

ORDINANCE NO. _____

1 AN ORDINANCE amending Chapter 23.10 of the Lincoln Municipal Code, the
 2 Lincoln Electrical Code, by amending Section 23.10.010 to adopt the 2008 Edition of the National
 3 Electrical Code; amending Section 23.10.140 relating to electrical permits to allow for routine
 4 maintenance without a permit; amending Section 23.10.160 relating to installation by homeowner
 5 for branch circuit and feeder wiring; amending Section 23.10.190 relating to requests for inspections
 6 by homeowners; amending Section 23.10.290 relating to wiring methods requiring separate
 7 conductors for grounding, PVC coating for metallic raceways, and installation of alternate energy
 8 sources; amending Section 23.10.300 relating to service disconnections and metering requirements;
 9 and repealing, in their entirety, Sections 23.10.310, 23.10.312, 23.10.320, 23.10.323, 23.10.324,
 10 23.10.327, 23.10.329, 23.10.330, 23.10.331, 23.10.332, 23.10.333, 23.10.335, 23.10.337, 23.10.340,
 11 23.10.345, 23.10.347, 23.10.350, 23.10.351, 23.10.353, 23.10.355, 23.10.380, 23.10.385, 23.10.390,
 12 23.10.393, 23.10.395, 23.10.400, 23.10.402, 23.10.410, 23.10.417, 23.10.420, 23.10.425, 23.10.430,
 13 23.10.440, 23.10.457, 23.10.458, 23.10.459, 23.10.460, 23.10.470, 23.10.475, 23.10.480, 23.10.490,
 14 23.10.495, 23.10.500 to delete specific sections of the 2002 National Electrical Code previously
 15 amended or deleted in the Lincoln Electrical Code; amending Section 23.10.510 relating to code
 16 coordination with the International Codes; and repealing Sections 23.10.010, 23.10.140, 23.10.160,
 17 23.10.190, 23.10.290, 23.10.300, and 23.10.510 of the Lincoln Municipal Code as hitherto existing.

18 BE IT ORDAINED by the City Council of the City of Lincoln, Nebraska:

19 Section 1. That Section 23.10.010 of the Lincoln Municipal Code be amended to
 20 read as follows:

21 **23.10.010 Adoption of the National Electrical Code, ~~2002~~ 2008 Edition.**

22 Except as hereinafter provided by specific changes, the National Electrical Code (~~2002~~ 2008
 23 edition), hereinafter the National Electrical Code, sponsored by the National Fire Protection
 24 Association under the auspices of the American National Standards Institute is hereby adopted.
 25 Three printed copies of this document have been filed in the office of the Director of Building and

1 Safety of the City of Lincoln for the use of and examination by the public. The City Clerk shall
2 maintain one printed copy of this document, in book form, with the official records of the city.

3 Section 2. That Section 23.10.140 of the Lincoln Municipal Code be amended to
4 read as follows:

5 **23.10.140 Permits Required.**

6 (a) No person, firm, or corporation other than a registered master electrician,
7 journeyman, or apprentice of an electrical contracting company, registered maintenance electricians,
8 or homeowners under certain conditions set forth in Section 23.10.160 shall install, alter, or add to
9 any electrical equipment, and no such installation, alteration or addition shall be made without first
10 obtaining a permit therefor from the Building Official. Permits may be issued only to registered
11 master electricians, registered maintenance electricians, and homeowners in accordance with Section
12 23.10.160.

13 EXCEPTION: Licensed State of Nebraska fire alarm installers registered with the City of
14 Lincoln may be issued permits for the installation of the low voltage portion of fire alarm systems.

15 (b) No permit, license, or registration shall be required to execute any of the classes of
16 electrical work as follows:

17 (1) ~~Minor repair work such as, but not limiting the generality of the term to,~~
18 ~~repairing flush and snap switches, replacing fuses, changing lamp sockets and receptacles, taping~~
19 ~~joints, repairing drop cords, and repairing appliances, motors, and other devices when not attached~~
20 ~~to permanent wiring; the wiring which is an integral part of machinery, appliances, or vehicles;~~
21 ~~experimental work of a temporary nature in testing laboratories of electrical shops, educational~~
22 ~~institutions and the like; wiring supplied with current by approved bell-ringing transformers; and~~
23 ~~the attaching of portable appliances to existing outlets. Routine maintenance requiring the repair or~~
24 replacement of existing electrical apparatus and equipment of the same size and type for which no
25 changes in wiring are made. The replacement of permanently wired fixed-in-place appliances
26 including, but not limited to, furnaces, air conditioners, garbage disposals, dishwashers and water
27 heaters shall not be considered as routine maintenance and shall be subject to permit requirements.

1 (2) The installation, alteration, or repair of electrical equipment for the operation
2 of signals or the transmission of intelligence by wire.

3 EXCEPTION: The requirements of Article NEC 300.22 shall apply to such wiring.

4 (3) The installation, alteration, or repair of electrical equipment installed by or
5 for an electricity supply agency for the use of such agency in the generation, transmission,
6 distribution, or metering of electricity.

7 (4) Installation, alteration, or repair made to electrical equipment, where such
8 equipment operates at a voltage not exceeding fifty volts, except emergency alarm systems and other
9 installations specifically referred to in this code. Regardless of operating voltage, all conductors of
10 any system shall comply with the requirements of NEC Article 300.22. This shall not be construed
11 as preemption of National Electrical Code Requirements for low voltage systems such as those
12 found in NEC Articles 411, 480, and Chapters 5, 6, 7, and 8.

13 (5) Repairs made by and within the authority granted to the holders of
14 maintenance registrations as provided in this code.

15 (6) Any work involved in the manufacture, test, or repair of electrical materials,
16 devices, appliances, or apparatus, but not including any permanent wiring other than that required
17 for testing purposes.

18 (7) Repair or replacement of motors on fixed approved appliances of the same
19 type and rating in the same location.

20 (8) The adjustment, repair, or maintenance of appliances designed to consume
21 natural or artificial gas, fuel oils, or coal; provided, this exception shall not permit the replacement
22 of an existing motor with one of a different rating.

23 The exceptions enumerated above shall not be construed to exempt any
24 person, firm, or corporation from compliance with the standards prescribed by this code for the
25 installation of electrical equipment, or from inspection as provided herein.

26 (c) Electrical equipment installed and/or connected to a source of electrical power by a
27 nonregistered person or a registered person or homeowner without a permit, or causing a registered

1 or nonregistered person to install and/or connect electrical equipment to a source of electrical power
2 in violation of the provisions of the ordinance shall constitute a violation of this code and be subject
3 to the penalty of Section 23.10.090 of this code.

4 Section 3. That Section 23.10.160 of the Lincoln Municipal Code be amended to
5 read as follows:

6 **23.10.160 Installation by Homeowner.**

7 ~~Citizens~~ Individuals may install electrical branch circuit and feeder wiring only in a stand
8 alone detached single family ~~residence~~ dwelling which they own and occupy ~~or will occupy~~ as their
9 ~~home~~ principal residence. All electrical wiring installed by homeowners shall be for themselves,
10 without compensation or pay from or to any other person for such labor or installation. Such
11 installation by a homeowner shall comply with the requirements of this code, and the homeowner
12 in exercising this privilege shall not constitute or be considered as an electrical contractor. The
13 homeowner shall be required to file plans, demonstrate knowledge of code requirements, apply for
14 and secure a permit, pay the required permit fees, and call for all inspections in the manner provided
15 by this code.

16 The Department of Building and Safety may deny the issuance of electrical permits to
17 homeowners under any one of the following circumstances:

18 (a) There is reason to believe the proposed electrical work will be done by someone other
19 than the owner;

20 (b) There is reason to believe the property is or will be sold on the completion of the
21 electrical work. For the purposes of this subsection (b) there is a rebuttable presumption that the
22 property is or will be sold on the completion of the electrical work if the applicant, within the prior
23 five years, has sold his or her home and the electrical work for said home was performed by the
24 applicant under a homeowner's permit.

25 (c) Previous homeowner electrical permits have not been completed in compliance with
26 this code;

27 (d) The owner is temporarily residing in the home.

1 If the homeowner is found to have at any time violated or falsified any of the above items,
2 they shall immediately cease all electrical work, forfeit the homeowner's permit, and obtain a
3 registered electrical contractor to complete the electrical work in compliance with the code.

4 Appointments for required inspections shall not be made with the exception that inspection
5 requests may be scheduled for a given day. The inspection shall be performed on the day requested
6 by the homeowner. The homeowner, if unable to be present during the normal working hours of a
7 day, shall be required to supply a key or other means of access for the inspection to be performed.
8 Homeowners may be granted one reinspection per permit without reinspection fee charge. Further
9 reinspections will require payment of the reinspection fee provided for in the electrical permit fee
10 schedule.

11 Section 4. That Section 23.10.190 of the Lincoln Municipal Code be amended to
12 read as follows:

13 **23.10.190 Inspections, Request for.**

14 Inspections of the installation, alteration, repair, or addition to electrical equipment under
15 the provisions of this code shall be requested by the person, firm, corporation or authorized
16 representative holding the permit for such work. The Building Official may require that every
17 request for inspection be filed at least one working day before the inspection is desired. Such
18 request may be in writing, by electronic transmission, or by telephone, at the option of the Building
19 Official. Requests for inspection must include the permit number, electrical contractor name,
20 address and suite number, if applicable, and means of access. Appointments for required inspections
21 shall not be made with the exception that inspection requests may be scheduled for a given day. It
22 shall be the duty of the person requesting inspection of electrical equipment to provide access to and
23 a means for proper inspection of such equipment. The person requesting final inspection shall
24 determine that the electrical equipment is operational before requesting such final inspection. In the
25 event that the registered master electrician or registered maintenance electrician, identified under
26 Section 23.10.140 as authorized to take out a permit, is intending for the owner of the property to
27 request a final inspection, said registered master electrician or registered maintenance electrician

1 shall provide the owner of the property with information on requesting a city inspection. The owner
2 of the property shall have the duty of requesting the final inspection and providing access and a
3 means for proper inspection.

4 Section 5. That Section 23.10.290 of the Lincoln Municipal Code be amended to
5 read as follows:

6 **23.10.290 Wiring Methods.**

7 (a) Approved metallic conduit, nonmetallic conduit, electric nonmetallic tubing,
8 manufactured wiring systems specifically approved by the authority having jurisdiction, and
9 approved wireway or cable tray shall be used in the installation of all electrical equipment in or on
10 all other buildings, structures, tents, and premises than those enumerated in subsection (b) of this
11 section. All ~~metallic wire enclosures~~ wiring methods shall be electrically and mechanically con-
12 tinuous and ~~grounded~~ shall incorporate a separate conductor for the purposes of equipment
13 grounding. The above wiring methods shall also be acceptable for those occupancies listed in
14 subsection (b) of this section. Flexible metal conduit may be used for fished-in connections, where
15 flexibility or sound isolation is required and for extensions of approved raceway systems where their
16 installation is not possible because of building requirements. Flexible metal conduit shall not be
17 used as a general wiring method. ~~Where exposed to weather or in wet or damp locations, liquid-~~
18 ~~tight flexible metallic or nonmetallic conduit or heavy gauge steel flexible metal conduit shall be~~
19 ~~used with the appropriate conductors and listed connectors. Assemblies specifically listed or~~
20 ~~approved as a grounding means shall be allowed.~~ All other flexible metal or liquid-tight flexible
21 metal raceways shall incorporate an equipment grounding conductor. Plastic fiber ducts and strips
22 may be used for surface extensions. ~~Where electrical nonmetallic tubing is installed through steel~~
23 ~~studs, grommets shall be installed.~~

24 It is the intent of this section to require a substantial, approved raceway system in which
25 conductors may be installed.

1 EXCEPTION (1): Fire alarm systems of fifty volts or less and installed in
2 accordance with NEC Article 760 shall not be required to be installed in a conduit
3 system, except if required to comply with NEC Article 300.22.

4 (b) Nonmetallic sheathed cable may be used for the installation of all concealed
5 electrical equipment within the following buildings:

6 (1) Single-family dwellings;

7 (2) Private garages ~~with six parking stalls or less,~~ which are used in connection
8 with ~~private or multi-family~~ single family dwellings;

9 (3) Outbuildings used in connection with a private ~~or multi-family~~ dwelling, such
10 as tool houses, hobby shops, and similar structures;

11 (4) Buildings now wired with metallic protected wiring which will be used in the
12 future for dwelling purposes only;

13 (5) Multi-family dwellings (apartment houses) ~~not exceeding three stories above~~
14 ~~grade,~~ where each dwelling unit within such dwelling structure has individual distribution panels
15 located in each unit; however, all feeders or subfeeders to each unit shall be installed in rigid metal
16 conduit, intermediate metal conduit, electrical metallic tubing, or rigid nonmetallic conduit.

17 EXCEPTION: In existing structures only, service equipment and sub-
18 panels may be located in a common area accessible to all occupants, provided
19 individual dwelling unit home runs are routed in a raceway between the sub-
20 panel and the unit.

21 A mounted or free standing microwave unit shall not be considered permanent provisions
22 for cooking as required to meet the definition of dwelling unit.

23 The word "concealed" as used in this section shall mean protected from mechanical injury
24 by being installed between or through holes bored in rafters, studding, floor joists, or being fished
25 in the air voids in masonry walls or partitions of buildings.

26 ~~(c) — Nonmetallic boxes. Where nonmetallic boxes are used with open wiring or concealed~~
27 ~~knob-and-tube wiring, the conductors shall enter the box through individual holes. Where flexible~~

1 ~~tubing is used to encase the conductors, the tubing shall extend from the last insulating support to~~
2 ~~no less than one-fourth inch inside the box. Where nonmetallic sheathed cable is used, the cable~~
3 ~~assembly, including the sheath, shall extend into the box no less than one-fourth inch through a~~
4 ~~nonmetallic sheathed cable knockout opening. Where nonmetallic sheathed cable is used with~~
5 ~~nonmetallic boxes and where the cable is fastened within eight inches of the box measured along~~
6 ~~the sheath and where the sheath extends into the box no less than one-fourth inch, securing the cable~~
7 ~~to the box shall not be required. In all other instances, individual conductors and cables shall be~~
8 ~~secured to nonmetallic boxes.~~

9 ~~(d) Underground conductors shall be installed as follows: Direct burial conductors, 30~~
10 ~~inches minimum; non-metallic raceways, a minimum of 18 inches of cover; asphaltum protected or~~
11 ~~PVC coated rigid or IMC conduits, a minimum of 6 inches of cover.~~

12 ~~(c) Electrical Metallic Tubing (EMT) shall not be used for direct earth burial. Where~~
13 ~~metallic raceways are installed in direct earth contact they shall incorporate either PVC coating or~~
14 ~~asphaltum protection.~~

15 ~~Exception 1. A minimum 24 inches of cover shall be provided for any raceway~~
16 ~~installed beneath streets, roads, alleys, driveways, parking lots, or runways.~~

17 ~~Exception 2. The authority having jurisdiction may grant special permission for~~
18 ~~lesser depths when location, construction parameters, etc., provide the same level of safety.~~

19 ~~(e) Overhead conductors running from pole to pole, building to building, or pole to~~
20 ~~building, may be installed as open conductors approved for that purpose by the Building Official.~~

21 ~~(f) Branch circuits or feeders supplying power to sub-panels, appliances, or other~~
22 ~~utilization equipment shall incorporate a separate equipment grounding means.~~

23 ~~(g d) Branch circuit or feeder conductors No. 6 and smaller where installed within~~
24 ~~structures shall be copper.~~

25 ~~(h e) Alternate energy sources: Prior to the installation of any electrical generating~~
26 ~~equipment, whether or not said equipment is capable of co-generation, plans and specifications for~~

1 such shall be submitted to and approved by the Building Official and the power supplier. These
2 installations shall not be performed by individuals applying for a permit under Section 23.10.160.

3 NOTE: Persons wishing to install such equipment should first contact their power
4 supplier and the City of Lincoln Department of Building and Safety.

5 Two permanent plaques shall be installed, one at the main disconnect for the normal
6 power supply and one at the meter location of the power supplier stating the location of the
7 disconnecting means for the alternate energy source.

8 (f) For the purpose of conductor continuity the phase, grounded, and grounding
9 conductors shall not be dependent upon device connections such as lamp holders, receptacles, etc.

10 (g) All electrical equipment located within six feet horizontally, to a maximum of eight
11 feet vertically above a hydromassage bathtub shall be GFCI protected for personnel. All pool, hot
12 tub, and associated equipment shall also have GFCI protection for personnel.

13 (h) All luminaires installed over tub and shower spaces up to a maximum of eight feet
14 above the bathtub rim or shower threshold shall be GFCI protected for personnel.

15 (i) Special permission where used by the National Electrical Code shall mean the
16 consent of the authority having jurisdiction.

17 (j) Enforcement of Section 210.12 of the National Electrical Code shall be congruent
18 with the requirements of the State of Nebraska's Electrical Division.

19 Section 6. That Section 23.10.300 of the Lincoln Municipal Code be amended to
20 read as follows:

21 **23.10.300 Services, Disconnects, Sub-feeders and Metering Requirements.**

22 Service disconnecting means shall contain the proper overcurrent devices, connected in
23 series with the service conductors to adequately protect all ungrounded conductors from overload.
24 These disconnects shall have a fault current interrupting rating equal to or greater than the computed
25 available fault current. It shall be the responsibility of the electrical contractor to obtain the value
26 of the fault current available from either the project design engineer or the power supplier.
27 Approved service equipment consisting of fuses or circuit breakers installed in line-meter-fuse

1 sequence shall be used on all installations requiring main fusing of 200 amperes or less and less than
2 250 volts nominal. The defined utility point for underground residential single family services both
3 temporary and permanent shall be the line side of the meter socket. For overhead single family
4 residential services both temporary and permanent the utility point shall be the utility connection
5 at the service head..

6 ~~EXCEPTION: CT metering as required by the power supplier such as for a 100-amp,~~
7 ~~277/480 volt service.~~

8 ~~Approved dead front distribution panels and fuse centers shall be used in all cases.~~

9 ~~Service entrance conductors and panel sub-feeder conductors except the equipment ground~~
10 ~~shall all be the same size and have an ampacity in accordance with NEC Tables 310.16 through~~
11 ~~310.19 and applicable notes for the maximum rating of the overcurrent device(s) or service.~~

12 ~~EXCEPTION (1): For center-grounded delta systems only, where a fused switch is provided~~
13 ~~for the service disconnect, a reduction in size of the high leg conductor with a corresponding~~
14 ~~reduction in overcurrent protection shall be permitted.~~

15 ~~EXCEPTION (2): Service entrance and sub-feeder conductors may utilize a reduced neutral~~
16 ~~conductor, provided the plans which are submitted for review prior to the issuance of a building~~
17 ~~permit include adequate information to justify reduced neutral ampacity.~~

18 ~~Self-contained 400-amp single phase meter sockets shall be permitted to supply two 200-amp~~
19 ~~panels for residential use only. These meter sockets shall be permitted to be used for commercial~~
20 ~~occupancies only if the combined rating of the main breakers is less than 320 amps.~~

21 The service disconnect shall be mounted as close to the point of service entrance as possible.
22 Each building or occupancy within a building having a service rated 200 amperes or less shall have
23 one main disconnect. When more than one service or main disconnect is provided, per building or
24 multi-occupancy building, said services or disconnects shall be placed immediately adjacent to each
25 other, unless otherwise specifically authorized by the Building Official, and shall be clearly labeled
26 in a permanent manner as to their voltage characteristics and the area or portion of the building or
27 premises that is being served by each disconnect. If located inside a building, and not mounted on

1 the outside wall directly opposite the point of entrance, the service conductors shall be enclosed in
2 conduit or raceway encased with two inches of concrete, four inches of brick, or eight inches of
3 hollow block or tile from the point of entrance to the service disconnect enclosure.

4 Liquidtight flexible metal conduit, flexible metal conduit, service entrance cables, liquidtight
5 flexible nonmetallic conduit, and electrical nonmetallic tubing shall not be used as the wiring
6 method for the installation of service entrance conductors.

7 Service entrance conductors and panel sub-feeder conductors except the equipment ground
8 shall all be the same size and have an ampacity in accordance with NEC Tables 310.16 through
9 310.19 and applicable notes for the maximum rating of the overcurrent device(s) or service.

10 EXCEPTION (1): For center-grounded delta systems only, where a fused switch is
11 provided for the service disconnect, a reduction in size of the high leg conductor with a
12 corresponding reduction in overcurrent protection shall be permitted.

13 EXCEPTION (2): Service entrance and sub-feeder conductors may utilize a reduced
14 neutral conductor, provided the plans which are submitted for review prior to the issuance
15 of a building permit include adequate information to justify reduced neutral ampacity.

16 EXCEPTION (3): For single family dwellings where the service lateral conductors
17 are not installed by a utility.

18 Main bonding jumpers and grounding electrode connections as a general rule shall be
19 installed and made in the main service disconnecting means. In all cases the bonding and grounding
20 connections shall be accessible after installation is complete, except where specifically listed for the
21 purpose. Connections shall not be made where a utility seal prevents the future maintenance and
22 inspection of these terminations. In the case of multiple service disconnecting means listed and
23 approved enclosures may be used for all grounding electrode connections and taps.

24 In general, metering equipment ~~should~~ shall be installed on the supply side of the service
25 disconnect. Meters on ~~the outside of a building or structure shall be located not less than three feet~~
26 ~~from the bottom of the glass nor more than six feet from the top of the glass measured from per-~~
27 ~~manent grade and shall be installed in such a manner as not to be subject to mechanical damage~~

1 installed as per the serving utilities standards regarding heights and type of equipment used. Where
2 the serving utility has no standard or regulation for this equipment, then all requirements contained
3 in the National Electrical Code shall be complied with. All nonmetallic E-conduits for underground
4 services or feeders, whether used as a sleeve for protection or installed as a complete raceway, shall
5 be sleeved and/or incorporate expansion fittings as required to prevent damage to service equipment.

6 ~~EXCEPTION: Where three or more meters are stacked vertically, the bottom of the lowest~~
7 ~~meter shall be at least twenty inches above finished grade and the top of the highest meter shall not~~
8 ~~exceed eight feet.~~

9 Potential reference and instrument transformer wires installed between service equipment
10 or CT cabinets and the meter socket may extend up to ~~ten~~ twenty feet within a structure without
11 raceway concrete encasement, provided the raceway is of rigid metal conduit. Runs of conduit for
12 unfused metering conductors exceeding ~~ten~~ twenty feet shall be installed below grade, or be encased
13 in not less than two inches of concrete, four inches of brick, or eight inches of hollow block or tile.

14 ~~Service repairs for existing installations shall include the installation of insulating sleeves~~
15 ~~or bushings, and a A permit shall be applied for in each case obtained for repairs of existing services~~
16 ~~where either the meter seal is broken, the meter is unfastened from the structure, or the service drop~~
17 ~~is disconnected. For replacement of existing electrical services where currently located within a~~
18 ~~bathroom area, the service shall not be required to be relocated provided the service equipment has~~
19 ~~proper clearances that comply with the current edition of the National Electrical Code. Special~~
20 ~~permission for variances to points of attachment, service, and feeder heights required in the National~~
21 ~~Electrical Code may be granted by the authority having jurisdiction. Each request for permission~~
22 ~~for variance shall be considered individually, and approval for variance must be obtained or the~~
23 ~~height requirements of the NEC must be conformed with. The electrical contractor shall ensure~~
24 ~~proper overcurrent protection is provided in accordance with NEC Articles 240.51(b) and 240.53.~~
25 ~~Proper bonding and grounding of the service shall be ensured. The main grounding electrode~~
26 ~~conductor will be allowed to be attached to a cold water pipe for these repaired installations,~~

1 provided there is a continuous conductive path provided by the water pipe to the water service
2 entrance and the water meter is bonded.

3 ~~NOTE: It is the intent of this section to require the main grounding electrode conductor be~~
4 ~~routed to a terminal location least likely to lose continuity to the electrode by insertion into the water~~
5 ~~system of non-conductive plumbing fittings. When rigidly attached permanent building finish does~~
6 ~~not prevent it, the main ground shall be run to the street side of the water meter. This shall apply~~
7 ~~to new, repaired, and re-wired services only in existing structures. See Section 23.10.360 for new~~
8 ~~construction requirements, also see exception in 23.10.360.~~

9 Section 7. That Section 23.10.310 of the Lincoln Municipal Code be and the same
10 is hereby repealed.

11 ~~**23.10.310 Power Supplies For Fire Alarm, Exit, and Emergency Lighting Systems;**~~
12 ~~**Specific Requirements.**~~

13 ~~Where automatically transferred power provided by a stand-by generator is available on the~~
14 ~~premises, these systems shall be provided power from the load side of the transfer switch, unless unit~~
15 ~~equipment provided with battery backup is utilized. Sources of primary and emergency power for~~
16 ~~all other installations shall comply with the requirements of NEC Article 700.~~

17 ~~Regardless of the source of primary power to a fire alarm system, whether or not an~~
18 ~~emergency generator is provided, battery back-up shall be supplied in accordance with NEC Section~~
19 ~~700.12(a).~~

20 ~~NOTE: See also Sections 23.10.130, 23.10.140, 23.10.200, 23.10.230, 23.10.270, 23.10.510,~~
21 ~~and 23.10.520 of the city ordinance regarding fire alarms.~~

22 Section 8. That Section 23.10.312 of the Lincoln Municipal Code be and the same
23 is hereby repealed.

24 ~~**23.10.312 Article 100 Definitions Amended; Service Conductors; Special Permission:**~~

25 ~~Article 100 of the National Electrical Code is amended to include the definition of "Service~~
26 ~~Conductors" and "Special Permission" as follows:~~

27 ~~Service Conductors: The conductors from the service point or other source of power to the~~
28 ~~service disconnecting means.~~

29 ~~Special Permission: The consent of the authority having jurisdiction.~~

30 Section 9. That Section 23.10.320 of the Lincoln Municipal Code be and the same
31 is hereby repealed.

32 ~~**23.10.320 Section 210.8(B) Amended; Ground Fault Protection for Personnel, Receptacles**~~
33 ~~**Other Than Dwelling Units.**~~

34 ~~Section 210.8(B) of the National Electrical Code is hereby amended to read as follows:~~

1 ~~210.8(B) Ground Fault Protection for Personnel, Other Than Dwelling Units.~~ All 125-
2 volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in (1), (2), (3),
3 (4), and (5) shall have ground-fault circuit-interrupter protection for personnel:

4 ~~(1) Bathrooms~~

5 ~~(2) Rooftops~~

6 ~~(3) Kitchens~~

7 ~~(4) Wet bar sinks, where the receptacles are installed to serve the countertop surfaces,~~
8 ~~and are located within 1.8m (6 feet) of the outside edge of the wet bar sink.~~

9 ~~(5) Receptacles within 1.8m (6 feet) of wet work areas such as wash down areas and~~
10 ~~utility sinks.~~

11 ~~Exception 1. Receptacle outlets for refrigeration equipment.~~

12 ~~Exception 2. Receptacles which are not readily accessible and are supplied from a~~
13 ~~dedicated branch circuit for electric snow-meting or de-icing equipment shall be permitted to be~~
14 ~~installed in accordance with the applicable provisions of Article 426.~~

15 ~~FPN: It is the intent of this section to require ground-fault circuit-interrupter~~
16 ~~protection in areas where electricity is being used in close proximity to water sources.~~

17 ~~Section 210.8 Amended; Ground Fault Circuit Protection For Personnel.~~

18 Section 10. That Section 23.10.323 of the Lincoln Municipal Code be and the same
19 is hereby repealed.

20 ~~23.10.323 Section 210.11(c)(3) Amended; Bathroom Circuits.~~

21 ~~Section 210.11(c)(3) of the National Electrical Code is hereby amended to read as follows:~~

22 ~~Section 210.11(c)(3). Bathroom Circuits.~~ In dwelling units, at least one wall receptacle
23 outlet shall be installed in bathrooms adjacent to each basin location. Bathroom receptacle outlets
24 shall be supplied by at least one 20-ampere branch circuit. No more than two bathrooms shall be
25 supplied by each 20-ampere circuit. Such circuits shall have no other outlets. See Section
26 210.8(a)(1). Receptacle outlets shall not be installed in a face-up position in the work surfaces or
27 countertops in a bathroom basin location.

28 ~~EXCEPTION: A 15-ampere branch circuit may be used to supply outlets for one bathroom.~~
29 ~~Additional outlets can be placed on the 15-ampere circuit at the discretion of the authority having~~
30 ~~jurisdiction.~~

31 Section 11. That Section 23.10.324 of the Lincoln Municipal Code be and the same
32 is hereby repealed.

33 ~~23.10.324 Section 210.12 Deleted; Arc Fault Circuit Interrupters.~~

34 ~~Section 210.12 of the 2002 National Electrical Code is hereby deleted in its entirety.~~

35 Section 12. That Section 23.10.327 of the Lincoln Municipal Code be and the same
36 is hereby repealed.

1 ~~23.10.327~~ — ~~Section 210.52(c)(2) Amended; Island Counter Space Receptacle Requirements.~~
2 ~~Section 210.52(c)(2) of the National Electrical Code is hereby amended to read as follows:~~
3 ~~210.52(c)(2). Island Counter Spaces.~~ At least one receptacle outlet may be installed at each
4 island counter space with a long dimension of 24 inches (610 mm) or greater and a short dimension
5 of 12 inches (305 mm) or greater.

6 Section 13. That Section 23.10.329 of the Lincoln Municipal Code be and the same
7 is hereby repealed.

8 ~~23.10.329~~ — ~~Section 210.52(c)(3) Amended; Dwelling Unit Peninsular Counter Space~~
9 ~~Receptacle Requirements.~~
10 ~~Section 210.52(c)(3) of the National Electrical Code is hereby amended to read as follows:~~
11 ~~210.52(c)(3). Peninsular Counter Space Receptacles.~~ At least one receptacle outlet may
12 be installed at each peninsular counter space with a long dimension of 24 inches (610 mm) or greater
13 and a short dimension of 12 inches (305 mm) or greater. A peninsular counter top is measured from
14 the connecting edge.

15 Section 14. That Section 23.10.330 of the Lincoln Municipal Code be and the same
16 is hereby repealed.

17 ~~23.10.330~~ — ~~Section 210.63 Amended; Heating, Air-Conditioning, and Refrigeration~~
18 ~~Equipment Outlet.~~
19 ~~Section 210.63 of the National Electrical Code is hereby amended to read as follows:~~
20 ~~210.63. Heating, Air-Conditioning, and Refrigeration Equipment Outlet.~~ This section
21 of the National Electrical Code shall apply to new installations only. For the purposes of this
22 section, ‘new installations’ shall mean all new construction, and existing structures which are being
23 equipped with an air conditioner or heat pump for the first time. It is not the intent of this section
24 to require a receptacle to be installed for replacement units.
25 ~~This receptacle, whether located at grade level or on rooftops, shall be ground fault circuit~~
26 ~~interrupter protected. An existing receptacle fulfilling all the criteria of this section shall be~~
27 ~~considered as meeting the intent of this requirement.~~

28 Section 15. That Section 23.10.331 of the Lincoln Municipal Code be and the same
29 is hereby repealed.

30 ~~23.10.331~~ — ~~Section 210.70 Amended; Lighting Outlets Required.~~
31 ~~Section 210.70 of the National Electrical Code is hereby amended to read as follows:~~
32 ~~210.70 Lighting Outlets Required.~~ Lighting outlets shall be installed where specified in
33 (a), (b), and (c).
34 ~~(a) Dwelling Units. In dwelling units, lighting outlets shall be installed in accordance~~
35 ~~with (1), (2), and (3).~~
36 ~~(1) Habitable Rooms. At least one wall switch-controlled lighting outlet shall be~~
37 ~~installed in every habitable room and bathroom.~~
38 ~~Exception No. 1: In other than kitchens and bathrooms, one or more~~
39 ~~receptacles controlled by a wall switch shall be permitted in lieu of lighting outlets.~~

1 ~~Exception No. 2: Lighting outlets shall be permitted to be controlled by~~
2 ~~occupancy sensors that are (1) in addition to wall switches or (2) located at a customary wall switch~~
3 ~~location and equipped with a manual override that will allow the sensor to function as a wall switch.~~

4 ~~(2) Additional Locations. At least one wall switch-controlled lighting outlet shall~~
5 ~~be installed in hallways, stairways, attached garages, and detached garages with electric power; and~~
6 ~~to provide illumination on the exterior side of outdoor entrances or exits with grade level access. A~~
7 ~~vehicle door in a garage shall not be considered as an outdoor entrance or exit. Where lighting~~
8 ~~outlets are installed in interior stairways, there shall be a wall switch at each floor level to control~~
9 ~~the lighting outlet where the difference between floor levels is six steps (risers) or more.~~

10 ~~Exception: In hallways, stairways, and at outdoor entrances, remote, central,~~
11 ~~or automatic control of lighting shall be permitted.~~

12 ~~(3) Storage or Equipment Spaces. For attics, underfloor spaces, utility rooms, and~~
13 ~~basements, at least one lighting outlet controlled by a wall switch shall be installed where these~~
14 ~~spaces are used for storage or contain equipment requiring servicing. At least one point of control~~
15 ~~shall be at the usual point of entry to these spaces. The lighting outlet shall be provided at or near~~
16 ~~the equipment requiring servicing.~~

17 ~~(b) Guest Rooms. At least one wall switch-controlled lighting outlet or wall switch-~~
18 ~~controlled receptacle shall be installed in guest rooms in hotels, motels, or similar occupancies.~~

19 ~~(c) Other Locations. For attics and underfloor spaces containing equipment requiring~~
20 ~~servicing, such as heating, air-conditioning, and refrigeration equipment, at least one lighting outlet~~
21 ~~controlled by a wall switch shall be installed in such spaces. At least one point of control shall be~~
22 ~~at the usual point of entry to these spaces. The lighting outlet shall be provided at or near the~~
23 ~~equipment requiring servicing.~~

24 Section 16. That Section 23.10.332 of the Lincoln Municipal Code be and the same
25 is hereby repealed.

26 ~~**23.10.332 Section 220.3(b)(7) Amended; Show Window Lighting Calculations.**~~

27 ~~Section 220.3(b)(7) of the National Electrical Code is hereby amended to read as follows:~~
28 ~~**220.3(b)(7). Show-Window Lighting.** For show-window lighting, a load of not less than~~
29 ~~200 volt-amperes shall be included for each linear foot (305 mm) of show window, measured~~
30 ~~horizontally along its base.~~

31 Section 17. That Section 23.10.333 of the Lincoln Municipal Code be and the same
32 is hereby repealed.

33
34 ~~**23.10.333 Section 220.12(b) Amended; Track Lighting Calculations.**~~

35 ~~Section 220.12(b) of the National Electrical Code is hereby amended to read as follows:~~
36 ~~**220.12(b) Track Lighting.** For track lighting in other than dwelling units or guest rooms of~~
37 ~~hotels or motels, an additional load of 200 volt-amperes shall be included for every two feet (610~~
38 ~~mm) of lighting track or fraction thereof. This load calculation shall be used to compute overall~~
39 ~~track lengths allowable on individual circuits. Maximum allowable circuit loading shall be~~
40 ~~considered to be 80 percent of the rating of the branch circuit overcurrent device.~~

1 Section 18. That Section 23.10.335 of the Lincoln Municipal Code be and the same
2 is hereby repealed.

3 ~~23.10.335 — Section 230.43 Amended; Wiring Methods for 600 Volts Nominal, or Less.~~

4 ~~Section 230.43 of the National Electrical Code is hereby amended to read as follows:~~

5 ~~230.43. Wiring Methods for 600 Volts, Nominal, or Less.~~ Service-entrance conductors
6 shall be installed in accordance with the applicable requirements of this code covering the type of
7 wiring method used and limited to the following methods: (1) open wiring on insulators; (2) rigid
8 metal conduit; (3) intermediate metal conduit; (4) electrical metallic tubing; (5) wireways; (6)
9 busways; (7) auxiliary gutters; (8) rigid nonmetallic conduit; (9) cablebus; (10) Type MC cable by
10 special permission in industrial complexes; (11) mineral-insulated, metal-sheathed cable; or (12)
11 liquid-tight flexible nonmetallic conduit.

12 ~~Approved cable tray systems shall be permitted to support cables approved for use~~
13 ~~as service-entrance conductors.~~

14 Section 19. That Section 23.10.337 of the Lincoln Municipal Code be and the same
15 is hereby repealed.

16 ~~23.10.337 — Section 230.46 Amended; Splicing Service Entrance Conductors.~~

17 ~~Section 230.46 of the National Electrical Code is hereby amended to read as follows:—~~

18 ~~230.46 Splicing Service Entrance Conductors.~~ Service entrance conductors may be
19 spliced under the following conditions:

20 ~~1. Clamped or bolted connections in metering equipment enclosures shall be permitted.~~

21 ~~2. Where service-entrance conductors are tapped to supply two to six disconnecting means~~
22 ~~grouped at a common location.~~

23 ~~3. At a properly enclosed junction point where an underground wiring method is changed~~
24 ~~to another type of wiring method.~~

25 ~~4. A connection shall be permitted where service conductors are extended from a service~~
26 ~~drop to an outside meter location and returned to connect to the service-entrance conductors of an~~
27 ~~existing installation.~~

28 ~~5. Where the service-entrance conductors consist of busway, connections shall be permitted~~
29 ~~as required to assemble the various sections and fittings.~~

30 ~~6. For existing service-entrance conductors, it shall be permissible to install listed~~
31 ~~underground splice kits for:~~

32 ~~a. Repair of existing conductors.~~

33 ~~b. Extension of conductors by special permission of the authority having jurisdiction.~~

34 Section 20. That Section 23.10.340 of the Lincoln Municipal Code be and the same
35 is hereby repealed.

36 ~~23.10.340 — Section 230.83 Added; Transfer Equipment.~~

37 ~~Section 230.83 is added to the National Electrical Code to read as follows:~~

38 ~~230.83. Transfer Equipment.~~ Transfer equipment shall operate such that all ungrounded
39 conductors of one source of supply are disconnected before any ungrounded conductors of the
40 second source are connected.

1 ~~EXCEPTION (1): Where manual equipment identified for the purpose, or suitable automatic~~
2 ~~equipment is utilized, two or more sources shall be permitted to be connected in parallel through~~
3 ~~transfer equipment.~~

4 ~~EXCEPTION (2): Where parallel operation is used and suitable automatic or manual control~~
5 ~~equipment is provided.~~

6 ~~Transfer equipment for permanently installed generators shall include a means for switching~~
7 ~~the neutral conductor, and the neutral conductor of both the normal and standby power sources shall~~
8 ~~be bonded and grounded independently.~~

9 Section 21. That Section 23.10.345 of the Lincoln Municipal Code be and the same
10 is hereby repealed.

11 ~~**23.10.345 Section 240.20 Amended; Ungrounded Conductors.**~~

12 ~~Section 240.20 of the National Electrical Code is hereby amended to read as follows:~~

13 ~~**240.20. Ungrounded Conductors.**~~

14 ~~(a) Overcurrent Device Required. A fuse or an overcurrent trip unit of a circuit breaker~~
15 ~~shall be connected in series with each ungrounded conductor. A combination of a current~~
16 ~~transformer and overcurrent relay shall be considered equivalent to an overcurrent trip unit.~~

17 ~~(FPN): For motor circuits, see Parts III, IV, V, and X of Article 430.~~

18 ~~(b) Circuit Breaker as Overcurrent Device. Circuit breakers shall open all ungrounded~~
19 ~~conductors of the circuit simultaneously. Listed multi-pole circuit breakers shall be utilized in~~
20 ~~circuits with more than one ungrounded conductor.~~

21 ~~(c) Closed-Loop Power Distribution Systems. Listed devices providing equivalent~~
22 ~~overcurrent protection in closed-loop power distribution systems shall be permitted as a substitute~~
23 ~~for fuses or circuit breakers.~~

24 Section 22. That Section 23.10.347 of the Lincoln Municipal Code be and the same
25 is hereby repealed.

26 ~~**23.10.347 Section 240.24 Amended; Location of Overcurrent Devices in or on Premises.**~~

27 ~~Section 240.24 of the National Electrical Code is hereby amended to read as follows:~~

28 ~~**240.24. Location in or on Premises.** (a) Readily Accessible. Overcurrent devices shall~~
29 ~~be readily accessible unless one of the following applies:~~

30 ~~1: For busways as provided in Section 364.12.~~

31 ~~2: For supplementary overcurrent protection as described in Section 240.10.~~

32 ~~3: For overcurrent devices as described in Sections 225.40 and 230.92.~~

33 ~~4: Overcurrent devices installed adjacent to motors, appliances, or other equipment~~
34 ~~that they supply shall be permitted to be accessible by portable means.~~

35 ~~(b) Occupant to Have Ready Access. Each occupant shall have ready access to all~~
36 ~~overcurrent devices protecting the conductors supplying that occupancy.~~

37 ~~EXCEPTION (1): In a multiple-occupancy building where electric service and~~
38 ~~electrical maintenance are provided by the building management and where these are under~~
39 ~~continuous building management supervision, the service overcurrent devices and feeder overcurrent~~
40 ~~devices supplying more than one occupancy shall be permitted to be accessible to authorized~~
41 ~~management personnel only.~~

1 ~~EXCEPTION (2): For guest rooms of hotels and motels that are intended for transient~~
2 ~~occupancy and that are under continuous building management supervision, the overcurrent devices~~
3 ~~shall be permitted to be accessible to authorized management personnel only.~~

4 ~~(c) Not Exposed to Physical Damage. Overcurrent devices shall be located where they will~~
5 ~~not be exposed to physical damage.~~

6 ~~(d) Not in Vicinity of Easily Ignitable Material. Overcurrent devices shall not be located in~~
7 ~~the vicinity of easily ignitable material such as in clothes closets.~~

8 Section 23. That Section 23.10.350 of the Lincoln Municipal Code be and the same
9 is hereby repealed.

10 **23.10.350 Section 250.24 Amended; Grounding Service-Supplied Alternating-Current**
11 **Systems; System Grounding Connections.**

12 ~~Section 250.24 of the National Electrical Code is hereby amended to read as follows:~~

13 ~~**250.24 System Grounding Connections.** A premises wiring system that is supplied by an~~
14 ~~ac service that is grounded shall have at each service a grounding electrode conductor connected to~~
15 ~~a grounding electrode that complies with Part III of Article 250. The grounding electrode conductor~~
16 ~~shall be connected to the grounded service conductor in the service disconnecting means, and be run~~
17 ~~in one unspliced piece to the street side of the premises' water meter or approved electrode.~~

18 ~~EXCEPTION (1): By special permission.~~

19 ~~EXCEPTION (2): As permitted in Section 23.10.300 (Note).~~

20 ~~EXCEPTION (3): As permitted in Section 23.10.360 (Exception).~~

21 ~~Where the transformer supplying the service is located outside the building, at least one~~
22 ~~additional grounding connection shall be made from the grounded service conductor to a grounding~~
23 ~~electrode, either at the transformer or elsewhere outside the building. A grounding connection shall~~
24 ~~not be made to any grounded circuit conductor on the load side of the service disconnecting means.~~

25 ~~(FPN): See definition of "Service Drop" and "Service Lateral" in Article 100; see also~~
26 ~~Section 230.21.~~

27 ~~A grounding electrode conductor shall be connected to the grounded conductor of a~~
28 ~~separately derived system in accordance with the provisions of Section 250.30(a)(2).~~

29 ~~A grounding conductor connection shall be made at each separate building where required~~
30 ~~by Section 250.32.~~

31 ~~For ranges, counter-mounted cooking units, wall-mounted ovens, clothes dryers, and meter~~
32 ~~enclosures as permitted by Section 250.61.~~

33 ~~For services that are dual fed (double ended) in a common enclosure or grouped together in~~
34 ~~separate enclosures and employing a secondary tie, a single grounding electrode connection to the~~
35 ~~tie point of the grounded circuit conductors from each power source shall be permitted.~~

36 ~~Where the main bonding jumper specified in Section 250.28 is a wire or busbar, and is~~
37 ~~installed from the neutral bar or bus to the equipment grounding terminal bar or bus in the service~~
38 ~~equipment, the grounding electrode conductor shall be permitted to be connected to the equipment~~
39 ~~grounding terminal bar or bus to which the main bonding jumper is connected.~~

40 ~~The grounded conductor on a high-impedance grounded neutral system shall be grounded~~
41 ~~in accordance with Section 250.36.~~

42 Section 24. That Section 23.10.351 of the Lincoln Municipal Code be and the same
43 is hereby repealed.

1 ~~23.10.351 — Section 250.50 Amended; Grounding Electrode System.~~

2 ~~Section 250.50 of the National Electrical Code is hereby amended to read as follows:~~

3 ~~250.50. Grounding Electrode System. Where available on the premises and in direct~~
4 ~~contact with the earth for ten feet or more, a metal underground water pipe shall always be used as~~
5 ~~the grounding electrode. The metal sheath (skin) and metal frames of buildings shall be bonded to~~
6 ~~the grounding electrode system. The connection of the grounding conductor to the grounding~~
7 ~~electrode shall be on the supply side of the water meter. Continuity of the grounding path or the~~
8 ~~bonding connection to the piping shall not rely on water meters, filtering devices, or similar~~
9 ~~equipment, nor shall the path be relied on if the water pipe incorporates insulated sleeve joints or~~
10 ~~di-electric couplings. Where an acceptable metal underground water pipe is not available at the~~
11 ~~structure, an approved made electrode shall be installed and bonded to.~~

12 ~~It shall be permitted to splice the grounding electrode conductor by means of the exothermic~~
13 ~~welding process only.~~

14 ~~EXCEPTION: In buildings where connection to the supply side of the water meter results~~
15 ~~in objectionable impedance, the authority having jurisdiction may permit an alternate grounding~~
16 ~~electrode system.~~

17 Section 25. That Section 23.10.353 of the Lincoln Municipal Code be and the same
18 is hereby repealed.

19 ~~23.10.353 — Section 250.52 Amended; Made and Other Electrodes.~~

20 ~~Section 250.52 of the National Electrical Code is hereby amended to read as follows:~~

21 ~~250.52. Made and Other Electrodes. Where none of the electrodes specified in Section~~
22 ~~250.50 is available, one or more of the electrodes specified in (a) through (c) below shall be used.~~
23 ~~Where practicable, made electrodes shall be embedded below permanent moisture level. The elec-~~
24 ~~trodes shall not be installed inside the structure. Made electrodes shall be free from nonconductive~~
25 ~~coatings, such as paint or enamel. Where more than one electrode system is used (including those~~
26 ~~used for lightning rods), each electrode of one system shall not be less than six feet from any other~~
27 ~~electrode of another system, or the electrodes shall be effectively bonded together. Note: See~~
28 ~~Section 250.106. Two or more electrodes that are effectively bonded together are to be treated as~~
29 ~~a single electrode system.~~

30 ~~(a) Other local metal underground systems or structures, such as piping systems and~~
31 ~~underground tanks;~~

32 ~~(b) Nonferrous or stainless steel rod electrodes shall be listed and not be less than eight~~
33 ~~feet in length and one-half inch in diameter, and shall be installed in the following manner:~~

34 ~~The electrode shall be installed so that at least eight feet of its length is in contact~~
35 ~~with the soil. It shall be driven to a depth of not less than eight feet except that where rock bottom~~
36 ~~is encountered, the electrode shall be driven at an oblique angle not to exceed forty-five degrees~~
37 ~~from the vertical or shall be buried in a trench that is at least two and one-half feet deep. The upper~~
38 ~~end of the electrode shall be flush with or below ground level unless the above-ground end and the~~
39 ~~grounding electrode conductor attachment are protected against physical damage.~~

40 ~~(c) Plate electrodes shall expose not less than two square feet of surface to exterior soil.~~
41 ~~Electrodes of iron or steel plate shall be at least one-fourth of an inch in thickness. Electrodes of~~
42 ~~nonferrous metal shall be at least 0.06 inches in thickness. Aluminum electrodes shall not be used.~~
43 ~~Plate electrodes shall be installed not less than two and one-half feet below the surface of the earth.~~

1 Section 26. That Section 23.10.355 of the Lincoln Municipal Code be and the same
2 is hereby repealed.

3 ~~23.10.355 — Section 250.92 Amended; Service Equipment.~~

4 ~~Section 250.92 of the National Electrical Code is hereby amended to read as follows:~~

5 ~~**250.92. Service Equipment.** (a) Bonding of Services. The noncurrent-carrying metal parts
6 of equipment indicated in (1), (2), and (3) below shall be effectively bonded together.~~

7 ~~(1) The service raceways, cable trays, cablebus framework, or service cable armor
8 or sheath except as permitted in 250.84.~~

9 ~~(2) All service enclosures containing service conductors, including meter fittings,
10 boxes, or the like, interposed in the service raceway or armor.~~

11 ~~(3) Any metallic raceway or armor enclosing a grounding electrode conductor as
12 specified in Section 250.64(b). Bonding shall apply at each end and to all intervening raceways,
13 boxes, and enclosures between the service equipment and the grounding electrode.~~

14 ~~(b) Bonding to Other Systems. An accessible means external to enclosures for connecting
15 intersystem bonding and grounding conductors shall be provided at the service by at least one of the
16 following means:~~

17 ~~(1) Exposed metallic service raceways external to the building.~~

18 ~~(2) Exposed grounding electrode conductor external to the building.~~

19 ~~(3) Approved means for the external connection of a copper or other corrosion-
20 resistant bonding or grounding conductor to the service raceway or equipment external to the
21 building.~~

22 ~~For the purposes of providing an accessible means for intersystem bonding, the
23 disconnecting means at a separate building or structure as permitted in Section 250.32 and the
24 disconnecting means at a mobile home, as permitted in Section 550.23(a), shall be considered the
25 service equipment.~~

26 ~~FPN NO. 1: A No. 6 copper conductor with one end bonded to the service raceway or
27 equipment and with six inches (152mm) or more of the other end made accessible on the outside
28 wall is an example of the approved means covered in (b)(3).~~

29 ~~FPN NO. 2: See Sections 800.40, 810.21 and 820.40 for bonding and grounding require-
30 ments for communications circuits, radio and television equipment, and CATV circuits.~~

31 Section 27. That Section 23.10.380 of the Lincoln Municipal Code be and the same
32 is hereby repealed.

33 ~~23.10.380 — Section 300.13(b) Amended; Mechanical and Electrical Continuity of
34 Conductors; Device Removal.~~

35 ~~Section 300.13(b) of the National Electrical Code is hereby amended to read as follows:~~

36 ~~**300.13(b) Device Removal.** The continuity of phase, grounded, or grounding conductors
37 shall not be dependent upon device connections, such as lamp holders, receptacles, etc., where the
38 removal of such devices would interrupt branch circuit continuity.~~

39 Section 28. That Section 23.10.381 of the Lincoln Municipal Code be and the same
40 is hereby repealed.

1 ~~23.10.381 — Section 300.14 Amended; Length of Free Conductors at Outlets, Junctions,~~
2 ~~and Switch Points.~~

3 ~~Section 300.14 of the National Electrical Code is hereby amended to read as follows:~~

4 ~~300.14. Length of Free Conductors at Outlets, Junctions, and Switch Points.~~

5 ~~At least six inches (152 mm) of free conductor, measured from the point in the box where~~
6 ~~it emerges from the face of the box, shall be left at each outlet, junction, and switch point for splices~~
7 ~~or the connection of fixtures or devices.~~

8 Section 29. That Section 23.10.385 of the Lincoln Municipal Code be and the same
9 is hereby repealed.

10 ~~23.10.385 — Section 314.16(B)4 Amended; Box Fill.~~

11 ~~Section 314.16(B)(4) of the National Electrical Code is hereby amended to read as follows:~~

12 ~~314.16(B)4. Device or Equipment Fill.~~ For each yoke or strap containing one or more
13 devices or equipment, a single volume allowance in accordance with Table 314.16(B) shall be made
14 for each yoke or strap based on the largest conductor connected to a device(s) or equipment
15 supported by that yoke or strap.

16 Section 30. That Section 23.10.390 of the Lincoln Municipal Code be and the same
17 is hereby repealed.

18 ~~23.10.390 — Section 334.12 Amended; Nonmetallic Sheathed Cable, Uses Not Permitted.~~

19 ~~Section 334.12 of the National Electrical Code is hereby amended to read as follows:~~

20 ~~334.12. Uses Not Permitted.~~ Nonmetallic sheathed cable shall not be used in any single
21 family, duplex, multifamily dwelling, or other structure exceeding three floors above grade. See
22 Section 23.10.290 for approved wiring methods.

23 ~~For the purpose of this article, the first floor of a building shall be that floor that has 50~~
24 ~~percent or more of the exterior wall surface area level with or above finished grade. One additional~~
25 ~~level that is the first level and not designed for human habitation and used only for vehicle parking,~~
26 ~~storage, or similar use shall be permitted.~~

27 Section 31. That Section 23.10.393 of the Lincoln Municipal Code be and the same
28 is hereby repealed.

29 ~~23.10.393 — Section 406.8 Amended; Receptacles in Damp or Wet Locations~~

30 ~~Section 406.8 of the National Electrical Code is hereby amended to read as follows:~~

31 ~~406.8 Receptacles in Damp or Wet Locations.~~

32 ~~(a) Damp Locations. A receptacle installed outdoors in a location protected from the~~
33 ~~weather or in other damp locations shall have an enclosure for the receptacle that is weatherproof~~
34 ~~when the receptacle is covered (attachment plug cap not inserted and receptacle covers closed).~~

35 ~~An installation suitable for wet locations shall also be considered suitable for damp~~
36 ~~locations.~~

37 ~~A receptacle shall be considered to be in a location protected from the weather where~~
38 ~~located under roofed open porches, canopies, marquees, and the like, and will not be subjected to~~
39 ~~a beating rain or water runoff.~~

40 ~~(b) Wet Locations.~~

1 ~~1. A receptacle installed in a wet location where the product intended to be~~
2 ~~plugged into it is not attended while in use (e.g., sprinkler system controllers, landscape lighting,~~
3 ~~holiday lights, etc.) shall have an enclosure that is weatherproof with the attachment plug cap~~
4 ~~inserted or removed.~~

5 ~~2. A receptacle installed in a wet location where the product intended to be~~
6 ~~plugged into it will be attended while in use (e.g., portable tools, etc.) shall have an enclosure that~~
7 ~~is weatherproof when the attachment plug cap is removed.~~

8 ~~(c) Bathtub and Shower Space. A receptacle shall not be installed within a bathtub or~~
9 ~~shower space.~~

10 ~~(d) Protection for Floor Receptacles. Standpipes of floor receptacles shall allow~~
11 ~~floor-cleaning equipment to be operated without damage to receptacles.~~

12 ~~(e) Flush Mounting with Faceplate. The enclosure for a receptacle installed in an outlet~~
13 ~~box flush-mounted on a wall surface shall be made weatherproof by means of a weatherproof~~
14 ~~faceplate assembly that provides a watertight connection between the plate and the wall surface.~~

15 ~~(f) Installation. A receptacle outlet installed outdoors shall be located so that water~~
16 ~~accumulation is not likely to touch the outlet cover or plate.~~

17 Section 32. That Section 23.10.395 of the Lincoln Municipal Code be and the same
18 is hereby repealed.

19 ~~**23.10.395 Section 408.21 Amended; Grounded Conductor Terminations.**~~

20 ~~Section 408.21 of the National Electrical Code is hereby amended to read as follows:~~

21 ~~**408.21 Grounded Conductor Terminations.** Each grounded conductor shall terminate~~
22 ~~within the panelboard in an individual terminal that is not also used for another conductor.~~

23 ~~Exception 1: Grounding conductors of like material and size, and from the same~~
24 ~~branch circuit shall be permitted to terminate in the same terminal as the grounded conductor, if the~~
25 ~~terminal is identified for connection of more than one conductor.~~

26 ~~Exception 2: Grounded conductors of circuits with parallel conductors shall be~~
27 ~~permitted to terminate in a single terminal if the terminal is identified for connection of more than~~
28 ~~one conductor.~~

29 Section 33. That Section 23.10.400 of the Lincoln Municipal Code be and the same
30 is hereby repealed.

31 ~~**23.10.400 Section 410.2 Amended; Lighting Fixtures; Application of Other Articles.**~~

32 ~~Section 410.2 of the National Electrical Code is hereby amended to read as follows:~~

33 ~~**410.2. Application of Other Articles.** Equipment for use in hazardous (classified) locations~~
34 ~~shall conform to Articles 500 through 517. Lighting systems operating at 30 volts or less shall also~~
35 ~~conform to Article 411. Arc lamps used in theaters shall comply with Section 520.61, and arc lamps~~
36 ~~used in projection machines shall comply with Section 540.20. Arc lamps used on constant-current~~
37 ~~systems shall comply with the general requirements of Article 490.~~

38 Section 34. That Section 23.10.402 of the Lincoln Municipal Code be and the same
39 is hereby repealed.

1 ~~23.10.402 — Section 410.4(d) Amended; Lighting Fixtures Above Bathtubs and Shower~~
2 ~~Areas:~~

3 ~~— Section 410.4(d) of the National Electrical Code is hereby amended to read as follows:~~

4 ~~— **410.4(d). Above Bathtubs and Shower Areas.** No parts of cord-connected fixtures,~~
5 ~~hanging fixtures, lighting track, pendants, or ceiling-suspended (paddle) fans shall be located within~~
6 ~~a zone measured three feet (914 mm) horizontally and eight feet (2.44 m) vertically from the top of~~
7 ~~the bathtub rim or shower stall threshold. This zone is all encompassing and includes the zone~~
8 ~~directly over the tub or shower stall.~~

9 ~~— All lighting fixtures, fans, or other electrical equipment installed directly within the zone~~
10 ~~over the tub, or within a shower, shower space, or shower enclosure shall be provided with GFCI~~
11 ~~protection.~~

12 Section 35. That Section 23.10.410 of the Lincoln Municipal Code be and the same
13 is hereby repealed.

14 ~~23.10.410 — Section 422.16(b) Amended; Specific Appliances.~~

15 ~~— Section 422.16(b) of the National Electrical Code is hereby amended to read as follows:~~

16 ~~— **422.16(b). Specific Appliances.** The exposed wiring to disposal and dishwasher units shall~~
17 ~~be protected with flexible metal tubing, flexible metal conduit, liquid-tight flexible metal conduit,~~
18 ~~or liquid-tight flexible nonmetallic conduit. Third party certified disposals and dishwasher units,~~
19 ~~factory equipped with a flexible cord, may be approved by special permission.~~

20 ~~— A readily accessible disconnect shall be installed adjacent to the equipment and all such~~
21 ~~equipment shall be grounded.~~

22 ~~— EXCEPTION: Listed kitchen waste disposers, dishwashers, and trash compactors protected~~
23 ~~by a system of double insulation, or its equivalent, shall not be required to be grounded. Where such~~
24 ~~a system is employed, the equipment shall be distinctively marked.~~

25 Section 36. That Section 23.10.417 of the Lincoln Municipal Code be and the same
26 is hereby repealed.

27 ~~23.10.417 — Article 430.102 Amended; Location of Motor Disconnects.~~

28 ~~— Article 430.102 of the National Electrical Code is hereby amended to read as follows:~~

29 ~~— **430.102. Location**~~

30 ~~— (a) — Controller. An individual disconnecting means shall be provided for each controller~~
31 ~~and shall disconnect the controller. The disconnecting means shall be located in sight from the~~
32 ~~controller location.~~

33 ~~— Exception No. 1: For motor circuits over 600 volts, nominal, a controller~~
34 ~~disconnecting means capable of being locked in the open position shall be permitted to be out of~~
35 ~~sight of the controller, provided the controller is marked with a warning label giving the location of~~
36 ~~the disconnecting means.~~

37 ~~— Exception No. 2: A single disconnecting means shall be permitted for a group of~~
38 ~~coordinated controllers that drive several parts of a single machine or piece of apparatus. The~~
39 ~~disconnecting means and the controllers shall be located in sight from the machine or apparatus.~~

40 ~~— (b) — Motor. A disconnecting means shall be located in sight from the motor location and~~
41 ~~the driven machinery location.~~

1 ~~Exception: A disconnecting means, in addition to the controller disconnecting means~~
2 ~~as required in accordance with Section 430.102(a), shall not be required for the motor where the~~
3 ~~disconnecting means for the controller is individually capable of being locked in the open position.~~

4 ~~FPN: For information on lockout/tagout procedures, see Standard for Electrical~~
5 ~~Safety Requirements for Employee Workplaces, NFPA 70E.1995.~~

6 Section 37. That Section 23.10.420 of the Lincoln Municipal Code be and the same
7 is hereby repealed.

8 ~~**23.10.420 Article 460 Amended; Rating of Capacitors:**~~

9 ~~Article 460 of the National Electrical Code is hereby amended by adding a new section~~
10 ~~numbered 460.7 to read as follows:~~

11 ~~**460.7. (a) Total Kilo-var Rating of Capacitors.** The total kilo-var rating of capacitors that~~
12 ~~are connected on the load side of a motor controller shall not exceed the value required to raise the~~
13 ~~no-load power factor of the motor branch circuit to unity.~~

14 ~~EXCEPTION: When motor ratings do not exceed 600 volts, nominal, and fifty horsepower,~~
15 ~~capacitors not exceeding fifty percent of the Kva rating of the motor input shall be permitted to be~~
16 ~~connected on the load side of the motor controller.~~

17 ~~(b) Motor not subject to unusual switching service. Capacitors so connected shall be~~
18 ~~permitted only in applications where the motor is not subject to unusual switching service, such as~~
19 ~~plugging, rapid reversals, reclosings, or other similar operations which could generate over-voltages~~
20 ~~and over-torques.~~

21 Section 38. That Section 23.10.425 of the Lincoln Municipal Code be and the same
22 is hereby repealed.

23 ~~**23.10.425 Section 500.7(K) Deleted; Combustible Gas Detection Systems:**~~

24 ~~Section 500.7(K) of the 2002 National Electrical Code is hereby deleted in its entirety.~~

25 Section 39. That Section 23.10.430 of the Lincoln Municipal Code be and the same
26 is hereby repealed.

27 ~~**23.10.430 Section 501.17 Amended; Lightning and Surge Protection for Class I, Divisions**~~
28 ~~**1 and 2 Locations (or Zone 0, 1, or 2).**~~

29 ~~Section 501.17 of the National Electrical Code is hereby amended to read as follows:~~

30 ~~**501.17. Surge Protection, Class I, Divisions 1 and 2.** Surge arresters, including their~~
31 ~~installation and connection, shall comply with Article 280. In addition, surge arresters if installed~~
32 ~~in Class I, Division 1 locations shall be in suitable enclosures. Surge-protective capacitors shall be~~
33 ~~of a type designed for specific duty.~~

34 ~~Approved surge arresters shall be installed on all overhead service entrance conductors~~
35 ~~which supply power to Class I, Division 1, Division 2, or Zone 0, 1, or 2 areas.~~

36 Section 40. That Section 23.10.440 of the Lincoln Municipal Code be and the same
37 is hereby repealed..

1 ~~23.10.440 — Section 502.17 Amended; Lightning and Surge Protection for Class H, Divisions~~
2 ~~1 and 2 Locations.~~

3 ~~— Section 502.17 of the National Electrical Code is hereby amended to read as follows:~~

4 ~~— 502.17. Surge Protection, Class H, Divisions 1 and 2. Surge arresters, including their~~
5 ~~installation and connection shall comply with Article 280. In addition, surge arresters if installed~~
6 ~~in a Class H, Division 1 location shall be in suitable enclosures. Surge protective capacitors shall~~
7 ~~be of a type designed for specific duty.~~

8 ~~— Approved surge arresters shall be installed on all overhead service entrance conductors~~
9 ~~which supply power to Class H, Division 1 or Division 2 areas.~~

10 Section 41. That Section 23.10.457 of the Lincoln Municipal Code be and the same
11 is hereby repealed.

12 ~~23.10.457 — Section 600.1 Amended; Scope of NEC Article 600.~~

13 ~~— Section 600.1 of the National Electrical Code is hereby amended by adding the following~~
14 ~~note:~~

15 ~~— NOTE: Rigid nonmetallic conduit and liquid-tight flexible nonmetallic conduit will not~~
16 ~~contribute to a corona induced failure of GTO cable, but care must be exercised in routing such~~
17 ~~conduits near or through grounded surfaces which may contribute to such failure. The dielectric~~
18 ~~withstand of these raceways has not been investigated by the City of Lincoln.~~

19 Section 42. That Section 23.10.459 of the Lincoln Municipal Code be and the same
20 is hereby repealed.

21 ~~23.10.459 — Section 600.10(c)2 Amended; GFCI Protection for Portable or Mobile Signs.~~

22 ~~— Section 600.10(c)2 of the National Electrical Code is hereby amended to read as follows:~~

23 ~~— 600.10(c)2. Outdoor Portable or Mobile Signs. The wiring of an outdoor sign that is~~
24 ~~portable or mobile and is readily accessible shall be provided with ground-fault circuit-interrupter~~
25 ~~protection for personnel. The ground-fault circuit-interrupter may be located in the cord cap, within~~
26 ~~twelve inches of the source end of the cord, in the sign behind an access cover, or on the sign in an~~
27 ~~approved weather-proof box. Conductive supports of a sign specified in this section shall be~~
28 ~~considered part of the sign.~~

29 Section 43. That Section 23.10.460 of the Lincoln Municipal Code be and the same
30 is hereby repealed.

31 ~~23.10.460 — Section 680.22(A)(1) Amended; Pool and Fountain Receptacle Locations, and~~
32 ~~Circuit GFCI Protection Requirements.~~

33 ~~— Section 680.22(A)(1) of the National Electrical Code is hereby amended to read as follows:~~

34 ~~— 680.22(A)(1): A receptacle that provides power for a water-pump motor for a permanently~~
35 ~~installed pool or fountain as permitted in Section 680.7, shall be permitted not less than five feet nor~~
36 ~~more than ten feet from the inside walls of the pool or fountain and shall be single and of the locking~~
37 ~~and grounding types and all receptacles shall be protected by a ground-fault circuit-interrupter. All~~
38 ~~circuits supplying power for pool equipment shall be protected by ground-fault circuit-interrupters.~~

39 ~~— Other receptacles on the property shall be located at least 10 feet from the inside walls of a~~
40 ~~pool or fountain.~~

1 Section 44. That Section 23.10.470 of the Lincoln Municipal Code be and the same
2 is hereby repealed.

3 ~~**23.10.470 — Section 680.8 Amended; Overhead Conductor Clearances.**~~

4 ~~Section 680.8 of the National Electrical Code is hereby amended to read as follows:~~

5 ~~**680.8. Overhead Conductor Clearances.** The following parts of swimming and wading
6 pools shall not be placed under existing service-drop conductors or any other open overhead wiring;
7 nor shall such wiring be installed above the following:~~

8 ~~(a) Swimming and wading pools, permanently installed spas, hot tubs, hydromassage
9 tubs, and the area extending ten feet horizontally from the inside of the walls of the pool, spa, or tub;~~

10 ~~(b) Diving structure; or~~

11 ~~(c) Observation stands, towers, or platforms.~~

12 ~~Electrical conduit shall be installed for utility company service wires when the service
13 conductors will be under the swimming pool, deck, apron, or within five feet of the swimming pool
14 walls.~~

15 Section 45. That Section 23.10.475 of the Lincoln Municipal Code be and the same
16 is hereby repealed.

17 ~~**23.10.475 — Section 680.23(A)(4) Amended; Swimming Pool Underwater Luminaries;
18 Voltage Limitations.**~~

19 ~~Section 680.20(a)(2) of the National Electrical Code is hereby amended to read as follows:~~

20 ~~**680.23(A)(4). Underwater Luminaries.** No luminaire shall be installed for operation over
21 150 volts between conductors except by special permission. Forming shells of nonmetallic
22 construction for wet-niche fixtures shall be allowed by special permission only.~~

23 Section 46. That Section 23.10.480 of the Lincoln Municipal Code be and the same
24 is hereby repealed.

25 ~~**23.10.480 — Section 680.26 Amended; Bonding Requirements.**~~

26 ~~Section 680.26 of the National Electrical Code is hereby amended to read as follows:~~

27 ~~**680.26. Bonding.** The No. 8 or larger solid bonding conductor shall be extended to the
28 equipment grounding terminal of the sub-panel, or neutral bar of the service panel which supplies
29 power to the pool lights and equipment.~~

30 Section 47. That Section 23.10.490 of the Lincoln Municipal Code be and the same
31 is hereby repealed.

32 ~~**23.10.490 — Section 680.43(A)(3) Amended; GFCI Requirements for Spas and Hot Tubs.**~~

33 ~~Section 680.43(A)(3) of the National Electrical Code is hereby amended to read as follows:~~

34 ~~**680.43(A)(3).** Receptacles or permanent wiring supplying power to a spa or hot tub shall
35 be protected by ground-fault circuit interrupters.~~

36 Section 48. That Section 23.10.495 of the Lincoln Municipal Code be and the same
37 is hereby repealed.

1 ~~23.10.495~~ — ~~Section 680.72 Amended; Electrical Equipment Located in the Vicinity of a~~
2 ~~Hydromassage Tub.~~

3 ~~Section 680.72 of the National Electrical Code is hereby amended to read as follows:~~

4 ~~680.72. Luminaries, switches, receptacles, and other electric equipment located in the same~~
5 ~~room, and not directly associated with a hydromassage bathtub shall be installed in accordance with~~
6 ~~the requirements of Chapters 1 through 4 in this code covering the installation of that equipment in~~
7 ~~bathrooms. Luminaries, switches, receptacles, and other electric equipment located within five feet~~
8 ~~measured horizontally from the inside walls of the hydromassage bathtub shall be protected by~~
9 ~~ground fault circuit interrupter.~~

10 Section 49. That Section 23.10.500 of the Lincoln Municipal Code be and the same
11 is hereby repealed.

12 ~~23.10.500~~ — ~~Section 700.12(f) Added; Emergency Service Source of Power.~~

13 ~~Section 700.12 of the National Electrical Code is hereby amended by the addition of part (f)~~
14 ~~as follows:~~

15 ~~700.12(f). Connection Ahead of Service Disconnecting Means.~~ Where acceptable to the
16 authority having jurisdiction, connections ahead of the main service disconnecting means shall be
17 permitted. ~~The emergency service shall be separated from the normal main service disconnecting~~
18 ~~means and/or distribution equipment to prevent simultaneous interruption of supply through an~~
19 ~~occurrence within the building or group of buildings served.~~

20 ~~The service entrance conductors within the building to the emergency disconnect and~~
21 ~~overcurrent protection shall be in rigid metallic conduit and shall be as close to the service entrance~~
22 ~~as possible, but not exceeding ten feet in length within the building.~~

23 Section 50. That Section 23.10.510 of the Lincoln Municipal Code be amended to
24 read as follows:

25 **23.10.510 Code Coordination.**

26 The electrical contractor shall become familiar with the requirements of other codes (such
27 as ~~the uniform building code, uniform mechanical code, uniform fire code~~ International Building
28 Code, International Mechanical Code, International Fire Code, and their adoptive ordinances)
29 enforced in this jurisdiction, the provisions of which apply to electrical installations.

30 ADVISORY NOTE: See the ~~Uniform Building Code, Section 310.9.1.4 as amended by Title~~
31 ~~20, the Lincoln Building Code, Section 20.12.260~~ 360 regarding requirements for smoke detectors
32 in dwelling units. Contact the Lincoln Bureau of Fire Prevention for the requirements of the Lincoln
33 Fire Code, Title 19, and Lincoln Fire Suppression Ordinance, Title 24, regarding exit lighting, fire
34 alarm and emergency systems, and hazardous (classified) area classification. Contact the

1 Mechanical Inspection Division regarding smoke detector requirements for air handling units of
2 more than 2000 cfm.

3 Section 51. That Sections 23.10.010, 23.10.140, 23.10.160, 23.10.190, 23.10.290,
4 23.10.300, and 23.10.510 of the Lincoln Municipal Code as hitherto existing be and the same are
5 hereby repealed.

6 Section 52. That this ordinance shall take effect and be in force from and after its
7 passage and publication according to law.

Introduced by:

Approved as to Form & Legality:

City Attorney

Approved this ___ day of _____, 2009.

Mayor