SASKATOON LIGHT & POWER

Customer Information Guide

May 2024

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0 Contact Information

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

Customer Connects
For information on new electrical service, upgrading or relocating an existing service, and temporary construction services please call or visit us online for the Electrical Service Request Form.
saskatoon.ca/slpelectricalservice

Customer Account Inquiries
For information about power bills, new accounts, or changes to an existing account.
306-975-2400

Construction Scheduling
Schedule construction with Saskatoon Light & Power (after the customer has received a Work Order Number from Saskatoon Light & Power).
306-975-2414 option 5

Street Light Maintenance
Report street light outages or issues regarding street lights.
306-975-2414 option 0 or online at saskpower.streetlightoutages.com

Powerline Locates
Schedule underground power line locates when you plan to dig or excavate.
1-866-828-4888 (Sask 1st Call) or online at sask1stcall.com

Tree Trimming/Service Drops
Schedule tree trimming near power lines or to temporarily drop service on customer property.
306-975-2414 option 0

Cut and Reconnections
Schedule cut and reconnections of power.
306-975-2414 option 4

Customer Self-Generation Programs
For more information on customer self-generation programs and applications.
306-975-2585, email selfgenerationprogram@saskatoon.ca, or online at saskatoon.ca/slpselfgeneration

Schedule witness test of self-generation systems.
306-975-2414 option 4

Metering Services

For information on metering and accredited meter test services.
306-975-2414 option 4

Electrical Inspections and Permits

Schedule inspections and obtain permits from Technical Safety Authority of Saskatchewan (TSASK) before any electrical work is performed by the electrical contractor.
1-866-530-8599 or online at tsask.ca

1 General Information

1.1 Mission

Our mission is to be relentless in the pursuit of improvements to our programs and services to meet the changing needs of our customers. We achieve this by seeking opportunities to improve environmental sustainability, maintain our financial sustainability, and build and maintain a robust grid that meets the needs of the future.

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.

1.2 Values

Service and system design standards used by Saskatoon Light & Power (SL&P) 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 SL&P 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, SL&P will not make uneconomical investments for connecting customers.

Customers should apply for service early in their planning stages to help ensure that SL&P 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 ensure 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 the customer fails to adhere to this manual.

2 Core Services

2.1 Power

SL&P 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 9.

For detailed SL&P service boundaries, refer to **Service Area** on page 6.

2.2 Street Lighting

The City of Saskatoon illuminates all roadways (except back alleys) and has approximately 35,000 lights. The principal purpose of street lighting is to allow accurate and comfortable visibility at night of possible hazards in sufficient time to allow for appropriate action. For a pedestrian this can mean better visibility of their surroundings and sidewalk, while for the driver of a motor vehicle it will mean having time to stop or maneuver around an obstacle. Good lighting has been shown to significantly reduce the number of accidents at night, especially on urban freeways and on major streets. For most streets and sidewalks, good lighting has been reported to increase the feeling of personal security of pedestrians.

Two service providers own and maintain street lights in Saskatoon: SaskPower with approximately 6,000 lights, and Saskatoon Light & Power (SL&P) with approximately 29,000 lights. The **SL&P Lighting Boundary Map** indicates the areas that are served by the two providers.

The designs for roadway lighting systems in Saskatoon are based on the latest edition of **Illuminating Engineering Society of North America's guidelines for roadway lighting (RP-8)**. These guidelines establish appropriate lighting levels, visibility levels and uniformity of lighting levels for a given class and operational characteristics of a roadway. Characteristics that are considered are traffic volume, speed, and pedestrian usage.

The City of Saskatoon's Parks Department determines if lighting is warranted in parks and on pathways. Saskatoon Light & Power designs, installs, and maintains the lighting systems in all parks and on pathways. Requests for additional lighting are to be directed to Parks at 306-975-3300.

2.3 Telecommunication

SL&P is not a public telecommunications provider. Telecommunication companies may lease space on SL&P'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 SL&P infrastructure.

2.3.1 Shared Overhead Installations

Qualified telecommunication companies can install and maintain their overhead systems and equipment on SL&P poles. Installation of antenna structures will be considered on a case-by-case basis.

2.3.2 Shared Underground Installations

The installation of telecommunications equipment in SL&P underground facilities must be performed by SL&P staff.

2.3.3 Communication Infrastructure

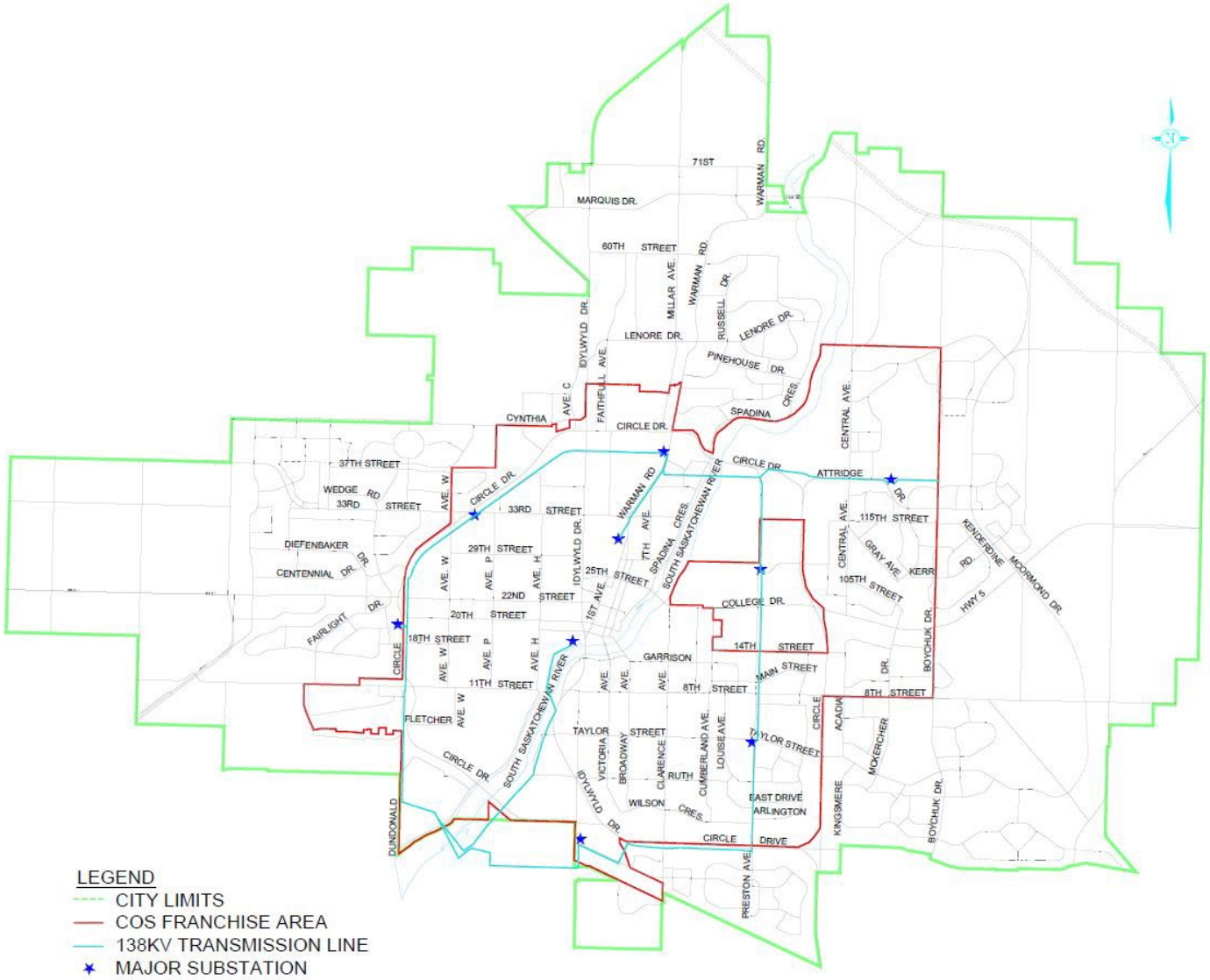
SL&P owns and operates various communication systems for the operation and control of its power systems as well as for other City Departments.

3 Service Area

SL&P provides electrical service within the **1958 City boundary** with the exception of the University of Saskatchewan, which is jointly serviced by SL&P and SaskPower. The areas outside the 1958 boundary are served by SaskPower.

For additional information and a more detailed map of the franchise area visit us at saskatoon.ca/slpaboutus.

Figure 1
Saskatoon Light & Power
Franchise Area Map



4 Safety Information

4.1 Clearance from Electrical Lines

4.1.1 Overhead Lines

The following table shows the safe limit of approach distance for persons, equipment, and permanent structures to energized lines in the SL&P 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	3.0 m	1.0 m
4.16	3.0 m	2.0 m
15	3.0 m	2.0 m
25	3.0 m	2.0 m
138	4.6 m	6.1 m

Any structures built in proximity to a SL&P 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 Employment Act & Occupational Health and Safety Regulations* to ensure worker safety during construction and maintenance of structures.
- Consult with SL&P prior to any installation or maintenance of structures near overhead lines.
- Cover all costs of either de-energizing SL&P'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.

4.1.2 Underground Lines

SL&P is a member of **Sask 1st Call**, a local one-call centre for underground facility locates.

Underground cable locates can be arranged through Sask 1st Call by calling 1-866-828-4888 or online at sask1stcall.com.

Be advised that there may be **customer owned** underground cables on the property. SL&P does not locate customer owned underground cables.

4.2 Excavation Near Underground Electrical Cables

SL&P 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 Sask 1st Call at 1-866-828-4888 or submit an online request at sask1stcall.com/request-online/ to request a cable locate and to receive a clearance for underground cables and duct banks within the SL&P franchise area. **Requests should be made a minimum of three (3) days in advance.**

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

3. If conductors need to be de-energized, contact SL&P at 306-975-2414 option 0. **A minimum notice of three (3) working days is required.**

4. Before backfilling, contact SL&P at 306-975-2414 option 0 to allow for inspection of cables and duct banks.

4.3 Customer Recommendations

Customers should ensure that their electrical infrastructure is in good condition prior to service changes, installations, and/or upgrades. For fire safety, efficiency, and reliability, it is recommended that all customers have adequate surge protection and proper grounding. It is also recommended that commercial and industrial customers consider including power factor correction and phase loss protection schemes. Consult your electrical contractor and/or engineering consultant for more information on load side reliability and/or protection schemes.

Caution

Never handle conductors under any circumstances.
If accidental contact occurs call SL&P at 306-975-2621
to report damage.

If emergency services are required call 911.

5 Power

5.1 Connections

SL&P offers the following secondary service voltages:

- Single-phase 3-wire 120/240V
- Poly-phase 3-wire 120/208V
- 3-phase 4-wire 120/208V
- 3-phase 4-wire 347/600V
- 14,400V or 25,000V – Primary Customers

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

SL&P does not offer 3-phase 3-wire 240V service as an upgrade or perform upgrades on existing 3-phase 3-wire 240V systems.

The electrical wiring past the connection/demarcation point between the customer and the utility must be up to the current *Canadian Electric Code (CEC)* standards. Service conductors on the customer's end are to be colour coded as per the *CEC* requirements for both overhead and underground services.

Saskatoon Light & Power has the right to refuse energizing any service if there is a concern regarding safety.

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

5.2 General Service Installation

The *CEC* specifies that all electrical installations on the customer end must be installed in a manner which is satisfactory for both TSASK and the Supply Authority (SL&P). The following section summarizes some of the requirements for SL&P.

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

Customers are not permitted to remove a meter and/or perform a service disconnect under any circumstances.

Report any unsafe conditions to the Saskatoon Light & Power Meter Shop at 306-975-2414 option 4.

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

Contact

a) The customer is responsible for contacting SL&P Customer Connects at 306-975-2414 option 3 to have an Electrical Service Request Form emailed to you or go to saskatoon.ca/slpelectricalservice to download a copy.
b) Once the form has been completed email it to SL&P at saskatoon.light.power@saskatoon.ca.
c) SL&P will respond to the inquiry within five to seven (5 to 7) business days to gather more information on the service request change.

Design

a) SL&P 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 *CEC* and *Saskatoon Light & Power Customer Information 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 five (5) business days.
e) SL&P must be consulted on the placement of connection/demarcation point, meter location, and cable routing.

Quote

a) Based on the design, SL&P will estimate labour hours and costs associated with the work.
b) The details on the responsibilities between SL&P and the customer are listed.
c) For new customers, SL&P will determine a one (1) year revenue investment toward the customer.
d) A Cost Acceptance and Pre-Payment Form and final design plan is sent to the customer for approval. SL&P requires signed copies of the design plan and Cost Acceptance and Pre-Payment Form before proceeding further.

Work Order

a) Once a signed acceptance of costs and design approval is received, SL&P initiates a Work Order and will invoice for the pre-payment amount as outlined in the Cost Acceptance and Pre-Payment Form.
b) Once the Work Order is created, a Work Order number is provided to the customer for future reference.
c) Once the payment for the initial invoice has been received by the City of Saskatoon, job preparations for materials, labour, vehicles, and contractors are made.

d) The Work Order is added to our preliminary schedule and transferred to our Operations Group.
Note: If any changes are made at this stage by the customer, SL&P will return the project file the Design stage and the process is repeated.

Construction

a) Once the customer has completed the requirements provided by SL&P, the customer can contact the Operations Scheduler at 306-975-2414 option 5 and provide the Work Order number for reference.
b) SL&P does not schedule a project until the customer is ready for service and the project has been inspected for conformance with the *Canadian Electrical Code (CEC)* and *Saskatoon Light & Power Customer Service Guide* requirements.
c) **Any customer completed trenching, conduit selection and/or placement is subject to inspection and approval by SL&P** for infrastructure compatibility and adherence to design requirements prior to backfilling. To avoid extra costs or delays, **we suggest that the customer does not backfill trenching/excavations before receiving approval from SL&P**. This can be in the form of site visit(s) with written approval especially for commercial, industrial, or large complex residential projects. For smaller residential projects, digital submission with photo(s) of the trench and the conduit layout including clear depth measurements could be accepted at the discretion of the SL&P staff.
d) Our Operations Crew may require 4 to 6 weeks to complete the job depending on the nature of the work.

Energization

a) Before SL&P can energize the installed service, the customer is required to have an account set up for utility billing.
b) The customer is responsible to contact the City of Saskatoon – Corporate Revenue Department to set up a new account for every utility meter required. The account can be set up in the following ways:

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

c) A licensed electrical contractor must contact the Meter Shop at 306-975-2414, option 4 and provide the TSASK Electrical Permit number prior to the installation of the meter. An energization sticker must be attached to the meter socket prior to meter installation.
d) When steps (b) and (c) are complete, SL&P will proceed with the installation of utility metering.
e) Upon completion of the work, SL&P will provide the final invoice for services, as applicable.

5.3 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. SL&P will provide an underground service in such cases unless circumstances dictates that an overhead service be installed. SL&P will review the conditions during the design process and method of delivery will be conveyed to the customer at that time. Costs associated with the service connection are the responsibility of the customer.

Please contact SL&P Customer Connects 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 determine service connection design for infill developments.

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

5.4 Underground Residential Connections

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

For underground service, SL&P will provide installation of underground cables from SL&P infrastructure to the meter socket.

5.4.1 Underground Service Requirements

The following requirements apply for an underground service:

- The customer is responsible for trenching on property. The customer is responsible to supply and install a 50 mm rigid PVC conduit from the meter socket to the property line towards SL&P facilities as per SL&P requirements. The routing of the conduit will be provided to the customer at the design stage. See **Figure 2 – Typical Layout for New Residential Underground Services (Power and Gas)** for more information. Conduit at property line must be clean and capped before backfilling.
    - As noted in Section 5.2 – General Service Installation – Construction. **All customer completed trenching and conduit selection or installation is subject to SL&P inspection/quality assurance check** and written approval prior to scheduling for construction. To avoid project delays, contact SL&P to schedule for trench and conduit inspection prior to backfill.
    - For single family residential dwellings, the customer must install separate communication ducts in the same trench. **SaskTel requires 25 mm grey conduit** and **Shaw requires 19 mm orange conduit**. Failure to install separate communication conduits may result in refusal of electrical service installation.
    - Contact information for SaskTel and Shaw to arrange for the conduit pickup are:
        - SaskTel – https://www.sasktel.com/business/industries/cat-5e-wire-at-no-charge-for-developers/fibre-materials-at-no-charge-to-developers or 1-844-727-5835 with any questions.
        - Shaw – warehousesas@sjrb.ca
        - **Note: SaskTel and Shaw may change their requirements without notice, please contact each provider for the latest updates.**
- All conduits and/or ducts installed are to be capped and sealed at property line stub outs to prevent the entry of water.
- The conduits must be buried at a minimum depth of 0.6 m below final grade and at a maximum depth of 1.1 m.
- No more than four (4) bends between the customer installed meter socket and SL&P's distribution point (service pedestal or utility pole) are allowed. Bend radius must be greater than or equal to 0.3 m.
- A minimum of 0.6 m horizontal separation between the electrical trench and gas trench and a minimum of 1.0 m separation between the electrical and gas meters must be maintained.

- A minimum of 1 m horizontal separation between the service conductors installed in conduit or 1.5 m horizontal separation between direct buried service conductors and the inside walls of an in-ground pool must be maintained.
- A minimum of 1.2 m of front clearance is required for service access to meter.
- Centerline of the meter to be a minimum of 1.5 m or maximum of 1.8 m above final grade on property.
- The meter socket must be located per the **Meter Socket Installation Locations for Underground Service** requirements below.
- 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 width as the socket.
- **The customer must install a loop box** with a secured fixed wooden backing, at a minimum height of 0.5 m above the final grade. Loop boxes are mandatory for new underground services. Existing services that are upgraded will also require a loop box. Loop boxes must be bonded per the *Canadian Electrical Code* (CEC).
- The loop box must have a PVC slip sleeve and expansion joints with a minimum of 100 mm of travel (both directions) to protect against ground movement. The sleeve should measure 0.6 m in length and 25 mm larger in diameter than the supply conduit. The sleeve must extend 450 mm below final grade. See **Figure 3 – Typical Residential Underground Service** for more information.
- SL&P is not responsible for duct separation resulting from inadequate soil preparation during installation.
- Meter sockets installed for underground services must be rated for 200A.
- For two (2) meters with residential loads up to 200A a 3-ganged meter socket with terminal plates must be used. The third meter position is used as a termination point.
- For residential services to multiple meters see section **5.4.4 Underground Services to Townhouse and Multi-Unit Dwellings** for more information.
- Meter sockets should have a 12 mm 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 garage may be built over a customer's underground service cable, but not over/on an easement. The service cable must be hand dug **and** exposed for the entire length which will be covered by the garage to prevent its damage during construction. See **Figure 4 – Typical Layout for Garages/Concrete Pads over Underground Services** for more information.
    - The customer is required to install a 50 mm rigid PVC duct under the garage/concrete pad at 0.6 m below final grade to facilitate future maintenance to the service cable. The duct should extend beyond the garage pad by a minimum of 0.3 m.

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 0.6 m separation between the gas line and power line for residential customers.

Figure 2
Typical Layout for New Residential Underground Services (Power and Gas)

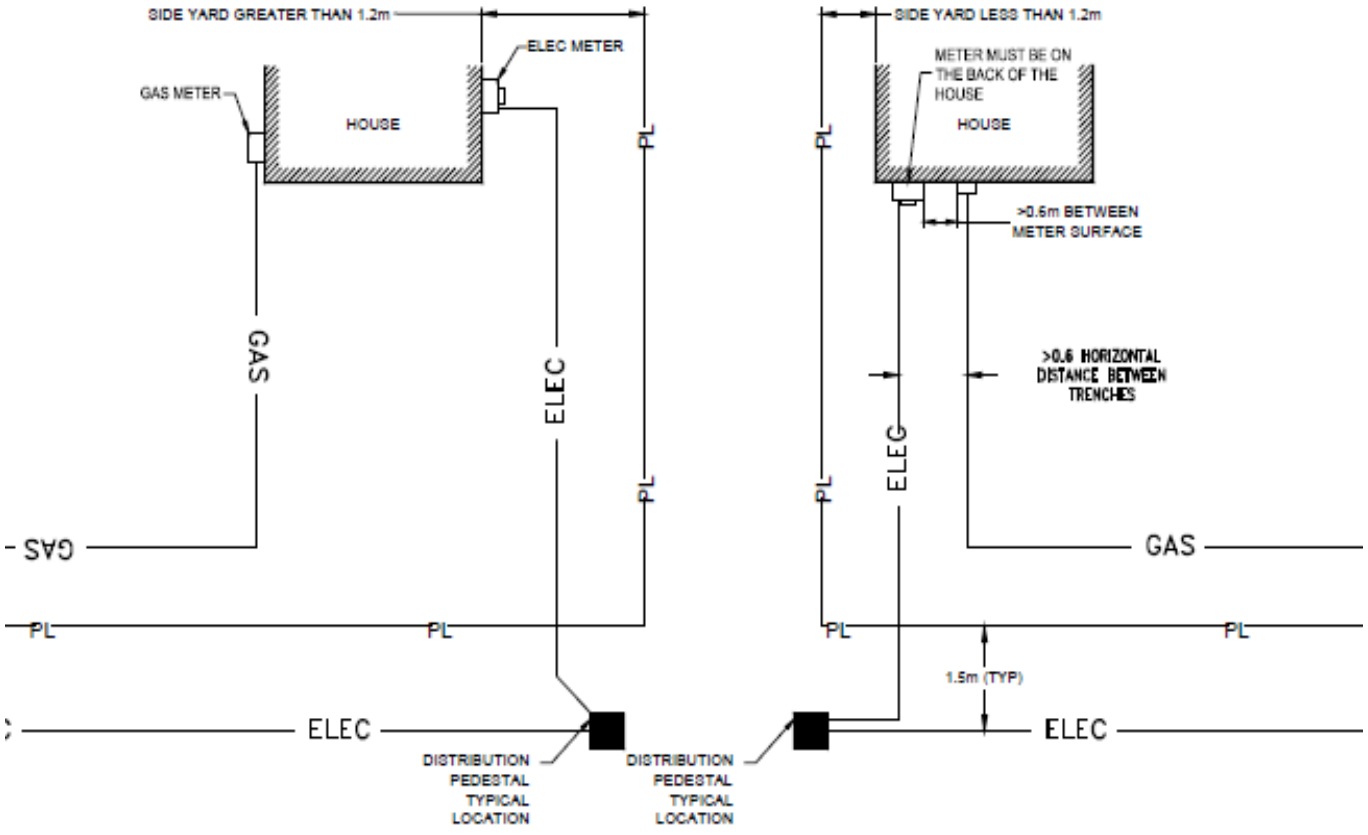
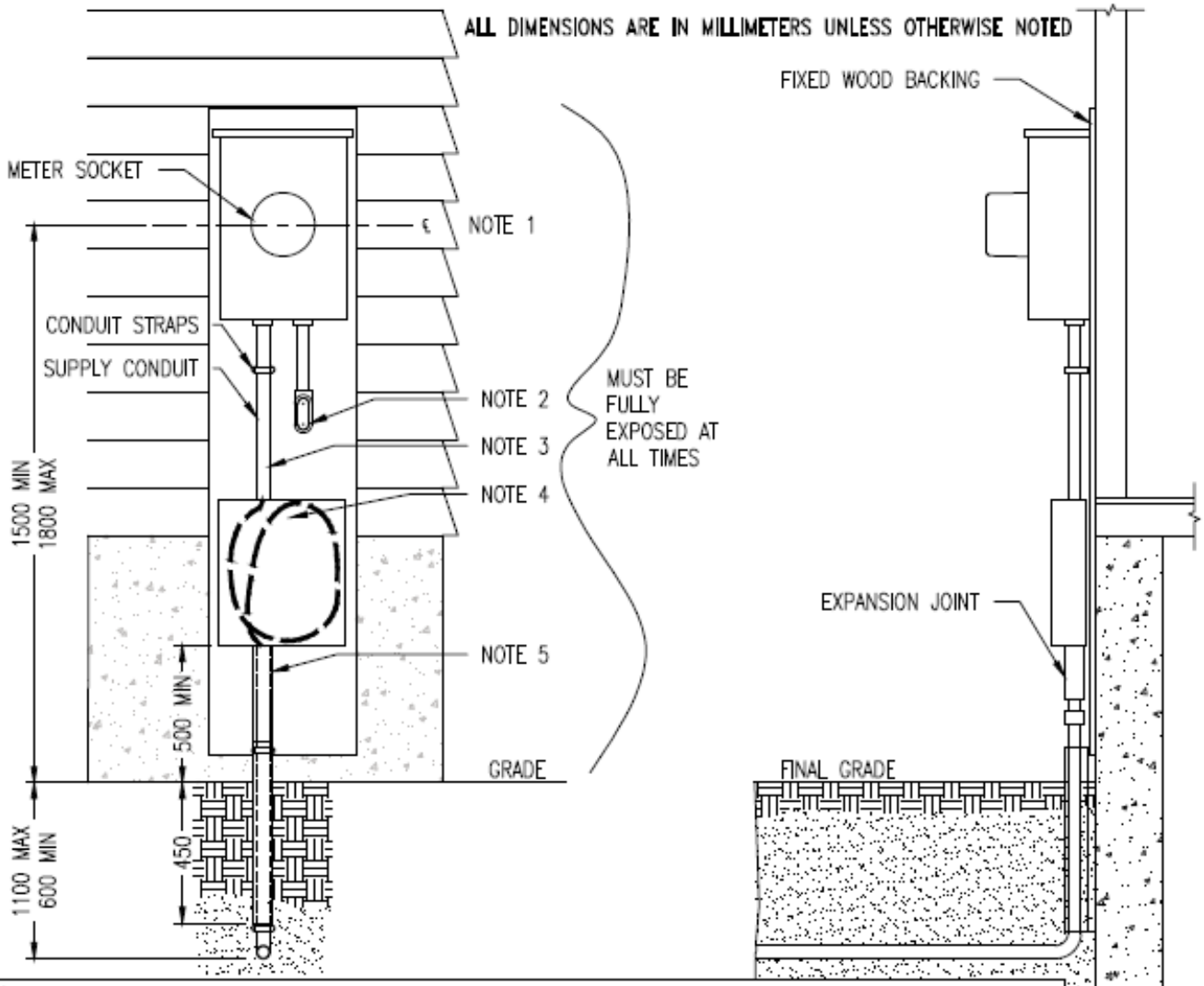


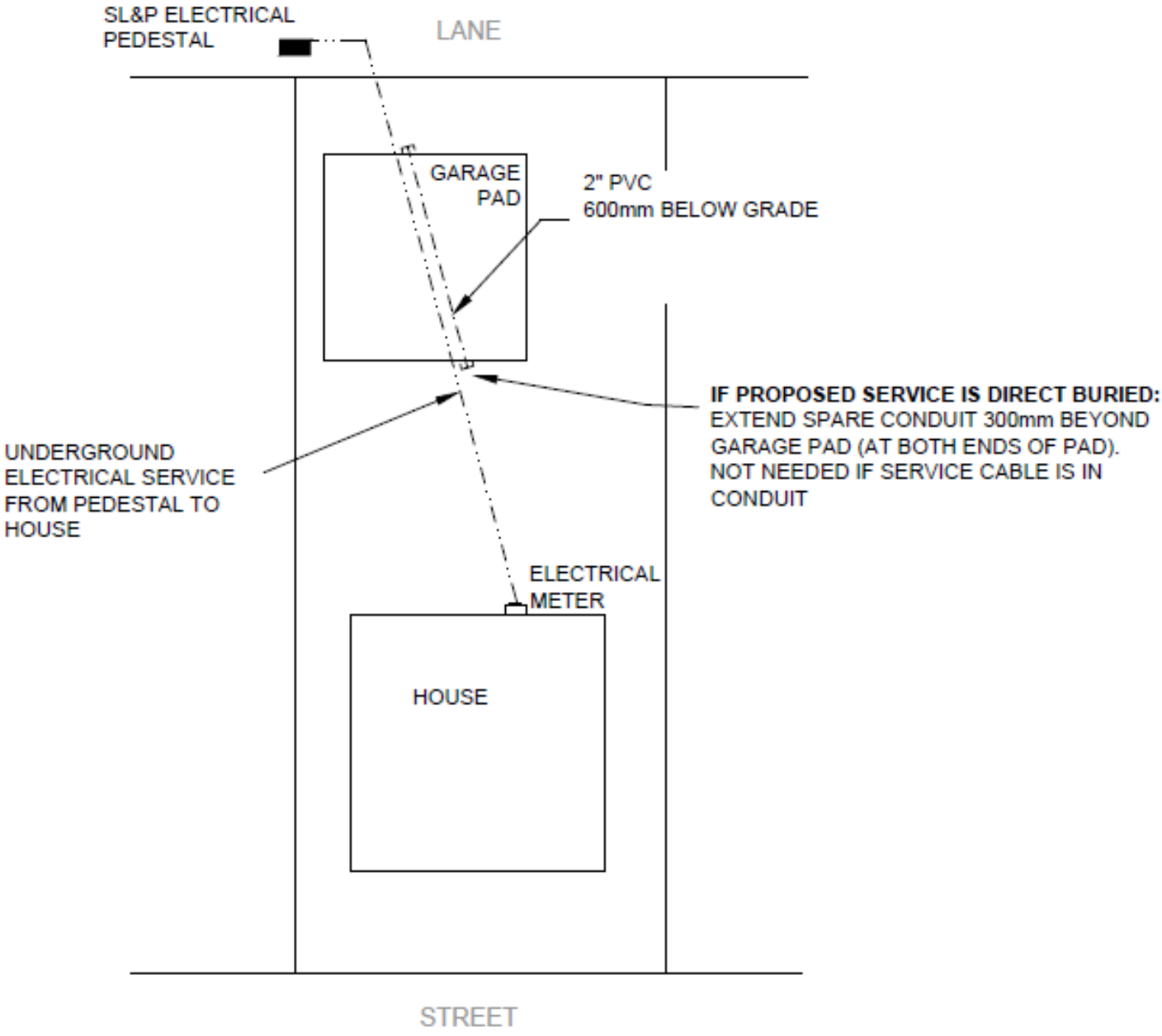
Figure 3
Typical Residential Underground Services



Note:

1. Centerline of the meter to be a minimum of 1500 mm (5 ft) and a 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 from the top of the socket to 300mm (12") above the final grade, with a minimum thickness of 19 mm (3/4") and must accommodate the loop box.
3. The supply conduit shall be a minimum of 50 mm (2") PVC, supplied and 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 a minimum of 500 mm (20") above final grade, to accommodate frost heaving mitigation methods. Loop box shall be lockable and of size: 305 mm (12") H x 305 mm (12") W x 150 mm (6") D
5. The loop box must have frost heaving mitigation methods (both PVC expansion joint and frost sleeve) to allow for ground movement due to frost. Do not fix frost sleeve to ground or structure to allow vertical expansion.
6. The Installation must follow the Canadian Electrical Code.

Figure 4
Typical Layout for Garages/Concrete Pads Over Underground Services



5.4.2 Meter Socket Installation Locations for Underground Service

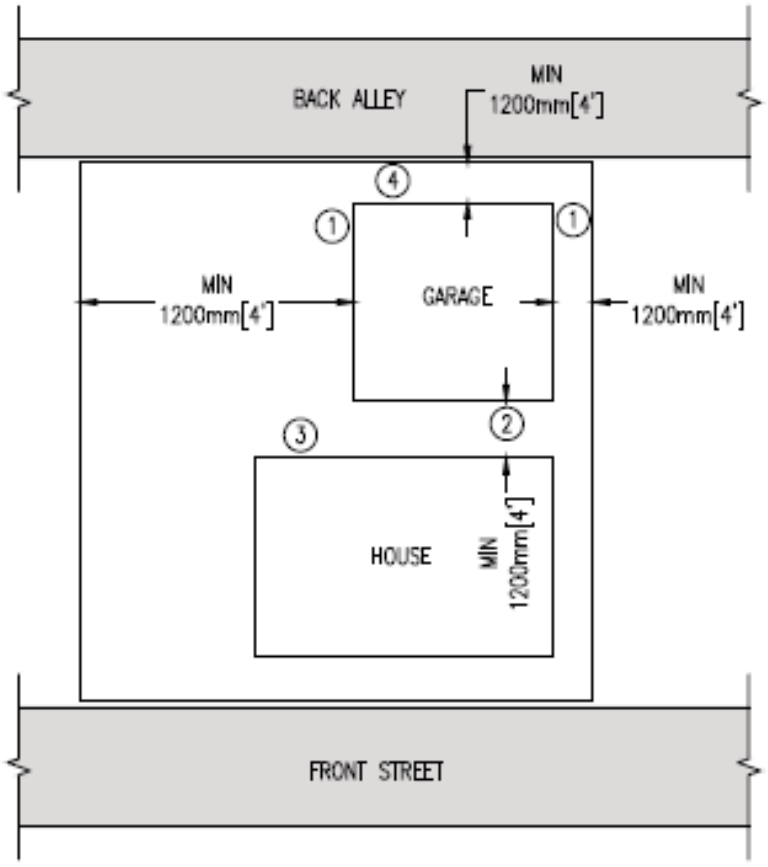
All meter socket installations must meet the clearance requirements above. The following locations are acceptable for meter socket installation, in order of preference. If the point of service is on the garage, the meter socket installation will be prioritized. See **Figure 2 – Typical Layout for New Residential Underground Services (Power and Gas)** for more information.

1. To the nearest side of the garage meeting above clearance requirements.
2. To the front of the garage (facing the building).
3. To the back of the house (facing the alley).
4. To the back of the garage (facing the alley).

See **Figure 5 – Preferred Meter Socket Installation Locations** for more information.

If none of the above locations meet clearance requirements, 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 SL&P prior to the installation of a free-standing meter base/pedestal.

Figure 5
Preferred Meter Socket
Installation Locations



5.4.3 Underground Residential Services Over 200A

A standard residential service request is 200A and under. For residential service above 200A, the customer is responsible to:

- Supply and install an external weatherproof splitter. The dimensions can be found in **Table 3 – Typical Service Installation Chart** on page 25. See **Figure 8A – Commercial & Industrial Connections greater than 200A** for more information.
- Make accommodations for instrument rated metering for all service points over 200A. **See Section 6 – Metering**, also contact the Meter Shop at 306-975-2414 option 4 for more information.

5.4.4 Underground Services to Townhouse and Multi-Unit Dwellings

SL&P provides an underground service to a maximum of four (4) meters in one (1) meter trough and must meet all requirements above. A blank lockable compartment next to the meter positions will be used as a termination point for SL&P. This would be achieved with the customer obtaining a 5-gang meter trough with spots one (1) to four (4) for individual meters and the fifth (5) spot being a blank lockable compartment for terminations. **This set up will be applicable only if a building/townhouse requires a maximum of four (4) meters and less than or equal to a 200A service size.**

If the total service is greater than 200A and/or requires more than four (4) meters, **SL&P will provide an underground service to a customer owned and installed splitter** which will be the demarcation point between SL&P and the customer. See **Table 3 – Typical Service Installation Chart** and **Figure 8A - Underground Commercial and Industrial Connections (Greater Than 200A)** for splitter sizing and installation.

A 125 mm rigid PVC supply conduit attached to a 125mm expansion joint complete with a 0.6 m long frost sleeve below is required from the splitter to 0.45 m below final grade. 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 and expansion joint is required to protect against ground movement due to frost heaving**. The sleeve should measure 0.6 m in length and 25 mm larger in diameter than the supply conduit. The customer is responsible to supply and install all 125 mm conduit on property. The splitter is to have a door with a 3-point latch and a padlock handle. The splitter will be the utility's point of service. Other structures, such as swimming pools and gas lines, can influence the placement of underground services to comply with CEC standards.

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

5.5 Overhead Residential Connections

SL&P provides an overhead service from our power lines/utility poles in the alley to the demarcation point on the house. For an overhead service the demarcation point between the customer and SL&P is the connection at the service mast.

A new residential overhead connection will be allowed at SL&P's discretion. It is the responsibility of the customer to contact SL&P for any new service request prior to construction. For general service requirements on an underground residential service, please see section **5.4 Underground Residential Connections** on page 13.

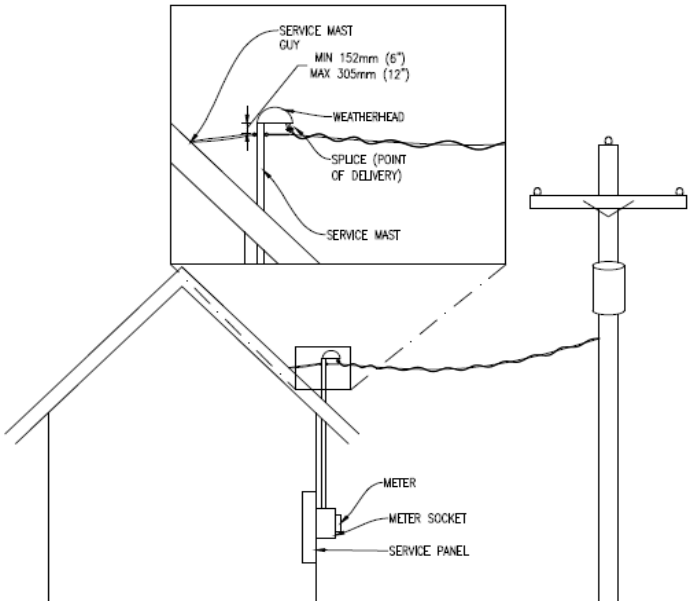
The following requirements by SL&P apply for an overhead service:

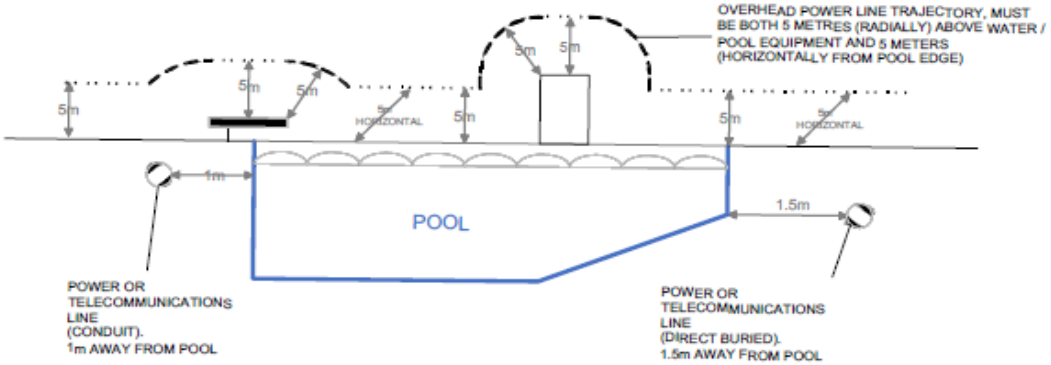
- The point of attachment cannot exceed 5.5 m above grade. The attachment point height should also be installed in such a manner that proper clearances per **Table 2 - Minimum Vertical Line Clearances** are maintained.
- Service conductors that are not higher than windows, doors, or porches must have a horizontal clearance of no less than 1.0 m.
- Mast weather head cable anchor (point of attachment) must be a minimum of 0.9 m above roof and at a maximum of 5.5 m above final grade. The conductive and neutral wires must be 204 mm from the mast kit to allow for a drip loop as outlined in the *Canadian Electrical Code (CEC)*.
- Masts greater than 1.5 m above the mast supporting joint require guying.
- Masts must be assembled with components suitable for service mast use.
- The attachment point must be attached to service mast with a clevis and spool insulator. **If an eyebolt is used, the eye must be closed**. The attachment point is required to have a minimum tension rating of 1000 lbs.
- No overhead service conductors may be located directly over a swimming pool. Pool installations must comply with the *CEC.* See **Figure 6 – Typical Residential Overhead Service** for more information.
- The ladder scope should be 4:1 (vertical height to horizontal distance) for an overhead connection installation. This means that each 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 thickness and at least the same size as the socket.
- A minimum of 1.2 m of clearance is required for service access to the meter.
- Centerline of the meter to be a minimum of 1.5 m or maximum of 1.8 m above final grade on property.
- The attachment point and the meter socket will be located at the nearest corner of the building to the power pole in the alley.
- Overhead residential connections are limited to 200A.

Mid-span tap off is not a service option in most scenarios. Please call SL&P Customer Connects at 306-975-2414 option 3 and our Engineering staff will be able to assist you.

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

Figure 6
Typical Residential Overhead Service and Overhead Service Pool Clearances





5.5.1 Meter Socket Installation Locations for Overhead Service

All meter socket installations must meet the clearance requirements above. The attachment point and the meter socket will be located at the nearest corner of the building to the power pole in the alley. The following locations are acceptable for meter socket installation, in order of preference:

1. To the nearest side of the garage.
2. To the front of the garage (facing the building).
3. To the back of the house (facing the alley).
4. To the back of the garage (facing the alley).

See **Figure 5 – Preferred Meter Socket Installation Locations** for more information.

Table 2
Minimum Vertical Line Clearances

Public Roadway or Lane	5.5 m
Residential Driveway	4.0 m
Pedestrian Walkway – Includes Patios and Decks	3.7 m
Flat Roof	2.5 m
Peaked Roof	1.0 m

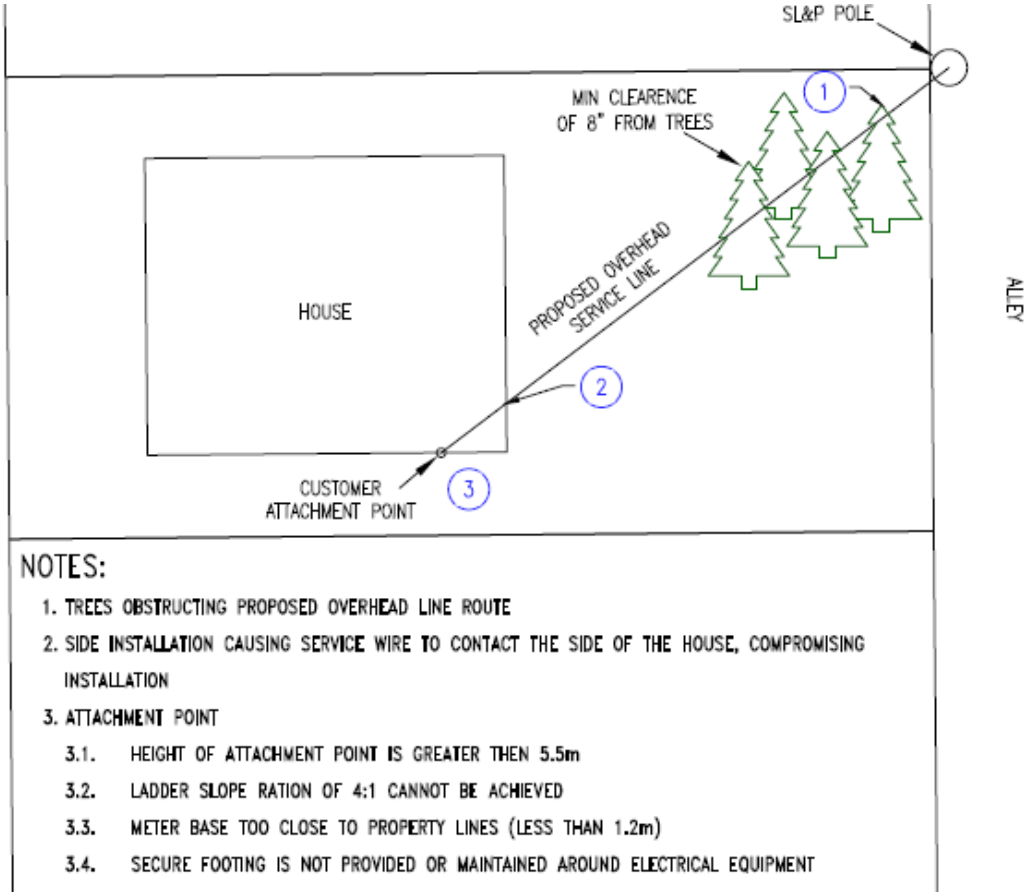
To ensure the safety of Saskatoon Light & Power's Powerline Technicians, please ensure that new mast installations completed by customers/electrical contractors are done in a way that allows us to reach the mast while working from a ladder. In cases of disconnects, we will cut the line from a point close to the ladder. The homeowner will be responsible to remove the remaining section of line.

5.5.2 Overhead Service Refusals

SL&P will refuse overhead service if required requirements and/or clearances are not met. See **Figure 7 – Overhead Service Refusals** for more information. The following conditions would cause a refusal:

- There is no clear line of sight between the attachment point on the house to the power pole.
- The length of the service wire exceeds 30 m.
- The attachment point on the side has any or all the following issues:
  - Side installation causes the service wire to rub against the side of the house causing wear on the insulation.
  - Height of the attachment point is greater than 5.5 m.
  - Ladder slope ratio of 4:1 cannot be achieved.
  - Meter base is too close to the property line (less than 1.2 m).
  - Secure footing is not provided or maintained around electrical equipment.

Figure 7
Overhead Service Refusals



5.6 Commercial, Industrial, and Large Residential Connections

Commercial, industrial, institutional, apartment, multi-plex or condominium customers must contact SL&P as soon as possible for new services or upgrades to existing services.

The following requirements by SL&P should be considered for any commercial or industrial service.

- **Commercial connections** requiring an **overhead service are limited to 600A** and below.
    - Service entrance size of 400A and below will require a single eyebolt/hook.
    - Service entrance size of 600A will require four (4) eyebolts/hooks. See **Figure 8B – Overhead Commercial Connections – Horizontal**, **Figure 8C – Overhead Commercial Connections Vertical**, and **Figure 8D – Overhead Commercial Connections Overview** for more information.
- Any **commercial connections requiring 800A and over** must be an **underground** service. See **Figure 8A – Underground Commercial and Industrial Connections** for more information.
- The customer is responsible to provide SL&P with the design plan for the site which must include the locations/routing of all other utilities (water, sewer, gas, etc.) on site 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 is shown in **Figure 9 – Typical Transformer Installation**.
- SL&P requires the installation of an external splitter which is considered as a demarcation point between the utility and the customer for underground services above 200A. Based on the service entrance size, the splitter sizes vary. Please see **Table 3 – Typical Service Installation Chart** for more information.
- The customer is responsible for stubbing out primary conduit to the property line in the direction specified on the design drawing. See **Figure 9 – Typical Transformer Installation.**
- As required by TSASK and the *CEC*, any conduits that are occupied by communications cable must not terminate or have any openings in facilities specified for power/electrical distribution use. Communication conduit must be a continuous run from property line to the communications room with no break and can be installed in the same trench as the power conduits.
- The splitter will have a door with a 3-point latch mechanism and a padlock handle. See **Figure 10 – Typical 1.2 m x 1.2 m Splitter Layout** for more information.
- 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 0.85 m above 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 SL&P requirements.

- All conduits and/or ducts installed are to be capped and sealed at any openings to prevent the entry of water.
- SL&P will determine the number of ducts and notify customer during design stage.
- Temporary construction services shall follow the CEC. Temporary services may require approval from SL&P Engineering and possible site visit(s). Please refer to section **5.7 Temporary Construction Services** for more information.

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 4.0 m x 4.0 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

Buildings/Properties with a service entrance of 800A or higher requires underground service and splitter installation. Overhead service will not be provided in such cases.

Volts(V)	Amps(A)	Minimum Splitter Size	Customer Installed Instrument Transformer Cabinets
120/240V	400A-600A	760 mm x 760 mm x 250 mm	760 mm x 760 mm x 250 mm
120/208V	400A-600A	915 mm x 915 mm x 300 mm	915 mm x 915 mm x 300 mm
120/208V	800A-1200A	1.2 m x 1.2 m x 300 mm	915 mm x 915 mm x 300 mm
120/208V	1600A-3000A	1.5 m x 1.5 m x 400 mm	915 mm x 915 mm x 300 mm
347/600V	200A-600A	915 mm x 915 mm x 300 mm	915 mm x 915 mm x 300 mm
347/600V	800A-1200A	1.2 m x 1.2 m x 300 mm	915 mm x 915 mm x 300 mm
347/600V	1600A-3000A	1.5 m x 1.5 m x 400 mm	915 mm x 915 mm x 300 mm
Splitters must be CEC type 3R rated or better. Downtown network splitter dimension requirements may differ; see page 34 for information on network services.			

Figure 8A
Underground Commercial and Industrial
Connections (Greater Than 200A)

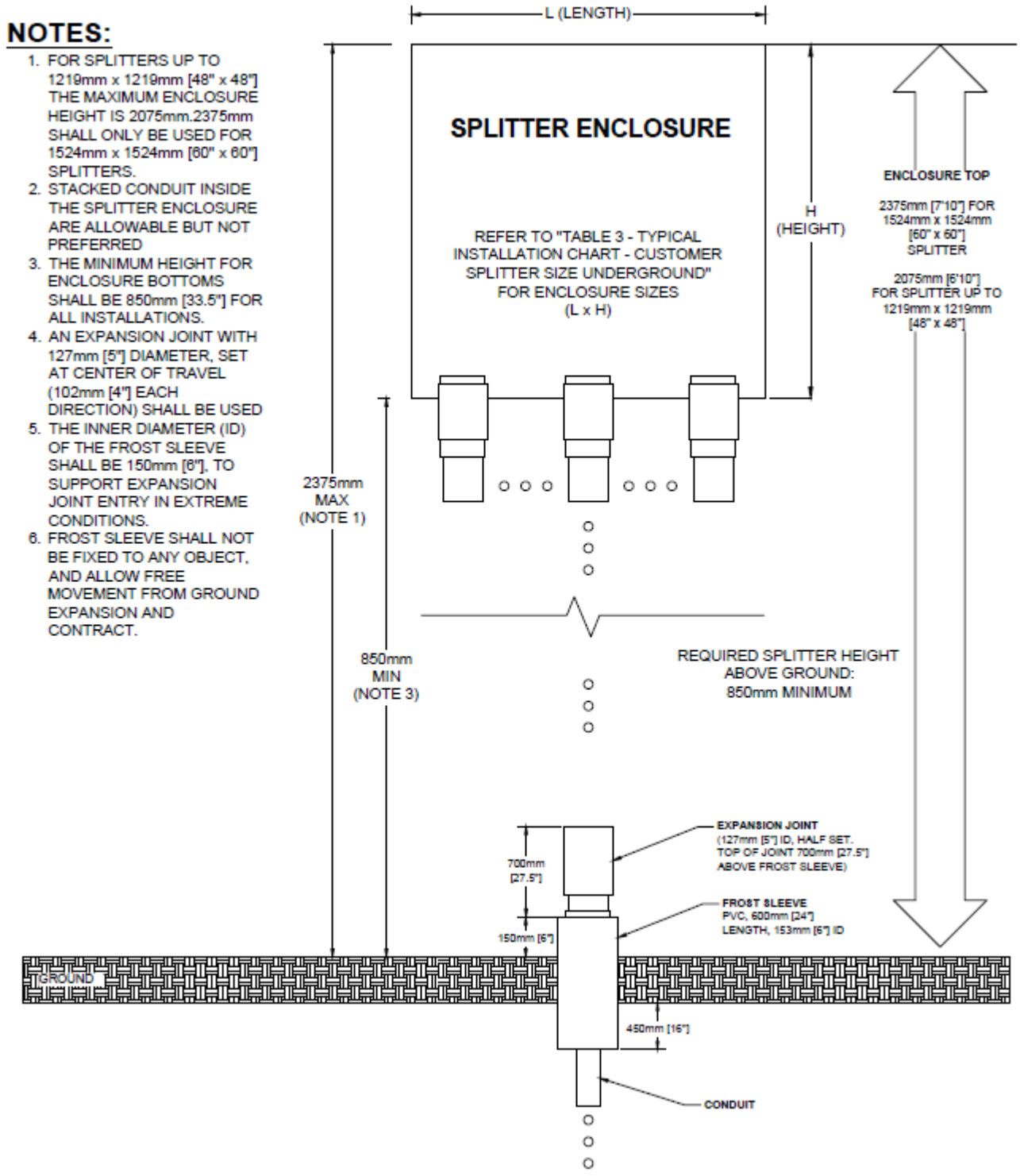
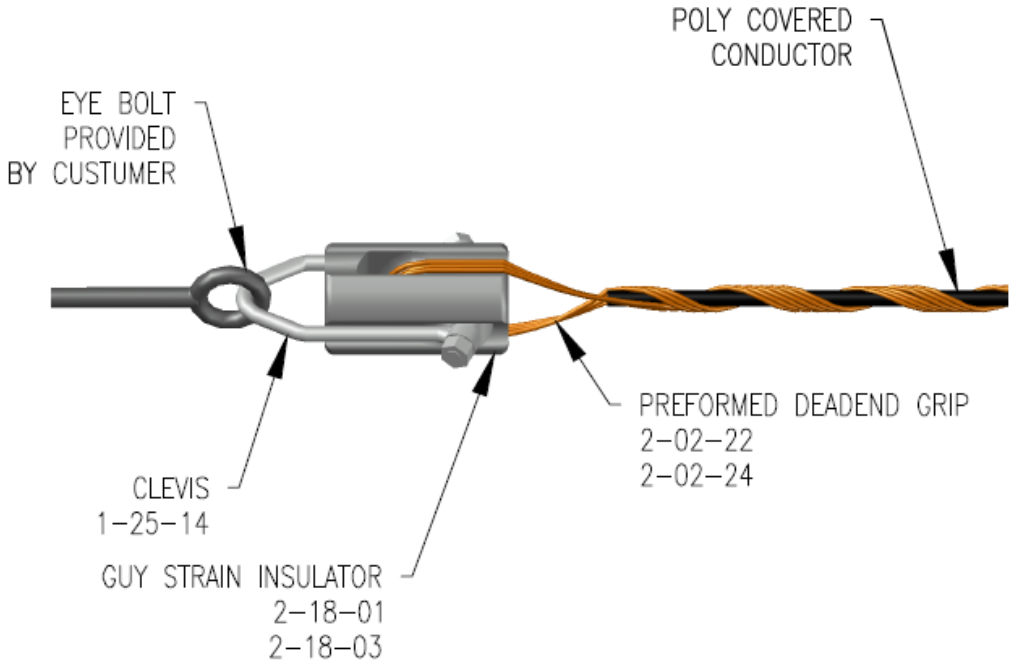
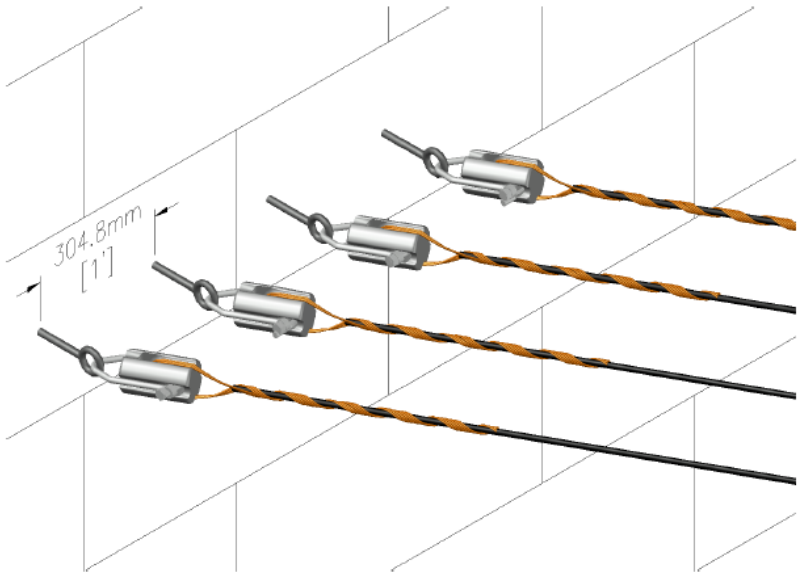


Figure 8B
Overhead Commercial Connections - Horizontal



DETAIL VIEW
1 : 8



A
HORIZONTAL CONFIGURATION
1 : 16

Figure 8C
Overhead Commercial Connections - Vertical

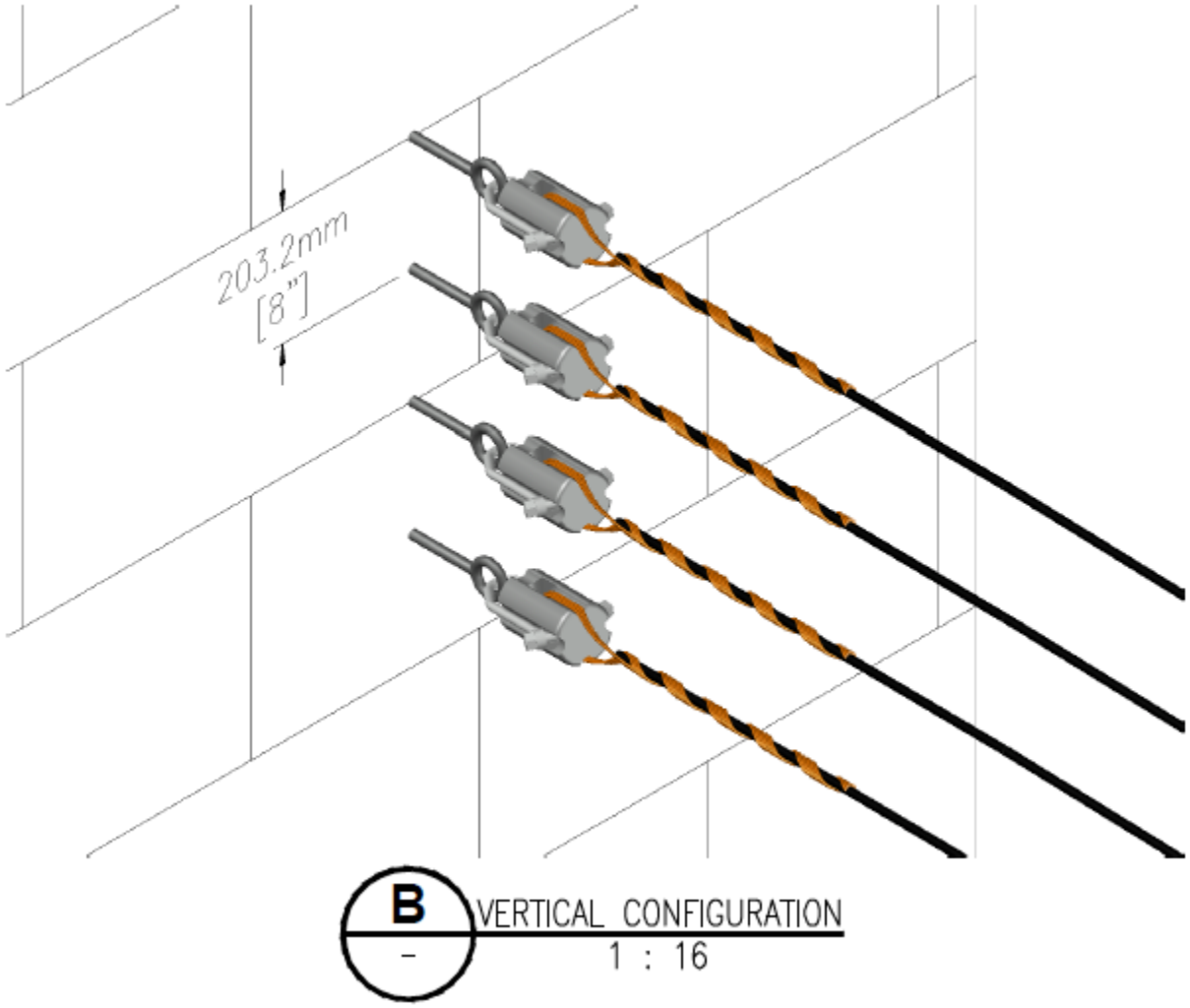


Figure 8D
Overhead Commercial Connections - Isometric Overview

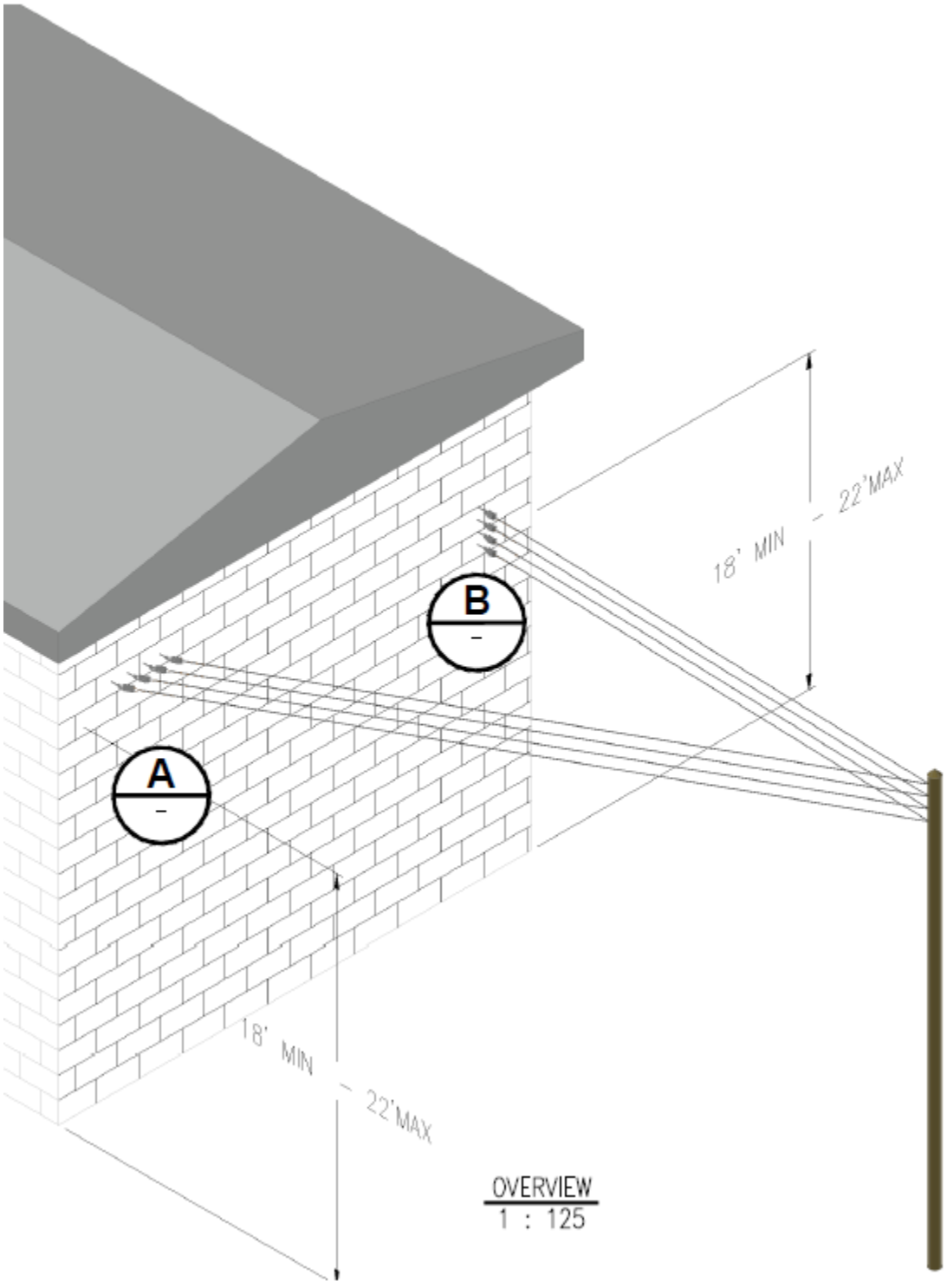


Figure 9
Typical Transformer Installation

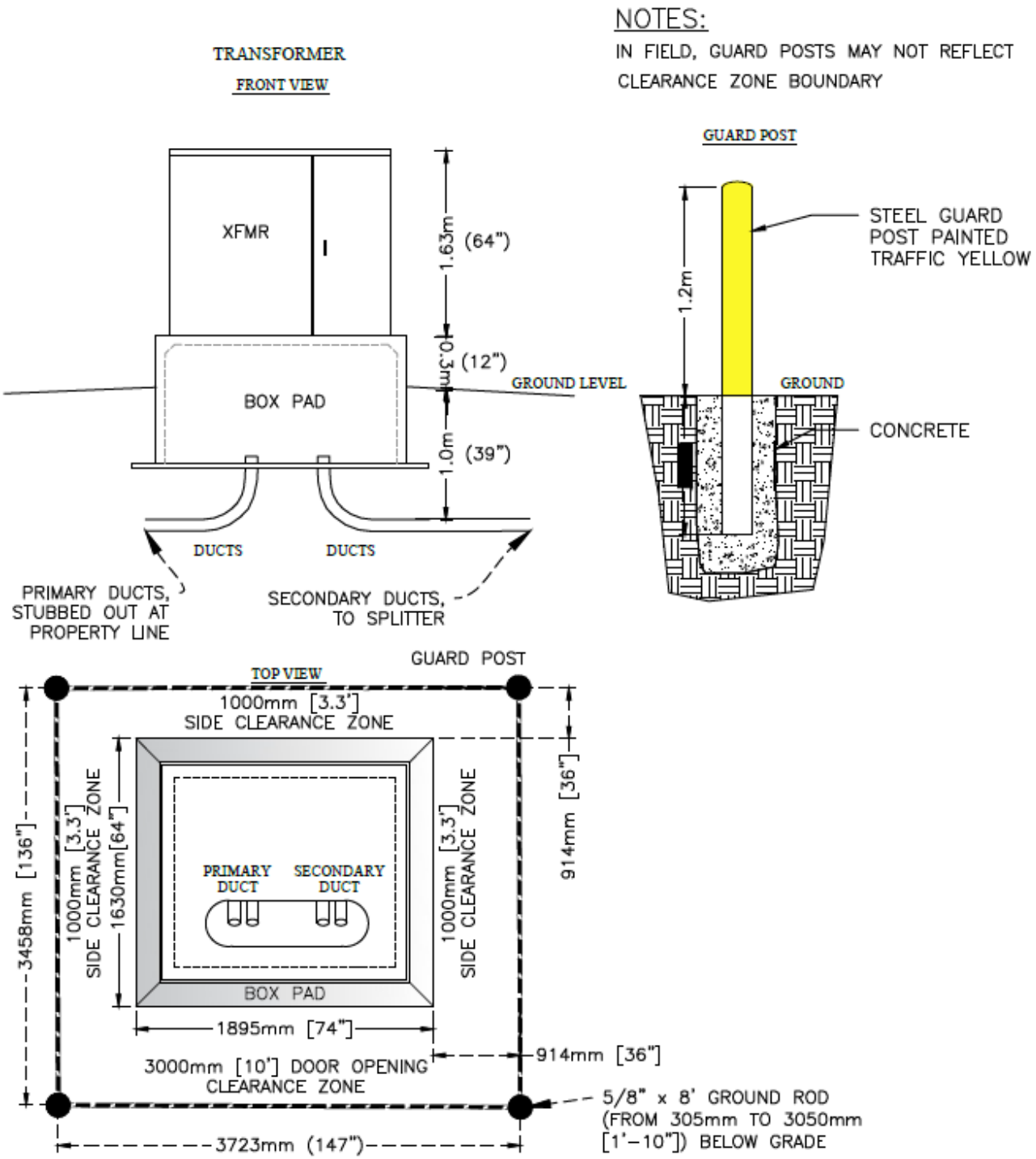
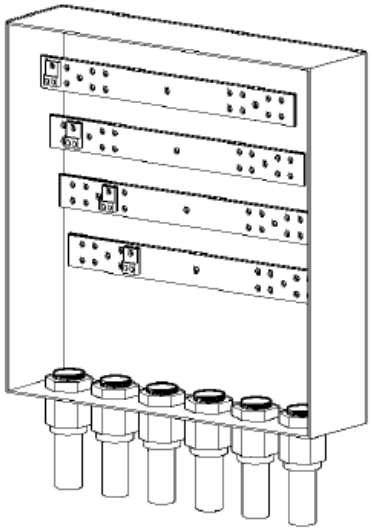
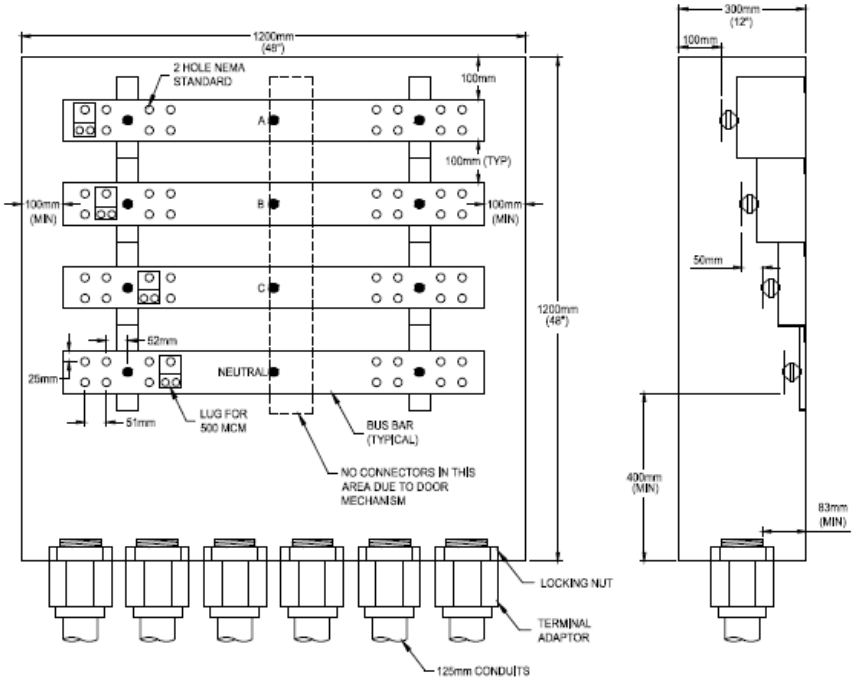


Figure 10
Typical 1.2 m x 1.2 m Splitter Layout



NOTES:

- REFER TO TABLE 3 FOR SPLITTER DIMENSIONS IN GIVEN SERVICE SIZE
- ENCLOSURE TYPE NEMA 3R
- ALL 120/240V, 120/208V & 347/600V SERVICE GREATER THAN 200A
- TYPICAL FAULT CURRENT RATING IS 50,000A CONTACT SL&P FOR AVAILABLE FAULT LEVELS AT A GIVEN LOCATION
- MOUNTED 610mm (2') ABOVE FINISHED GRADE
- DUAL DOORS: PADLOCKABLE WITH 3-POINT LATCH
- POWDER COATED, ANSI 61 GREY
- TO SAVE SPACE INSIDE THE SPLITTER, STACKING CONDUITS IS ACCEPTABLE BUT NOT PREFERRED

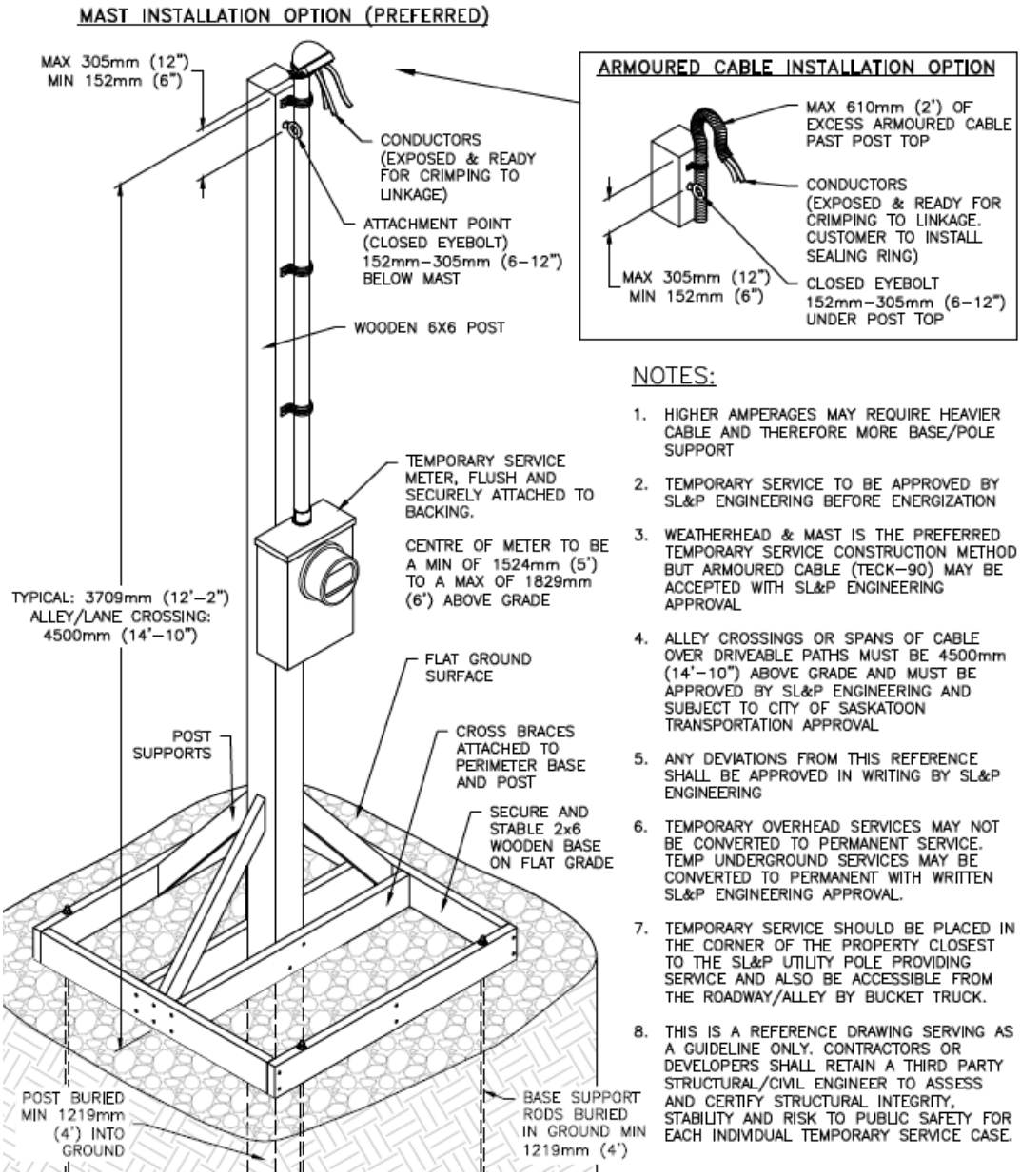


5.7 Temporary Construction Service

Customers may request temporary construction service from SL&P. This will require a separate electrical service request and a temporary service meter account from the City's Revenue Department prior to energization.

Temporary construction services may be subject to inspection and/or approval by SL&P Engineering.

Figure 11
Overhead Temporary Construction Service



5.8 Downtown 347/600 Volt Network Service Area

Downtown Saskatoon has been designated as an underground Network Service Area. This is an area roughly within the boundaries of 25th Street, Idylwyld Drive, and the riverbank.

Services within this area have the following special requirements for new developments and existing electrical services that are being changed or upgraded:

- The electrical service will be 347/600V 3-Phase 4-Wire. Service request for any different voltage levels will be provided at SL&P's discretion.
- Installation of a splitter is required. See **Figure 10 – Typical 1.2 m x 1.2 m Splitter Layout** for more information. Final splitter requirements for network installations will be determined on a case-by-case basis.
- Depending on circumstances, the demarcation point between SL&P and the customer will be an external splitter or an interior cable entry cell which is part of the switchgear. See **Figure 12 – Cable Entry Cabinet** for more information.
- SL&P does not approve the installation of an internal splitter as the demarcation point. Customer installed splitters must be external.
- SL&P installs special protective fuses at the demarcation point in certain cases that would require the depth of an external splitter to be more than a regular splitter. Please contact SL&P for details on the dimensions of the external splitter or an interior cable entry cell.
- The customer will provide shop drawings of the switchgear prior to servicing for SL&P comments and approval.
- SL&P will not energize a network service unless there is a TSASK energization sticker on the service installed by the electrical contractor.

5.8.1 Network Interior Entry Requirement

Pull boxes are required when the path, including the conduit and raceways, between the source and the demarcation point involves any bends, deflections, or profile changes that are lesser or equal to 360° when summed together. **Pull boxes may also be required at the discretion of the SL&P**.

Pull boxes have the following requirements:

- In the room containing the pull box, the customer must provide sufficient physical space for SL&P to bring in a cable tugger, as well as sufficient floor space for pulling in lengths of slack cable to be trained into the raceway.
- At the discretion of SL&P, anchor points may need to be installed in the room containing the pull box in order to anchor the cable tugger and to install pulleys that are used to pull in cables from either raceway through the pull box.
- The pull box requirements are defined in the *CEC*.
- The customer must provide drawings for the conduit entry into the building, the pull box design, and raceway to SL&P for comments and approval.

5.8.2 Customer Duct Formations

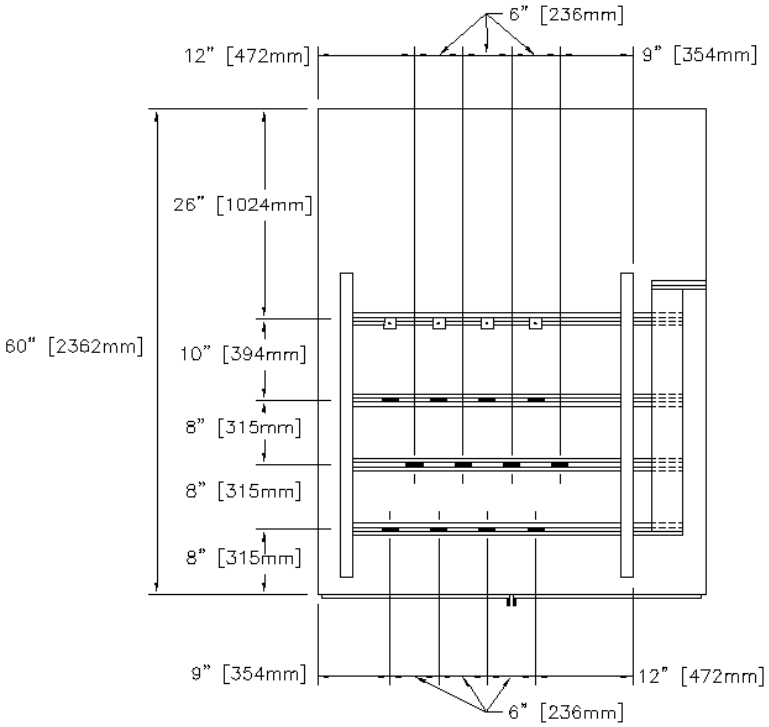
The customer is responsible for supplying and installing 125 mm PVC pipes that are encased in minimum 20 MPa concrete. The formation is to run from the property line to the splitter or the property line to the entrance into their building if the demarcation point is inside the building. The customer must supply a quantity of 125 mm straight DB2 PVC couplers equal to the number of pipes in the formation. If the demarcation point is in an above ground splitter, the customer is to use expansion joints for all pipes that are turned upward towards the splitter. The expansion joint will couple the DB2 PVC pipes to Schedule 40 pipes, if Schedule 40 pipes are used.

All open or exposed conduits/ducts are required to be capped/sealed to prevent the entry of water.

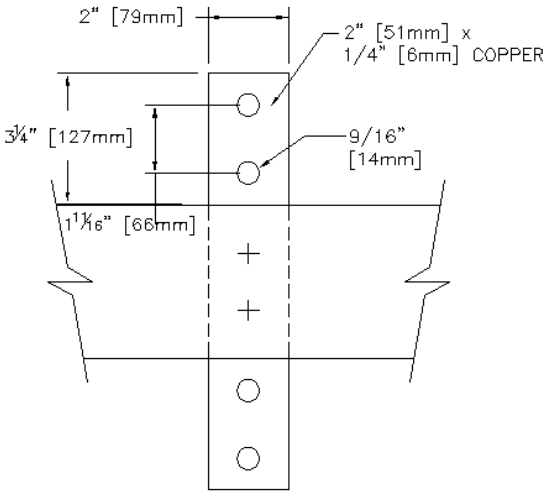
The typical network demarcation point is a customer owned splitter; however, in the case that SL&P will be directly connecting conduit and/or duct to customer owned conduit and/or duct, the customer will need to provide duct formation drawing(s) showing the duct arrangement and materials used in construction of the duct formation that SL&P will be connecting to. These duct formation drawings are subject to approval by SL&P prior to connection to the network.

The customer is responsible for contacting SL&P in order to join their formation to SL&P's formation at the property line. At least five (5) business days' notice must be given.

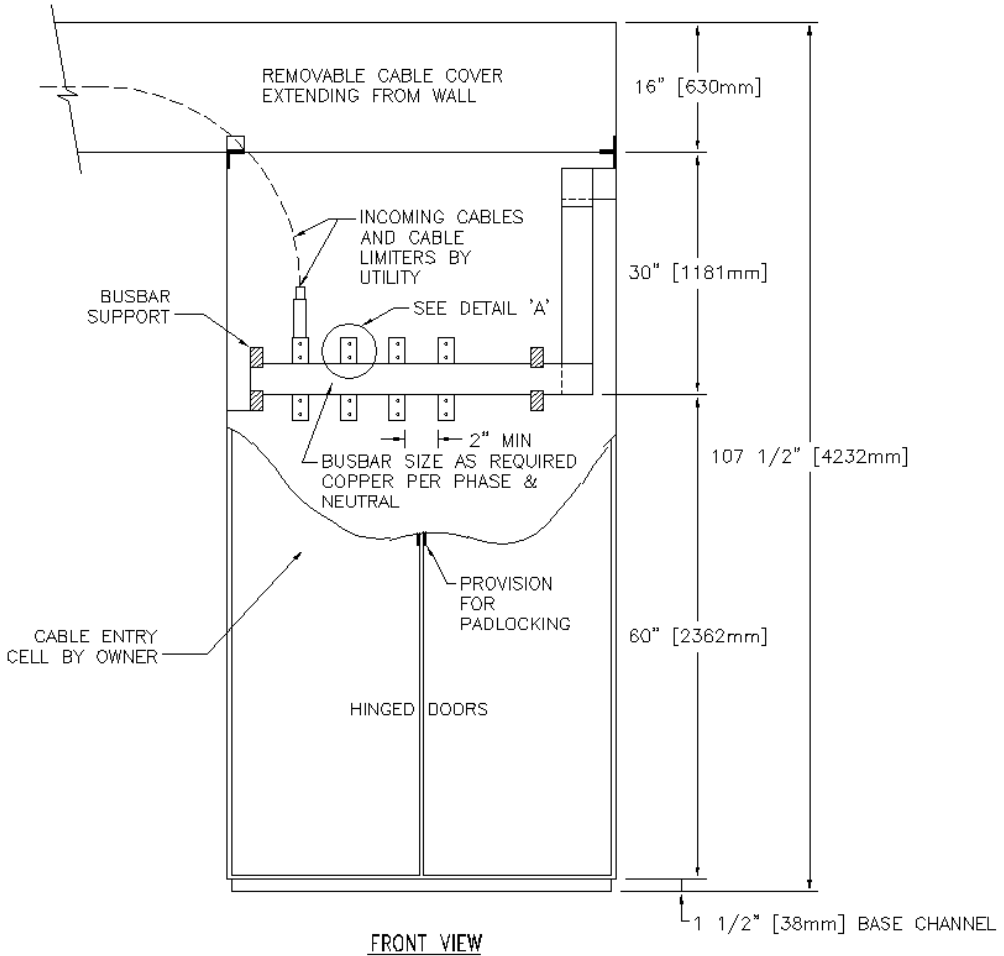
Figure 12
Cable Entry Cabinet



PLAN VIEW



DETAIL 'A'
(TYPICAL FOR PHASE BUS ONLY)



FRONT VIEW

5.9 Cut and Reconnect Request

SL&P provides a cut and reconnect service for residential homes. Customers can request this by contacting SL&P's Meter Shop at 306-975-2414 option 4. For a typical residential home, electrical contractors can request a cut and reconnect to do the following:

- Replace the panel, meter socket, and mast.
- Request a meter pull (removal) to perform service work or an inspection.
- Perform other work that is more safety accomplished by disconnecting the electrical service such as replacing siding.
- Any non-electrical work that affects the electrical system.

All work performed must comply with Saskatoon Light & Power's Customer Service Guide and the Canadian Electrical Code. A paid and valid electrical permit must be provided upon request.

Failure to comply with these requirements may result in refusal to energize or disconnection from Saskatoon Light & Power's system.

For residential service upgrades or service relocations, or for all commercial property service changes, please contact SL&P's Customer Connects at 306-975-2414 option 3.

Please note SL&P requires a minimum of 72 hours notice for a cut and reconnect. Unforeseen circumstances, such as severe weather, may delay scheduled cut and reconnects.

5.10 Service Drop Requests

Customers can request a service drop to perform non-electrical work around service line. During a service drop the overhead powerline to the customer is temporarily disconnected at the pole. For example, this allows for safe tree trimming or removal of trees in the path of the powerline.

Customers can request this by contacting SL&P at 306-975-2414 option 0. Service drops are by appointment only and must be booked a minimum of 72 hours in advance.

Any attempt to modify the service without a paid and valid electrical permit may result in the service not being reconnected.

5.11 Service Upgrades

SL&P requires any service upgrade to follow the new connection process. Customers can contact SL&P's Customer Connects at 306-975-2414 option 3 for more information. Alternatively, visit us at saskatoon.ca/slpelectricalservice to download the Electrical Service Request Form. **Customer electrical systems are subject to upgrades in order to meet current Canadian Electrical Code standards in addition to customer work related to service upgrades** prior to energization.

5.12 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 of clearance is required around all sides of SL&P infrastructure. For more information call Customer Connects at 306-975-2414 option 3.

5.13 Customer Charges

When a customer requests new or upgraded electrical services, SL&P will provide a quotation for costs associated with getting electrical power to that site. Refer to Section 5.2: General Service Installation for information on how to apply for electrical service.

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.

6 Metering

6.1 General Metering Requirements

6.1.1 Mandatory Energization Sticker

For new services or reconnections, a TSASK approved Energization Sticker must be affixed to the meter socket prior to energization or installation of meter. Multiple unit meters must each be affixed with an energization sticker. Affixing this sticker implies that:

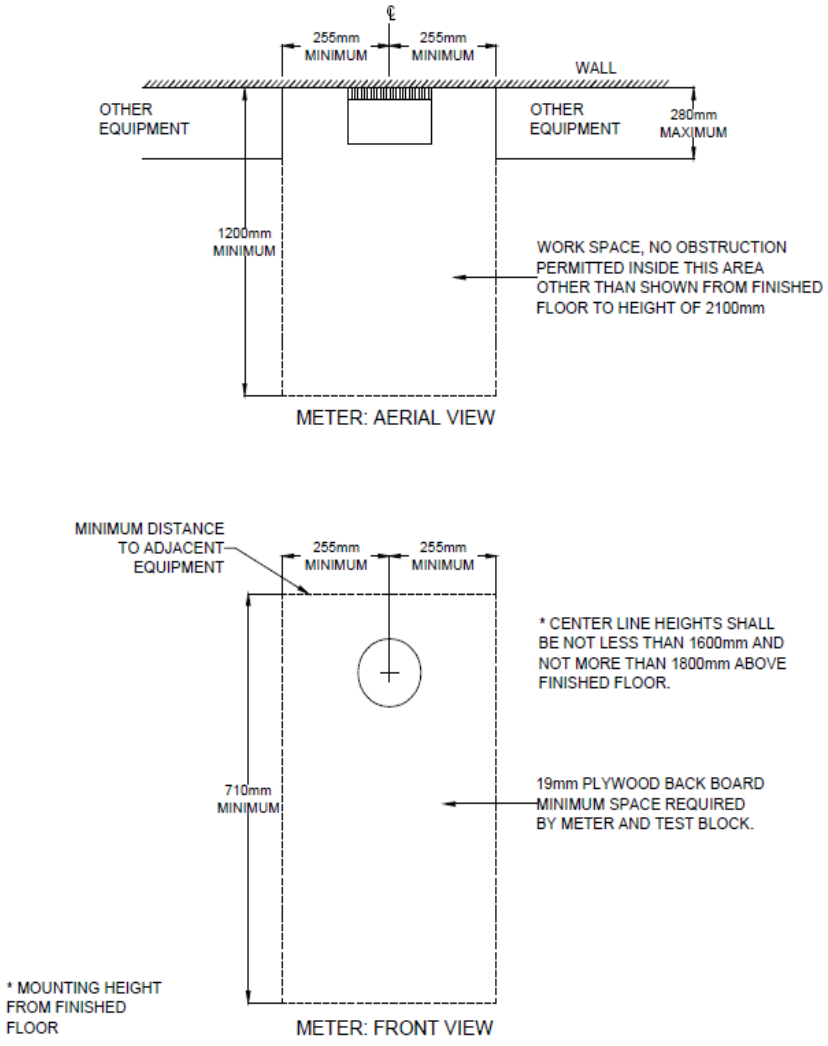
- A paid electrical permit has been obtained for the service;
- Wiring on the service (from the point of delivery to the main disconnect) is free from short circuits, grounds or any defects that might cause a hazard to life or property;
- The main switch is in the open position;
- The service is free of any other source of energization (back feed);
- A pre-energization inspection has been performed and approved by TSASK (where required). Services requiring inspection are outlined in the latest Saskatchewan Interpretations of the *Canadian Electrical Code (CEC)*; and
- The service meets the grounding and clearance requirements of the *CEC*.

6.1.2 Meter Clearance

A minimum of 1.2 m on the front side, 0.25 m from the center line of meter to both sides, and 2.1 m for height clearance is required. See **Figure 13 – Revenue Meter Clearance Instrument Rated Meters** for more information.

Any obstructions found around the meter socket and conduit may require removal at the customer's expense.

Figure 13
Revenue Meter Clearance Instrument Rated Meters



6.1.3 Access to Metering Equipment

Where 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 resolve restrictions in a timely manner may result in disconnection of service or delays to construction.**

The customer can contact the Meter Shop at 306-975-2414 option 4 to arrange for access to locked metering equipment.

6.1.4 Socket Energization Safety

For public safety, services with **cold metering** (meter after the disconnect switch) must be energized with the disconnect locked off and have the meter socket glassed off and sealed with a tie wrap prior to installation of the meter.

Similarly, services with **hot metering** (no disconnect switch before the meter) must have the meter socket glassed off and sealed with a tie wrap prior to installation of the meter.

6.1.5 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 **padlock** handle.

The minimum size of conduit from instrument transformer cabinet to base of plywood backboard for meter and test block is 31.75 mm. If any access points are used, they must be sealable and clearly visible. The maximum length of conduit is limited to 7.5 m.

For instrument transformer cabinets or switchgear with buss bars, a minimum physical separation of 50 mm must be maintained between instrument transformers and between instrument transformer and the surrounding enclosure.

6.1.6 Meter Location

In situations where the meter is installed inside a building, it is preferred that metering equipment is installed on an exterior wall. For concrete or metal clad buildings SL&P may require a separate 31.75 mm conduit for the exclusive use of aiding meter communication. This conduit must extend to the exterior of the building and terminate into an outdoor rated lockable junction box with minimum dimensions of 0.15 m x 0.15 m x 0.1 m. The junction box must be installed at a height of 1.6 m to 1.8 m above grade.

Saskatoon Light & Power reserves the right to determine the meter location.

6.1.7 Care of Metering Equipment

The customer is required to exercise reasonable care for the protection of SL&P 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.

6.1.8 Service Inspection

Services that are presently inactive (vacant or without an account holder) for a period of greater than one (1) year shall require a service inspection performed by a licensed electrical contractor. The contractor will be required to provide an electrical permit number and have an Energization Sticker prior to reconnection.

6.1.9 Clarifications

Please contact the Meter Shop at 306-975-2414 option 4 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 306-975-2414 option 4.

6.2 Self-Contained Metering

A self-contained meter is rated to carry the current and voltage of the circuit to be metered. The maximum load for a self-contained meter is 200A per phase. The maximum voltage limit for a self-contained meter is 600V phase to phase.

6.2.1 Single-Phase Self-Contained Metering

Service Voltages

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

6.2.2 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. Buildings with five (5) to eight (8) meters must be in an electrical room or outdoor electrical closet 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 demarcation point for the SL&P service cable and all other metering equipment must be located on the side of the building that parallels the property line and the service trench. The contractor/owner bear all responsibility to ensure the correct labelling is applied. Meter socket labelling shall be a lamacoid style or equivalent weather and UV resistant tag. SL&P may require proof of connectivity to ensure correct labels are applied before installing meters.

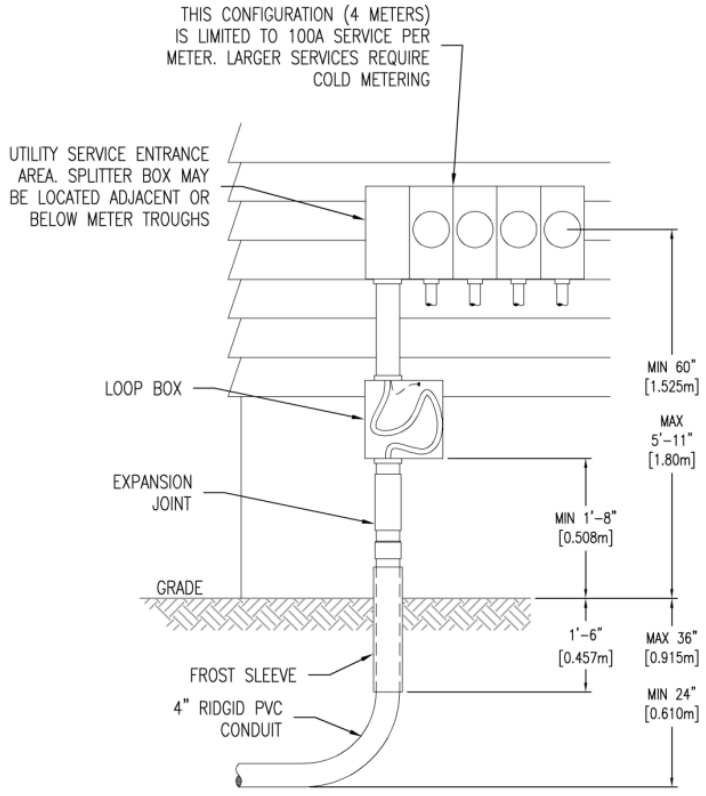


Figure 14
Residential Metering
Multiple Single-Family Dwellings

6.2.3 Three Phase Self-Contained Metering

Service Voltages

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

6.2.3.1 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 or lamacoid style labels 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. SL&P may require proof of connectivity to ensure correct labels are applied before installing meters.

6.2.4 Demand Meters

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

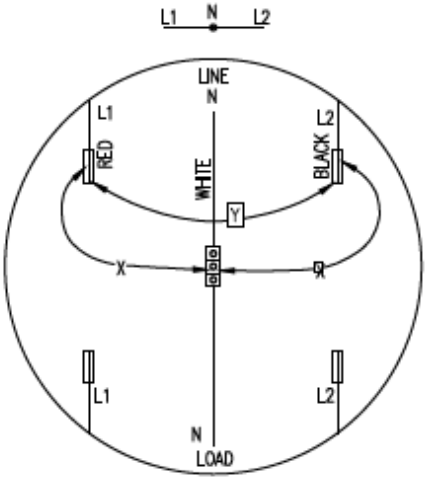
6.2.5 Self-Contained Meter Enclosure

Meter enclosure specifications are shown below in **Table 4 – Self-Contained Meters (Up to 200A).**

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

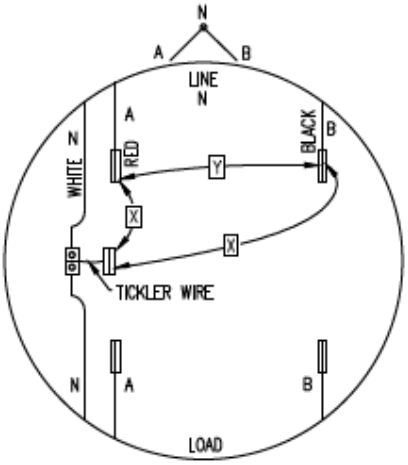
Voltage	Phase	Wire	Connection	Socket	Figure
120/240	1	3		4 Jaw	13
120/208	1	3	Network	5 Jaw	14
120/208	3	4	Star (Y)	7 Jaw	15
347/600	3	4	Star (Y)	7 Jaw	15

Figure 15
4-Jaw Meter Socket



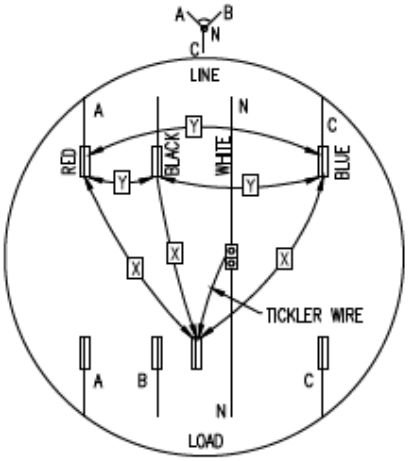
LINE VOLTAGE	MEASURED VOLTAGE	
	X	Y
120/240	120	240

Figure 16
5-Jaw Meter Socket



LINE VOLTAGE	MEASURED VOLTAGE	
	X	Y
120/208	120	208

Figure 17
7-Jaw Meter Socket



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

6.2.6 Supply of Self-Contained Metering Responsibilities

The following responsibilities apply to the customer:

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

The following responsibilities apply to SL&P:

- Supply and install the meter in the socket.
- Make line side connections.

6.3 Instrument Transformer Metering

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

6.3.1 Single-Phase Instrument Transformer Metering

Service Voltages

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

6.3.2 Three Phase Instrument Transformer Metering

Service Voltages

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

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

6.3.3 Multiple Meters

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

6.3.4 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. If the meter is in an outdoor enclosure the splitter must be located outside this enclosure.

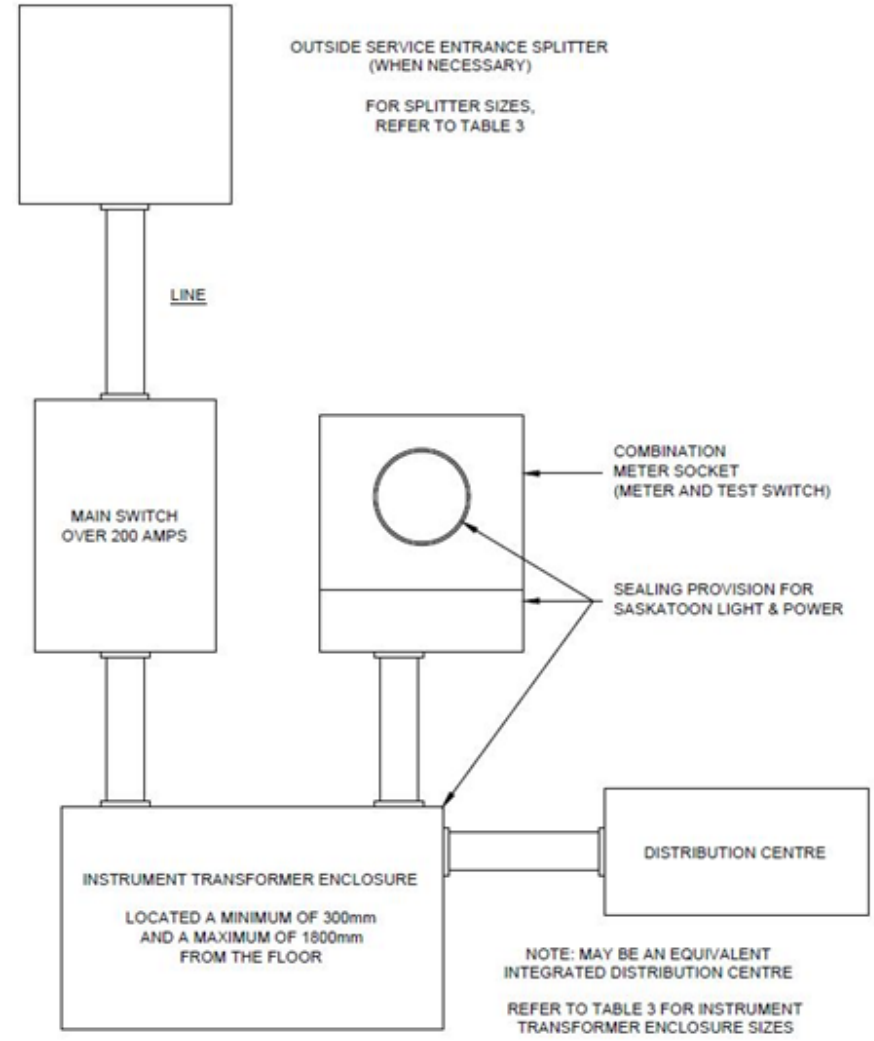
6.3.5 Instrument Transformer Meter Enclosure

Separate meter and transformer enclosures are required for each instrument transformer service. The meter enclosure must have a 13-jaw meter socket (for 3-phase services) or 5-jaw meter socket (for single phase services), have space for a test switch, and wiring from the test switch to the socket. Meter enclosure specifications are shown below in **Table 5 – Instrument Transformer Meters**. See **Table 3 – Typical Service Installation Chart** for instrument transformer enclosure dimensions. See **Figure 17 – Instrument Transformer Meter Enclosure Layout** for general arrangement of equipment.

Table 5
Instrument Transformer Meters (over 200A)

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

Figure 18
Instrument Transformer Meter Enclosure Layout



6.3.6 Instrument Transformer Metering Equipment Location

For SL&P owned 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 306-975-2414 option 4 for more information and approval.

6.3.7 Supply of Instrument Transformer Metering Responsibilities

The following responsibilities apply to the customer:

- Supply and install a meter enclosure according to specifications shown in **Table 5 – Instrument Transformer Meters**.
- Install instrument transformers.
- Supply and install a 31.75 mm conduit between the instrument transformer enclosure and the meter enclosure 25.4 mm 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 plywood sheet behind all enclosures.

The following responsibilities apply to SL&P:

- Supply instrument transformers.
- Supply and install the meter and test switch.
- Supply and install the secondary wiring.

Instrument transformers are available to the customer for installation upon request by calling the Meter Shop at 306-975-2414 option 4. All instruments will need to be signed for and the contractor will be responsible for lost or stolen equipment. The customer must provide the service address and electrical permit number when placing a request for instrument transformers.

6.4 Primary Metering

Primary polyphase metering at distribution system voltage will be instrument rated and must be inside a building or suitable padlock enclosure. **A minimum of four (4) months' notice is required to provide primary metering services.**

7 Power Quality

Power quality is defined as the quality of the voltage which is delivered to the customer. SL&P 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 – This can be caused by periodic fluctuations of voltage. This is mainly due to fluctuating loads on the system such as hoists, arc furnaces, etc.
- Voltage Unbalance – This issue occurs for three phase customers where the voltage measurements of the individual line voltages are not the same.
- Low Voltage – This occurs when voltage levels at customer equipment are lower than the standard voltage levels. See **Table 6 – Voltage Variation Limits** below for acceptable voltage levels.
- Voltage Dip – This is seen mainly by customers in industrial areas. Typically, a motor start further down the line causes a momentary reduction of the voltage levels.

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

Nominal System Voltages	Voltage Variation Limits Applicable at Service Entrances			
	Extreme Operating Conditions	Normal Operating Conditions		Extreme Operating Conditions
Single-Phase				
120/240	106/212	110/220	125/250	127/254
240	212	220	250	254
Three-Phase 4-Conductor				
120/208Y	110/190	112/194	125/216	127/220
347/600Y	306/530	318/550	360/625	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 SL&P at 306-975-2414 option 0. Based on the type of power quality issue observed by the customer, SL&P will work to rectify the problem.

8 Customer Owned Generation

Customers may generate electricity at their home or business to offset their electricity purchases.

Customers interested in generating and selling excess energy to the SL&P electrical grid can participate in the Net Metering, Small Power Producer, or Behind-The-Meter programs as per the City's *Power Producer's Policy A07-022*.

Customers interested in behind-the-meter generation must ensure there is no back feed of excess energy to the SL&P electrical grid.

Customers are required to apply for the available programs and contact SL&P prior to installing any equipment.

Customers will require a bi-directional meter to keep track of the electricity to and from the grid for billing or monitoring purposes. Customers are required to sign an interconnection agreement prior to energization of their system.

There are some program restrictions in the downtown area. There may be technology and system size restrictions in certain applications. Please visit saskatoon.ca/slpselfgeneration for more information, rules, requirements, and to download the application form.

9 Locked Equipment and Facilities

9.1 Access to Customer Facilities

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

9.2 Access to SL&P Equipment

Removal or tampering of the SL&P seal or lock on equipment is strictly forbidden. **Where there is evidence of tampering, the person(s) responsible shall be liable for prosecution and immediate disconnection of service.** Customers may contact the Meter Shop at 306-975-2414 option 4 to arrange for access.

10 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.

11 Revisions

Date	Version	Description
May 2015	4	Major revision – Renamed Customer Information Guide and 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 SL&P 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, and special section for Infill Developments.
October 2019	9	Mast installation revisions.
February 2023	10	Major Revision – Format and clarifications throughout.
March 2024	11	Major Revision – Format and clarifications throughout. • Revised numerous clearances • Revised numerous administrative and/or operational procedures and descriptions • Revised Typical Underground Service Diagram • Added Pool Clearance Diagram in Overhead Residential Services • Added Underground Commercial & Industrial Connections > 200A (Splitter General) Diagram • Revised Transformer Diagram and added SL&P pad mount equipment grounding rings/grid standard with related operational clearances • Added Temporary Service Diagram for Temporary Overhead Construction Service • Added Construction Standard Drawing for Residential Meter – Multiple Single Family Dwelling as Figure 14