UrbanUtilities

ASSET PROTECTION STANDARDS

October 2024

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Version control

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We welcome feedback on these guidelines.
Send your comments to: Development.BOA@urbanutilities.com.au

1. Introduction

This document includes the requirements to: ensure that Urban Utilities' assets remain fit for purpose and accessible, and improve the quality of all Referral Submissions received by Urban Utilities.

1.1. Purpose

The purpose of this standard is to detail Urban Utilities' minimum requirements to ensure that any building and/or construction works undertaken near or over our infrastructure or assets are undertaken in such a way to ensure that,

(1) the works does not;

(a) adversely affect the operation of Urban Utilities' infrastructure; or

(b) place a load on Urban Utilities' infrastructure that could adversely affect its structural integrity; and

(2) the integrity of the building or structures is unlikely to be affected as a result of Urban Utilities' infrastructure;

(a) being maintained or replaced; or

(b) failing to function properly; and

(3) when completed, the works allows for;

(a) any gas that builds up in Urban Utilities' infrastructure to escape in a way that ensures persons in close proximity to a maintenance cover for the infrastructure are not harmed by the gas; and

(b) that suitable access to be maintained to Urban Utilities' infrastructure required for inspecting, maintaining or replacing the infrastructure.

1.1Scope

The scope of Urban Utilities' infrastructure and assets covered by this standard includes;

- Gravity sewerage infrastructure,
- Pressure water infrastructure,
- Pressure sewer infrastructure,
- Easements.

1.2. Definitions

The following definitions are provided to assist the reader of any Urban Utilities' documentation, forms or alternative solution technical drawings on the meaning of the various terms and items referred to.

Acceptable solution	Solutions provided in MP1.4 for the construction of class 1 or 10 buildings or structures, constructed over or near gravity sewers with a nominal diameter (DN) less than 300mm (refer to Queensland Development Code (QDC) MP1.4).

Alternative solution	See the *Building Act 1975, Schedule 2*.
BOA (Build Over Asset)	Terminology used by Urban Utilities for any building works being undertaken near or over its infrastructure.
Bored pier	A pile/footing formed by extraction of soil via a powered auger from a drilled hole, allowing for installation of reinforcement and concrete to support a structural load from above
Bulk excavated pier	A footing formed by excavation of soil (via a backhoe, hand excavation or vacuum) from a hole allowing for installation of reinforcement and concrete, to support to a structural load from above.
Bulk excavation	Removal large quantities of soil and/or rock from near or over relevant infrastructure, e.g. excavation for an in-ground swimming pool or basement carpark.
Cantilevered retaining wall	Retaining wall structure incorporating a vertical stem and horizontal footing (heal) which utilises the weight of the backfill material to resist overturning.
Carport	A shelter consisting of a roof supported on posts, with at least one side permanently open.
Clear zone	For relevant infrastructure, a three-dimensional space, free of overhanging parts of a building or structure and other objects that impede access for the purpose of inspecting, maintaining or replacing the infrastructure.
COA (Construction Over Asset)	Terminology used by Urban Utilities for any construction works being undertaken near or over its infrastructure.
DN	Nominal diameter of a pipe.
Driven pile	Structural member, driven or vibrated into the ground, to transmit loads to the underlying soil or rock, and provide a footing component for a structure.
Edge beam	A concrete beam located at the outer edge of a slab on ground, to provide stiffness.
Fill	Material used to backfill a trench or build up the level of land above the original surface before building work commences.
Finished floor level (FFL)	Top surface of the finished structural floor from which minimum ceiling height is measured.
Finished ground level (FGL)	Level of the ground at the completion of all construction and landscaping.
Footing system	General term used to refer to slabs, footings, piers, pile systems that transfer load from a structure to the foundation.
Foundation	Ground that supports the footing system.
Garage	A fully enclosed shelter consisting of a roof supported on either posts and/or structural walls.
Gravity wall	Retaining wall structure that relies on its own mass to resist the bearing pressure from behind the wall.
Ground anchor	Temporary or permanent cable or solid member installed into soil or rock to support a vertical structure (such as a concrete pier or tilt-up slab).
Invert level	For a pipe forming part of relevant infrastructure, the lowest point of the internal surface of the pipe at any cross-section of the pipe.
Large diameter sewer	Sewer pipe with DN greater than 600mm.
Maintenance structure	Chamber through which a person, machine or device may gain access to the relevant infrastructure for the purpose of inspecting, maintaining or replacing.
Maintenance structure cover	Lid or access cover located at or below ground level, through which a person, machine or device may gain access to the relevant infrastructure, for the purpose of inspecting, maintaining or replacing.
Manhole	See Maintenance Structure.
Medium diameter sewer	Sewer pipe with DN of 300mm or greater, and less than 600mm.

MP1.4	Mandatory section of the Queensland Development Code (QDC) pertaining to building over or near relevant infrastructure.
Operational Works	Work (other than building work or plumbing or drainage work) in, on, over or under premises that materially affects premises or the use of premises. Refer to the *Planning Act 2016*
Outermost projection (OMP)	Outermost part of a building or structure including, in the case of a roof, the outside face of the fascia, or the roof structure where there is no fascia, or attached sunhoods or the like, but does not include retractable blinds, fixed screens, rainwater fittings, or ornamental attachments.
Pad footing	Isolated concrete footing used to support a pier or stump.
Post and panel retaining wall	Type of retaining wall structure which incorporates a series of vertical panels (concrete panels, shotcrete or lateral concrete or timber sleepers) supported by vertical piers or columns to resist the bearing pressure from behind the structure.
Pressure main	Pipeline designed to operate predominantly under pressure, whether imposed by pumping or gravity, at pipe-full flow, e.g. a potable water main or sewer rising main.
Removable section	Lift out panel which enable access to the junction of a sewer property connection. Note: a removable section can be located in concrete driveway or timber deck.
Rock bold	Long anchor bolt used to stabilise rock excavations.
RPEQ	Registered Professional Engineer Queensland accredited under the Professional Engineers Act 2002.
Screw pile	A structural member that is screwed or drilled into the ground to transmit loads to the underlying soil or rock to provide a footing component for a structure.
Self-assessable building work	Refer to the *Building Act 1975, Section 21(3).*
Sleeper retaining wall	See Post and panel retaining wall, above.
Sewer connection point	The upstream end of a sewer property connection where the private house drainage connects to the sewer property connection.
Sewer property connection	All sewerage infrastructure pipes and fittings between the junction of the sewer main and a property service, up to and including the connection point.
Sewer service junction	The downstream end of a sewer property connection where sewer property connection connects to the sewer main.
Small diameter sewer	Sewer pipe with DN less than 300mm.
Strip footing	A longitudinal concrete footing used to uniformly distribute a load along its entire length (i.e. commonly used to support a concrete block retaining wall or fence).
TOP	Top of Pipe - the topmost vertical point of a pipe section and associated fittings and/or pipe collars.
Zone of influence	Area of the foundation loaded by the footings of a building or structure (or other load bearing elements), taking into account the angle of repose.

2. Gravity Sewerage Infrastructure

The minimum requirements included in this section pertain to gravity sewerage infrastructure and are presented to align with the 2 performance requirements specified in MP1.4,

- Performance Requirement (P1) –
  Ensuring building work does not damage infrastructure.
- Performance Requirement (P2) -
  Maintaining access to and ventilation for infrastructure.

Note that Urban Utilities reserves the right to vary the minimum requirements in Section 2 as and when required, based on the nature of the works being undertaken and the site specific or infrastructure considerations.

2.1. Asset protection requirements (P1)

To ensure that any buildings or structures and associated works or operational works;

a) does not adversely affect the operation of relevant infrastructure; and

b) does not place a load on the infrastructure that adversely affects its structure; and

c) is constructed and located so its integrity is unlikely to be affected as a result of the infrastructure—

   i) being maintained or replaced; or

   ii) failing to function properly,

The acceptable horizontal and vertical clearances and founding depths specified from gravity sewerage infrastructure, has taken into consideration the infrastructure's,

- Function,
- Nominal size,
- Material type,
- Depth of earth cover above the top of the infrastructure,
- Likely trench dimensions and construction methodology,
- Likely tunnel dimensions and construction methodology,
- Level of risk associated with the building works.

2.1.1. Footings

2.1.1.1. Bored piers and screw piles

Notes –

Bored piers are typically dug with a powered auger.

The horizontal clearance of a bored pier is the distance from the outer edge of the bored pier to the outer edge of the pipe.

The horizontal clearance of screw piles is the distance from the outer edge of the screw pile helix to the outer edge of the pipe.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All (excluding PE)	Equal to or less than DN150	1.0m	In solid ground below the invert of the sewer
PE only	Equal to or less than DN150	0.6m	In solid ground below the invert of the sewer

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All (excluding PE)	Less than DN300	1.0m	Zone of influence at least 300mm below the invert of the sewer
PE only	Less than DN300	0.6m	In solid ground below the invert of the sewer

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	1.5m	In solid ground below the invert of the sewer
	DN600 or larger	2.0m	In solid ground below the invert of the sewer

2.1.1.2. Bulk excavated footings

Notes –

Types of bulk excavated footings include backhoe, vacuum or hand excavated, but exclude any footings dug with a powered auger.

The horizontal clearance of a bulk excavated footing is the distance from the outer edge of the footing to the outer edge of the pipe.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Equal to or less than DN150	0.5m	In solid ground below the invert of the sewer

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Less than DN300	0.6m	Zone of influence at least 300mm below the invert of the sewer
		0.3m	In solid ground below the invert of the sewer

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	0.6m	In solid ground below the invert of the sewer
	DN600 or larger	1.0m	In solid ground below the invert of the sewer

2.1.1.3. Unsupported strip footings adjacent to sewers

Note –

Unsupported strip footings are a continues monolithic concrete footing which are not supported on bored piers or bulk excavated footings.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Equal to or less than DN150	0.6m	Zone of influence at least 300mm below the invert of the sewer

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Less than DN300	0.6m	In solid ground below the invert of the sewer

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	1.0m	In solid ground below the invert of the sewer
	DN600 or larger	1.5m	In solid ground below the invert of the sewer

2.1.1.4. Supported cantilevered and bridging beams adjacent to or over sewers

Note –

Supported cantilevered or bridging beams are a continues monolithic concrete footing which are supported on bored piers or bulk excavated footings.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. clearance
All	Equal to or less than DN50	0.3m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. clearance
All	Less than DN300	0.3m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. clearance
All	DN300 to less than DN600	0.3m
	DN600 or larger	0.6m

2.1.1.5. Unsupported strip footings bridging over sewers

Note –

Unsupported strip footings are a continues monolithic concrete footing which are not supported on bored piers or bulk excavated footings.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. span distance on both sides of sewer	Min. vertical clearance
All	Equal to or less than DN150	1.0m	0.3m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. span distance on both sides of sewer	Min. vertical clearance
All	Less than DN300	1.0m	0.3m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. span distance on both sides of sewer	Min. vertical clearance
All	DN300 to less than DN600	1.5m	0.3m
	DN600 or larger	2.0m	0.3m

2.1.1.6. Large deep sewers (class 1 buildings less than 2 stories)

Requirements for 1 or 2 level class 1 or 10 buildings or structures over or near a large diameter sewer with less than 10m of earth cover (top of pipe to finished surface level) are as follows,

- The first row of piers adjacent to the sewer,
    - Edge of screw or bored piers must be located at least 2m horizontally clear of the edge of the 1200 Dia. sewer main, and to be founded in solid ground below the level of the sewer main, and
    - The boring augers or screw piers should be raked away from the sewer main.
    - Piers beyond the first row of piers are to be founded below the zone of influence, with Engineering Certification being provided which states that,

      "The construction and loading of the proposed building will not endanger the sewer in anyway, and that any collapse of the sewer or subsidence of the sewer trench/tunnel will not endanger the building in anyway."

  Note: the final depth of the footing or screw pile will need to be determined by a RPEQ engineering, after taking into consideration,
    - *Urban Utilities' minimum requirement, and*
    - *The ground conditions of this site.*

Requirements for 1 and 2 level class 1 or 10 buildings or structures over or near large diameter sewers with more than 10m of cover (top of pipe to finished surface level) are as follows;

- No bridging of sewer is required.
- No pier support is required.
    - If bored piers are required due to soil conditions (not designed due to proximity of sewer), they should not be founded more than 3m below ground level.
    - Any design which incorporates bored piers deeper than 3m must demonstrate zero effect on the sewer.

For all other building classes and heights, please submit a Service Advice Notice (SAN) application via the Developer Services Portal (https://www.urbanutilities.com.au/development/developer-services-portal). Refer to the Quick Reference Guide (below the GO button on this webpage) for help in lodging this request.

2.1.1.7. Driven piles adjacent to sewers

Note –

Driven piles (precast piles) are prefabricated elements (timber, steel or concrete), which are driven into the ground by percussion, pressing or vibration.

The requirements specified in this section are also applicable for the installation of sheet piling.

In addition to the minimum clearance requirements stated below, Urban Utilities may also require a Vibration Management and Monitoring Plan to be provided which outlines,

- *The vibration monitoring methodology to be used, and*
- *The expected maximum Peak Partial Velocity (PPV) to be encountered, and*
- *The actions to be undertaken in the event of the PPV approaches or exceeds the expected maximum.*

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Equal to or less than DN150	5.0m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Less than DN300	5.0m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	DN300 to less than DN600	5.0m
	DN600 or larger	5.0m

2.1.1.8. Ground Anchors adjacent to sewers

Note –

The clearances specified is the minimum distance required for a clear zone around the sewer, measured from the outer edge of the sewer.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. clearance
All	Equal to or less than DN150	1.5m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. clearance
All	Less than DN300	1.5m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. clearance
All	DN300 to less than DN600	2.0m
	DN600 or larger	**Contact Urban Utilities for advice**

2.1.1.9. Micro pile footing system

Note –

Micro pile footing systems are a relatively new system developed as an alternative to the traditional screw piles or concrete footings.

At this stage, Urban Utilities considers the installation of micro piles to be similar to ground anchors / rock bolts in that the micro piles are to be installed with a similar minimum horizontal clearance.

Applications received for assessment which include the installation of a micro pile footing system will require a pipe location report to be provided which demonstrates the location and depth of any sewerage infrastructure located within or adjacent to the site.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. clearance
All	Equal to or less than DN150	1.5m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. clearance
All	Less than DN300	1.5m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. clearance
All	DN300 to less than DN600	2.0m
	DN600 or larger	2.5m

2.1.2. Excavation and Operational Works

2.1.2.1. Bulk excavation adjacent to sewers

Note –

The minimum requirements specified are to reduce the likelihood of any excavation works affecting the pipe trench or bedding material, which could have a negative impact on the integrity of the sewerage infrastructure.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Equal to or less than DN150	0.6m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Less than DN300	0.6m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	DN300 to less than DN600	1.0m
All	DN600 or larger	1.5m

2.1.2.2. Excavation over sewers

Note –

The minimum requirements specified are to ensure that sufficient earth cover is maintained to protect the sewerage infrastructure, and is applicable for areas clear of any concrete bridging beams or slabs.

Asset Function:- **Sewer Property Connection**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	Equal to or less than DN150	0.6m

Asset Function:- **Sewer main**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	Less than DN300	0.6m

Asset Function:- **Trunk sewer main**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	DN300 to less than DN600	1.0m
All	DN600 or larger	1.5m

2.2. Access and ventilation requirements (P2)

To ensure that when completed, a building or structure allows;

a) gas that builds up within our infrastructure to escape into a safe and well vented environment; and
b) suitable access to and above our infrastructure for inspecting, maintaining or replacing the infrastructure.

2.2.1. Clear zones above sewerage infrastructure

2.2.1.1. Clearance above sewer property connections

Note –
These requirements are specified to ensure that Urban Utilities have suitable access around and above the finished ground level to maintain or repair a sewer property connection.

Requirement – A **clear zone above all parts of a sewer property connection/s** with the following minimum dimensions must be established and maintained,

- A horizontal base extending **1m around all parts of the sewer property connection** with a minimum height of **2.4m above the finished ground level**.

2.2.1.2. Clearance above sewer maintenance covers

Note –
These requirements are specified to ensure that Urban Utilities have suitable access around and above the sewer maintenance cover to access and maintain or repair a sewerage infrastructure.

Requirement – A **clear zone above a sewer maintenance cover/s** with the following minimum dimensions must be established and maintained,

- A horizontal base extending **1m around the edge of the sewer maintenance cover** and **open to the sky**.

2.2.1.3. Clearance above vertical and horizontal bends in PE sewers

Note –
These requirements are specified to ensure that Urban Utilities have suitable access around and above any bends in a PE sewer main to access and maintain or repair a sewerage infrastructure.

Requirement – All buildings and/or structures must be located a **minimum 1m horizontally clear** of **any bends and the associated transition points** in all PE sewer main/s or PE sewer property connection/s.

3. Pressure Water Infrastructure Requirements

The minimum requirements included in this section pertain to pressure water infrastructure and are presented to align with the 2 performance requirements specified in MP1.4,

- Performance Requirement (P1) –
  Ensuring building work does not damage infrastructure.
- Performance Requirement (P2) -
  Maintaining access to the infrastructure.

Note that Urban Utilities reserves the right to vary the minimum requirements in Section 3 as and when required, based on the nature of the works being undertaken and the site specific or infrastructure considerations.

3.1. Asset protection requirements (P1)

To ensure that any buildings or structures and associated works;

a) does not adversely affect the operation of relevant infrastructure; and
b) does not place a load on the infrastructure that adversely affects its structure; and
c) is constructed and located so its integrity is unlikely to be affected as a result of the infrastructure—
   i) being maintained or replaced; or
   ii) failing to function properly.

The acceptable horizontal and vertical clearances and founding depths specified from pressure water infrastructure, has taken into consideration the infrastructure's,

- Function,
- Nominal size,
- Material type,
- Depth of earth cover above the top of the infrastructure,
- Likely trench dimensions and construction methodology,
- Likely construction methodology,
- Level of risk associated with the building works.

3.1.1. Footings

3.1.1.1. Bored piers and screw piles

Notes –

Bored piers are typically dug with a powered auger.

The horizontal clearance of a bored pier is the distance from the outer edge of the bored pier to the outer edge of the pipe.

The horizontal clearance of screw piles is the distance from the outer edge of the screw pile helix to the outer edge of the pipe.

Asset Function:- **Water Meter and Service**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Equal to or less than DN50	0.6m	In solid ground below the invert of the water service

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Less than DN300	1.5m	In solid ground below the invert of the water main

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	2.0m	In solid ground a minimum 600mm below the invert of the water main
	DN600 or larger	2.5m	In solid ground a minimum 600mm below the invert of the water main

3.1.1.2. Bulk excavated footings

Notes –

Types of bulk excavated footings include backhoe, vacuum or hand excavated, but exclude any footings dug with a powered auger.

The horizontal clearance of a bulk excavated footing is the distance from the outer edge of the footing to the outer edge of the pipe.

Asset Function:- **Water Meter and Service**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Equal to or less than DN50	0.6m	In solid ground below the invert of the water service

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Less than DN300	0.6m	In solid ground a minimum 300mm below the invert of the water main

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	1.0m	In solid ground a minimum 600mm below the invert of the water main
	DN600 or larger	1.5m	In solid ground a minimum 1m below the invert of the water main

3.1.1.3. Unsupported strip footings adjacent to water infrastructure

Note –

Unsupported strip footings are a continues monolithic concrete footing which are not supported on bored piers or bulk excavated footings.

Asset Function:- **Water meter and Service**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Equal to or less than DN50	0.6m	Zone of influence at least 300mm below the invert of the water service

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Less than DN300	0.6m	In solid ground a minimum 300mm below the invert of the water main

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	1.0m	In solid ground a minimum 600mm below the invert of the water main
	DN600 or larger	1.5m	In solid ground a minimum 1m below the invert of the water main

3.1.1.4. Edge thickened beams adjacent to water infrastructure

Asset Function:- **Water meter and Service**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Equal to or less than DN50	0.3m	Not specified

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	Less than DN300	0.6m	To be supported on footing or piers founded in solid ground a minimum 300mm below the invert of the water main

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance	Founding/depth
All	DN300 to less than DN600	1.0m	To be supported on footing or piers founded in solid ground a minimum 300mm below the invert of the water main
	DN600 or larger	**Contact BOA Team for advice**	

3.1.1.5. Supported cantilevered beams adjacent to water infrastructure

Note –

Supported cantilevered or bridging beams are a continues monolithic concrete footing which are supported on bored piers or bulk excavated footings.

Asset Function:- **Water meter and Service**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Equal to or less than DN50	0.3m

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Less than DN300	0.6m

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	DN300 to less than DN600	1m
	DN600 or larger	**Contact BOA Team for advice**

3.1.1.6. Strip footings (supported and unsupported) bridging water infrastructure

Note –

*Urban Utilities **will not permit buildings or structures and their associated footings to be located over pressure water infrastructure**. Please contact Urban Utilities for advice.*

3.1.1.7. Bulk excavation adjacent to water infrastructure

Note –

Asset Function:- **Water meter and service**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Equal to or less than DN50	0.6m

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	Less than DN300	0.6m

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	DN300 to less than DN600	1.0m
	DN600 or larger	**Contact BOA Team for advice**

3.1.1.8. Driven piles adjacent to water infrastructure

Note –

Driven piles (precast piles) are prefabricated elements (timber, steel or concrete), which are driven into the ground by percussion, pressing or vibration.

The requirements specified in this section are also applicable for the installation of sheet piling.

In addition to the minimum clearance requirements stated below, Urban Utilities may also require a Vibration Management and Monitoring Plan to be provided which outlines,

- *The vibration monitoring methodology to be used, and*
- *The expected maximum Peak Partial Velocity (PPV) to be encountered, and*
- *The actions to be undertaken in the event of the PPV approaches or exceeds the expected maximum.*

Asset Function:- **Water meter and service**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Equal to or less than DN150	5.0m

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Less than DN300	5.0m

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	DN300 to less than DN600	5.0m
	DN600 or larger	5.0m

3.1.1.9. Ground Anchors adjacent to water infrastructure

Note –

The clearances specified is the minimum distance required for a clear zone around the infrastructure, measured from the outer edge of the pipe.

Asset Function:- **Water meter and service**

Pipe Material	Pipe Diameter	Min. horizontal clearance
All	Equal to or less than DN150	1.5m

Asset Function:- **Water main**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	Less than DN300	1.5m

Asset Function:- **Trunk water main**

Pipe Material	Pipe Diameter	Min. vertical clearance
All	DN300 to less than DN600	2.0m
	DN600 or larger	2.5m

3.2. Access requirements (P2)

To ensure that when completed, a building or structure allows;

a) suitable access to and above our infrastructure for inspecting, maintaining or replacing the infrastructure.

Note –

Given that the majority of pressure water infrastructure is located outside of a lot, maintaining access to the infrastructure and associated components is typically not an issue. However, if there is pressure water infrastructure located within a site where building or construction works are to be undertaken, ***please email the BOA Team (development.boa@urbanutilities.com.au) for advice*** *specific to your site.*

4. Pressure Sewer Infrastructure Requirements

The minimum requirements included in this section pertain to pressure sewer infrastructure and are presented to align with the 2 performance requirements specified in MP1.4,

- Performance Requirement (P1) –
  Ensuring building work does not damage infrastructure.
- Performance Requirement (P2) -
  Maintaining access to the infrastructure.

Note –

Given that it is uncommon for building or construction works to be undertaken adjacent to this type of infrastructure, ***please email the BOA Team (development.boa@urbanutilities.com.au) for advice specific to your site.***