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ELECTRICAL INSPECTIONS

Plans Review and Renewable Energy Check Sheet

Based on the 2021
Canadian Electrical Code

Effective November 1, 2021



**Technical
Safety Authority**
of Saskatchewan

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WEBSITE INFORMATION

Publications Saskatchewan: <https://publications.saskatchewan.ca/#/freelaw/acts>

- Electrical Inspection Act, 1993: E-6.3
- Electrical Inspection Regulations: E-6.3 R1, E-6.3 R16
- Electrical Licensing Act: E-7.2
- Electrical Licensing Regulations: E-7.2 R4

TSASK: www.tsask.ca

- 2021 CEC Saskatchewan Interpretations and Information
- Approved Field Inspection Agencies and Certification Bodies
- District Inspector Contact Numbers
- District Inspector Territory Maps
- Electrical Fee Schedule
- Code for Electrical Installations at Oil & Gas Facilities
- Wind & Solar Information
- Link to Electrical Inspection Act and Electrical Inspection Regulations



SECTION 2 – GENERAL RULES

2-014 - PLANS AND SPECIFICATIONS

- 1) One set of construction electrical plans and specifications, as required by Section 19 of *The Electrical Inspection Act, 1993* or as requested by the Electrical Inspections department, shall be submitted to and reviewed by the Electrical Inspections department for:
- Main service and or feeders where ampacity is over 400A;
 - All renewable energy systems installations;
 - Sewage lift and treatment facilities;
 - Class A, B and C health care facilities as indicated by the current edition of the Z32 Standard, including identification of the patient care areas (See [Section 24](#) in the Saskatchewan Interpretations for definitions);
 - Installations covered by Sections 18, 19 (Oil & Gas Code - excluding single oil well sites <1000 V) 20 and 22 (Note – Reclassification of areas must be performed by a Professional Engineer complete with an assessment report and stamped drawings);
 - High voltage services and feeders;
 - Generator systems over 12 KW; or
 - Any other installation as deemed necessary by the Electrical Inspections department (i.e. large renovations of public buildings).
- 2) Submissions shall include the following information:
- Submitter (consultant/contractor/client) contact information:
 - Company name
 - Mailing address
 - Phone number
 - Email address
 - Project name, construction site address and/or land location.
 - Clearly specify the scope of the work.
 - Clearly identify existing, new, and future part of the project.
 - Electrical plans shall include the following:
 - Detailed site plan;
 - An overall single line diagram complete with:
 - Main service ampacity, voltage and phase;
 - Main and feeder conductor type and sizes including installation method i.e. underground (as per the D Tables and Diagrams), conduit, free air, bundled or raceway;
 - Panel schedules indicating current and voltage ratings;
 - Breaker/fuse size;
 - Conductor material (copper or aluminum);
 - Maximum short circuit current available at main service;



- Transformer ratings, primary and secondary overcurrent protection devices and conductor sizes; and
 - Grounding and bonding details;
- 3) Hazardous area classification drawings, which shall include the auto ignition temperature (AIT) of the hazardous product present at the site;
 - 4) Patient care areas (clearly identify the different patient care levels);
 - 5) Calculated loads;
 - 6) Cable schedule;
 - 7) Cablebus;
 - 8) Electrical equipment layout; and
 - 9) Voltage drop calculation for services and feeders.
- f) For high voltage (over 1000 V) installations, in addition to the applicable items in (e), the following information shall be submitted:
- 1) Electrical equipment arrangement complete with elevation, profile views and physical arrangement of the electrical equipment dimensions to clearly indicate the electrical, physical and work clearances and relative locations of the equipment;
 - 2) Ground potential rise (GPR) study;
 - 3) Fencing arrangement and details (see [36-312](#));
 - 4) Grounding and bonding details (including impedance grounding wiring details);
 - 5) Provisions for metering equipment; and
 - 6) Other design information and documents as requested by Electrical Inspections.
- g) Plans submission for a renewable energy system shall include, but not limited to:
- 1) [Renewable Energy Information Check Sheet](#) must be submitted with all renewable energy installation plans: visit www.tsask.ca for the check sheet;
 - 2) manufacturers specification or data sheets for racking systems, PV modules, DC combiners, inverters, rapid shutdown, etc.;
 - 3) a detailed site plan showing the relative locations of all electrical equipment including the length of all feeders and any applicable voltage drop calculations; and
 - 4) an overall single line diagram shall contain the following:
 - All electrical equipment (new and existing) and where this equipment connects to any electrical systems on the property such as PV array, DC combiner, inverter, disconnect, breaker/fuse, panel, etc.
 - Show all specific wiring and installation methods for the entire electrical installation (i.e. copper or aluminum conductors, PVC conduit, EMT, ACWU or TECK cables, underground, indoor/outdoor location, etc.)
 - All grounding and bonding details of any new electrical equipment.
 - The interactive point of connection as applicable in Rule 64-112 shall be shown. For example, if the connection is on the load side of the service disconnecting means such as a panelboard, splitter or other distribution equipment, provide bus amperage rating, utility source breaker and the renewable energy system input breaker ratings.
 - 5) solar array details required are:

- The maximum photovoltaic source circuit voltage as calculated by Rule 64-202 (N/A for micro-inverters, optimizers);
 - The rated short-circuit current (N/A for micro-inverters);
 - The rated operating current and voltage;
 - The type and number of PV modules connected in each series string;
 - The specific wiring methods for the solar array as applicable in CEC Rules [64-210](#), 64-212, & 64-220; and
 - For rapid shutdown initiation devices, show the location of equipment placards as per the local fire department (see Appendix M).
- h) Plans submission for irrigation systems shall include, but not limited to:
- Services;
 - Pump electrical data;
 - Pump controllers;
 - Cable sizes and distances;
 - Approval from AHJ for use in navigable waters;
 - Buoy requirements; and
 - Application for Deviation

3) Refer to the Electrical Fees Schedule for related costs

- △ 4) Submit plans to:
- TSASK**
Gas & Electrical Inspections Division
#177-1621 Albert Street
Regina, SK S4P 0S1
Telephone: 1-866-530-8599
Email: electricalplansreview@tsask.ca

NOTES:

1. The electrical contractor shall ensure that the plans have been submitted to Electrical Inspections.
2. The electrical contractor shall ensure that any main service and/or feeder conductor/cable changes made during construction, be submitted on an updated SLD to Electrical Inspections for addition to the GEIS data base for review by the Local Inspector.
- △ 3. The electrical contractor shall ensure that any substantial changes made during construction be re-submitted to Electrical Inspections for review.



