

ORDINANCE NO. 6013

AN ORDINANCE TO AMEND FGC CHAPTER 10, ARTICLE IX NATIONAL ELECTRICAL CODE, BY ADOPTING THE 2014 NATIONAL ELECTRICAL CODE WITH LOCAL AMENDMENTS

WHEREAS, the Building Code Review and Appeals Commission reviewed the 2014 edition of the National Electrical Code and the amendments thereto and recommends adoption of the 2014 National Electrical Code with local amendments; and

WHEREAS, the City Council accepts the recommendations of the Building Code Review and Appeals Commission,

NOW, THEREFORE, BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF FAIRBANKS, ALASKA, as follows:

Section 1. Fairbanks General Code Chapter 10, Article IX, is hereby repealed and re-enacted as follows:

ARTICLE IX. NATIONAL ELECTRICAL CODE

Sec. 10-276. Adoption.

The National Electrical Code, 2014 Edition, as published by the National Fire Protection Association, is hereby adopted by the City of Fairbanks.

Sec. 10-277. Amendments.

The City of Fairbanks Local Amendments to the 2014 National Electrical Code is hereby adopted. Copies of the Local Amendments to the 2014 National Electrical Code shall be made available at the Building Department and published online at the City of Fairbanks website.


Section 2. The effective date of this Ordinance is the 11th day of June 2016.



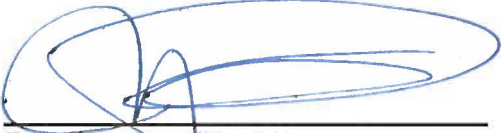
John Eberhart, Mayor

AYES: Cleworth, Pruhs, Rogers, Huntington, Matherly, Gatewood
NAYS: None
ABSENT: None
ADOPTED: June 6, 2016

ATTEST:


D. Danyielle Snider, CMC, City Clerk

APPROVED AS TO FORM:


Paul Ewers, City Attorney
FEW

CITY OF FAIRBANKS

Local Amendments to the 2014 National Electrical Code

(Adopted by Ordinance No. 6013)

The National Electrical Code, 2014 Edition, is hereby amended as follows:

Article 210.8 Ground-Fault Circuit-Interrupter Protection for Personnel. Add subsection ~~(D)~~(E) to read as follows:

~~(D)~~(E) Day Care Facilities.

In all day care facilities as defined by the current building codes adopted by the City of Fairbanks all 125-volt, single phase, 15- and 20- ampere receptacles installed where accessible to children shall have ground-fault circuit-interrupter (GFCI) protection.

Article 210.52 Dwelling Unit Receptacle Outlets. Add subsection ~~(I)~~(J) to read as follows:

(J) Parking spaces.

For each dwelling unit and mobile home, there shall be at least one exterior weather proof duplex receptacle on a separate 20- ampere ~~{G.F.C.I.}~~ circuit adjacent to on-site parking locations.

Article 220.52 Small Appliance, Laundry and Car Head bolt Heater Loads - Dwelling Unit. Add subsections (C) and (D) to read as follows:

(C) Car Head bolt Heater Loads.

A feeder load of not less than 1500 volt-amperes shall be included for each individual 20 ampere branch circuit required by Article 210.52(e). This requirement also applies to Article 220.30, 220.31, 220.32, 220.33.

(D) Commercial Parking Areas.

The minimum calculated load for **each** car head bolt heater receptacles is 1200 volt amperes. If the service, feeder and branch circuit overcurrent protective devices are located outside then 1200 volt amperes for the first 30 spaces, 1000 volt amperes for the next 30 spaces and 800 volt amperes for each space over 60 will be allowed.

Article 230.9(A) Clearances. Amend as follows:

Service conductors installed as open conductors or multi-conductor cable without an overall outer jacket shall have a clearance of not less than 900 mm (3 ft) from windows that are designed to be opened, doors, porches, balconies, ladders, stairs, fire escapes, building attic gable vents, or similar locations.

Article 230.11 Service Detail Requirements. Add a new section as follows:

Service installations shall comply with the details of Exhibit #1 Residential Service.

Article 230.12 Temporary Power Service. Add a new section as follows:

Temporary Services shall comply with the details of Exhibit #2 Temporary Service.

Article 230.24(B) Vertical Clearance for Overhead Service Conductors. Amend as follows:

(1) 3.81 m (12.5 ft) - at the electrical service entrance to buildings, also at the lowest point of the drip loop of the building electrical entrance, and above areas or sidewalks accessible only to pedestrians, measured from final grade or other accessible surface only for overhead service conductors supported on and cabled together with a grounded bare messenger where the voltage does not exceed 150 volts to ground

(2) 3.81 m (12.5 ft) - over residential property and driveways, and those commercial areas not subject to truck traffic where the voltage does not exceed 300 volts to ground.

Article 230.26 Point of Attachment. Amend as follows:

In no case shall this point of attachment be less than [~~3.81 m~~] 4.27 m [~~(12.5 ft)~~] (14 ft.) above finished grade.

Article 230.28 Service Masts as Supports. Add subsections [(A)], [(B)], (C), (D), (E), (F) to read as follows:

[(A)](C) General.

When the overhead service is installed on the eave side of a structure with a pitched roof, the service mast conduit shall extend through the roof.

~~(B)~~(D) Conduit Size.

The conduit size shall be a minimum of two inches rigid metal or intermediate metal conduit and must extend at least three feet above the roof surface. If couplings are used in the installation, they must be located below the roof overhang.

~~(C)~~(E) Guyed Support.

The service mast conduit when installed through the roof shall be guyed to the roof with a minimum 5/8 inches galvanized closed eyebolt using a minimum of 1/8 inches stranded stainless steel wire aircraft cable with four approved clamps. If the service mast conduit extends above the roof over four feet in length, then a double V-guy installation is required.

~~(D)~~(F) Protection of Meter.

When the eave overhang is less than eighteen inches, additional protection shall be required to protect the meter from snow and ice damage by a minimum of an 18 gauge galvanized metal hood or equivalent extending over the meter.

Article 230.41 Insulation of Service Entrance Conductors. Add the following:

Individual ungrounded service entrance conductors shall be XHHW, RHW, or R-Type insulation approved for exterior use. No other insulation is acceptable.

Article 230.54(F) Drip Loops. Add the following:

For 100 ampere service, leave 18 inches of conductors, for 200 ampere and larger, leave 24 inches of conductors extending out of the weather head.

Article 230.70(A)(1) Location. Add the following:

If installed inside, a means to disconnect all conductors in the building from the service entrance conductors shall be provided on the building exterior

Article 230.70(A)(3) Remote Control. Add the following subsections:

- (a) The remote control device shall be a key switch approved by the Fire Department.
- (b) The key switch shall shut down the electrical power for the entire building.
- (c) If a facility is equipped with a generator, a key switch shall be installed to shut down the generator in the event of an emergency. This switch shall be located adjacent to the electrical service remote control key switch or the electrical service disconnect.
- (d) Key switch locations shall be marked with a visible sign indicating "Fire Department Use Only" and "Generator Disconnect".

Article 230.70(A)(4) Add subsection (4):

(4) Natural and Liquid Petroleum Gas. Electrical equipment (i.e.: service disconnect, electrical meters, receptacles, etc.) shall be installed not less than 5 feet from any LPG tank installation and related regulators, etc. or NG meter and regulators. If the gas equipment is installed less than 5 feet to the electrical equipment, then the electrical equipment shall meet the requirements of Article 500 and 501 of the National Electrical Code.

Article 230.70(B) Marking. Add the following:

When there is more than one meter on any single service, they shall be permanently identified with numbers painted on the meter base at least one inch in height or identified by other approved means that corresponds to the number on the unit served.

Article 250.66(B) Connections to Concrete Encased Electrodes. Amend the following:

Where the grounding electrode conductor is connected to a concrete encased electrode as permitted in 250.52(A)(3) a #4 AWG bare copper conductor consisting of at least 6.0 m (20 ft) in length shall be installed in the footing for a 100-200 ampere service. A #2 AWG bare copper conductor shall be installed in the footing for 225-300 ampere service. A 1/0 AWG bare copper conductor is required for a 350-400 ampere service. A 2/0 AWG bare conductor is required for a 450-500 ampere service and 3/0 AWG bare conductor is required for services greater than 500 amperes.

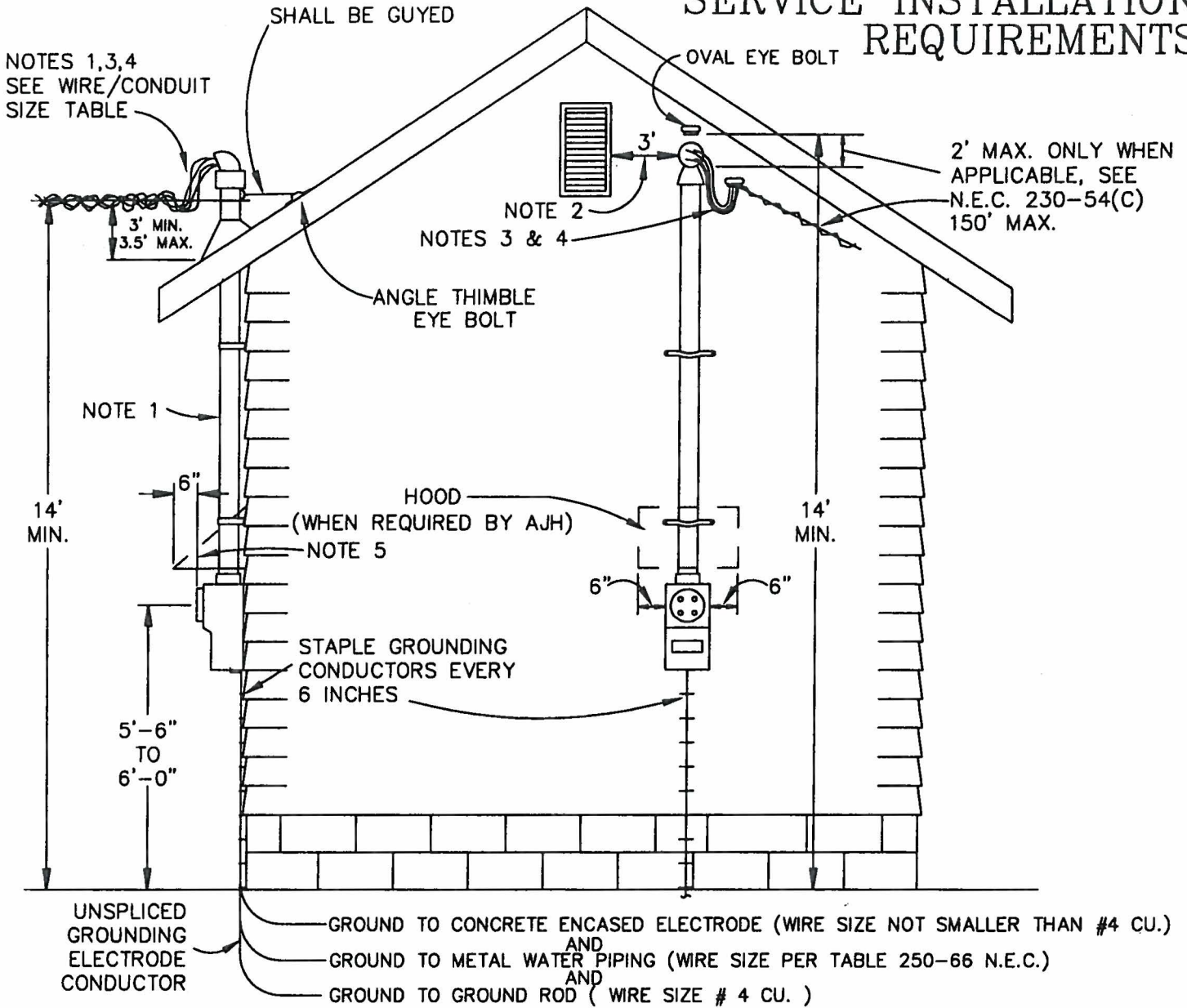
Article 410.36(B) Suspended Ceilings. Add the following exception:

Exception: When the light fixtures are supported seismically in accordance with the current building codes adopted by the City of Fairbanks the above supports are not required.

Article 700.12(B) Generator Set. Add subsection (7):

(7) The generator shall have an exterior disconnect located adjacent to service disconnect to prevent the generator from starting when the normal power is turned off in case of an emergency or fire. A weatherproof sign shall be installed adjacent to the service disconnect that reads: Emergency Generator Disconnect Switch.

SERVICE INSTALLATION REQUIREMENTS



NOTES:

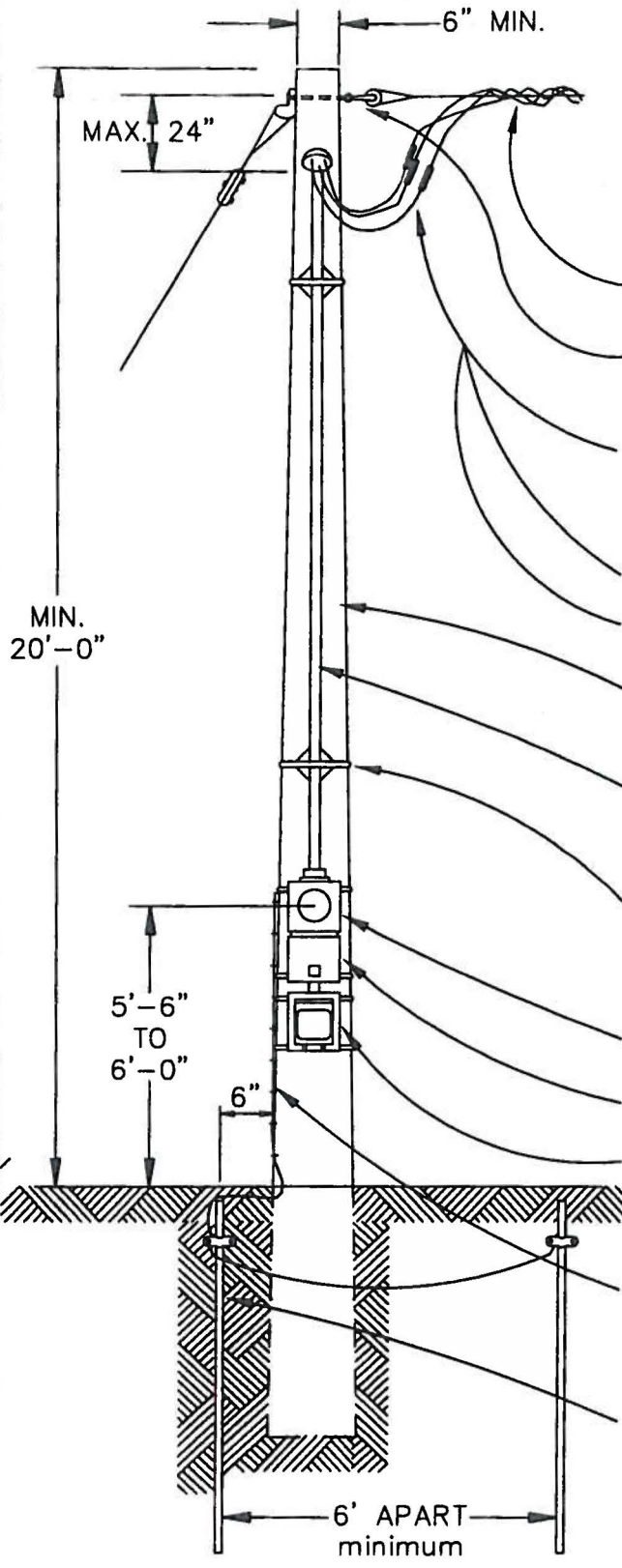
1. SERVICE ENTRANCE. MASTS THAT EXTEND ABOVE THE ROOF LINE SHALL BE MINIMUM 2" RIGID STEEL CONDUIT, AND SHALL BE GUYED USING MINIMUM 1/8" AIRCRAFT CABLE, APPROVED CLAMPS AND NUTTED 5/8" CLOSED EYE BOLT. (N.E.C. 230-28 AMENDMENT)
2. CONDUCTORS SHALL BE ABOVE OR AT LEAST 36" FROM ANY BUILDING OPENING. BUILDING OPENINGS SHALL INCLUDE VENTS. (N.E.C. 230-9 AMENDMENT)
3. INDIVIDUAL UNGROUNDED SERVICE ENTRANCE CONDUCTORS SHALL BE INSULATED WITH XHHW, RHW OR R-TYPE INSULATION APPROVED FOR EXTERIOR USE. NO OTHER INSULATION IS ACCEPTABLE. (N.E.C. 230-41 AMENDMENT)
4. CONNECTIONS AT SERVICE HEAD. FOR 100 AMP SERVICE LEAVE 18" TAILS, FOR 200 AMP SERVICE LEAVE 24" TAILS. AND STRIP NEUTRAL TAILS TO THE WEATHERHEAD. (N.E.C. 230-54 AMENDMENT)
5. EXTERIOR ELECTRICAL SERVICES SHALL BE PLACED ON THE GABLE END OF THE STRUCTURE WHERE POSSIBLE. WHEN SERVICES ARE INSTALLED ON THE EAVE SIDE OF THE BUILDING, THE MAST SHALL EXTEND ABOVE THE ROOF. IN THE EVENT THE EAVE IS NOT 18" IN LENGTH THE METER AND DISCONNECT SHALL BE PROTECTED BY AN 18 GAUGE GALVANIZED HOOD. THE HOOD SHALL EXTEND AT LEAST 6" PAST THE METER FACE AND 6" ON EACH SIDE OF THE SERVICE EQUIPMENT. (N.E.C. 230-28 AMENDMENT)

*6. REVISED IN CONJUNCTION WITH THE 2014 N.E.C. AS ADOPTED BY THE CITY OF FAIRBANKS.

WIRE/CONDUIT SIZE TABLE		
**WIRE MUST BE COPPER OR #1 AND LARGER ALUMINUM		
SERVICE SIZE (MIN.)	MIN. WIRE SIZE	MIN. CONDUIT SIZE
100 AMP	#3 COPPER**	1-1/4"
200 AMP	3/0 COPPER**	2"

TEMPORARY SERVICE INSTALLATION REQUIREMENTS

OTHER METHODS MAY BE USED ONLY WITH WRITTEN APPROVAL PRIOR TO INSTALLATION.



- UTILITY SERVICE DROP MAXIMUM 150'; SEE NOTE #1
- GALVANIZED EYEBOLT WITH EYE-NUT, MINIMUM 5/8" DIAMETER.
- INSULATION SHALL BE XHHW, RHW, OR APPROVED EXTERIOR R-TYPE INSULATION. NO OTHER INSULATION IS ACCEPTABLE. SEE WIRE/CONDUIT SIZE TABLE.
- LEAVE 18" TAILS
- COPPER OR #1 AND LARGER ALUMINUM CONDUCTOR.
- CUSTOMER OWNED PRESSURE TREATED POLE, MINIMUM OF 25'.
- RIGID CONDUIT IMC OR GRC.
- POLE BRACKETS SUCH AS "LILA ROBIN LR-MS POLE HUGGER", OR EQUAL.
- MINIMUM 60 AMP RAIN TIGHT SERVICE EQUIPMENT.
- MAIN DISCONNECT.
- RAIN TIGHT CONSTRUCTION OUTLET. N.E.C. REQUIRES GROUND FAULT PROTECTION ON 15, 20, AND 30 AMP RECEPTACLES.
- TIE #4 COPPER GROUND WIRE TO NEUTRAL AND SERVICE ENCLOSURE AT DISCONNECT AND TO WELL OR GROUND ROD. STAPLE ON POLE EVERY 6".
- MINIMUM TWO 5/8"x8' CU. GROUND ROD WITH APPROVED CONNECTOR DRIVEN IN TO UNDISTURBED EARTH.

NOT TO BE USED FOR ENERGIZING PERMANENT WIRING SYSTEMS. CONSTRUCTION SERVICE APPROVED FOR CONSTRUCTION POWER ONLY. SERVICE WILL BE DISCONNECTED 12 MONTHS AFTER CONNECT OR IF PERMANENT WIRING IS ENERGIZED

NOTES:

1. IF A SERVICE DROP EXCEEDS 50', POLE MUST BE GUYED. SERVICE DROP SHALL NOT EXCEED 150'. WEATHERHEAD SHALL BE 18' ABOVE GRADE.
- *2. REVISED IN CONJUNCTION WITH THE 2014 N.E.C. AS ADOPTED BY THE CITY OF FAIRBANKS.

WIRE/CONDUIT SIZE TABLE		
**WIRE MUST BE COPPER OR #1 AND LARGER ALUMINUM		
SERVICE SIZE (MIN.)	MIN. WIRE SIZE	MIN. CONDUIT SIZE
60 AMP	#6 COPPER**	1"
100 AMP	#3 COPPER**	1-1/4"