

Tabled by Building Codes Bd at  
the Departmental Briefing held on  
BOCA 1/5/13.  
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## MP 1.4 – BUILDING OVER OR NEAR RELEVANT INFRASTRUCTURE

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### **Purpose**

To ensure *building work* for a *building* or *structure* on a lot that contains, or is adjacent to a lot that contains, existing *relevant infrastructure* is carried out so that:

- (a) it does not damage the infrastructure; and
- (b) when completed, it does not impede access to the infrastructure that the *relevant service provider* requires for the purposes of inspecting, maintaining or replacing the infrastructure, as required.

### **Commencement**

This Part, published on [date], commences on [date].

### **Application**

- (1) This Part applies to *building work* for a *building* or *structure* on a lot that:
  - (a) contains *relevant infrastructure*; or
  - (b) is adjacent to a lot that contains *relevant infrastructure*; or
  - (c) contains *relevant infrastructure* and is adjacent to a lot that contains *relevant infrastructure* (adjacent relevant infrastructure).
- (2) However, performance criteria P2 does not apply for:
  - (a) *relevant infrastructure* mentioned in subsection (1)(b); or
  - (b) *relevant infrastructure* that is adjacent relevant infrastructure.
- (3) Despite subsection (1), this Part does not apply in relation to *relevant infrastructure* to the extent there is an easement for the *relevant infrastructure* registered with the Queensland Titles Registry.
- (4) To remove doubt, this Part does not apply to a lot owner's plumbing, including *sanitary drainage*, water supply pipes and stormwater drain pipes (other than *combined sanitary drains*).

### **Referral agency**

Under the *Sustainable Planning Regulation 2009*, schedule 7, table 1, item 27A, if the applicant for a building development application seeks to use an *alternative solution* to meet the *performance requirements* of this Part, the application must be referred for concurrence agency response.

### **Compliance with the QDC**

Compliance with this Part can be achieved only by:

- (a) complying with the relevant *acceptable solution* for the performance criteria; or
- (b) formulating an *alternative solution* that complies with the performance criteria or is shown to be at least equivalent to the relevant *acceptable solution*; or
- (c) a combination of paragraphs (a) and (b).

Notes:

- 1 Refer to the *Building Act*, section 14.
- 2 Figures 1-8 of this Part provide examples of how to achieve the *acceptable solutions* for the *performance requirements*.

### Associated requirements

- AS/NZS 3500 (Set): 2003 – Plumbing and drainage Set
- *Building Act 1975*
- *Building Regulation 2006*
- *Local Government Act 2009*
- National Construction Code
- *Plumbing and Drainage Act 2002*
- *Professional Engineers Act 2002*
- *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009*
- *Standard Plumbing and Drainage Regulation 2003*
- *Sustainable Planning Act 2009*
- *Sustainable Planning Regulation 2009*
- *Water Supply (Safety and Reliability) Act 2008*

### Definitions

Note:

Italicised words within the body of the text, other than legislation titles, are defined below.

***acceptable solution*** see the *Building Act*, section 14.

***additional fill*** means *fill* above the natural ground level prior to *building work* commencing.

Note:

Building certifiers should perform reasonable checks to determine whether *fill* has been added since the infrastructure was installed.

***alternative solution*** see the *Building Act*, schedule 2.

***assessable building work*** see the *Building Regulation*, schedule 4.

***BCA*** see the *Building Act*, section 12.

***building*** see the *Building Act*, schedule 2.

Note – ***building*** includes a building of any class. See also the definition of ***structure***.

***Building Act*** means the *Building Act 1975*.

***Building Regulation*** means the *Building Regulation 2006*.

***building work*** see the *Building Act*, section 5.

**centreline** in relation to a *sewer, water main or stormwater drain* means a notional line running through the length of the *sewer, water main or stormwater drain* at its centre.

**class**, for a *building or structure*, see the *Building Act*, schedule 2.

**clear zone** means a three dimensional space, free of overhanging parts of a *building or structure*, and other objects that would impede access to the *relevant infrastructure* required by the *relevant service provider* for the purposes of inspecting, maintaining or replacing the infrastructure, as required.

Example:

See Figure X.

**cohesionless soil** means any free-running type of soil, such as sand or gravel, where the soil strength depends on friction between particles.

**combined sanitary drain** see the *Standard Plumbing and Drainage Regulation 2003*, schedule 6.

**connection point** means the point of connection to *relevant infrastructure*.

**DN** means nominal diameter.

**excavation**, for *building work*, means the act of digging to remove earth or other material from an area.

Example:

Digging the foundations for *building work* or the construction of a driveway.

**fill** means material used to backfill a trench or build up the level of land.

**gravity wall** means a retaining wall which depends on its mass to resist pressure from behind the wall.

Example:

A boulder wall.

**invert level** means the lowest point of the internal surface of a pipe at any cross-section.

Example:

See Figure X.

**jump-up** means the vertical section of a pipe, which joins two sections of a *sewer or stormwater drain* at different levels.

Note:

'Jump-up' also includes 'graded jump-up' – an inclined section of sanitary drain joining two drains at different levels.

**load bearing element**, for a *building* or *structure*, means an element intended to resist vertical or horizontal (including lateral) forces additional to those due to its own weight.

**maintenance cover**, for *relevant infrastructure*, means a cover, whether above, at, or below ground level, for an access chamber through which a person, machine or device may enter or gain access to the *relevant infrastructure*, for the purposes of inspecting, maintaining or replacing the infrastructure.

**pressure pipeline** means a pipeline that is designed to operate predominantly under pressure, whether imposed by pumping or gravity, at pipe-full flow, and includes a sewer rising main.

Note:

'Non-pressure' pipelines that are designed to operate predominantly at part-full flow conditions do not fall within the definition of *pressure pipeline*, even though they may operate under pressure at certain times. A non-pressure pipeline includes a surcharged stormwater drain.

**relevant infrastructure** means:

- (a) a *sewer*, a *water main* or a *stormwater drain* owned or operated by a *relevant service provider*; or
- (b) a *combined sanitary drain* owned by a lot owner.

**relevant service provider** means:

- (a) for *relevant infrastructure* comprising a *sewer* or a *water main*:
  - (i) a local government; or
  - (ii) a distributor-retailer established under the *South East Queensland Water (Distribution and Retail Restructuring) Act 2009*; or
  - (iii) a water service provider or sewerage service provider under the *Water Supply (Safety and Reliability) Act 2008* that is not captured by subparagraph (a)(i) or (ii); and
- (b) for *relevant infrastructure* comprising a *stormwater drain*—a local government or other entity that owns or operates the *stormwater drain*.

Note:

A list of water service providers and sewerage service providers under the *Water Supply (Safety and Reliability) Act 2008* and owners and operators of *stormwater drains* is published on the Department of Energy and Water Supply website.

**RPEQ** means a Registered Professional Engineer under the *Professional Engineers Act 2002*.

**sanitary drainage** see the *Plumbing and Drainage Act*, Schedule 'Dictionary'.

**self-assessable building work** see the *Building Act*, section 21(3).

**sewer** see the *Plumbing and Drainage Act*, Schedule 'Dictionary'.

Note: For this part, *sewer* also includes a *maintenance cover*.

**stormwater drain** means a *relevant service provider's* infrastructure used to receive, store, transport or treat stormwater and includes a *maintenance cover*.

**structure** see the *Building Act*, schedule 2.

**vertical plane along the centreline** for a *sewer, water main or stormwater drain* means a notional two dimensional vertical plane extending upwards and downwards through the *centreline* of the *sewer, water main or stormwater drain*.

**water main** means a *relevant service provider's* infrastructure used to transport drinking, non-drinking or recycled water and includes a *maintenance cover*.

**zone of influence**, of a *building or structure*, means the area determined to be loaded by the footings or other *load bearing elements* of the *building or structure*.

Examples:

See **Figures 1, 2 and 3**.

Note:

The angle of repose for a *zone of influence* is dependent on the soil type. Generally, for *cohesionless soils* the angle is determined to be 30 degrees and for other soils the angle is determined to be 45 degrees (upwards from the horizontal). The appropriateness of these angles must be considered when designing any footings over or near *relevant infrastructure*.

PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
<p><b><i>Building work over or near relevant infrastructure</i></b></p> <p><b>P1</b> <i>Building work for a building or structure on a lot that contains, or is adjacent to a lot that contains, relevant infrastructure does not—</i></p> <p>(a) <i>adversely affect the function of the relevant infrastructure; or</i></p> <p>(b) <i>place any load on the relevant infrastructure.</i></p>	<p>For <i>building work for a building or structure on a lot that contains, or is adjacent to a lot that contains, relevant infrastructure</i>, the following requirements are satisfied—</p> <p>(a) <i>the building work is for a class 1 building, or a class 10 building or structure; and</i></p> <p>(b) <i>the relevant infrastructure is a sewer, stormwater drain or combined sanitary drain (except any pressure pipelines); and</i></p> <p>(c) <i>if the relevant infrastructure is a sewer—the sewer is not more than 225mm DN; and</i></p> <p>(d) <i>if the relevant infrastructure is a stormwater drain—the stormwater drain is not more than 375mm DN; and</i></p> <p>(e) <i>either:</i></p> <p>(i) <i>the building or structure is located so that the relevant infrastructure is not located within the zone of influence; or</i></p> <p>(ii) <i>the base of the footings of the building or structure is located so that the closest point of the zone of influence to the relevant infrastructure is at least 300mm below the invert level of the relevant infrastructure; or</i></p>
<p><b>A1</b></p>	



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- (iii) the footings of the *building or structure* are supported on screwed or bored piles or piers that:
- (A) are installed at least 1.2m from the *centreline* of the *relevant infrastructure*, measured horizontally; and
  - (B) extend so that the closest point of the *zone of influence* of the piles or piers to the *relevant infrastructure* is at least 300mm below the *invert level* of the *relevant infrastructure*; and
- (f) *excavation* is not carried out within 600mm of the outer wall of *relevant infrastructure*; and
- (g) compaction by vibration is not carried out within 2m of the *centreline* of the *relevant infrastructure*, measured horizontally at natural ground level; and
- (h) for *fill* –
- (i) use of *fill* for the *building work*, does not result in more than 1m of *additional fill* being placed over *relevant infrastructure*; or
  - (ii) where more than



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1m of *fill* is associated with a retaining wall, the *relevant infrastructure* is bridged over via a design certified by an *RPEQ*.

Note:

For a *class 2, 3, 4, 5, 6, 7, 8 or 9 building* to comply with this Part, *alternative solutions* for P1 and P2 are required. A building development application involving *alternative solutions* (except those for a *combined sanitary drain*) for P1 or P2 must be referred to a concurrence agency for assessment against the relevant *performance criteria*—see *Sustainable Planning Regulation 2009*, schedule 7, table 1, item 27A.

**Access to relevant infrastructure**

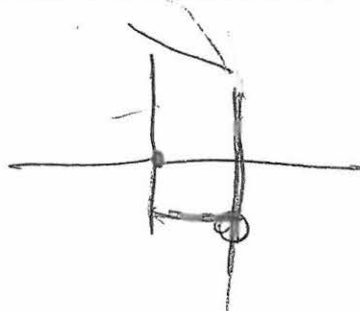
P2

*Building work* for a *building or structure* on a lot that contains *relevant infrastructure*, when completed, allows the *relevant service provider* to gain access to the *relevant infrastructure* to enable ongoing inspection, maintenance and replacement of the *relevant infrastructure*.

A2

For *building work* mentioned in P2, the following requirements are satisfied—

- (a) a wall, footing, pile, pier or floor of the *building or structure* is installed at least 1.2m from the *vertical plane along the centreline* of any *sewer, water main or stormwater drain* contained in the lot; and
- (b) any *sewer or water main* contained in the lot is not more than 225mm *DN*; and



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- (c) any *stormwater drain* contained in the lot is not more than 375mm *DN*; and
- (d) the distance measured vertically from finished surface level to the *invert level* of any *sewer, water main* or *stormwater drain* contained in the lot is not more than 1.5m; and
- (e) for any *sewer, water main* or *stormwater drain* contained in the lot - a *clear zone* is maintained having the following dimensions:
- (i) a width of 1.5m measured at right-angles to the *vertical plane along the centreline* of the *sewer, water main* or *stormwater drain*; and
  - (ii) a height of 2.4m measured upwards from finished surface level; and
  - (iii) a length the same as the length of the *sewer, water main* or *stormwater drain*; and
- (f) for a *maintenance cover*
- (i) a *clear zone* is maintained having the following

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dimensions:

- (A) the base of the *clear zone* (on the horizontal plane at the finished surface level) is circular with a radius of 1.5m from the centre of the *maintenance cover*; and
- (B) a height of 2.4m measured upwards from the finished surface level; and
- (ii) natural ventilation for the cover is not impeded by the *building or structure*; and
- (iii) the *building or structure* does not cause ponding on the upper surface of the cover and water is allowed to naturally drain away; and
- (iv) the *maintenance cover* is not covered by *fill* associated with the *building work*; and

(g) for *jump-ups - a clear*

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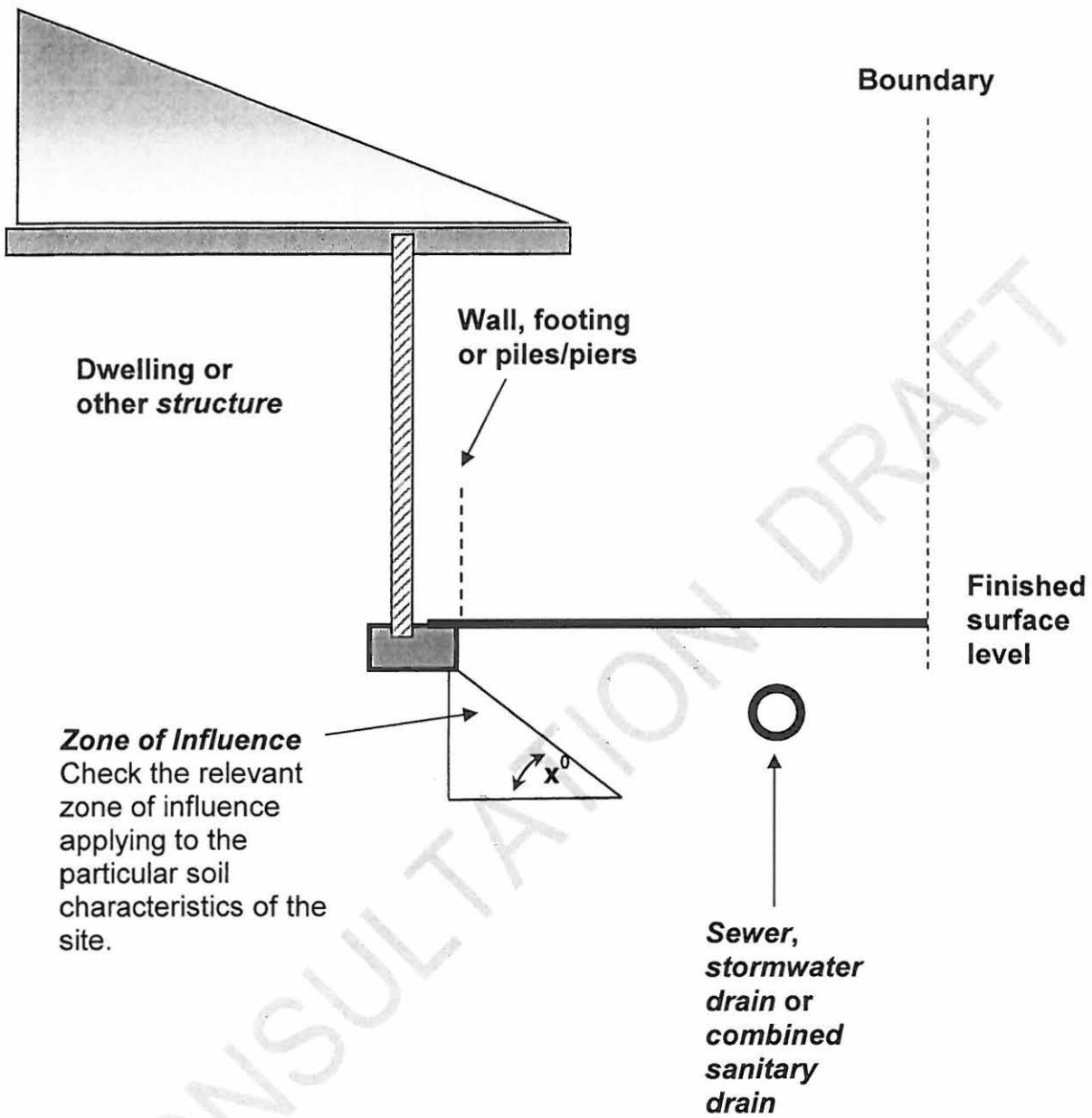
*zone* is maintained having the following dimensions:

- (i) the base of the *clear zone* (on the horizontal plane at the finished surface level) is circular:
    - (A) with a radius of 1m from the centre of the *jump-up*; or
    - (B) with a 2m diameter whose circle intersects the centre of the *jump-up*; and
  - (ii) A height of 2.4m measured upwards from the finished surface level; and
- (h) for *gravity walls* – the design of any *gravity walls* higher than 1m in height where the *zone of influence* is within 300mm below the invert level of the *relevant infrastructure*, is certified by an *RPEQ* as appropriate taking into account the safety of workers who will inspect, maintain and replace the *relevant infrastructure*, as required.

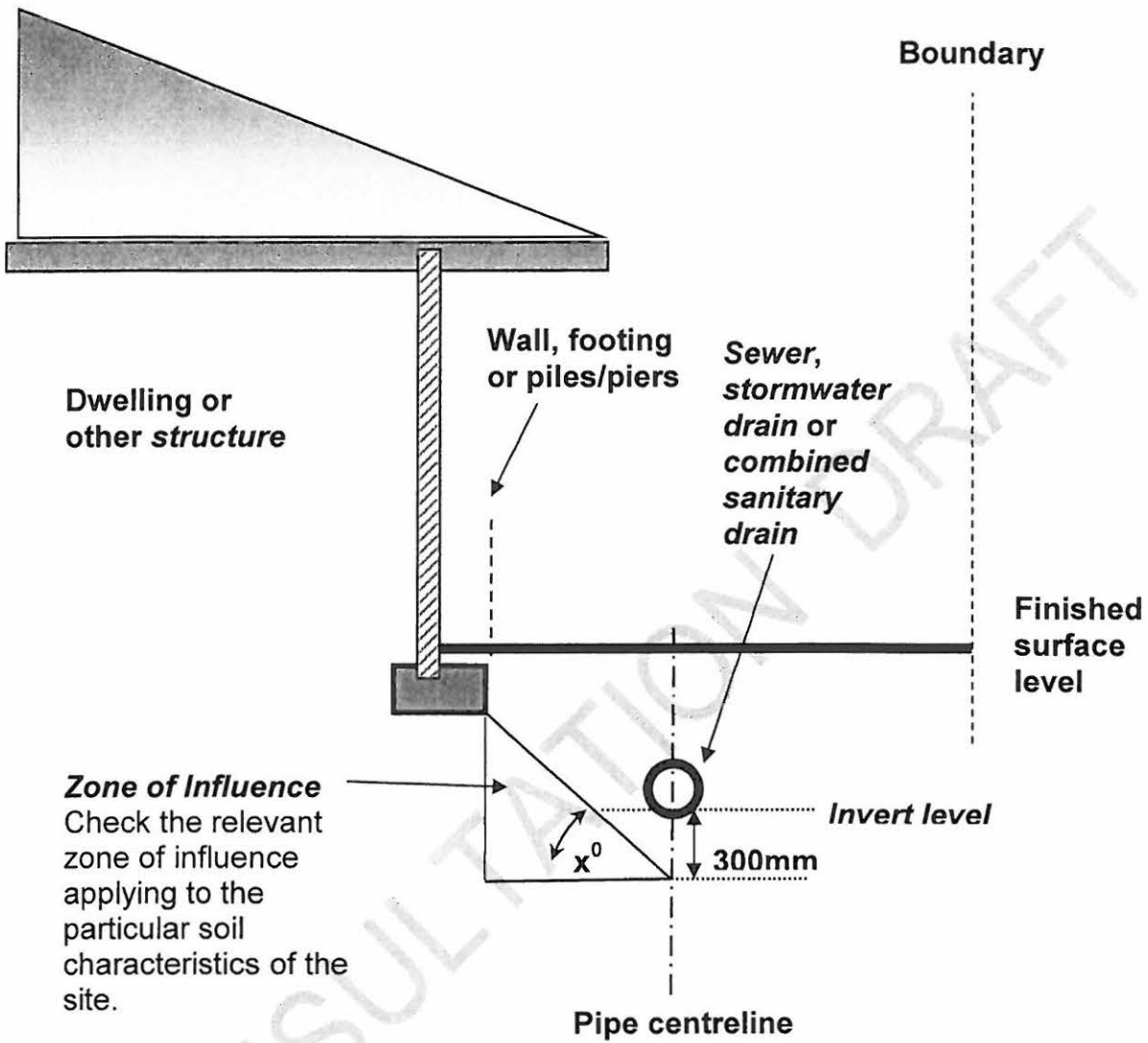
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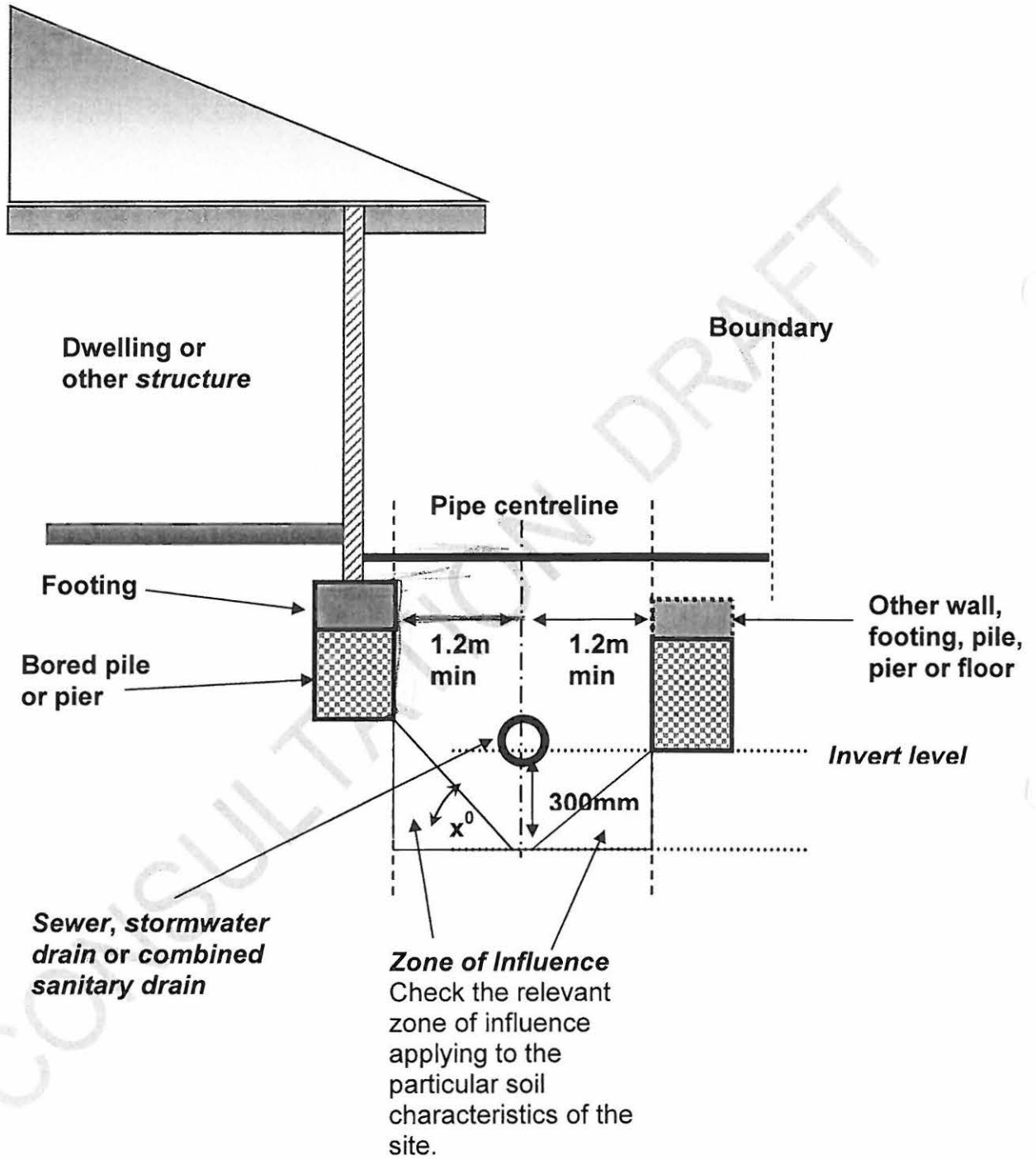


**FIGURE 1**  
Example for A1(e)(i)

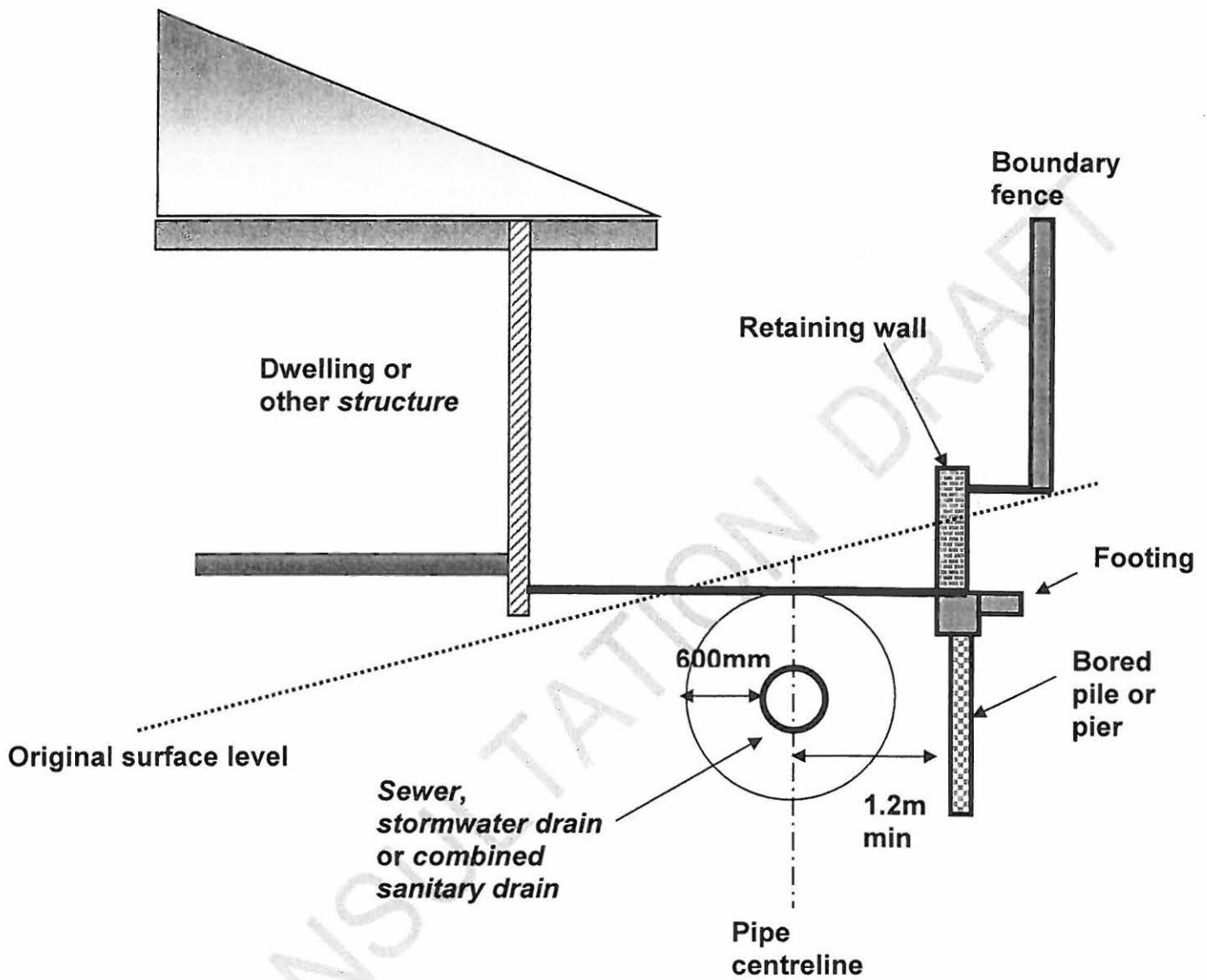


**FIGURE 2**  
Example for A1(e)(ii)

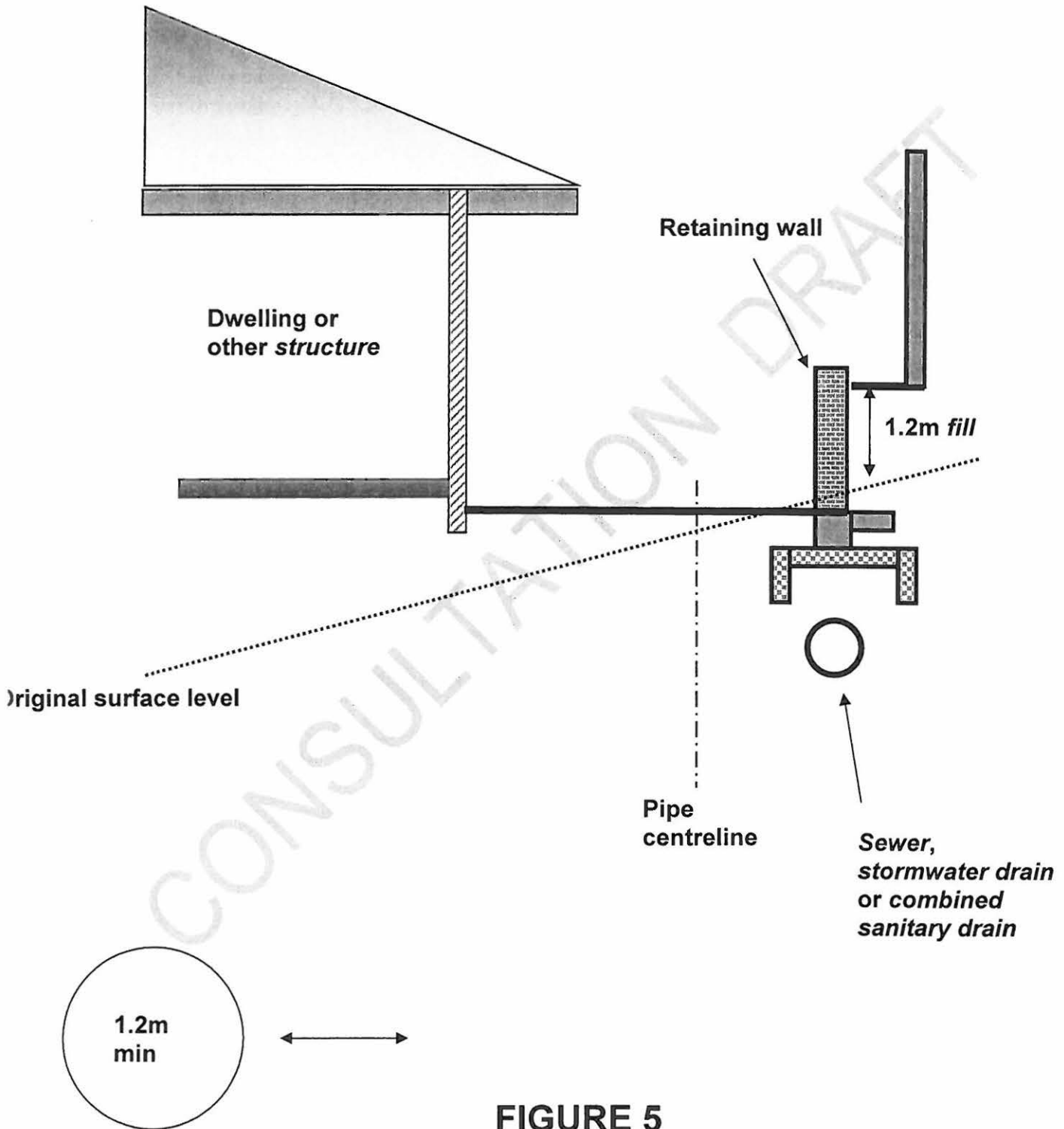




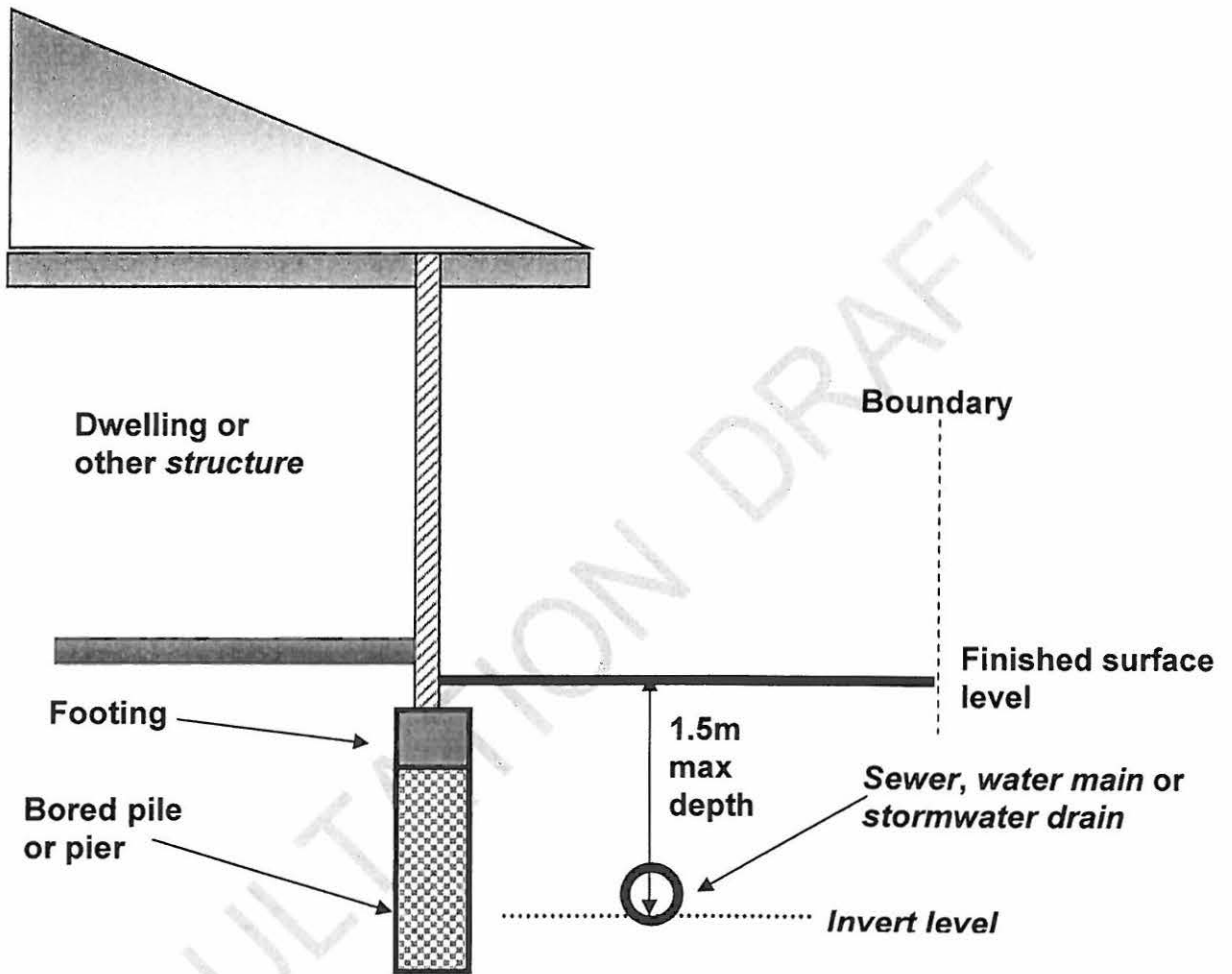
**FIGURE 3**  
Example for A1(e)(iii)



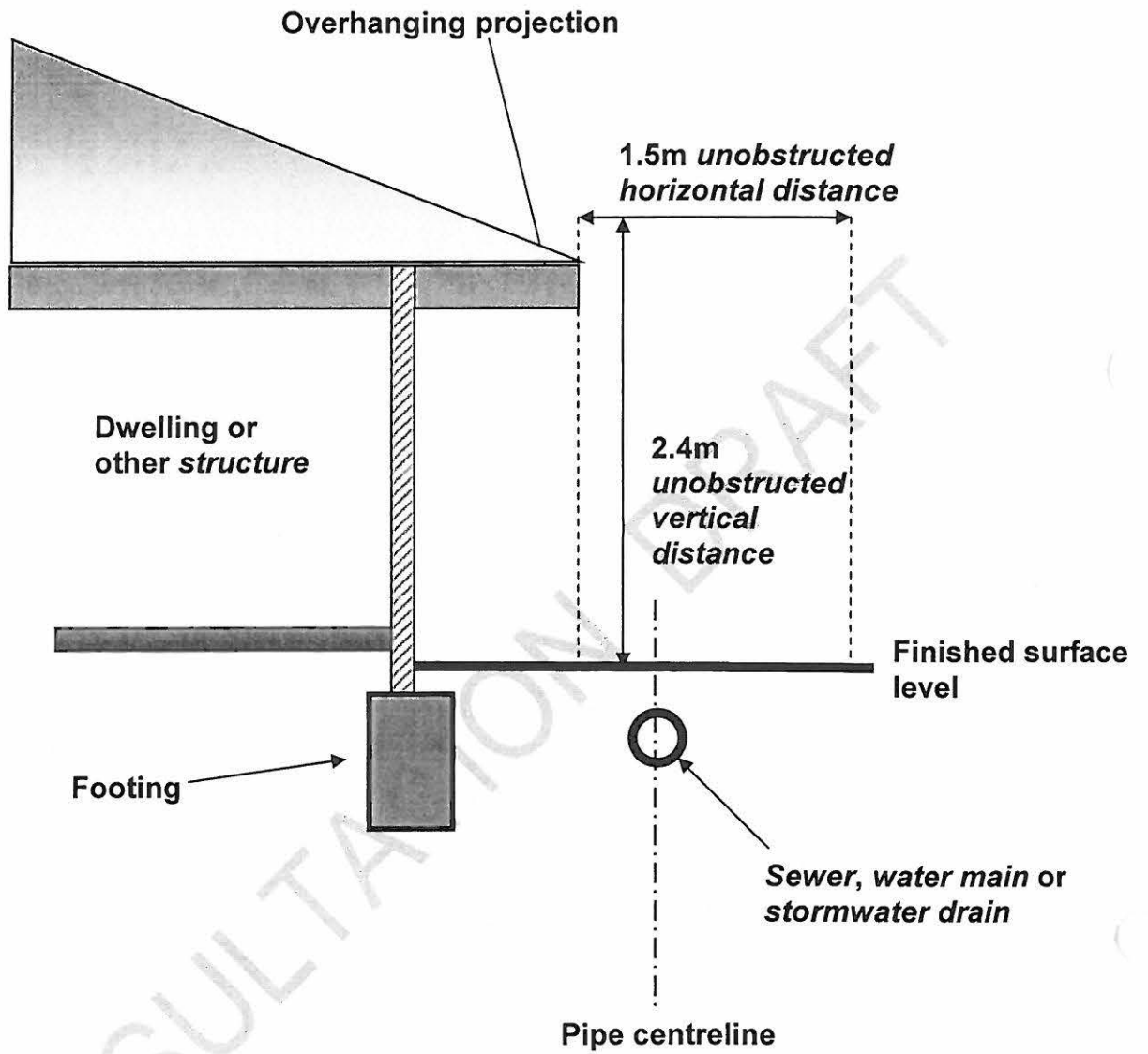
**FIGURE 4**  
Example for A1(f)



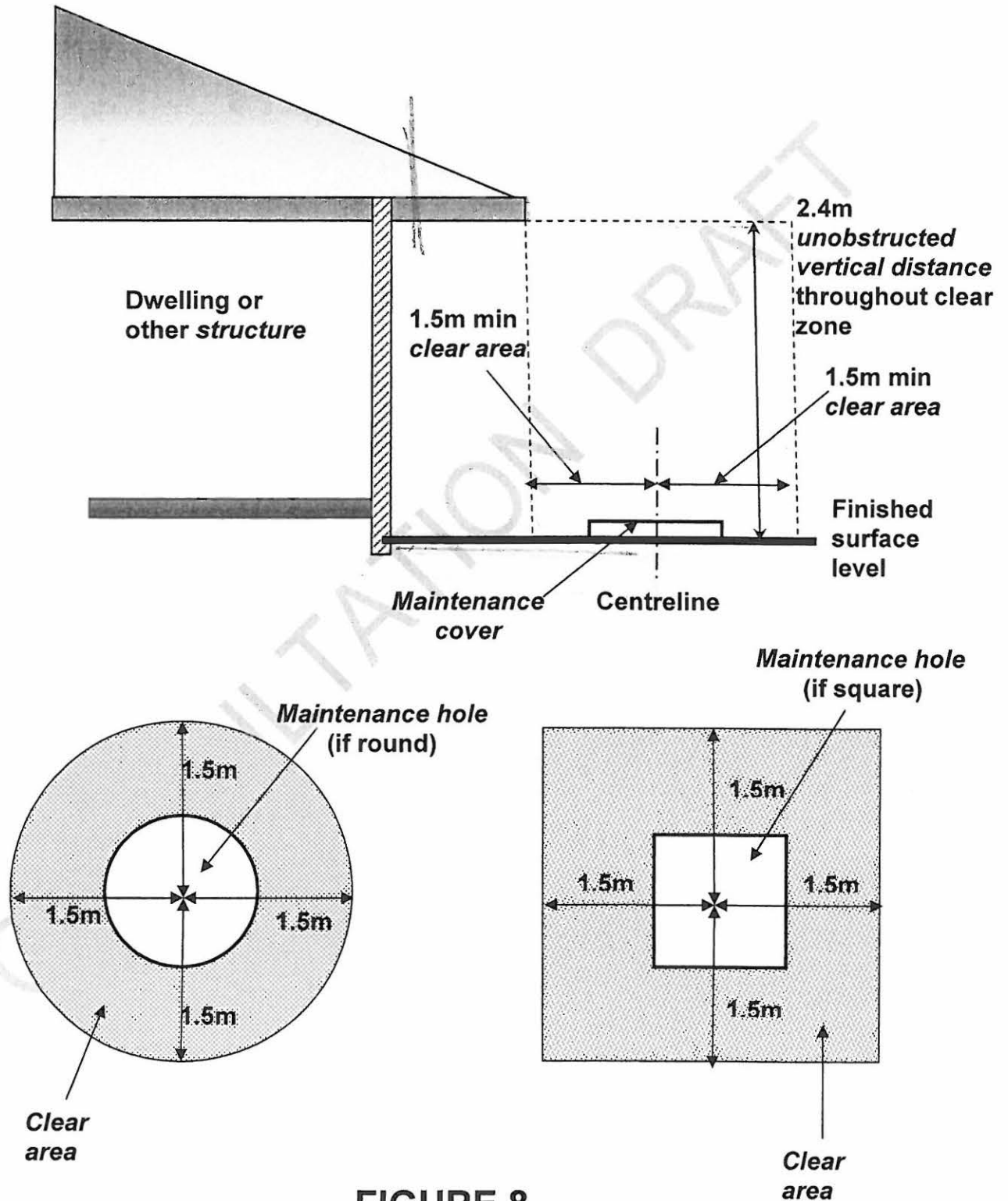
**FIGURE 5**  
Example for A1(h)(ii)



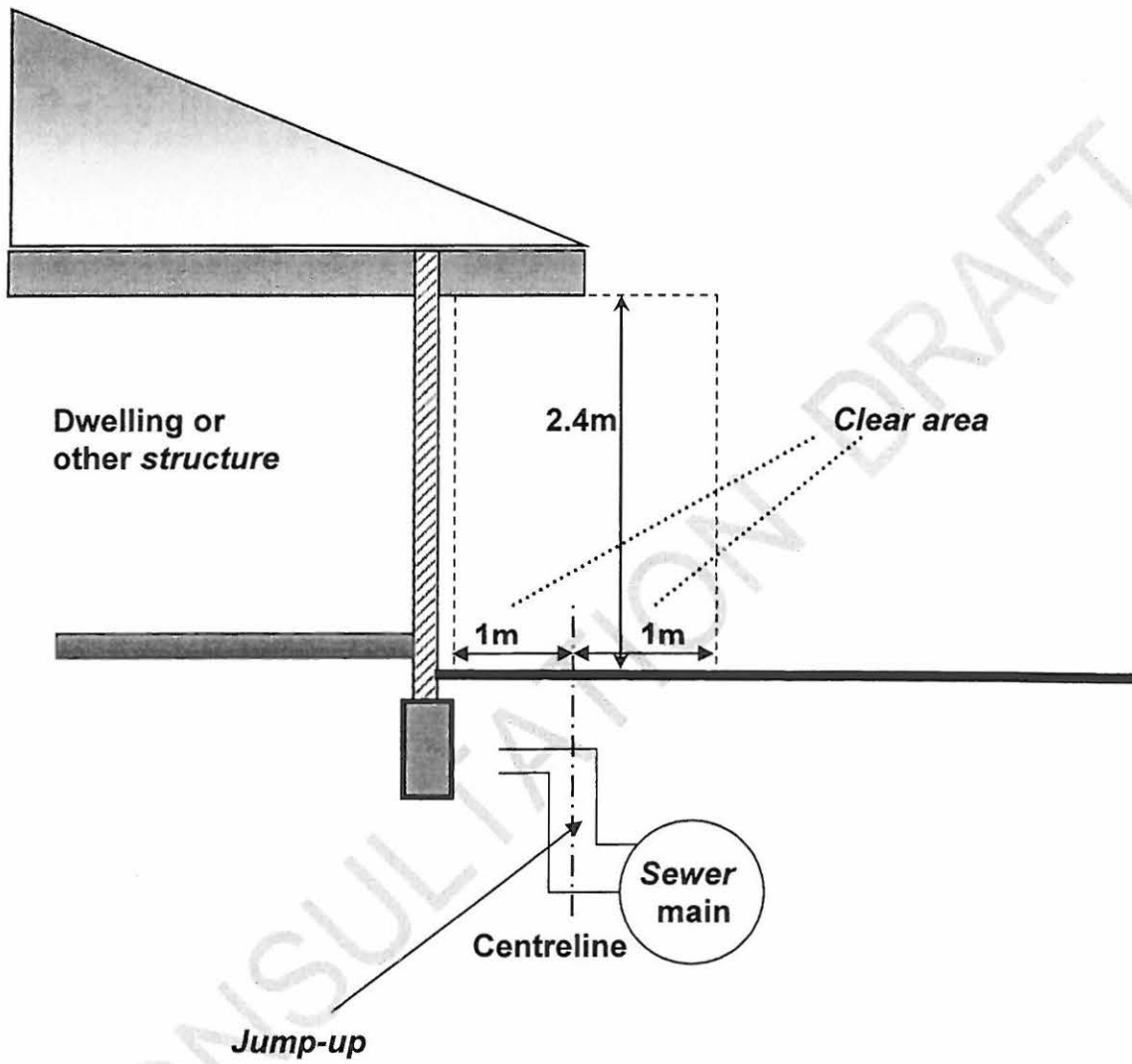
**FIGURE 6**  
Example for A2(d)



**FIGURE 7**  
Example for A2(e)



**FIGURE 8**  
Example for A2(f)



**FIGURE 9**  
Example for A2(g)