SASKATOON LIGHT & POWER

Reliable . Responsive .

City of Saskatoon

Customer Information Guide

Contents

Contact Information

Power Outages/ Emergencies 24 Hour Line
Report power outages or other electrical emergencies
306-975-2621

New Accounts/ Account Inquiries
For information about power bills and to create new accounts
306-975-2400

Connects/ Disconnects
Moving in or out of your current dwelling
306-975-2400

Street Light Maintenance
To report street light outages or issues regarding street lights
306-975-2414 option #7 or online https://saskpower.streetlightoutages.com

Underground Locates – Always Call Before You Dig
Sask1stCall
For when you plan to dig or excavate
1-866-828-4888

Construction Scheduling
To schedule construction with Saskatoon Light & Power (after the customer has received a Work Order Number from Saskatoon Light & Power)
306-975-2414 option #8

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To schedule tree trimming near power lines on customer property
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306-975-2417

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To obtain permits before any electrical work is performed by the electrical contractor and for Electrical Inspections
1-888-757-6937

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To obtain more information on customer based generation program and to get your generation installed and/or inspected
306-975-2414

Customer Connection Information
For information on obtaining a new electrical service or an upgrade to a house/ business
306-975-2414 option #3

General Information

Mission

The mandate of Saskatoon Light & Power is to provide safe, reliable and cost effective electricity in an environmentally responsible way. We strive to minimize the number and duration of customer outages with a focus on system maintenance, staff training and safety. We build, operate and maintain an electric distribution system to sell electricity to customers.

The information in this guide is intended to help existing and future customers to connect with our system in a safe, responsible and professional manner when planning upgrades or new construction.

Values

Service and system design standards used by Saskatoon Light & Power are intended to provide a high level of service to customers, minimizing the number and duration of power outages. Consideration needs to be made for an electrical installation to not only serve the load in a safe, efficient and convenient manner now but to provide capacity for future load growth. Installations with adequate capacity and convenient arrangement are essential to secure the full benefits of electrical service. This is important for commercial and industrial customers where an inadequate installation could result in production limitations, power losses and excessive maintenance costs.

Every effort will be made to comply with a customer's service request but Saskatoon Light & Power reserves the right to determine the supply voltage and load limitation, depending on available system capacity. Each request for service is reviewed with a view of the whole system. On behalf of the utility and its customers, Saskatoon Light & Power will not make uneconomical investments for connecting customers.

Customers should apply for service early in their planning stages to help ensure that Saskatoon Light & Power can meet the customer's project time schedule and to ensure that installation will be satisfactory.

Disclaimer

The information in this manual provides guidelines necessary to expedite the connection of electric service. Where details are shown, they are provided to assure the safety of individuals in the immediate vicinity of the electrical service entrance. It is the responsibility of the customer, their engineers and their contractors to assure that the installation meets all applicable codes. Saskatoon Light & Power does not assume this responsibility.

Saskatoon Light & Power may refuse to provide or continue with electrical service if this customer fails to adhere to this manual.

Core Services

Power

Saskatoon Light & Power provides electrical service to customers within its franchise area, defined roughly by the 1958 City of Saskatoon (City) limits. Power is purchased in bulk form SaskPower and distributed through a system of transmission lines, substations and distribution lines. Power is delivered to our customers at a variety of voltage levels and configurations. Metering of the power is provided by our Measurement Canada accredited Meter Shop.

More details regarding electrical services can be found in the **Power** section starting on page 8.

For detailed Saskatoon Light & Power service boundaries, refer to page 5 **Service Area**.

Street Lighting

Roadway lighting is the responsibility of the municipality as it is the owner of the roadway. Typically, the municipality hires the local electrical utility to provide the roadway lighting service. In Saskatoon, SaskPower and Saskatoon Light & Power both provide this service.

a) Transportation & Construction Department – Transportation Division

Transportation Division, as owner and operator of the roadway, is responsible for all aspects of the roadway including street lighting. Transportation is responsible for ensuring that there is sufficient funding for the installation of the lighting system for new roadways.

b) Community Services Department – Parks Division

All parks in Saskatoon are owned and maintained by the Parks Division; therefore, park and parkway lighting is their responsibility. Parks Division has chosen to hire Saskatoon Light & Power to provide pathway lighting services.

c) Utilities & Environment Department – Saskatoon Light & Power

Saskatoon Light & Power provides lighting service in the following areas:

- Within its franchise area
- For all City parks and pathways
- In all new neighbourhoods since 2003

In addition to providing the lighting service, Saskatoon Light & Power is responsible for administering the street lighting system and acts as an agent for the City of Saskatoon.

d) Other Lighting Owners

Lighting services outside the jurisdiction of Saskatoon Light & Power are provided by SaskPower or the Saskatchewan Ministry of Highways and Infrastructure. Each owner is responsible for the operation and maintenance of the street lights in their respective areas.

e) Saskatoon Light & Power Exclusions

Saskatoon Light & Power does not provide specialty lighting, such as ground or bollard lights. Saskatoon Light & Power also does not provide lighting for city-owned parking lots or city owned property (such as leisure facilities). This service is provided by the Utilities & Environment Department, Facilities Management Division.

Telecommunication

Saskatoon Light & Power is not a public telecommunications provider. Telecommunication companies may lease space on Saskatoon Light & Power's facilities provided an agreement is reached prior to installation of any equipment. Ongoing rental and lease payments will be charged for the use of Saskatoon Light & Power infrastructure.

a) Shared Overhead Installations

Qualified telecommunication companies can install and maintain their overhead systems and equipment on Saskatoon Light & Power poles. Installation of antenna structures is considered on a case-by-case basis.

b) Shared Underground Installations

The installation of telecommunications equipment in Saskatoon Light & Power underground facilities must be performed by Saskatoon Light & Power staff.

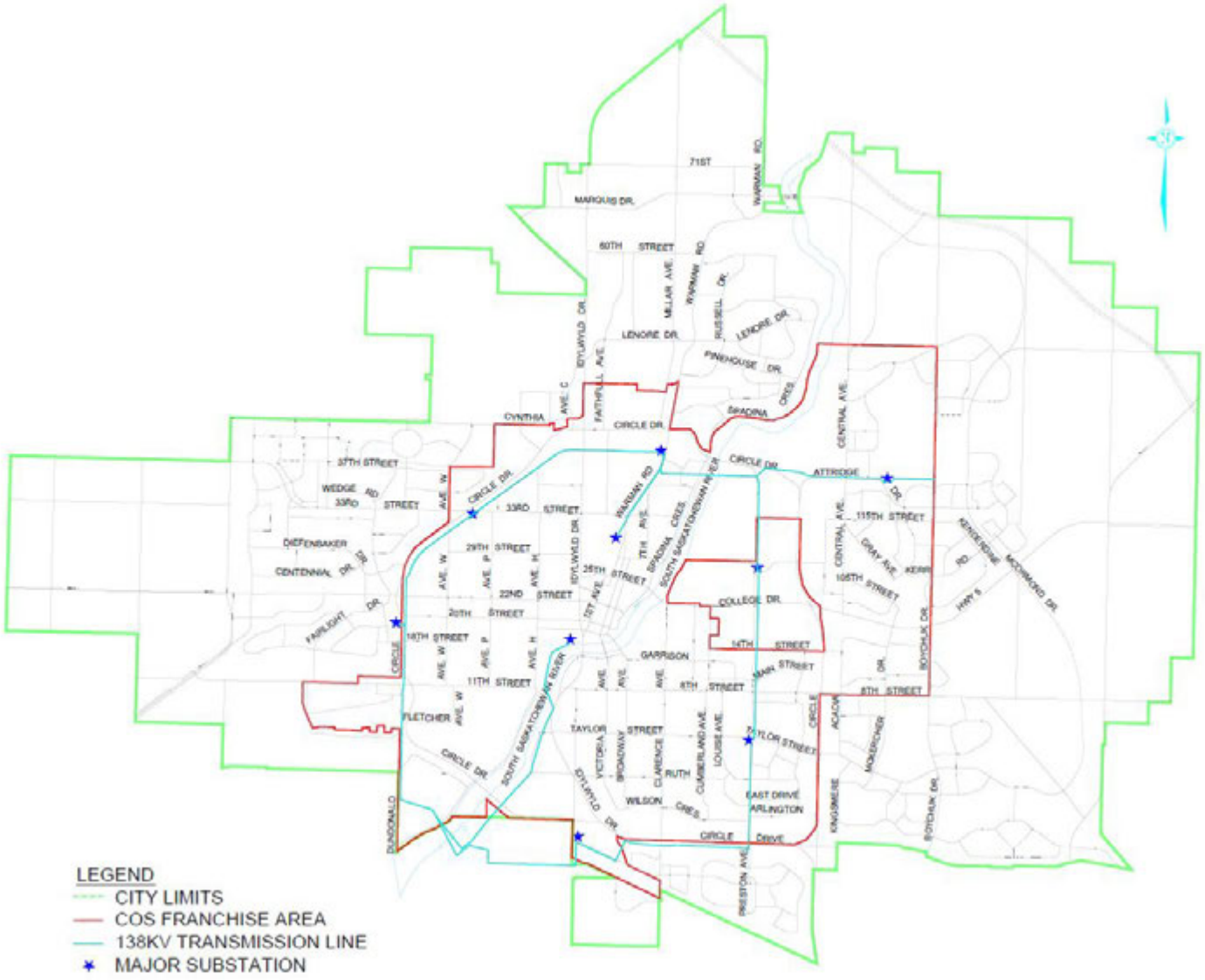
c) Communication Infrastructure

Saskatoon Light & Power owns and operates various communication systems for the operation and control of its power systems as well as for other City of Saskatoon Departments.

Service Area

The City of Saskatoon operates an electric utility, Saskatoon Light & Power, providing electrical service to the area of Saskatoon, which lies generally within the 1958 city boundary. **This does not include the area belonging to the University of Saskatchewan**. A more detailed map of the franchise area can be found at: www.saskatoon.ca → Services for Residents → Power, Water & Sewer →Saskatoon Light & Power.

Figure 1
Saskatoon Light & Power
Franchise Area Map



Safety Information

Clearance from Electrical Lines

a) Overhead Lines

The following table shows the safe limit of approach distance for persons, equipment and permanent structures to energized lines in the Saskatoon Light & Power system.

Table 1
Safe Limit of Approach

Phase to Phase Voltage of Overhead Power Lines (kV)	Safe Limit of Approach Distance	
	For Persons and Equipment	Permanent Structures
0.75 (insulated conductors)	0.3 m (1 ft.)	0.3 m (1 ft.)
4.16	3.0 m (10 ft.)	2.0 m (10 ft.)
15	3.0 m (10 ft.)	2.0 m (10 ft.)
25	3.0 m (10 ft.)	2.0 m (15 ft.)
138	4.6 m (15 ft.)	6.1 m (20 ft.)

Any structures built in proximity to a Saskatoon Light & Power overhead line with voltages as shown in **Table 1 – Safe Limit of Approach** must be located so that the structure and any worker on the structure can maintain the clearance as shown from any conductor on the line.

The owners of the structure must:

- Comply with the *Saskatchewan Occupational Heal and Safety Act and Regulations* to ensure worker safety during construction and maintenance of structures.
- Consult with Saskatoon Light & Power prior to any installation or maintenance of structures near overhead lines.
- Cover all costs of either de-energizing Saskatoon Light & Power's overhead line or installing cover-ups on the line if required for any installation or maintenance of structures.
- Accept all responsibility and liability should any mishap occur related to the presence of their structures.

b) Underground Lines

Saskatoon Light & Power is a member of **Sask1stCall**, a local one-call centre for underground facility locates.

Underground cable locates can be arranged through Sask1stCall by calling 1-866-828-4888 or go online at http://www.sask1stcall.com, or by accessing the mobile application on your cellular device.

Be advised that there may be **customer owned** underground cables on the property. Saskatoon Light & Power does not locate customer owned underground cables.

Excavation Near Underground Electrical Cables

Saskatoon Light & Power requires contractors and homeowners to contact the utility before work is performed in proximity to the utility's underground cables and duct banks.

1. Contact Sask1stCall at 1-866-828-4888 or submit an online request at https://www.sask1stcall.com/request-online/ to request a cable locate and to receive a clearance for underground cables and duct banks within the Saskatoon Light & Power franchise area. **Requests should be made a minimum of two (2) days in advance**.

2. Once located, hand expose or hydro-vac cables and duct banks, if excavating within 1.0 m (3 ft) of markings.

3. If conductors need to be de-energized, contact Saskatoon Light & Power at 306-975-2414 option #5. **A minimum notice of three (3) working days is required**.

4. Contact Saskatoon Light & Power at 306-975-2414 option #5, before backfilling to allow for inspection of cables and duct banks.

Caution

Never handle conductors under any circumstances

Power

Connections

Saskatoon Light & Power offers the following secondary service voltages:

- Single phase 3-wire 120/240 V
- Single phase 3-wire 120/240 V (network)
- 3 phase 4 wire 120/208 V
- 3 phase 4 wire 347/600 V
- 14,400 V or 25,000 V – considered as Primary Customers

Saskatoon Light & Power will provide one point of service per building. If additional information on servicing is required, please call 306-975-2414 option #3.

Saskatoon Light & Power does not offer 3-phase 3-wire 240 V service as an upgrade or perform upgrades on existing 3-phase 3-wire 240 V systems. Saskatoon Light & Power provides suitable credits for upgrades for the removal of existing 3-phase 3-wire services.

The electrical wiring past the demark point between the customer and the utility must be up to the current *Canadian Electric Code Standards*. For both overhead services and underground services the service conductors on the customer's end are to be colour coded as per the *Canadian Electrical Code* requirements.

Saskatoon Light & Power has the right to refuse energizing any service if there is a concern regarding safety and the customer may or may not be notified of the deficiencies.

It is the duty of the customer to contact Saskatoon Light & Power to gather all information prior to the start of construction.

General Service Installation

The *Canadian Electrical Code* specifies that all electrical installations on the customer end must be installed in a manner which is satisfactory for both the Electrical Inspections Department and the Supply Authority. The following section summarizes some of the requirements for Saskatoon Light & Power.

Note: Not all of the requirements are listed below. It is the responsibility of the customer to contact Saskatoon Light & Power to find out the requirements for any given electrical service.

For any new electrical service or to make any changes to an existing service, the following steps are followed:

1. Contact

a) The customer is responsible to contact Saskatoon Light & Power – Customer Connects at 306-975-2414 option #3 which is an automated voicemail.
b) The customer must provide the civic address/location they are enquiring about, along with a brief description of the nature of the enquiry.
c) Saskatoon Light & Power will respond to the enquiry within 3 business days to gather more information on the service request change.

2. Design

a) Saskatoon Light & Power completes a preliminary design based on the information gathered by our Engineering group.
b) The Engineering group and the customer work on the design details until a design is mutually agreed upon. **Note:** design considerations will need to meet both *Canadian Electrical Code* and *Saskatoon Light & Power Customer Service Guide* requirements.
c) For commercial and transformer rated services, the customer is required to submit all project drawings (e.g. building, single-line, switchgear etc.) for power delivery and metering for review.
d) Based on the scope of the project, the preliminary design requires 5 business days.

3. Quote

a) Based on the design Saskatoon Light & Power estimates labour hours and costs associated with the work.
b) The details on the responsibilities between Saskatoon Light & Power and the customer are listed.
c) For new customers Saskatoon Light & Power will determine a 1 year revenue investment toward the customer. This investment is credited back towards the estimate calculated in the previous step.
d) A cost acceptance form and final design plan is sent to the customer for approval. Saskatoon Light & Power requires a signed acceptance of the costs and design before proceeding further.

4. Work Order

a) Once a signed acceptance of costs and design is received Saskatoon Light & Power initiates a Work Order.
b) Once the Work Order is created, a Work Order number is provided to the customer for future reference.
c) Job preparations for materials, labour, vehicles and contractors are made.
d) The Work Order is added to our preliminary schedule.
e) The Work Order is transferred to our Operations Group. **Note**, if any changes are made at this stage the customer will revert back to the Design stage and the process is repeated.

5. Construction

a) Once the customer has completed the responsibilities provided by Saskatoon Light & Power the customer can contact the Operations Scheduler at 306-975-2414 option #8 and provide the Work Order number for reference.
b) Saskatoon Light & Power does NOT schedule a project until the customer is ready and the project has been inspected for conformance with *Canadian Electrical Code* and *Customer Service Guide* requirements.
c) Our Operations Crew may require 4 to 6 weeks to complete the job depending on the nature of the work.

6. Energize

a) For Saskatoon Light & Power to energize the installed service the customer should have an account set up for utility billing.
b) The customer is responsible to contact City of Saskatoon – Corporate Financial Services – Corporate Revenue Division to set up a new account for every utility meter required. The account can be set up in the following ways:
    i. In person at City Hall at 222 3rd Avenue North
    ii. Phone: 306-975-2400 or 1-800-667-9944
    iii. Fax: 306-975-7975
    iv. Email: revenue@saskatoon.ca
c) The customer or their electrical contractor has to contact Saskatoon Light & Power's Meter Shop at 306-975-2417 and provide the SaskPower Electrical Permit number prior to the installation of the meter.
d) When steps (b) and (c) are completed Saskatoon Light & Power will proceed with the installation of utility metering.

Infill Development

The City of Saskatoon's *Neighbourhood Infill Development Strategy* permits the construction of additional residential units in established neighbourhoods of Saskatoon. Infill usually occurs by adding an additional residential unit within a house by adding a garage and garden suite or the demolition of a house and subdividing the land to create additional residential lots.

The infill purchase listings note that the utilities, such as natural gas, electric power and phone service will be provided from the property line to a point to be determined by the respective utility agencies. Saskatoon Light & Power will provide an underground service in such cases unless circumstances dictates that an aerial service be installed. Saskatoon Light & Power will review the conditions during the design process and method of delivery will be conveyed to the customer. Costs associated with the service connection are the responsibility of the customer.

Please contact Saskatoon Light & Power – Customer Connection Line at 306-975-2414 option #3 for more information on the method of delivery and the costs associated with the delivery of electrical power to the property.

Saskatoon Light & Power will mandate service connection design. It is the responsibility of the customer to contact Saskatoon Light & Power to gather all requirements prior to service connection.

Underground Residential Connections

Underground service is the preferred service for upgrades, new and infill builds but in limited cases an overhead service may make a better design option. Contact Saskatoon Light & Power prior to beginning construction to determine the most suitable design.

Where underground service is the most suitable Saskatoon Light & Power will provide installation of underground cables from Saskatoon Light & Power infrastructure to the meter socket.

The following requirements by Saskatoon Light & Power should be considered for an underground service.

- The customer is responsible for trenching on property. The customer is responsible to supply and install a 2" PVC conduit from the meter socket to the property line towards Saskatoon Light & Power facilities as per Saskatoon Light & Power requirements.

- The customer is allowed to install separate communication ducts in the same trench. SaskTel requires 1" grey conduit, and Shaw requires ¾" orange conduit. Failure to install separate communication conduits may result in refusal of electrical service installation.
- Contact Numbers for Sasktel and Shaw to arrange for the conduit pickup are:
    - Sasktel – Charles Vanneste: (306) 931-5493
    - Shaw – warehouses@sjrb.ca
- The conduits must be buried at a minimum depth of 0.6 m (2 ft) below final grade and at a maximum depth of 1.1 m (3.6 ft).
- No more than four (4) 90 degree bends between the customer installed meter socket and Saskatoon Light & Power's point of service are allowed.
- A minimum of 0.6 m (2 ft) horizontal separation between the electrical trench and gas trench and a minimum of 0.6 m (2 ft) separation between the electrical and gas meter must be maintained.
- A minimum of 1.2 m (4 ft) of clearance is required for service access to meter.
- The meter socket must be located at the nearest corner of the building to the power pole in the alley. The meter socket is to be mounted on an adequately secured fixed wood backing with a minimum of 19 mm (3/4") thickness and at least the same size as the socket.
- The customer will install a loop box at a minimum height of 0.3 m above the final grade with accommodations for an expansion joint/ frost sleeve to allow for ground movement.

If the point of service is on the garage, the meter socket installation will be prioritized. See **Figure 2-Prioritized Locations for an Underground Service** for more information.

- To the nearest side of the garage meeting above clearance requirements.
- To the front of the garage (facing the building) meeting above clearance requirements.
- To the back of the house facing the alley.

If none of the above locations work, then the customer will be responsible to supply and install a free-standing meter base/pedestal which will be the point of service. Please contact Saskatoon Light & Power prior to the installation of a free-standing meter base/pedestal.

Saskatoon Light & Power may refuse service if required clearances cannot be provided.

- For two (2) meters with residential loads up to 200 Amps a 3-ganged meter socket will be used. The third meter position is used as a termination point.
- Meter sockets should have a 12.5 mm (0.5") stud type line side and neutral terminals to permit straight in conductor connections suitable for securing compression lugs rated for #6 to 4/0 conductors.
- A PVC frost sleeve or slip pipe is required to protect against ground settling. The sleeve should measure 600 mm (24") in length and 25 mm (1") larger in diameter than the supply conduit.

Residential Services Over 200A

A standard residential service request is 200 Amps and under. Any residential service above 200 Amps have special requirements as noted:

The customer is responsible to supply and install an external weather proof splitter. The dimensions can be found in **Table 3 Typical Service Installation Chart**.

- Saskatoon Light & Power does not install a 400 Amps rated self-contained meter:
  - For single meters, the customer must make accommodations for an instrument rated meter. Please contact Saskatoon Light & Power Meter Shop at 306-975-2417 for more information.
  - For multiple meters up to 200 Amps, an instrument rated meter is not required.

Figure 2
Prioritized Locations for an Underground Service

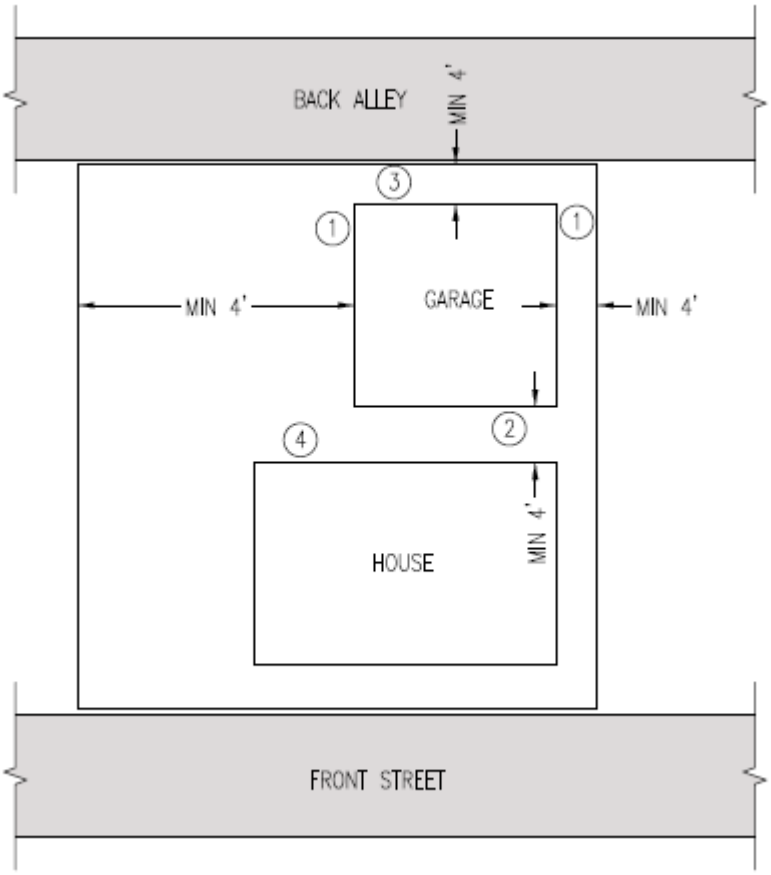


Figure 3
Typical Layout for New Residential
Underground Services (Power and Gas)

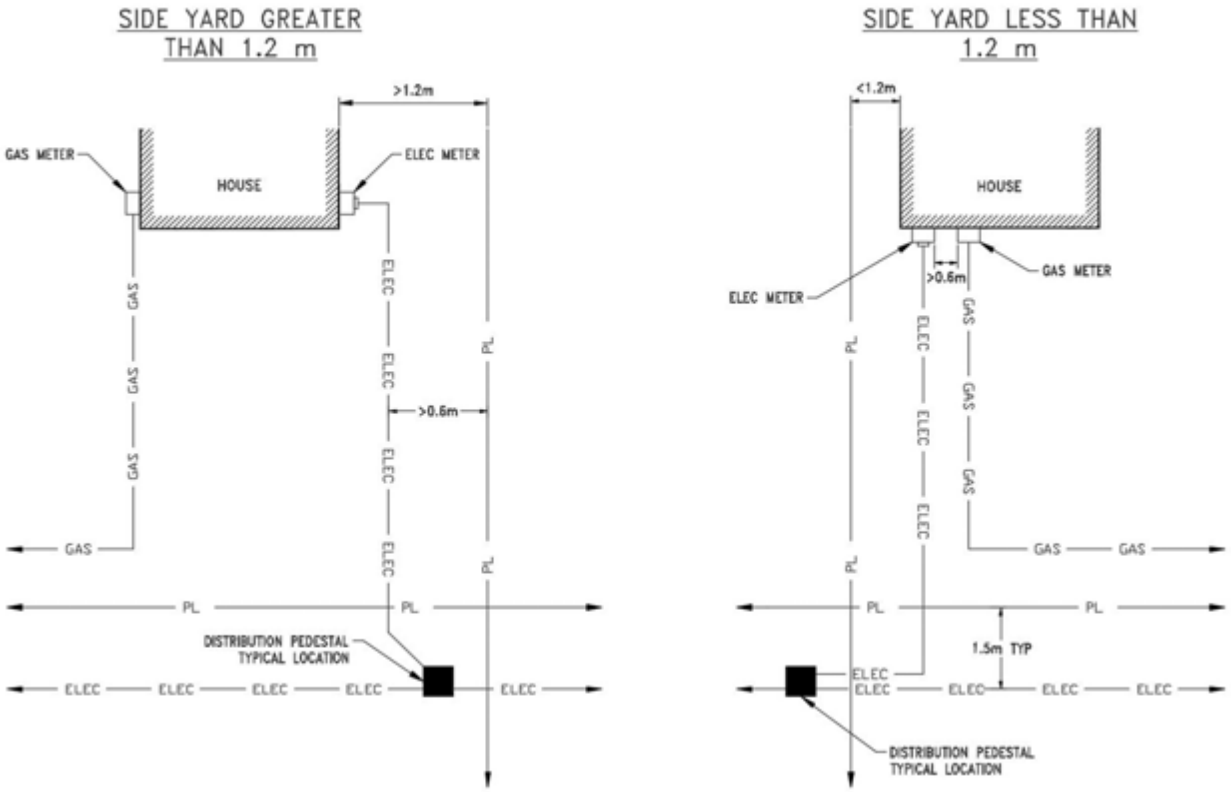
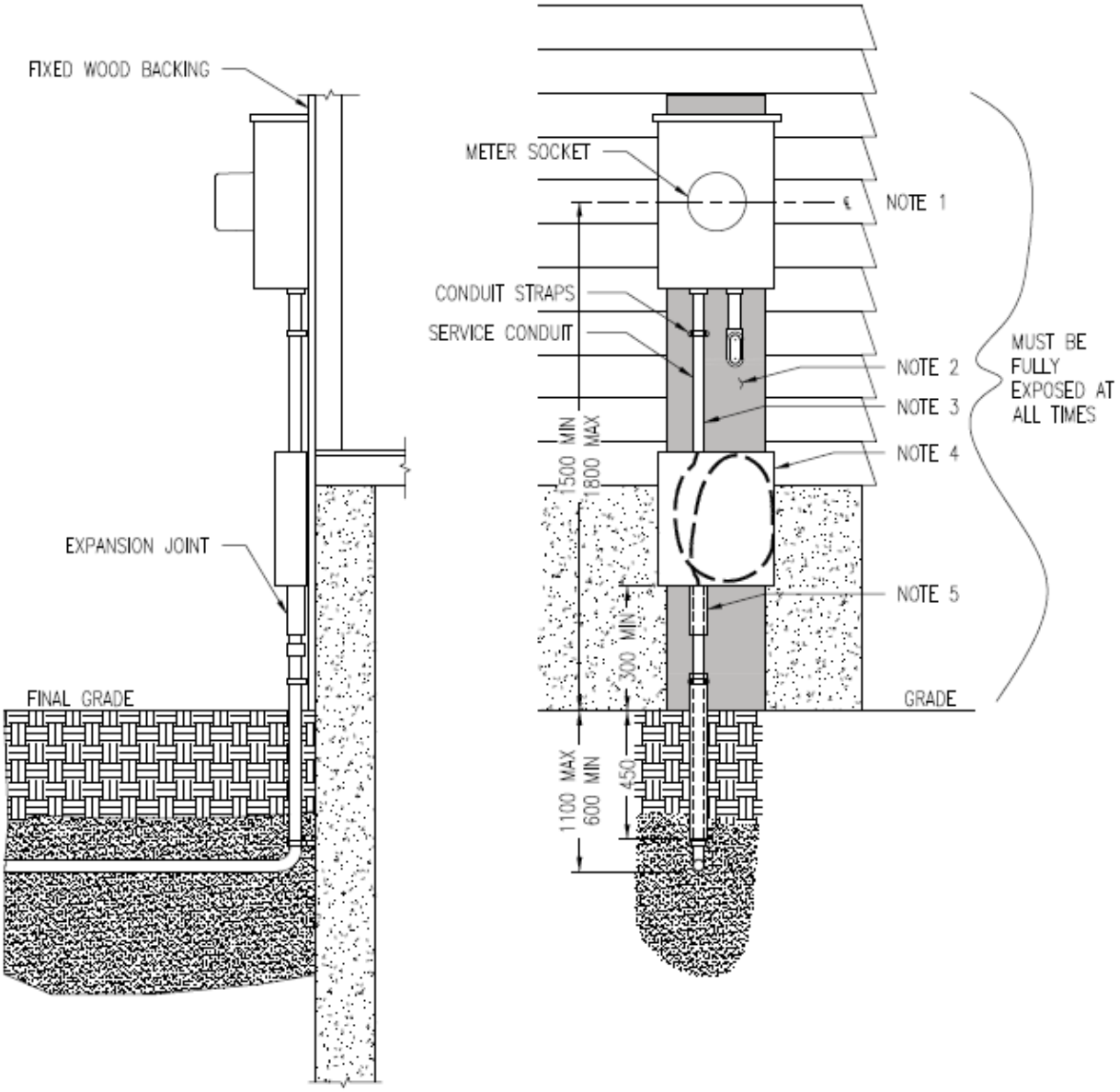


Figure 4
Typical Residential
Underground Service



Note:

1. Centerline of the meter to be a minimum of 1500 mm (5 ft) or maximum of 1800 mm (6 ft) from final grade on property.
2. The service will have a fixed wood backing at least the same width as the socket extending to 300 m above the final grade and must accommodate the loop box.
3. The supply conduit should be a minimum of 50 mm (2”) PVC and is installed by the customer on property. The routing of the conduit will be provided to the customer at the design stage.
4. The customer must install a loop box at a minimum of 0.3 m above final grade.
5. The loop box must have PVC slip sleeves and/ or expansion joints to allow for ground settling and must follow the *Canadian Electrical Code* requirements.

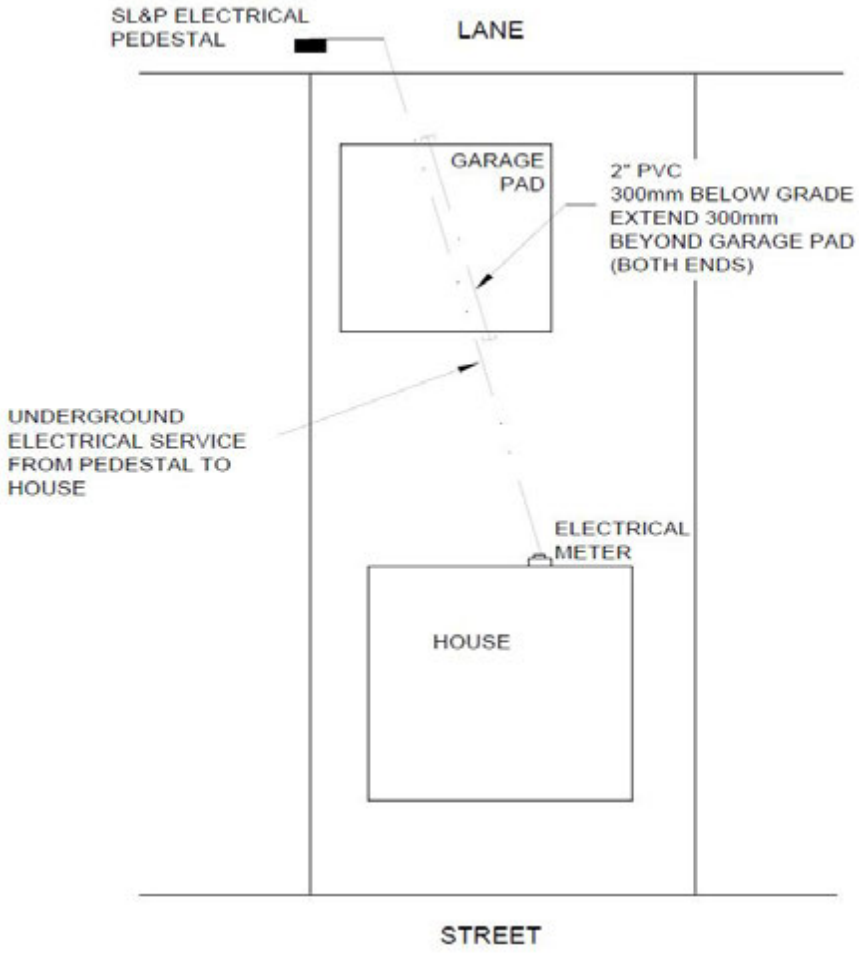
Saskatoon Light & Power does not allow the customer gas line to be installed in the same trench as the electrical service line.

Saskatoon Light & Power requires a minimum of 600 mm separation between the gas line and power line for residential customers.

A garage may be built over a customer’s underground service cable, but not on an easement. The service cable must be hand exposed for the entire length which will be covered by the garage to prevent its damage during construction.

The customer is required to install a 50 mm (2”) PVC duct under the garage pad at 450 mm (1.5 ft) below finished grade to facilitate future maintenance to the service cable. The duct should extend beyond the garage pad by a minimum of 300 mm (1 ft).

Figure 5
Building Garage



Overhead Residential Connections

Saskatoon Light & Power provides an overhead service from our power lines in the alley to the demarcation point on the house. For an overhead service the demarcation point between the customer and Saskatoon Light & Power is the connection at the mast.

A new residential overhead connection will be allowed at Saskatoon Light & Power's discretion. It is the responsibility of the customer to contact Saskatoon Light & Power – Customer Connects line for any new service request prior to construction. For general service requirements on an underground residential service, please see "**Underground Residential Connections** (page 11)."

The following requirements by Saskatoon Light & Power should be considered for an overhead service:

- The point of attachment cannot exceed 18 feet above grade. The attachment point height should also be installed in such a manner that proper clearances (Shown in **Table 2 - Minimum Vertical Line Clearances**) are maintained.
- The ladder scope should be 4:1 for an overhead connection installation. This means that for a 4.0 m ladder extension should have 1.0 m of horizontal separation between the base of the ladder and the structure.
- A clear line of sight should be maintained from the attachment point to the power lines in the alley. Trees must be cleared to 2.0 m around the proposed route of the customer service line.
- The attachment point should face the alley. The meter socket is to be mounted on an adequately secured fixed wood backing with a minimum of 19 mm (3/4") thickness and at least the same size as the socket.
- A minimum of 1.2 m (4 ft) of clearance is required for service access to the meter.
- The attachment point and the meter socket will be located at the nearest corner of the building to the power pole in the alley.
- If the attachment point is on the garage, the meter socket installation will be prioritized:
    - To the nearest side of the garage meeting above clearance requirements.
    - To the back of garage (facing the alley) meeting above clearance requirements.

Saskatoon Light & Power may refuse service if the required clearances cannot be provided.

- For two (2) meters with residential loads up to 200 Amps, a 3-ganged meter socket will be used. This third meter position is used as a termination point.
- Mid-span tap off is not a service option in most scenarios. Please call Saskatoon Light & Power – Customer Connects at 306-975-2414 option #3 and our Engineering staff will be able to assist you.
- Overhead connections are limited to 200 Amps.

Table 2
Minimum Vertical Line Clearances

	Metres	Feet
Public roadway or lane	5.5	18.0
Residential driveway	4.0	13.1
Pedestrian walkway	3.5	11.5
Deck, flat roof	2.5	8.2
Garage roof	1.0	3.1

Figure 6
Typical Residential
Overhead Service

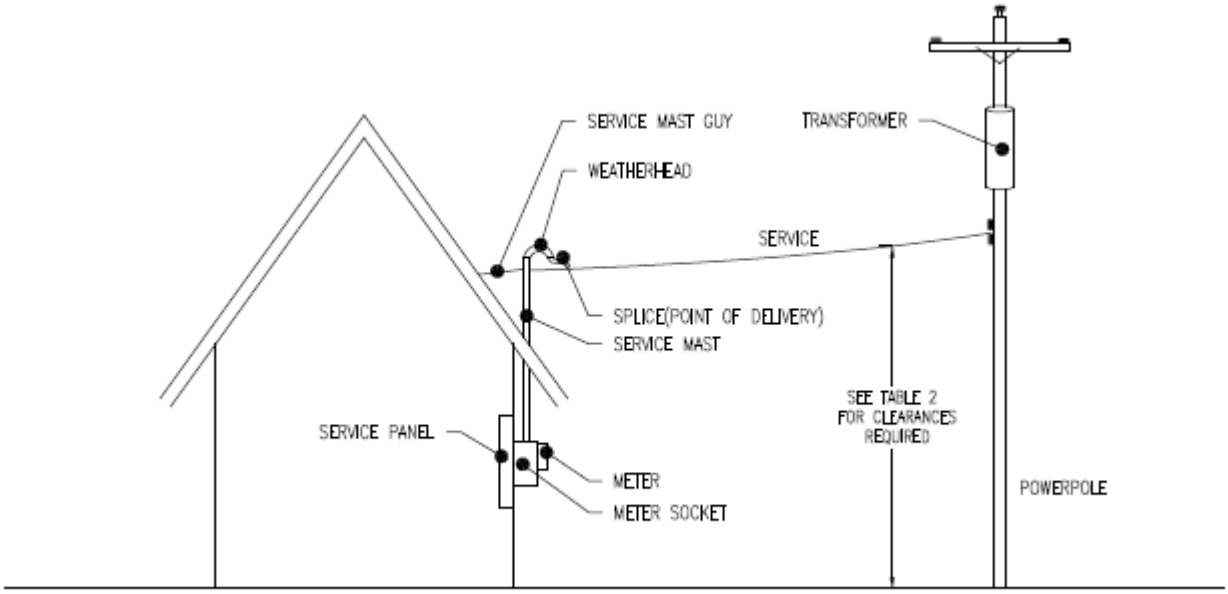
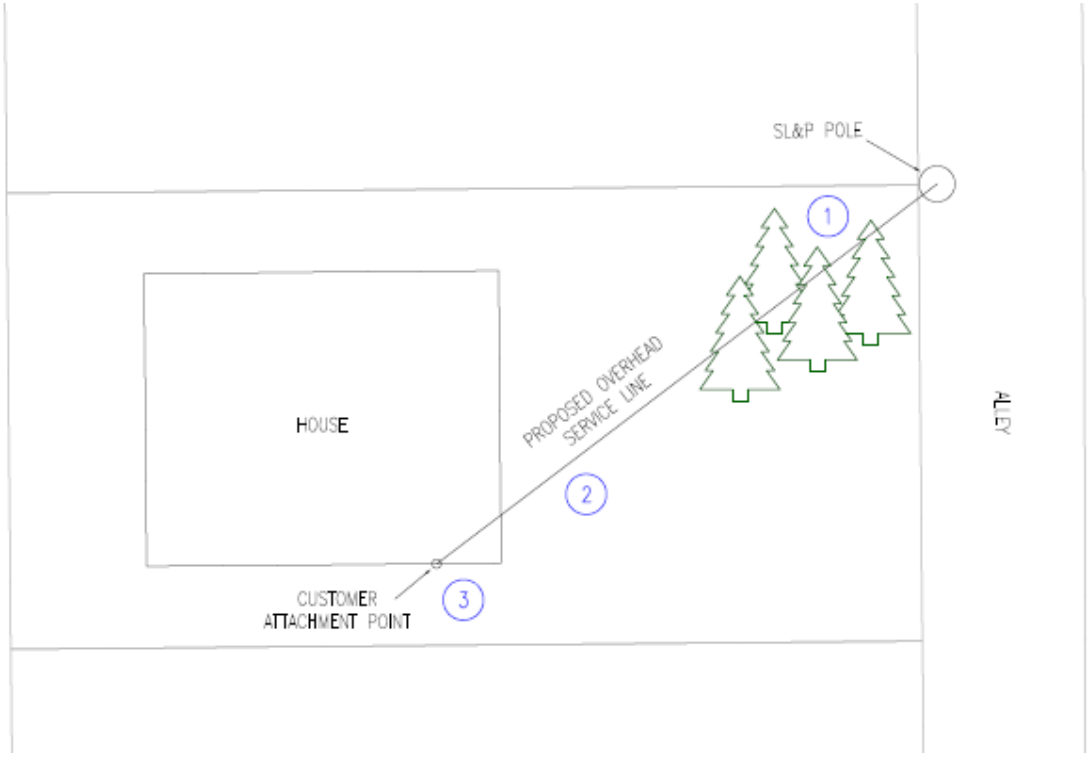


Figure 7
Refusing an Overhead Service



1. There is no clear line of sight between the attachment point on the house to the power pole.
2. The length of the service wire exceeds 30 m.
3. The attachment point on the side is not allowed:
    a. Side installations cause the service wire to rub against the side of the house which causes the insulation to wear.
    b. Height of the attachment point is greater than 18 feet.
    c. Ladder slope ration of 4:1 cannot be achieved.
    d. Meter base is too close to the property line (less than 1.2 m).

Underground Connections – Townhouse and Multi-Unit Dwellings

Saskatoon Light & Power provides an underground service to a maximum of four (4) meters in one meter trough. A blank compartment next to the meter positions will be used as a termination point for Saskatoon Light & Power. This set up will be applicable only if a building requires a maximum of four (4) meters. Any residential townhouses/ multi-unit dwellings requiring more than 4 meters will require an external splitter.

A 125 mm (5") PVC supply conduit complete with a 600 mm (2 ft) ling frost sleeve is required from the splitter to 450 mm (1.5 ft) below finished grade. The customer is responsible to supply and install all 125 mm duct on property. The splitter is to have a door with a 3-point latch and a padlockable handle. The splitter will be the utility's point of service.

The following requirements by Saskatoon Light & Power should be considered for an underground service.

- The customer is responsible for trenching on their property. The customer is responsible to supply and install PVC conduits from the meter socket/ splitter to the property line towards Saskatoon Light & Power facilities as per Saskatoon Light & Power requirements.
- The customer is allowed to install separate communication ducts in the same trench.
- The conduits will be buried at a minimum depth of 0.6 m (2 ft) below final grade.
- There will be no more than four (4) 90 degree bends between the customer installed meter socket and Saskatoon Light & Power's point of service.
- There will be a minimum of 0.6 m horizontal separation between the electrical trench and gas trench.
- A minimum of 1.2 m (4 ft) of clearance is required for service access to the meter.
- If the point of service is on the garage, the meter socket installation will be prioritized:
    - To the nearest side of the garage meeting the above clearance requirements.
    - To the front of the garage (facing the building) meeting above clearance requirements.

Saskatoon Light & Power may refuse service if the required clearances cannot be provided:

- The meter socket is to be mounted on an adequately secured fixed wood backing with a minimum of 19 mm thickness and at least the same size as the socket.
- A PVC frost sleeve or slip pipe is required to protect against ground settling. The sleeve should measure 600 mm (24") in length and 25 mm (1") larger in diameter than the supply conduit.

Commercial Connections

Commercial, industrial, institutional, apartment or condominium customers must contact Saskatoon Light & Power as soon as possible for new services or upgrades to existing services.

The following requirements by Saskatoon Light & Power should be considered for any commercial or industrial service.

- Commercial connections requiring an overhead service are limited to 600 Amps and below.
    - Service entrance size of 400 Amps and below will require a single hook/ eyebolt.
    - Service entrance size of 600 Amps will require four (4) eyebolts/ hooks. See **Figures 8A, 8B and 8C.**
- Any commercial connections requiring 800 Amps and over will be an underground service.
- The customer is responsible to provide Saskatoon Light & Power with the design plan for the site.
- This site plan will show the locations/ routing of water, sewer, gas, etc. of all other utilities on site, which is helpful to coordinate electrical design.
- Accommodations will be made by the customer on property for a dedicated utility transformer to provide power to the site. Typical padmount transformer and guard post installation are shown in **Figure 9 Typical Transformer Installation.**
- Saskatoon Light & Power requires the installation of an external splitter which is considered as a demarcation point between the utility and the customer for underground services above 200 Amps. Based on the service entrance size the splitter sizes vary. Please see **Table 3 - Typical Service Installation Chart** for more information.
- The splitter will have a door with a 3-point latch mechanism and a padlockable handle.
- The neutral buss-bar or neutral lugs will be the first point of contact, followed by the phase buss/ lug arrangement.
- The secondary lugs will be positioned away from the door latching mechanism to avoid accidental contacts.
- The splitter will be mounted at a minimum height of 600 mm above finished final grade.
- The customer is responsible to supply and install the ducts from the transformer to the splitter on the property and will adhere to Saskatoon Light & Power requirements.
- Saskatoon Light & Power will determine the number of ducts and will convey it to the customer during the design stage.

Saskatoon Light & Power will provide design estimates for new or upgraded electrical services by an informal request but will not order equipment without a written/ signed acceptance of the design and costs associated with the upgrade. Drawings showing site plans and single-line diagram must be included when the customer contacts Saskatoon Light & Power.

In most cases, Saskatoon Light & Power requires a minimum of a 4 m x 4 m stretch of space on a property to install a padmount transformer and splitter required to provide electrical service.

Table 3
Typical Service Installation Chart

Volts(V)	Amps(A)	Minimum Splitter Size (inches)	Customer Installed Instrument Transformer Cabinets (inches)
120/240V	400A-600A	30”x30”x10”	36”x36”x12”
120/208V	200A-600A	36”x36”x12”	36”x36”x12”
	800A-1200A	48”x48”x12”	36”x36”x12”
	1600A-3000A	60”x60”x16”	36”x36”x12”
347/600V	200A-600A	36”x36”x12”	36”x36”x12”
	800A-1200A	48”x48”x12”	36”x36”x12”
	1600A-3000A	60”x60”x16”	36”x36”x12”

Any building/ property with a service entrance of 800 Amps or higher requires underground service and the installation of a splitter. Overhead service will not be provided in such cases.

Figure 8 A
Commercial Connections - Horizontal

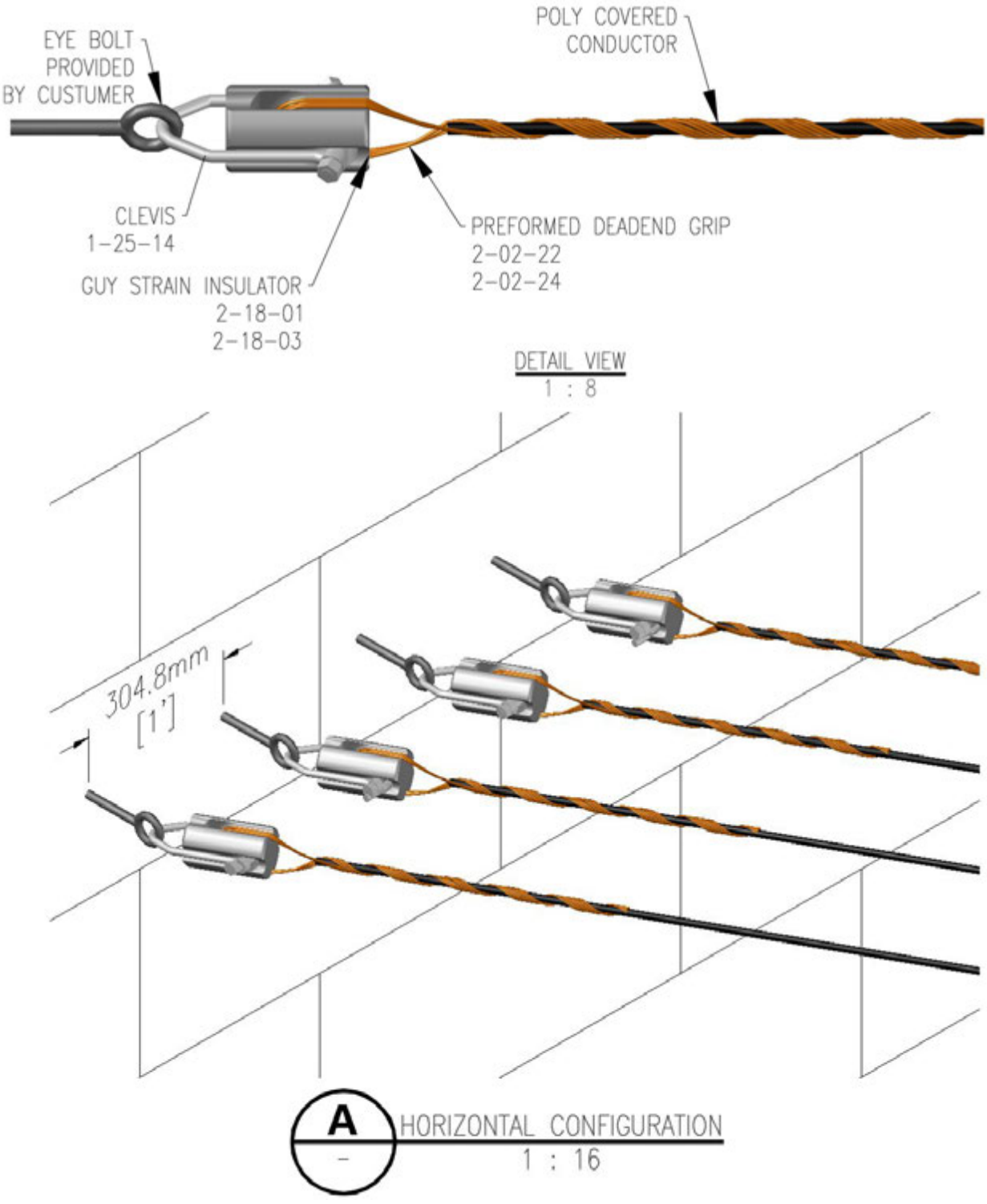


Figure 8 B
Commercial Connections Vertical

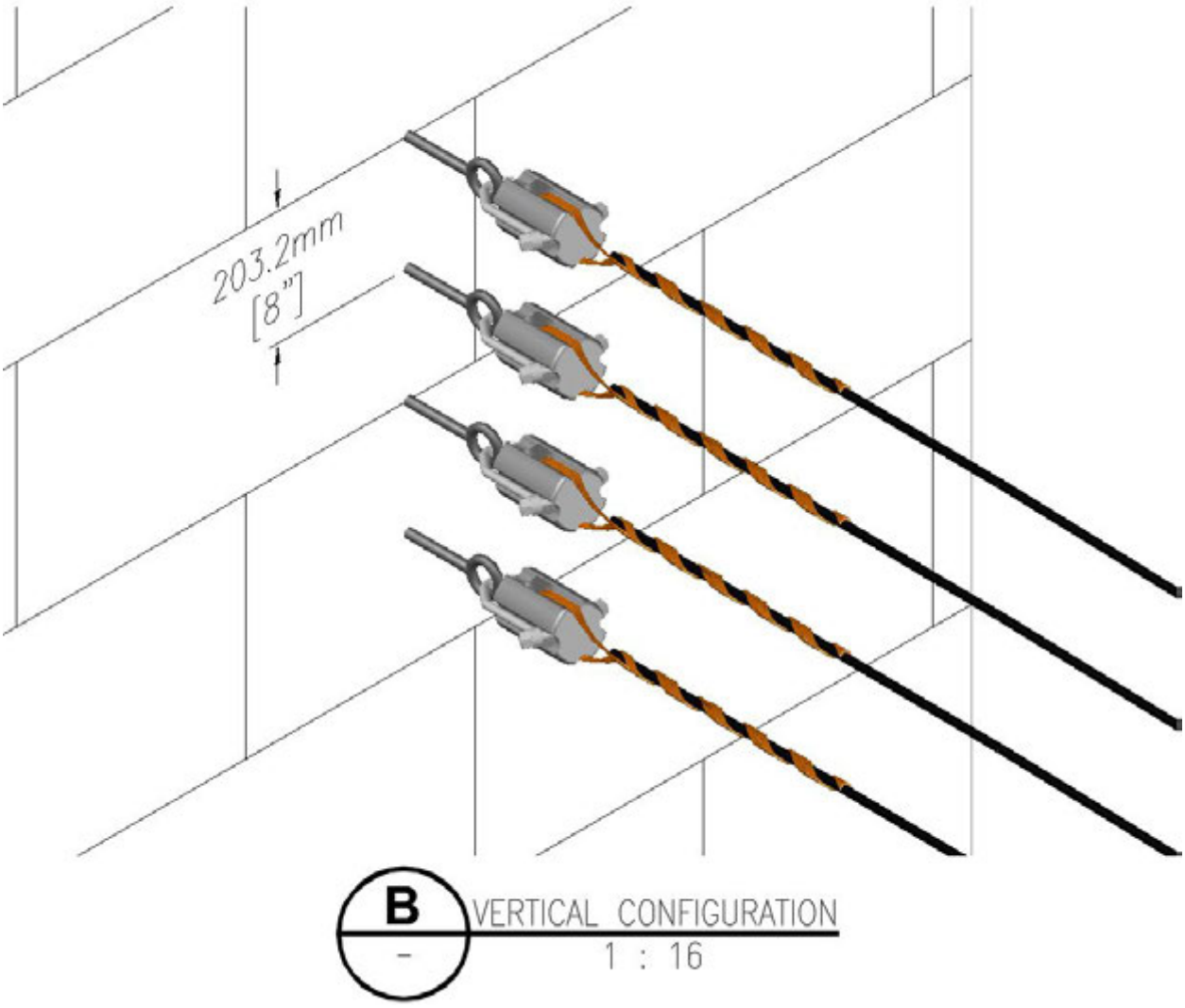


Figure 8 C
Commercial Connections Overview

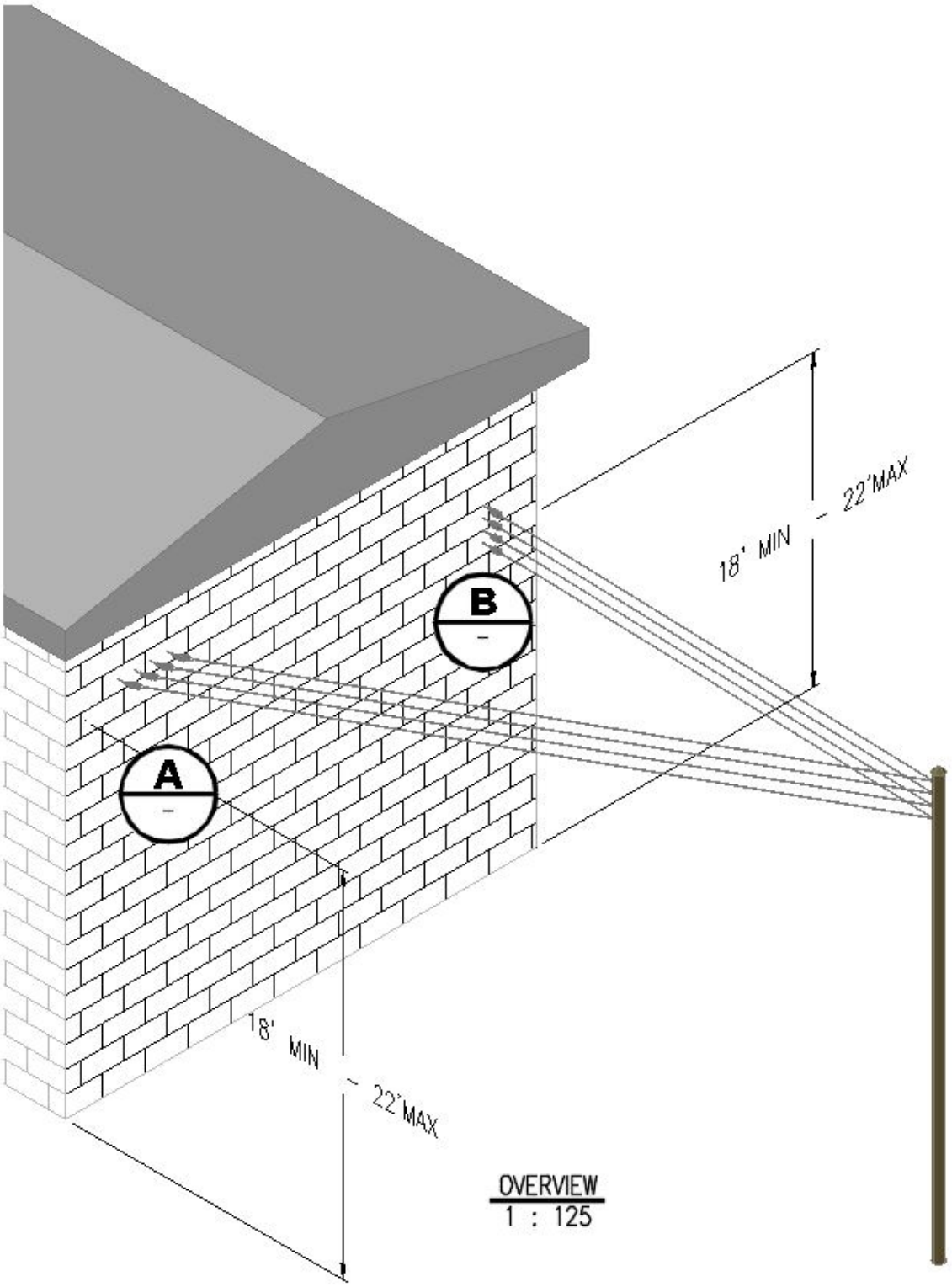
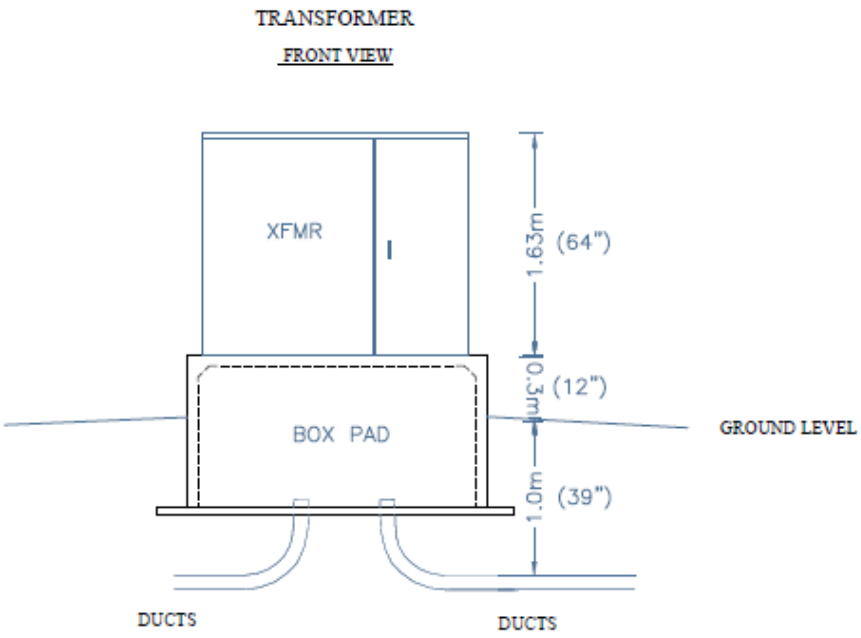
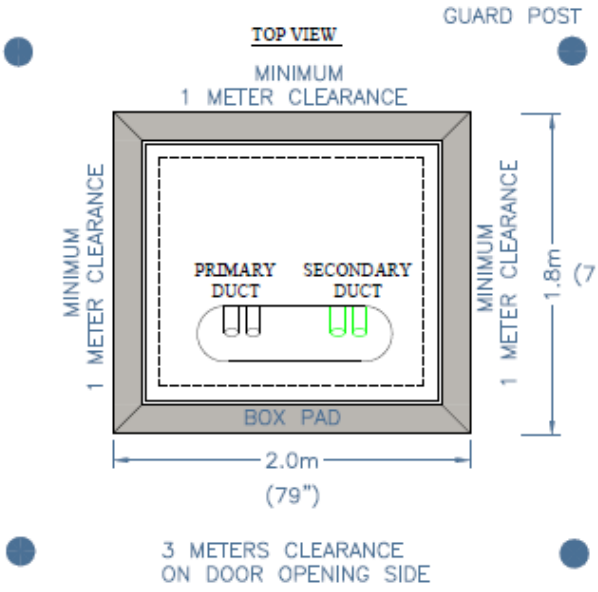


Figure 9
Typical Transformer Installation





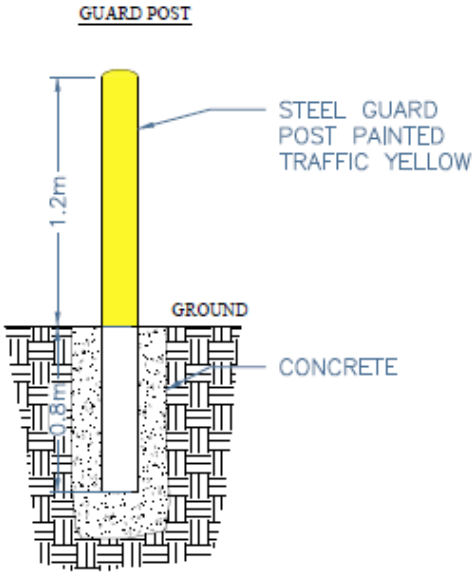
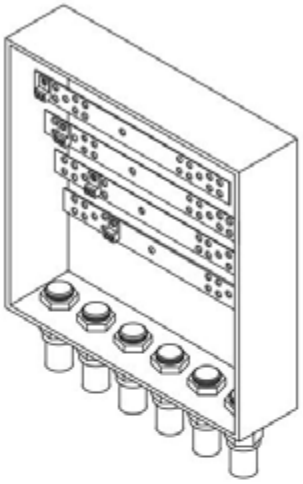
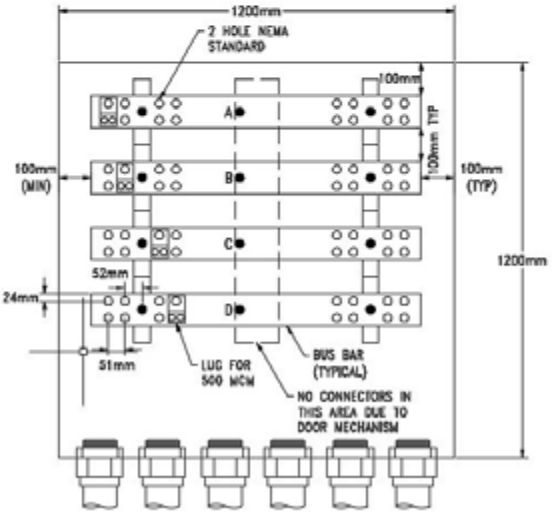


Figure 10
Typical 48” x 48” Splitter Layout

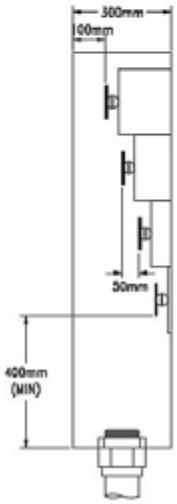


NOTES:

- REFER TO TABLE 3 FOR SPLITTER DIMENSIONS IN GIVEN SERVICE SIZE
- NEMA 3R
- 600A TO 2000A
- 120/208V TO 347/600V
- TYPICAL FAULT CURRENT RATING IS 50,000A, CONTACT SL&P FOR AVAILABLE FAULT LEVELS AT A GIVEN LOCATION
- MOUNTED 2ft ABOVE FINISHED GRADE
- DUAL DOORS; PADLOCKABLE WITH 3–POINT LATCH
- POWDER COATED ANSI 61 GREY



FRONT VIEW



RIGHT SIDE VIEW

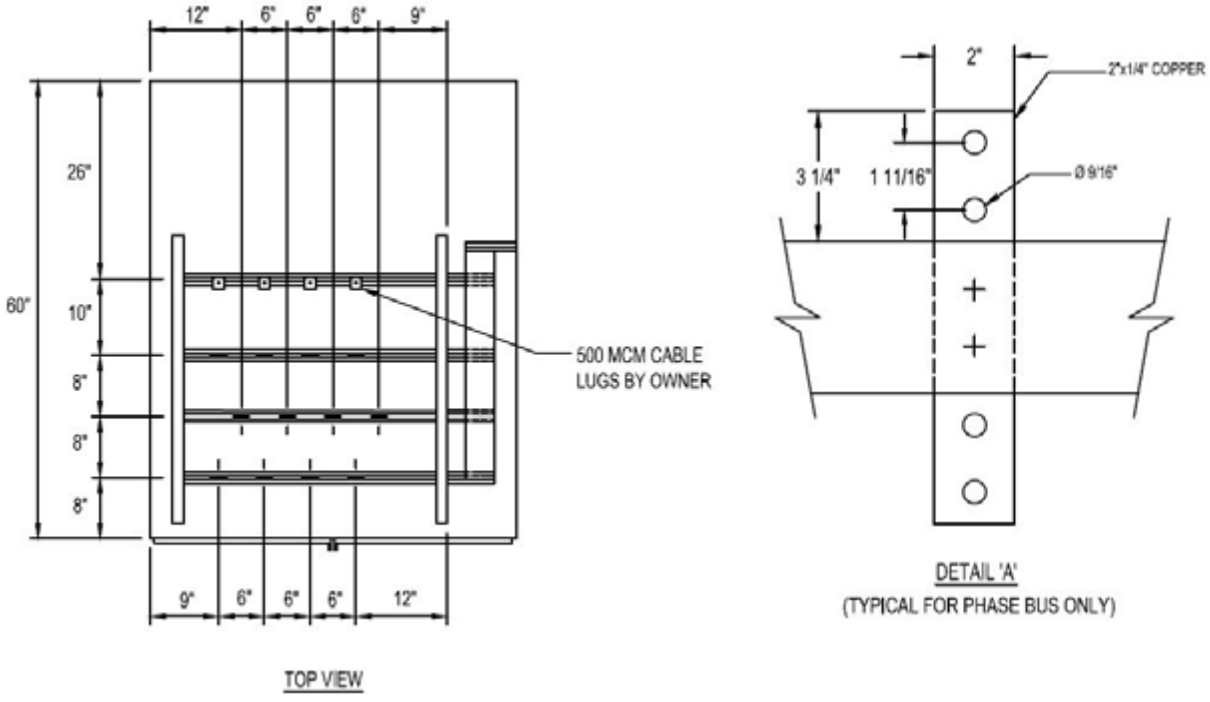
Customers are not permitted to remove a meter and/ or perform a service disconnect under any circumstances and should report any unsafe conditions to Saskatoon Light & Power’s Meter Shop at 306-975-2417.

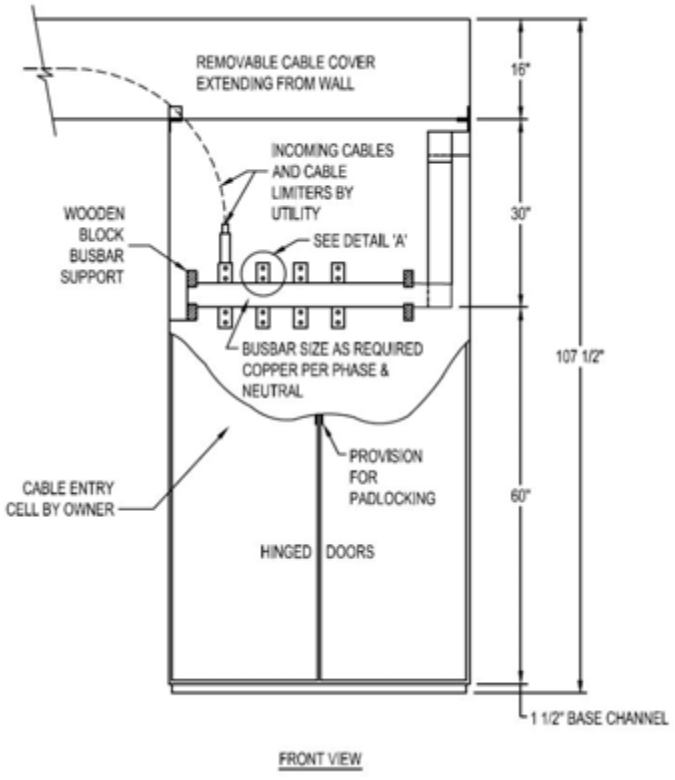
Downtown 347/ 600 Volt Network Service Area

The Saskatoon downtown has been designated as an underground Network Service Area. This is an area roughly within the boundaries of 25th Street on the north, Idywyld Drive on the west and the riverbank on the east and south. Services within this area have special requirements:

- For new developments and existing electrical services that are being changed or upgraded; the electrical service will be 347/ 600 V 3-Phase 4-Wire. Service request for any different voltage levels will be provided at Saskatoon Light & Power's discretion.
- Saskatoon Light & Power will require the installation of a splitter in such cases as well.
- Depending on the circumstances, the demarcation point between Saskatoon Light & Power and the customer will be an external splitter or an interior cable entry cell which is part of the switchgear.
- The customer will provide shop drawings of the switchgear prior to servicing for Saskatoon Light & Power comments/ approval.
- Saskatoon Light & Power does not approve the installation of an internal splitter as the demarcation point.
- Saskatoon Light & Power installs special protective fuses at the demarcation point in certain cases which would require the depth of an external splitter to be more than a regular splitter. Please contact Saskatoon Light & Power for details on the dimensions of the external splitter or an interior cable entry cell.
- Saskatoon Light & Power will not energize a network service unless there is a SaskPower energization sticker on the service installed by the electrical contractor.

Figure 11
Cable Entry Cabinet





Cut/ Reconnect Request

Saskatoon Light & Power provides a cut/ reconnect service for residential homes. Customers can request this by contacting Saskatoon Light & Power's Meter Shop at 306-975-2417. For a typical residential home, customers can request a cut/ reconnect in order to do the following:

- Perform siding work around the customer's electrical service entrance;
- Replace the panel inside the house, the panel size must remain the same;
- Request a meter pull (removal) to perform service work or an inspection.

Saskatoon Light & Power will not provide a cut/ reconnect service if there are any changes or modifications to the electrical service.

Any customers requesting a cut/ reconnect service to a property other than a residential dwelling will have to contact Saskatoon Light & Power's Customer Connections at 306-975-2414 option #3.

Please note, Saskatoon Light & Power requires a minimum of 72 hours-notice for a cut/ reconnect to organize a crew.

Service Drop Requests

Saskatoon Light & Power provides a service drop for residential homes. Customers can request this by contacting Saskatoon Light & Power at 306-975-2414 option #4.

For a typical residential home, customers can request a service drop in order to trim or remove trees. During a service drop the overhead powerline to the customer is temporarily disconnected at the pole. This allows for safe tree trimming or removal of trees in the path of the powerline.

Service drops are by appointment only and must be booked a minimum of 72 hours in advance.

Service Upgrades

Saskatoon Light & Power requires any service upgrade to follow the new connection process; customers should contact Saskatoon Light & Power' Customer Connections at 306-975-2414 option #3 for more information. Customers may be requested to upgrade their electrical system to meet current Electrical Code standards.

Easements

An easement or utility right of way is used for the protection, safety and service of the utility's infrastructure in the designated area. The Certificate of Title for the property will list the easement and the name of the company holding the easement if there is any utility infrastructure on the property.

In the event of a power outage, access to the cables may be required to restore electricity. For this reason, customers are not to change the grade of an easement, build garages or sheds or plant trees in an easement. Customers may plant a lawn, flowerbeds, vegetable gardens and low shrubs in an easement.

A minimum of 1.0 m (3 ft) of clearance is required around all sides of pedestals.

Customer Charges

When a customer requests new or upgraded electrical services Saskatoon Light & Power will provide a quotation for costs associated with getting electrical power to that site. As part of these costs, Saskatoon Light & Power may determine a utility investment and deduct the amount from the total construction costs. Additional investments may be made where the upgrade facilitates improvements to Saskatoon Light & Power infrastructure.

Steps for Service

For a new service or an upgrade, below are the basic steps to follow:

1. Contact

Contact Saskatoon Light & Power's Customer Connection Line at 306-975-2414 option #3 with the initial request. Please leave a detailed message including the customer address or address of work site, load information, requested voltage, option of overhead or underground and customer contact information. Call will be returned within 3 business days.

2. Design

Based on the information provided, Saskatoon Light & Power will complete a preliminary design. During this process Saskatoon Light & Power will contact the customer to establish the final design.

3. Quote

Once the design is finalized, Saskatoon Light & Power will determine its investment, if any, and convey costs to the customer. Saskatoon Light & Power requires written acceptance of the costs before proceeding with a Work Order.

4. Work Order

With the acceptance of the costs, Saskatoon Light & Power initiates a Work Order. Job preparations for material and labour are made and the Work Order is placed into a preliminary schedule.

5. Construction

When the customer has completed their work and is ready for service Saskatoon Light & Power will commence construction. Based on the nature of the job, it may require 4 to 6 week to complete the construction.

The customer is to contact Saskatoon Light & Power at 306-975-2414 option #8 with the Work Order number provided when ready for construction.

6. Install Meter and Energize

The customer should contact City of Saskatoon – Revenue Division to set up an account for the new meter:

In person at:	222 3rd Avenue North Saskatoon SK
Phone:	306-975-2400 or 1-800-667-9944
Fax:	306-975-7975
Email:	revenue@saskatoon.ca

The electrical contractor has to contact Saskatoon Light & Power's Meter Shop at 306-975-2417 and provide the SaskPower Electrical Permit Number prior to the installation of the meter.

Saskatoon Light & Power has the right to refuse energizing the service if there are concerns regarding safety and may require an inspection to be completed. The customer may or may not be notified of the deficiencies. It is the duty of the customer to call Saskatoon Light & Power to gather all the information.

Metering

Mandatory SaskPower Energization Sticker Requirement

A **SaskPower Energization Sticker** must be affixed to the meter socket for new services or for reconnects when installations are ready to be energized. Affixing this sticker is assurance that:

- A paid electrical permit has been obtained for the customer's service;
- Wiring on the customer's service (from the point of delivery to the main disconnect) is free from short circuits, grounds or any defects that might cause a hazard to life or property;
- The customer's main switch is in the open position;
- The customer's service is free of any other source of energization (back feed);
- For services 600 Amps and above, a pre-energization inspection has been performed by *SaskPower Electrical Inspections* and they have approved the service connections;
- The customer's service meets the *Canadian Electrical Code* for grounding and clearance.

General Metering Information

a) Meter Clearance

A minimum of 1.2 m (4 ft) on front side, 255 mm (0.8 ft) from the center line of meter to both side and 2100 mm (6.9 ft) for height clearance is required for service access to the meter (as shown in **Figure 12**). Any obstructions found around the meter socket and conduit may require removal at the owner's expense.

b) Access to Metering Equipment

Where Saskatoon Light & Power access to metering equipment is restricted due to locked doors or other obstructions, the customer may be requested to provide a key, access or pathway clearance upon request. Failure to provide access to metering can result in service being disconnected.

Where the customer requires access to locked metering equipment, the customer can contact Saskatoon Light & Power's Meter Shop at 306-975-2417 to arrange access.

c) Pre-Meter Install Socket Safety

Electrical services which have **cold metering** (meter after disconnect) must be energized with the disconnect locked off and have the meter socket glassed off and sealed with a tie wrap before Saskatoon Light & Power will install the revenue meter.

Electrical services with **hot metering** (no disconnect before the meter) must have the meter socket glassed off and sealed with a tie wrap before Saskatoon Light & Power will install the revenue meter.

d) Instrument Rated Metering Cabinet, Conduit Sizing and Distance

For instrument rated meters, a suitable instrument enclosure requires **3-point latching** on the doors and a **padlockable** handle.

The minimum size of conduit from instrument transformer cabinet to base of plywood backboard for meter and test block is 31.75 mm (1 ¼”). The conduit will not have fitting with removable covers. If LB conduit or similar conduit fitting are used, they must be sealable and clearly visible. The maximum length of conduit is limited to 7.5 m (25 ft).

For instrument transformer cabinets or switchgear with bus bars type design, a minimum physical separation of 50 mm (2”) must be maintained between instrument transformers and between instrument transformer and the surrounding enclosure.

e) Indoor Meter Location

In situations where the meter is installed inside a building, it is preferred that the metering is installed on an exterior facing wall (e.g. back side of wall faces outdoors). For concrete or metal clad buildings Saskatoon Light & Power may require a separate electrical conduit sized 31.75 mm (1 ¼”) provided for the exclusive use of aiding meter communication and will extend to the exterior of the building terminate into an outdoor rated lockable junction box of minimum dimensions 150 mm x 150 mm x 100 mm (6” x 6” x 4”). Junction box must be installed at a height of 1600 mm to 1800 mm (63” to 71”) above grade.

f) Care of Metering Equipment

The customer is required to exercise reasonable care for the protection of Saskatoon Light & Power metering equipment installed on the customer’s premises. Should any damage occur or if the meter is lost or stolen after installation, the customer will be liable for the cost of repair or replacement.

g) Service Inspection

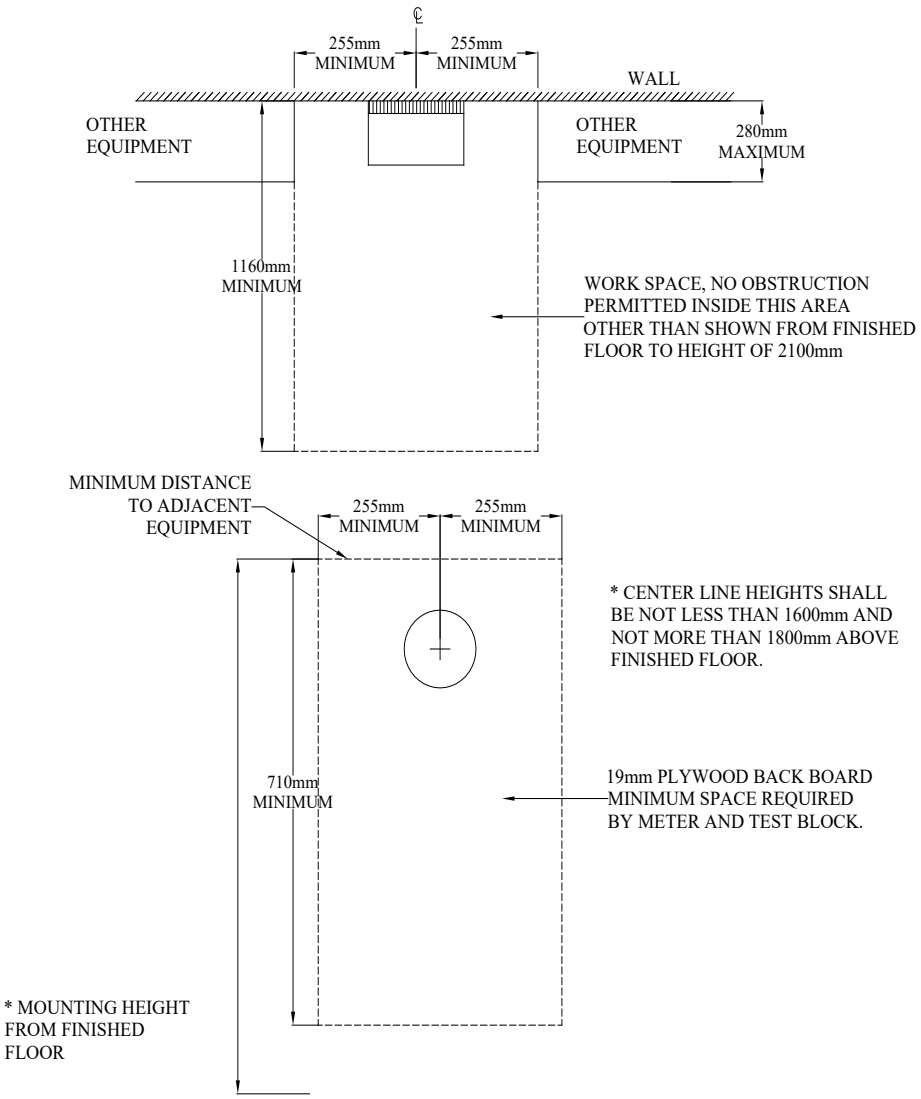
Services that are presently inactive (e.g. vacant or without an account holder) for a period of greater than 1 year shall require a service inspection performed by a licensed electrical contractor. The contractor will be required to provide an electrical permit number to Saskatoon Light & Power prior to reconnection.

h) Clarifications

Customers can contact Saskatoon Light & Power’s Meter Shop at 306-975-2417 for more information.

Electrical contractors are not permitted to remove a meter and/ or perform a service disconnect under any circumstances and should report any unsafe conditions to Saskatoon Light & Power’s Meter Shop at 306-975-2417.

Figure 12
Revenue Meter Clearance
Instrument Rated Meters



Plan View

Elevation View

Types of Metering

Self-Contained Metering

The maximum load for a self-contained meter is 200 Amps per phase. The maximum voltage limit for a self-contained meter is 600 V phase to phase.

a) Single-Phase Self-Contained Metering

Service Voltages

- 240 V 3-wire self-contained
  - Services rated up to 200 Amps
  - Meter must be outside and be hot metered

Multiple Meters (Apartments, Condominiums, Townhouses)

A maximum number of four (4) meters can be installed in a meter trough. A splitter is required for multiple meters. Greater than eight (8) meters must be in an electrical room and cold metered. A separate house meter may be required for common loads. All meter sockets must be clearly identified with the unit number in permanent weather resistant marking and are to be arranged in sequential order either vertically or horizontally. The contractor/ owner bear all responsibility to ensure the correct labelling is applied. Saskatoon Light & Power may require proof of connectivity to ensure correct labels are applied before installing meters.

b) Poly-Phase Self-Contained Metering

Service Voltages

- Network 120/ 208 V 3-wire self-contained
  - Services rated up to 200 Amps. Meter must be installed inside and cold metered. In certain circumstances (e.g. outdoor signage/ billboards) meter may be installed.
- 120/ 208 V 4-wire self-contained
  - Services rated up to 200 Amps. Meter can be outside and hot metered; if located inside they are to be cold metered.
- 347/ 600 V 4-wire self-contained
  - Services rated up to 200 Amps. Meter must be inside and cold metered.

Multiple Meters

All multiple meter installations (2 or more meters) must be inside a building and cold metered, and are to be grouped in a centralized location (usually electrical room). All meter sockets must be clearly identified with unit number in permanent weather resistant marking and are to be arranged in sequential order either vertically or horizontally. The contactor/ owner bear all responsibility to ensure the correct labelling is applied. Saskatoon Light & Power may require proof of connectivity to ensure correct labels are applied before installing meters.

Demand Meters
All demand meters must be inside a building or in a suitable outdoor rated meter enclosure. Meter must be cold metered for all voltages.

c) Self-Contained Meter Enclosure

Meter enclosure specifications are shown in **Table 4** below.

Table 4
Self-Contained Meters
(Up to 200 Amps)

Voltage	Phase	Wire	Connection	Socket	Figure
120/240	1	3		4 Jaw	13
120/208	1	3	Network	5 Jaw	14
120/208	3	4	Star (Y)	7 Jaw	15
347/600	3	4	Star (Y)	7 Jaw	15

d) Supply of Self-Contained Metering Responsibilities

The customer will:

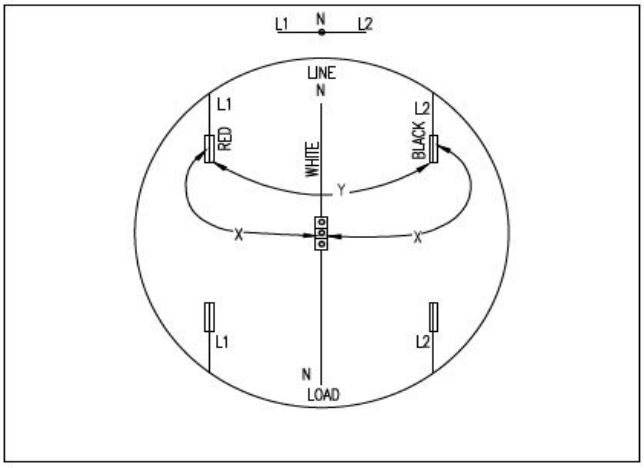
- Supply and install an approved meter socket complete with a screw type sealing ring
- Make all connections within the meter socket

Saskatoon Light & Power will:

- Supply and install the meter in the socket

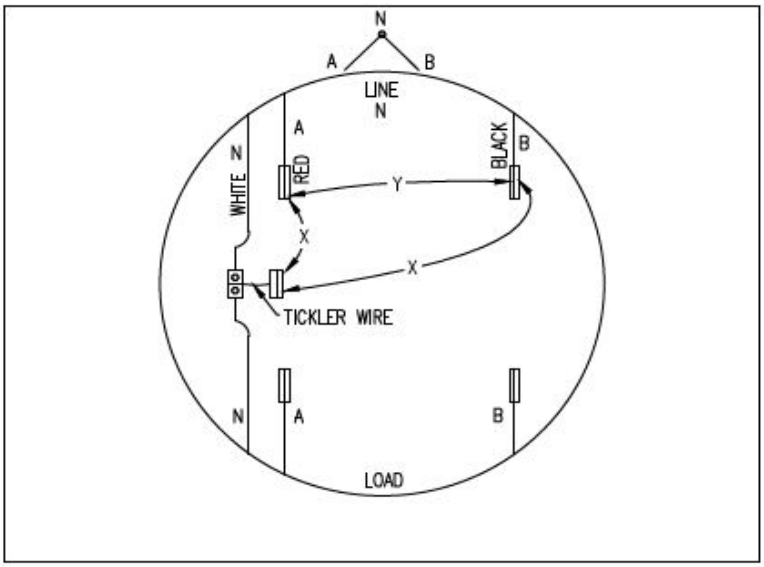
e) Drawings

Figure 13
4-Jaw Meter Socket



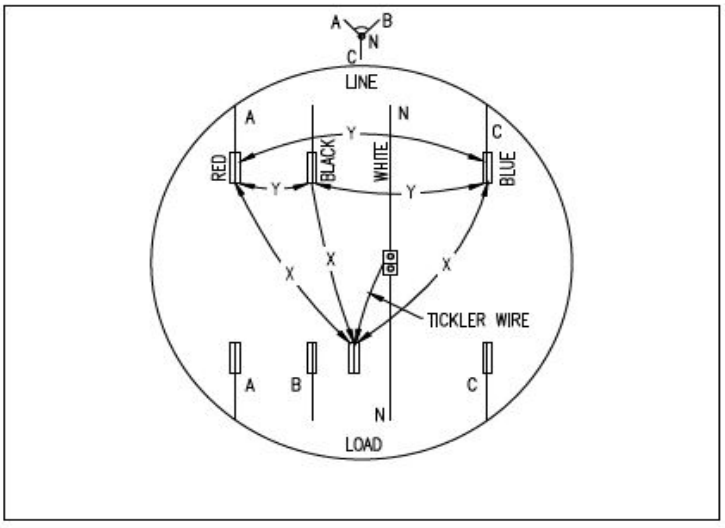
LINE VOLTAGE	MEASURED VOLTAGE	
	X	Y
120/240	120	240

Figure 14
5-Jaw Meter Socket



LINE VOLTAGE	MEASURED VOLTAGE	
	X	Y
120/208	120	208

Figure 15
7-Jaw Meter Socket



LINE VOLTAGE	MEASURED VOLTAGE	
	X	Y
120/208	120	208
347/600	347	600

Instrument Transformer Metering

Instrument transformer type metering is required on all services exceeding 200 Amps per phase.

a) Single-Phase Instrument Transformer Metering

Service Voltages

- 240 V 3-wire transformer rated
  - Services rated over 200 Amps
  - Meter must be inside and cold metered

b) Poly-Phase Instrument Transformer Metering

Service Voltages

- 120/ 208 V 4-wire transformer rated
  - Services rated over 200 Amps
  - Meter must be inside and cold metered

- 347/ 600 V 4-wire transformer rated
  - Services rated over 200 Amps
  - Meter must be inside and cold metered

Multiple Meters

All multiple meter installations must be inside a building and cold metered and are to be grouped in a centralized location (usually electrical room). All meter sockets must be clearly identified with unit number in permanent weather resistant marking and are to be arranged in sequential order either vertically or horizontally. The contractor/ owner bear all responsibility to ensure the correct labelling is applied. Saskatoon Light & Power may require proof of connectivity to ensure correct labels are applied before installing meters.

Demand Meters

All demand meters must be inside a building or in a suitable outdoor rated meter enclosure. Meter must be cold metered for all voltages.

c) Instrument Transformer Meter Enclosure

A separate meter enclosure is required for each instrument transformer service. This enclosure is a 13-jaw meter socket (for 3-phase services) or 5-jaw meter socket (for single phase services), a test switch and wiring from the test switch to the socket. Meter enclosure specifications are shown below in **Table 5 – Instrument Transformer Meters**.

Table 5
Instrument Transformer Meters
(over 200 Amps)

Voltage	Phase	Wire	Connection	Socket	Figure
120/240	1	3		5 Jaw	16
120/208	3	4	Star (Y)	13 Jaw	16
347/600	3	4	Star (Y)	13 Jaw	16

d) Instrument Transformer Metering Equipment Location

For Saskatoon Light & Power owned and distribution transformer installations, meter and metering equipment installation should be connected on the load side of the distribution transformer.

For customer owned distribution transformer installations, meter and metering equipment should be connected on the line side of the distribution transformer.

Customer equipment is not allowed within the instrument transformer enclosure. The instrument transformer cabinet cannot be used as a splitter box.

In certain situations, the metering equipment and wiring arrangements can be made in the customer switchgear instead of the customer supplied instrument transformer cabinet. Please contact Saskatoon Light & Power's Meter Shop at 306-975-2417 for more information and approval.

e) Supply of Instrument Transformer Metering Responsibilities

The customer will:

- Supply and install a meter enclosure according to specifications shown in **Table 5 – Instrument Transformer Meters**.
- Supply and install a 31.75 mm (1 1/4") conduit between the instrument transformer enclosure and the meter enclosure (25.4 mm (1") conduit for single phase installations).
- Supply and install all hardware, buswork, termination and/ or cable required for primary connects to the current transformers
- Supply and install a 19 mm (3/4") plywood sheet behind all enclosures

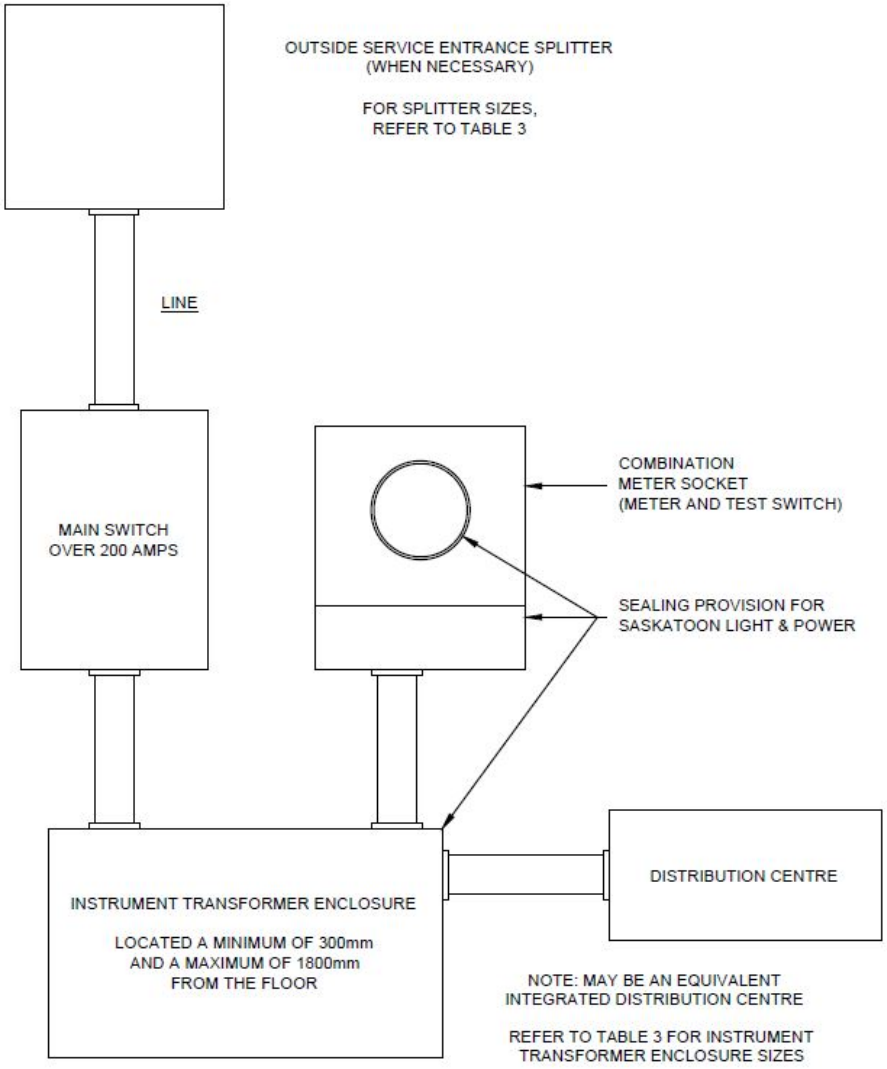
Saskatoon Light & Power will:

- Supply instrument transformers
- Supply and install the secondary wiring
- Supply and install the meter

The instrument transformers are available to the customer for installation upon request to Saskatoon Light & Power. All instruments will need to be signed for and contractor will be responsible for lost or stolen equipment. The customer must provide the service address and electrical permit number to Saskatoon Light & Power's Meter Shop when placing a request for instrument transformers.

f) Drawings

Figure 16
Single Phase – 3-Wire
3-Phase – 4-Wire Services
Exceeding 200 Amps



Primary Metering

Primary polyphase metering at distribution system voltage will be instrument rated and must be inside a building or suitable padlockable enclosure. Saskatoon Light & Power requires a minimum of four (4) months' notice to provide primary metering.

Power Quality

Power quality is defined as the quality of the voltage which is delivered to the customer. Saskatoon Light & Power is committed to delivering the best quality of power to its customers. However, there are factors which are beyond the Utility's control and contribute to poor power quality. Some of the common disturbances seen are:

- *Flickering Lights* – caused to periodic fluctuations of voltage. This is mainly cause due to fluctuating loads on the system such as hoists, arc furnaces, etc.
- *Voltage Unbalance* – seen for three phase customer where the voltage measurements of the individual line voltages are not the same.
- *Low Voltage* – voltage levels at customer's equipment are lower than the standard voltage levels; please see **Table 6 - Voltage Variation Limits** below for acceptable voltage levels.
- *Voltage Dip* – seen mainly by customers in industrial areas. Typically, a motor start further down the line causes a momentary reduction of the voltage levels at their end.

Table 6
Voltage Variation Limits
For Circuits up to 1000 V at Service Entrances

Nominal System Voltages	Voltage Variation Limits Applicable at Service Entrances			
	Extreme Operating Conditions			
		Normal Operating Conditions		
Single-Phase 120/240 240	106/212 212	110/220 220	125/250 250	127/254 254
Three-Phase 4-Conductor 120/208Y 347/600Y	110/190 306/530	112/194 318/550	125/216 360/625	127/220 367/635
Three-Phase 3-Conductor 240	212	220	250	254

In all the cases listed in **Table 6 - Voltage Variation Limits** above, please call Saskatoon Light & Power's Meter Shop at 306-975-2417 and based on the type of power quality issue observed by the customer, Saskatoon Light & Power will work to rectify the problem.

Customer Owned Generation

Customer may generate electricity at their home or business under Saskatoon Light & Power's *Power Producer's Policy A07-022.*

Any electricity generated by the customer offsets electricity purchased from Saskatoon Light & Power for their home or business, reducing their monthly electricity bill. Any excess power generated is sold to Saskatoon Light & Power and flows to the electrical grid.

A bi-directional meter keeps track of the electricity to and from the grid for billing purposes. Power put back onto the grid is accumulated throughout the year. At the end of each year payment is made for all customer generated electricity sold to Saskatoon Light & Power.

Customers are required to apply for the program **prior to installing any equipment.** There are some program restrictions in the downtown area. There are technology and system size restrictions in certain applications.

Please visit www.saskatoon.ca/services-residents/power-water/saskatoon-light-power/customer-based-generation-programs for more information, rules, requirements, and to download the application form.

Locked Equipment and Facilities

Access to Customer Facilities

Customers are required to provide access to any facility where Saskatoon Light & Power equipment is installed. The customer is also responsible to provide keys where necessary to gain access.

Access to Saskatoon Light & Power Equipment

Removal or tampering of Saskatoon Light & Power seal or lock on equipment is strictly forbidden.

Where there is evidence of tampering, the person(s) responsible will be liable for prosecution and immediate disconnection of service.

Customers may contact Saskatoon Light & Power 306-975-2417 to arrange for access.

Deviations

The customer is required to attain written approval of any deviation from requirements contained in this manual. Failure to do so may result in refusal and/ or delays in providing service.

Any approval of customer deviation is only applicable to the service being considered and does not imply acceptance of deviation at other locations.

Revisions

Date	Version	Description
May 2015	4	Major revision – renamed Customer Information Guide Revised format
June 2015	5	Swimming pools – minimum separation of overhead and underground lines by a swimming pool
January 2016	6	Note – customers are not permitted to perform their own service disconnects Commercial Connections – customer must provide Saskatoon Light & Power with shop drawings of the switchgear (if applicable) prior to servicing Typical Service Installation Chart
March 2017	7	
January 2019	8	Major revision – format Clarification around service requirements Special section for Infill Developments