

**City of Saskatoon**  
**Design and Development Standards Manual**

**Section Seven**  
**Service Connections**

**Version 16**



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## 1 Objective

Water and sanitary sewer service connections shall be provided for every property.

Storm sewer connections shall be provided for all commercial, industrial, institutional, and multi-unit family properties.

## 2 Submissions and Approvals

The Proponent is responsible for being aware of the regulatory requirements governing service connections, and for compliance with these requirements.

Regulatory and supporting documents that shall be referenced for the design and installation of service connections include the following:

- [Waterworks Bylaw \(Bylaw No. 7567\)](#), City of Saskatoon;
- [Private Sewer and Water Service Connection Bylaw \(Bylaw No. 8880\)](#), City of Saskatoon;
- [Storm Water Management Utility \(Bylaw No. 9545\)](#), City of Saskatoon;
- [Sewer Use Bylaw \(Bylaw No. 9466\)](#), City of Saskatoon;
- [Drainage Bylaw \(Bylaw No. 8379\)](#), City of Saskatoon;
- [Standard Construction Specifications and Drawings: Roadways, Water, and Sewer](#), City of Saskatoon;
- [Water Pipeline Design Guidelines EPB 276](#), Saskatchewan Environment;
- [Waterworks Design Standard EPB 501](#), Saskatchewan Environment;
- [Sewage Works Design Standard EPB 503](#), Saskatchewan Environment;
- [Stormwater Guidelines EPB 322](#), Saskatchewan Environment;
- [Saskatchewan Employment Act, S-15.1](#), Province of Saskatchewan;
- [Occupational Health and Safety Regulations, 1996, O-1.1 Reg 1](#), Province of Saskatchewan;
- [The Plumbing Regulations Chapter, P-37.1 Reg 13](#), Province of Saskatchewan;
- [Private Sewage Works Regulations, P-37.1 Reg 14](#), Province of Saskatchewan;
- [Water Supply for Public Fire Protection](#), Fire Underwriters Survey;
- *The National Building Code*, Canadian Commission on Building and Fire Codes, National Research Council of Canada;
- *National Plumbing Code*, Canadian Commission on Building and Fire Codes, National Research Council of Canada; and

- National Fire Protection Association (NFPA) Standards

## **2.1 City of Saskatoon**

The City of Saskatoon (CoS) requires the submission of connection records in order to satisfy the requirements for final acceptance of construction.

## **2.2 Other Authorities**

The Proponent shall be responsible for obtaining approvals from the appropriate authorities in a timely manner.

# **3 Water and Sanitary Sewer Connections**

Service connections are generally laid in a straight line from the mains to the building and at right angles to the mains, at a minimum horizontal distance of 1.5m from the property line. Services less than 1.5m from the property line may require an easement to be registered on the adjoining property.

- Each dwelling unit on its own site shall have separate service piping connected to the mains except for a multiple unit dwelling on one site which can share service piping.
- A Semi-detached dwelling unit on its own site shall have separate service piping connected to the mains.
- Street townhouses where each dwelling unit is on its own site shall have separate service piping connected to the mains.
- Street row houses (three or more dwellings) on a single site may have separate, or shared, service piping connected to the mains.
- Dwelling groups on a single site shall have shared service piping connected to the mains.

## **3.1 Water Services**

- The depth of the water service pipe on the street portion shall not be less than 2.9 m at the property line.
- Where there are more than 50 dwelling units, or a high occupancy building, on a single lot, the lot shall be serviced by two connections that can be independently supplied and controlled. Each high occupancy building, on a single lot, requires two connections into the building that can be independently supplied and controlled.

### 3.1.1 Size

Minimum inside diameters for water services are:

- 19 mm for single dwelling units.
- 25 mm where the length of the service pipe is greater than 25 m.
- As specified in NFPA standards where sprinkler service mains are required.

### 3.1.2 Backflow Device Requirements

Requirements for backflow devices are provided in The Waterworks Bylaw, No. 7567 and within the Specifications & Standards drawings applicable to each development.

### 3.1.3 Backflow Device Degree of Hazard

The Waterworks Bylaw (Bylaw No. 7567) requires that all customers provide backflow protection in accordance with the most current adopted version of CAN/CSA – B64.10 – Manual for the Selection of Backflow Prevention Devices. Standard B64.10 includes a guide to the degree of hazard for premises. Appendix B provides supplemental requirements to this guide.

## 3.2 Sanitary Sewer Services

Sanitary sewer service pipes of 150 mm diameter or less shall be tapped directly into the main.

- Service pipes greater than 150 mm in diameter shall connect to the main via a manhole.
- If the crown of the service pipe is 750mm or more above the crown of the main at a manhole, a drop structure with riser shall be installed as per below criteria:
  - For service pipe 150mm or smaller, the drop structure shall have an internal riser installed.
  - For service pipe larger than 150mm, the drop structure shall have an external riser installed.
- Manholes shall also be required on connections as specified in the *Sewer Use Bylaw No. 9466*.

### 3.2.1 Size

The minimum diameter of sanitary sewer service pipe for a single dwelling unit shall be 100 mm.

### **3.2.2 Slope**

The minimum slope between the connection to the main cleanout and the collection main shall be:

- Two percent in low to medium density developments.
- One percent in higher density developments.

### **3.2.3 Clean Outs**

Sewer clean outs shall be provided where:

- The service pipe bends greater than 45 degrees.
- The length of the service pipe is greater than 25 m.

## **4 Storm Sewer Connections**

Connections shall be provided for all commercial, industrial, institutional, multiple unit (three or more dwelling units) and dwellings groups.

- Service connections are generally laid in a straight line from the mains to the building and at right angles to the mains.
- Each property shall have separate service piping connected to the mains except for multiple unit dwellings.

Drainage from single family residential properties shall not be connected directly to the minor storm drainage system except as approved by the CoS on a case-by-case basis.

### **4.1 Allowable Discharge**

The allowable discharge to the minor storm system shall be based on design runoff coefficients. For new neighbourhoods, the design runoff coefficients are listed in Table B-2 within section 6 of the manual. For infill and redevelopment sites in existing neighbourhoods, the design runoff coefficient shall be determined using available system capacity. Developers are recommended to contact CoS to determine design runoff coefficient prior to starting design and applying for building permits. Discharge shall typically enter the minor system and drain right away

unless the rainfall is greater than the 1-in-2 year design event where stormwater shall remain on the property and drain slowly.

- Discharge shall enter the minor system directly and underground.
- All properties, including parking lots, which routinely discharge to the minor system during events equal to or less than the 1-in-2 year event, shall be required to implement on-site stormwater management practices to control peak runoff rate during high intensity rainfall events.
- Storage rate of release to the minor system shall be as per storm water design standards and available system capacity.
- On-site treatment via oil and grit separators may be required as per criteria listed in section 6 of the manual (Storm Water Drainage System).

## **4.2 Connection to Main**

Storm sewer service connections may be tapped directly into mains where the size of the service pipe is one-half the size of the mains or less.

- Where the size of the service pipe is greater than one-half the size of the main or where the size of the service pipe exceeds 250mm, a manhole shall be used to make the connection.



## Appendix A Applicable Standard Drawings

Proponents shall be responsible for referencing standard drawings that are applicable to their development. Drawings are available from the [City website](#).

Drawings are subject to revision, addition, or deletion. Revised drawings shall be renamed using the date of latest revision. Proponents are responsible for ensuring that they are referencing the latest version of any standard drawing.

Drawings that are applicable to the Storm Water Drainage System include the following:

Drawing Number	Title
<b>Service Connections</b>	
102-0013-001	Typical Sewer & Polyethylene Water Service Connection
102-0013-002	Typical Sewer & Copper Water Service Connection
102-0013-003	Typical Duplex Water & Sewer Service Connection
102-0013-004	Interior Drop Structure at Sanitary Sewer Manhole
102-0013-005	Typical Sewer Service Cleanout
102-0013-007	Typical Sewer Tapping
102-0013-008	PVC Service Connection Riser Assembly
102-0013-009	100mm Water Service Seasonal Connection
102-0013-010	50mm Water Service Seasonal Connection
102-0013-013	15mm Spindle Details
102-0013-015	19mm Spindle Details
102-0013-016	PVC Service Connection Vertical Riser Assembly (Reconstruction only)
102-0013-017	Standard Curb Box
102-0013-018	Service Box Top
102-0013-019	Standard Curb Box Cap

Drawings that are applicable to buildings connected to the Water Service System include the following:

Drawing Number	Title
<b>Service Connections</b>	
102-0013-022	Typical Large <a href="#">Water</a> Meter Installation 75mm, 100mm, & 150mm Compound, Turbine Meters & Aquamaster Magnetic Flowmeter

102-0013-023	Typical <u>Small</u> Water Meter Installation <u>19mm &amp; 25mm</u> ( <u>5/8</u> <u>3/4</u> " <u>—&amp;</u> <u>1</u> " Meter)
102-0013-024	Typical Intermediate Water Meter Installation <u>38mm &amp; 50mm</u> (1 1/2" <u>—&amp;</u> <u>2</u> " <u>Meter</u> )
102-0013-025	Typical Layout for Parallel Water Meters (No Bypass <u>38mm &amp;</u> <u>50mm</u> )

Source:

<http://www.saskatoon.ca/business-development/development-regulation/specifications-standards>

## Appendix B Backflow Device Degree of Hazard Requirements

The following table provides supplemental requirements to CAN/CSA – B64.10 – Manual for the Selection of Backflow Prevention Devices.

<u>CAN/CSA – B64.10, Guide to Degree of Hazard</u>		<u>City of Saskatoon Requirement</u>
<u>Type of Building or Facility</u>	<u>Degree of Hazard</u>	<u>Degree of Hazard</u>
<u>Arena</u>	<u>Moderate to severe</u>	<u>Severe</u>
<u>Dental office / surgery facility</u>	<u>Moderate to severe</u>	<u>Severe</u>
<u>Funeral home / cemetery / crematorium</u>	<u>Moderate to severe</u>	<u>Severe</u>
<u>Industrial and institutional premises (not otherwise listed)</u>	<u>Moderate to severe</u>	<u>Severe</u>
<u>Manufacturing plant (not specified)</u>	<u>Moderate to severe</u>	<u>Severe</u>
<u>Mixed-use commercial and residential building</u>	<u>Moderate to severe</u>	<u>Severe</u>
<u>Multi-unit commercial retail units</u>	-	<u>Severe</u>
<u>Veterinary clinic / office</u>	<u>Moderate to severe</u>	<u>Severe</u>