Code regarding further number of services as it relates to transient voltage surge suppressors.

SECTION 28. Amends Section 21.70.115 of the Kirkland Municipal Code regarding service masts as support.

SECTION 29. Amends Section 21.70.120 of the Kirkland Municipal Code regarding wiring methods for 600 volts, nominal or less.

SECTION 30. Amends Section 21.70.125 of the Kirkland Municipal Code regarding service disconnects for outside and inside locations.

SECTION 31. Amends Section 21.70.130 of the Kirkland Municipal Code regarding service disconnection means for bathroom electrical.

SECTION 32. Amends Section 21.70.135 of the Kirkland Municipal Code regarding service equipment overcurrent protection.

SECTION 33. Amends Section 21.70.140 of the Kirkland Municipal Code regarding ground fault protection of equipment.

SECTION 34. Amends Section 21.70.145 of the Kirkland Municipal Code regarding service entrance conductors.

SECTION 35. Amends Section 21.70.150 of the Kirkland Municipal Code regarding common service to two or more buildings.

SECTION 36. Amends Section 21.70.155 of the Kirkland Municipal Code regarding grounding of electrode systems.

SECTION 37. Amends Section 21.70.160 of the Kirkland Municipal Code regarding resistance of rod, pipe and plate electrodes.

SECTION 38. Amends Section 21.70.165 of the Kirkland Municipal Code regarding bonding of piping systems and exposed structural steel.

SECTION 39. Amends Section 21.70.170 of the Kirkland Municipal Code regarding grounding of systems and circuits.

SECTION 40. Amends Section 21.70.175 of the Kirkland Municipal Code regarding multiple grounding.

SECTION 41. Amends Section 21.70.180 of the Kirkland Municipal Code regarding multigrounded neutral conductors.

SECTION 42. Repeals Section 21.70.185 of the Kirkland Municipal Code.

SECTION 43. Amends Section 21.70.190 of the Kirkland Municipal Code regarding securing and support.

SECTION 44. Amends Section 21.70.195 of the Kirkland Municipal Code regarding conductor identification.

SECTION 45. Repeals Section 21.70.200 of the Kirkland Municipal Code.

SECTION 46. Amends Section 21.70.205 of the Kirkland Municipal Code regarding boxes and conduit bodies to be accessible.

SECTION 47. Repeals Section 21.70.210 of the Kirkland Municipal Code.

SECTION 48. Repeals Section 21.70.215 of the Kirkland Municipal Code.

SECTION 49. Amends Section 21.70.220 of the Kirkland Municipal Code regarding uses not permitted.

SECTION 50. Amends Section 21.70.225 of the Kirkland Municipal Code regarding further uses not permitted.

SECTION 51. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.227 regarding tamper resistant receptacles.

SECTION 52. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.228 regarding bathtub and shower areas.

SECTION 53. Amends Section 21.70.230 of the Kirkland Municipal Code regarding cord connected lampholders and luminaires.

SECTION 54. Amends Section 21.70.235 of the Kirkland Municipal Code regarding branch circuit ratings.

SECTION 55. Amends Section 21.70.240 of the Kirkland Municipal Code regarding oil insulated transformers installed outdoors.

SECTION 56. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.242 regarding sewage disposal systems.

SECTION 57. Amends Section 21.70.245 of the Kirkland Municipal Code regarding circuit disconnects.

SECTION 58. Amends Section 21.70.250 of the Kirkland Municipal Code regarding emergency systems.

SECTION 59. Repeals Section 21.70.255 of the Kirkland Municipal Code.

SECTION 60. Repeals Section 21.70.260 of the Kirkland Municipal Code.

SECTION 61. Amends Section 21.70.265 of the Kirkland Municipal Code regarding locations of service equipment.

SECTION 62. Amends Section 21.70.270 of the Kirkland Municipal Code regarding feeder conductors.

SECTION 63. Amends Section 21.70.275 of the Kirkland Municipal Code regarding wiring methods.

SECTION 64. Amends Section 21.70.280 of the Kirkland Municipal Code regarding scope to include private, non-commercial docking facilities.

SECTION 65. Amends Section 21.70.285 of the Kirkland Municipal Code regarding transformers.

SECTION 66. Amends Section 21.70.290 of the Kirkland Municipal Code regarding location of service equipment for floating docks or marinas.

SECTION 67. Amends Section 21.70.295 of the Kirkland Municipal Code regarding electrical connections.

SECTION 68. Amends Section 21.70.300 of the Kirkland Municipal Code regarding electrical equipment enclosures.

SECTION 69. Amends Section 21.70.305 of the Kirkland Municipal Code regarding wiring methods and installation for overhead wiring.

SECTION 70. Amends Section 21.70.310 of the Kirkland Municipal Code regarding shore power receptacles.

SECTION 71. Amends Section 21.70.315 of the Kirkland Municipal Code regarding gasoline dispensing stations hazardous locations.

SECTION 72. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.317 regarding scope to include circuits used for construction purposes as temporary.

SECTION 73. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.319 regarding general splices on construction sites.

SECTION 74. Amends Section 21.70.320 of the Kirkland Municipal Code regarding listing of electrical signs.

SECTION 75. Amends Section 21.70.325 of the Kirkland Municipal Code regarding portable or mobile signs.

SECTION 76. Repeals Section 21.70.330 of the Kirkland Municipal Code.

SECTION 77. Amends Section 21.70.335 of the Kirkland Municipal Code regarding ballasts, transformers and electronic power supplies.

SECTION 78. Amends Section 21.70.340 of the Kirkland Municipal Code regarding applicability to all field installed skeleton tubing and neon circuit conductors.

SECTION 79. Amends Section 21.70.345 of the Kirkland Municipal Code regarding approval of equipment.

SECTION 80. Amends Section 21.70.350 of the Kirkland Municipal Code regarding locations maintenance disconnecting means for swimming pool, hot tub or spa.

SECTION 81. Amends Section 21.70.355 of the Kirkland Municipal Code regarding field installed electrical equipment for a swimming pool, hot tub or spa.

SECTION 82. Amends Section 21.70.360 of the Kirkland Municipal Code regarding equipment assemblies for spas or hot tubs.

SECTION 83. Amends Section 21.70.370 of the Kirkland Municipal Code regarding hydromassage bathtubs.

SECTION 84. Amends Section 21.70.375 of the Kirkland Municipal Code regarding wiring emergency systems.

SECTION 85. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.378 regarding installation of conductors and equipment in cables.

SECTION 86. Amends Section 21.70.380 of the Kirkland Municipal Code regarding fire alarm circuit identification.

SECTION 87. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.385 providing a definition for telecommunications network demarcation point.

SECTION 88. Amends Chapter 21.70 of the Kirkland Municipal Code by adding a new Section 21.70.390 regarding communications circuits.

SECTION 89. Amends Section 21.74.030 of the Kirkland Municipal Code regarding construction permit fees.

SECTION 90. Provides a severability clause for the ordinance.

SECTION 91. Authorizes publication of the ordinance by summary, which summary is approved by the City Council pursuant to Section 1.08.017 Kirkland Municipal Code and establishes the effective date as five days after publication of summary.

The full text of this Ordinance will be mailed without charge to any person upon request made to the City Clerk for the City of Kirkland. The Ordinance was passed by the Kirkland City Council at its meeting on the \_\_\_\_\_ day of \_\_\_\_\_, 2005.

I certify that the foregoing is a summary of Ordinance \_\_\_\_\_ approved by the Kirkland City Council for summary publication.

\_\_\_\_\_  
City Clerk

Ord\05 Bldg pubsum 2