

Purpose

The purpose of this guidance note is to provide information for any third party Infrastructure Bodies, Public Bodies and Developers working near Affinity Water Limited's (AWL's) network apparatus including temporary works activity and positioning of any permanent works.

As a statutory body AWL requires safe and unhindered access to operate and maintain its assets, whether in a street or constructed in private land enjoying protection for its use in law as well as by any associated written agreements with a landowners. It is recognised there will be cases that are not covered within this guidance note, upon such circumstances AWL will require further consultation.

Scope

These conditions and precautions apply to all water pipelines, network apparatus and associated telemetry systems in the Affinity Water network. They cover temporary works such as trial holes and other excavation activities in and around apparatus as well as the positioning of permanent works and the protection and access of assets for the future.

Introduction

Affinity Water has a network of over 16,000km of pipes spread throughout its 3 regions; Central, East and South East. Pipes are located in both rural and urban areas. It is particularly in urban areas that the assets are located in close proximity with various utilities such as the drains, telecommunications cables, gas and electricity cables, meaning that others may be working in close proximity to AWL mains and in particular those of high importance. In more rural areas some assets are located in fields where there may be the potential for heavy machinery to pass over them. This guidance therefore identifies the safe working conditions that must be followed by others to avoid damaging AWL's network.

Related Documents

HSG47 – Avoiding danger from Underground Services
AM307 - Design of Distribution Mains and Services
NJUG Guidelines Volume 1 on the positioning and colour coding of underground utilities' apparatus
NJUG Guidelines Volume 4; Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in the Proximity to Trees

Requirements

Requests from an interested party should be made to Affinity Water's Geographical Analysis Team (GAT) mailbox:

Geographical.AnalysisTeam@affinitywater.co.uk

On request, a plan will be issued by AWL showing the approximate locations of assets, there may or may not be a charge upon such request. The position of service connections and private water pipes are not normally shown but their presence should be anticipated and flagged. The

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plans are furnished as a general guide only with the Company standard disclaimer and no guarantee as to their accuracy is given or implied. The plan showing AWL apparatus must not be relied upon in the event of excavations or other works in the vicinity of such apparatus, which must always be carried out with extreme care.

AWL cannot accept responsibility for loss or damage that may occur as a result of inaccuracies in the particulars supplied and actual locations must be determined through the process and methods described below.

In order to work safely in and around AWL apparatus and ensure this apparatus is protected and access maintained now and into the future, the following requirements shall be met:

1. Guidance issued in HSG47 shall be taken as the minimum standard for the works.
2. For works in and around mains greater than or equal to 300mm a comprehensive risk and method statement (RAMS) shall be provided at least 10 working days before commencement of any works. The RAMS shall incorporate the following requirements and be specific to the works to be carried out.
3. Typically water mains are laid at a depth of 900mm. The exact depth of a specific asset may be unavailable but can vary between 750mm and 1500mm as shown in Figure 1. There may however be instances where pipelines cross other utilities' plant, roads, railways or rivers where AWL pipes could be significantly deeper, occasionally mains are laid at shallower depths. Asset information will not include information on service pipes, which normally have a depth of 750mm. Their position can be inferred from the position of stop taps and meter box covers. In all situations the potential existence of small supply pipes should always be anticipated and all endeavours to ensure they are located prior to the use of mechanical equipment.

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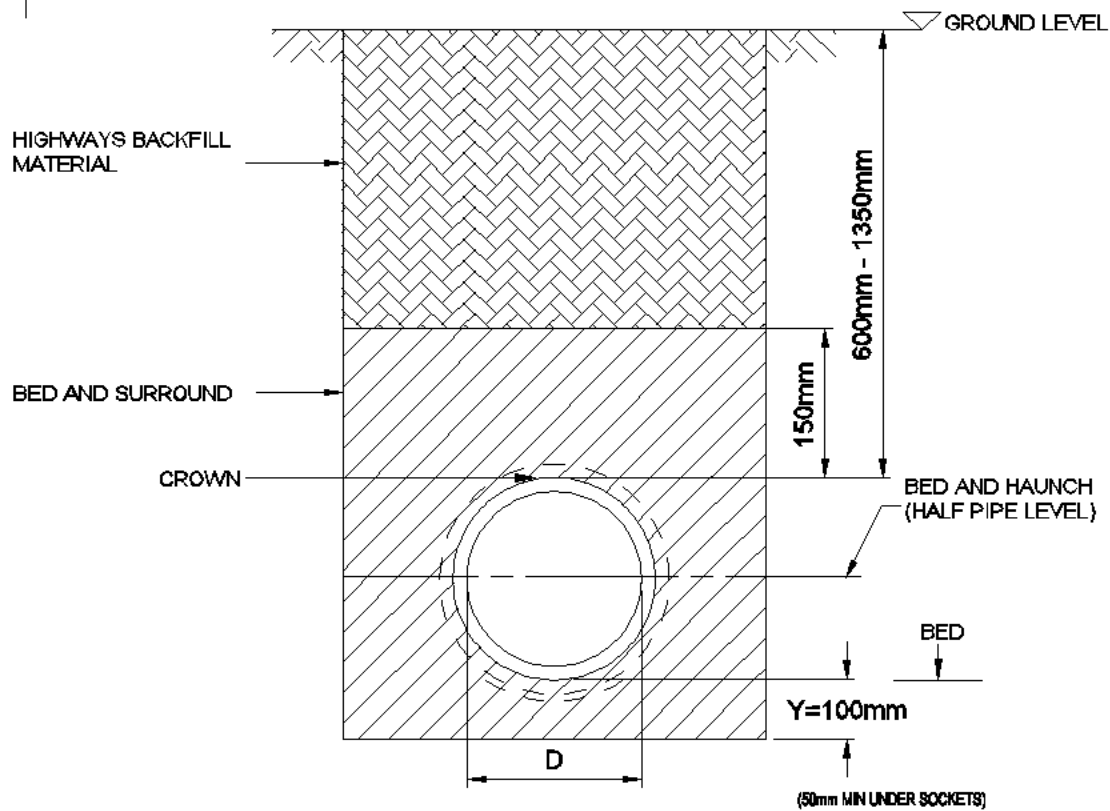


Figure 1 Diagram Showing the Range of Depths for Affinity Water's Pipes

4. No mechanical excavators or power tools are to be used within 500mm of any main or other asset. Final exposure of the main by horizontal digging is preferred.
5. Where excavations of trenches adjacent to any AWL assets affect its support or restraint, the AWL assets must be adequately restrained to prevent movement in any direction. Water mains are pressurised and could fail, particularly if excavation removes support to thrust blocks on bends and fittings. The proposed restraint design must be provided to AWL for comment.
6. Where other utility plant cross AWL pipelines and assets these should cross perpendicular to the pipeline where possible. Crossings of ducts, pipelines etc should pass below AWL assets with a minimum cover of 300mm, when in a trench crossing. Where large numbers of ducts, large pipelines cross using a tunnelling technique then the requirement for cover is greater due to the greater risk and AWL should be consulted. Where other utilities apparatus cross below a large pipeline (300mm or greater) the risk of damage to this apparatus is great should the pipe fail. In this instance a minimum cover between apparatus shall be 600mm
7. Where electrical cables cross or run parallel an AWL ferrous pipeline (>300mm) an assessment is to be made as to whether cathodic protection of the pipeline is required.
8. Where a water pipe is being crossed underneath then the pipe shall be supported over its exposed length.

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9. Where a trench is excavated that crosses or is parallel to the line of any AWL assets, the backfill must be adequately compacted to prevent any settlement which could subsequently cause damage to the AWL assets. It may be necessary to provide AWL assets with permanent support where it has been exposed over the length of the excavation before backfilling and reinstatement is carried out. Concrete backfill should not be in contact with the AWL assets.

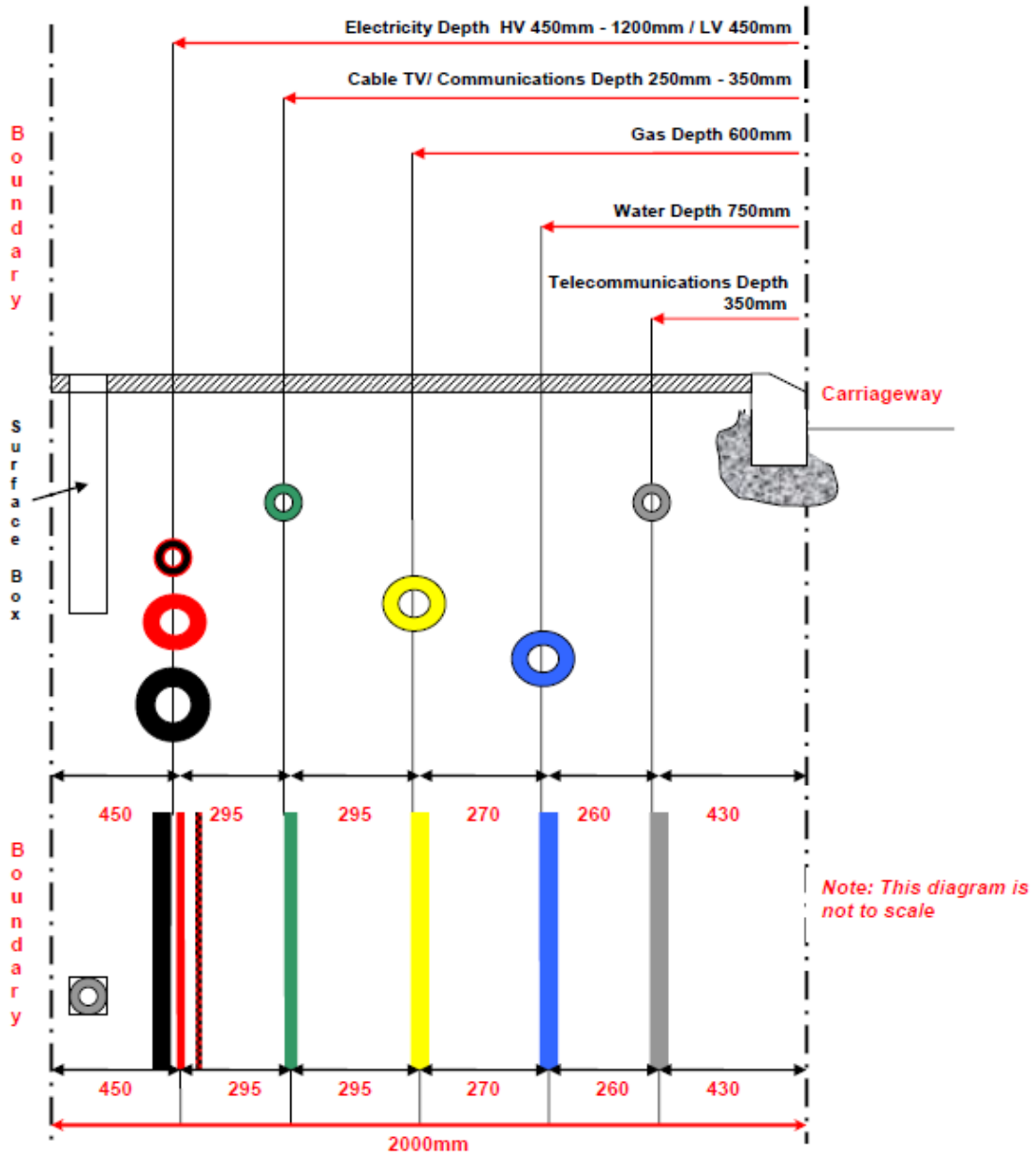
10. Where it is proposed to carry out piling or boring within 15 meters of any AWL assets. AWL should be consulted (the third party must provide assurance documents that would guarantee that AWL pipeline will not be affected by their proposed works) and enable any affected assets to be surveyed prior to the works commencing and the location/path of the main should be marked out above ground. Where aggressive piling techniques such as driven piling or substantial demolition works are within 10m of AWL assets, work should not be undertaken without prior notification as additional protection of assets may be required.

If your scheme involves any form of piling:

- The outer surface of the apparatuses that may be affected must be defined at ground level before works commence.
 - Driven piles shall be installed no closer than 15m from the pipe measured between the outside face of the pile and the outside face of the pipe.
 - Bored or augered piles shall be at least three metres or 1.5 times the diameter of the pile, whichever is greater, from the pipe measured between the outside face of the pile and the outside face of the pipe.
 - Piles adjacent to a pipe must be founded at a level not less than 1.5m below the underside of the pipe.
 - All boring operations must be controlled to ensure that the minimum of vibration is transmitted to the pipe
 - Impact hammer or vibrating hammer piles need to be considered on an individual basis, dependent on the nature and condition of the pipe.
 - Piles forced or otherwise jacked into place can cause abnormal loadings on pipes below and should be subject to specific assessment.
11. During construction work, where heavy plant needs to cross a pipeline or other asset, AWL must be made aware of the specific crossing points and they shall be suitably protected where required. Protection may include restricting the number of crossings. These crossing points should be clearly marked on site and crossings at other locations must be prevented. Positioning of static plant should not be positioned within 5m of AWL assets.

 12. No other below ground assets should be laid directly along the line of AWL assets irrespective of clearance, in accordance with NJUG, see below for details. Above ground structures should not be located within a minimum of 3 metres either side of the centre line of AWL assets for small diameter pipes (151mm – 450mm) and 4 metres from the centre line either side for larger diameter pipes (>450mm) without prior approval. No manhole or chamber shall be built over or adjacent to any AWL assets in accordance with NJUG Guidelines volume 1.

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Guidance Regarding Building near Water Mains

1. Buildings are not permitted directly adjacent or over AWL assets; standard AWL preferred widths are below in **Error! Reference source not found.**, however AWL reserves the right to vary from these where required.
2. No structure is allowed within two metres of a public water main and this distance may increase where necessary to protect Affinity Water's mains as stated below in **Error! Reference source not found.** An easement may be required when Affinity Water access is not guaranteed under NRSWA. Affinity Water must have unrestricted access to repair, maintain or renew the main as required.
3. Any proposal to build closer to the water mains than the stated distance may result in the water main being diverted at the third party's expense.

Table 1. Showing the easements allowed to each main by Affinity Water for their corresponding diameters

Diameter of Water Main	Protection Width
Less than 150mm	4m (2m from the centre line either side of the water main)
150mm – 450mm (6" – 18")	6m (3m from the centre line either side of the water main)
>450mm (18")	8m (4m from the centre line either side of the water main)

13. Damage to AWL assets may include damage to coatings or wrappings, even to a minor extent. Where damage occurs AWL must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out, at the cost of the third party. The necessary remedial work will be recharged.
14. It may be necessary to adjust the finished level of any surface boxes which may fall within a proposed construction. Ground level cannot be raised above a height of 1500mm or reduced below a height of 750mm above the crown of the pipe. If there is no other option the pipe can be relocated, however this will be at the third party's expense. Assets including but not limited to stop taps meters, valves and hydrants shall not be damaged, buried or otherwise rendered inaccessible or inoperable as a result of the works. Minor reduction in existing levels may result in conflict with assets such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such assets in order to determine any necessary alterations in advance of the works.
15. With regard to any proposed resurfacing works, AWL must be contacted to arrange a site inspection to establish the condition of any AWL assets in the nature of surface boxes or manhole covers and frames affected by the works. AWL will then advise on any measures that must be taken in the event of this and a proportionate charge will be made.
16. The erection of posts must not be either directly over, or within 1.0 metre, of valves and hydrants so they can be safely operated.

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Guidance Regarding Planting Restrictions

Set out below are the recommendations for planting in close proximity of AWL assets. General guidance is provided by NJUG volume 4; Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in the Proximity to Trees. Mature root systems and canopies of any plants should not encroach within the recommended distances specified in the notes below:

1. No shrubs or bushes should be planted within 2 metres of the centre line of a water pipe or other AWL assets, including water meter boxes.
2. The following trees and those of a similar size, whether deciduous or evergreen should not be planted within 6 metres of AWL assets e.g. Ash, Beech, Birch, Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear trees.
3. Trees with extensive root systems such as Poplar and Willow trees should not be planted within 12 metres of AWL assets.
4. In certain circumstances, both the Company and landowners may wish to plant shrubs/bushes in close proximity to AWL assets for screening purposes. This should only be done once prior approval by AWL has been provided. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quick Thorn, Snowberry and most ornamental flowering shrubs.

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