



Guidelines for Non-drinking Water in South Australia

Part 2: On-site Plumbing



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Introduction

Purpose

The aim of these Guidelines is to provide advice and assistance to the plumbing and water industries on the correct installation and ongoing operation of non-drinking water systems that are acceptable to the Technical Regulator and deemed to comply with the *Water Industry Act 2012 (Act)*, *Water Industry Regulations 2012 (Regulations)*, and technical standards, e.g. *Water Supply Code of Australia (WSA 03)* and *National Construction Code Volume Three*.

The intention is to improve awareness and understanding of the installation requirements for all non-drinking water systems and the associated regulatory responsibilities within the plumbing and water industries.

Scope

These Guidelines present the current requirements for the technically safe and reliable installation and operation of non-drinking water systems in South Australia.

These Guidelines do not introduce any additional legislative requirements to current prerequisites.

These Guidelines apply to new installations as well as alterations, additions and repairs to existing installations.

Beneficiaries

These Guidelines have been developed for water industry entities' personnel, plumbing contractors, irrigation contractors, engineers, planners, consultants, developers, local government and state government agencies. Specific sections of the Guidelines are also relevant to individual landowners and community groups.

Normative References

These Guidelines contain both legislative (normative) and informative information for use. The normative references include:

- *Water Industry Act 2012*.
- *Water Industry Regulations 2012*.
- *Plumbing, Gasfitters and Electricians Act 1995*.
- *Plumbing, Gasfitters and Electricians Regulations 2010*.
- *National Construction Code Volume Three (Plumbing Code of Australia)*.
- AS/NZS 3500.1 – Water Services.
- Standard for Dual Reticulation Infrastructure.
- Water Services Association of Australia (WSAA) Codes.

In all cases, non-drinking water should not be used for purposes other than those specified in relevant legislation or an applicable approval.

Licensing Requirement for Contractors and Workers

The *Plumbers, Gasfitters and Electricians Act 1995* and *Plumbers, and Gasfitters and Electricians Regulations 2010* determine who can carry out work on non-drinking water systems. There is specific work that is designated for plumbing and irrigation contractors and workers to carry out. For the purposes of the guidelines the wording “appropriately licensed persons” will be used.

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For clarification on the specific licensing conditions contact Consumer Business Services on www.cbs.sa.gov.au.

Structure

These Guidelines are structured in a manner consistent with similar documents in the plumbing and water industries. The focus is placed on safe and reliable installations and ongoing operation for people and plant to ensure a safe and reliable service to customers.

The Guidelines are presented in Parts as follows:

- **Part 0 – Glossary of Terms, Abbreviations and References** aids in interpreting terminology and abbreviations used in these Guidelines.
- **Part 1 – Infrastructure** provides an overview of non-drinking water as an alternative water supply, and the requirements associated with non-drinking water infrastructure. This Part includes legislative requirements, planning and design, implementation, monitoring, management, reporting and auditing for non-drinking water infrastructure.
- **Part 2 – On-site Plumbing** provides detailed information related to on-site non-drinking water installations.

1. Legislative Requirements

1.1 Legislation and Guidelines

There are a number of key legislation applicable to on-site non-drinking water plumbing installations, operations and management, as summarised in Table 1-1.

Table 1-1 Legislation related to non-drinking water

Local Government Act 1999	General and specific obligations under this legislation apply to the operation of non-drinking water systems in that the Council's need to provide appropriate services and facilities to meet the present and future needs of the associated local community. In addition, a provision is made in Schedule 1A for the implementation of Stormwater Management Agreement.
Plumbers, Gas Fitters and Electricians Act 1995	General and specific obligations under this legislation stipulate who can perform plumbing work. The legislation also includes requirements associated with licensing of contractors and registration of workers.
Plumbers, Gas Fitters and Electricians Regulations 2010	Specific obligations under this legislation include licensing of contractors and registration of workers, including work which is exempt.
South Australian Public Health Act 2011	General and specific obligations under this legislation apply to protecting individuals or communities from risks to public health, including those related to non-drinking water.
South Australia Public Health (Wastewater) Regulations 2013	General and specific obligation under this legislation apply to the operation of recycled water systems, including installation or alteration of collection, treatment of reuse of its recycled water.
Water Industry Act 2012	General and specific obligations under this legislation apply to the installation and operation of non-drinking water systems, including water demand and supply planning, licensing, price regulation, customer service standards, and technical standards for infrastructure and plumbing installations, including the <i>National Construction Code Volume Three (Plumbing Code of Australia)</i> .
Water Industry Regulations 2012	General and specific obligations under this legislation apply to the installation and operation of non-drinking water systems.

A copy of the legislation listed above is available at <http://www.legislation.sa.gov.au/index.aspx>.

1.2 Licensing Requirements

The *Plumbers, Gas Fitters and Electricians Act 1995 and Plumbers, Gas Fitters and Electricians Regulations 2010* determine who can carry out work on drinking and non-drinking water systems, and the type of work performed. For the purposes of the guidelines, the wording 'appropriately licensed person/s' is used.

For clarification on the specific licensing conditions contact Consumer Business Services at www.cbs.sa.gov.au.

1.3 Plumbing Regulatory Framework in South Australia

Figure 1-1 demonstrates how the *National Construction Code Volume Three, Plumbing Code of Australia (PCA)* fits into the regulatory framework within South Australia.

South Australia

Water Industry Act 2012

An Act to facilitate planning in connection with water demand and supply; to regulate the water industry, including by providing for the establishment of a licensing regime and providing for the regulation of prices, customer service standards, technical standards for water and sewerage infrastructure and installations and plumbing, and by providing performance monitoring of the water industry; to provide for other measures relevant to the use and management of water; and for other purposes.

WATER INDUSTRY ACT 2012

Plumbing Standard

Technical Regulator

This Standard is published by the Technical Regulator pursuant to sections 66 and 67 of the *Water Industry Act 2012* (the Act).

This Standard comes into effect on the date on which it is gazetted.

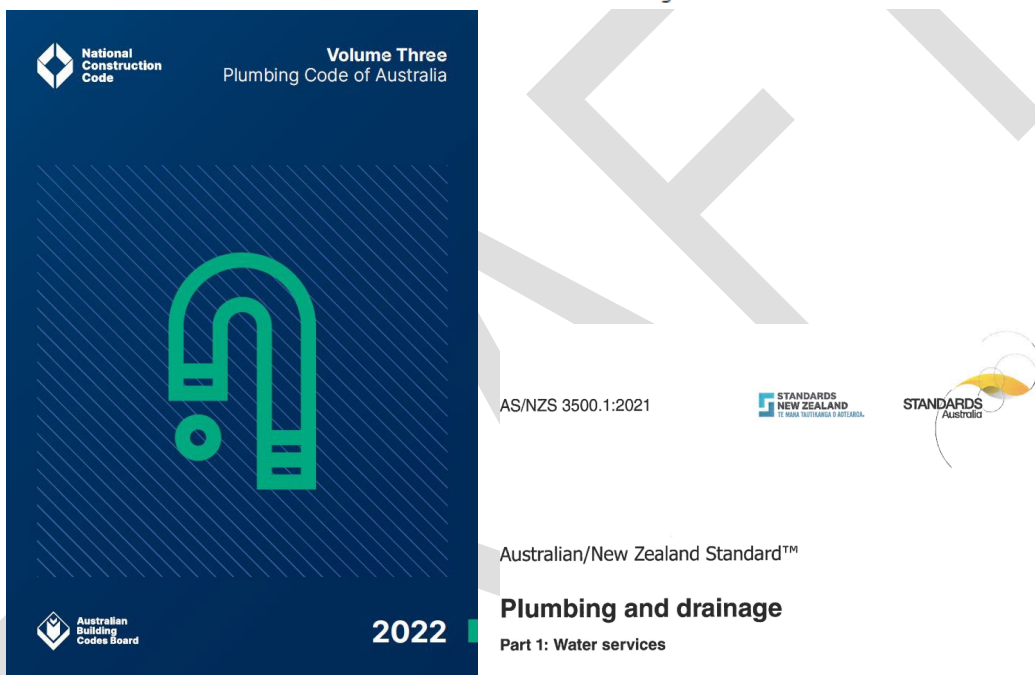


Figure 1-1 Plumbing regulatory framework in South Australia

1.4 Roles and Responsibilities

1.4.1 Designer

The designer of a non-drinking water system requires extensive knowledge of the regulatory framework at federal, state and local government levels, standards, guidelines and codes relating to non-drinking water.

For more information regarding the responsibilities of designers, please refer to *Part 1 – Infrastructure of the Guidelines for Non-Drinking Water in South Australia*.

1.4.2 Responsibilities of Appropriately Licensed Persons

Appropriately licensed persons are required to have sound knowledge of all relevant legislative requirements, standards, guidelines and codes relating to the installation of non-drinking water services.

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They must ensure that all installations are in accordance with the PCA, AS/NZS 3500.1, and the following:

- Contact the OTR to book in all in-ground and in-wall installations.
- Conduct cross-connection tests on all non-drinking water installations.
- Contact the water industry entity that supplies the non-drinking water to book a cross-connection test.
- Complete and forward a Certificate of Compliance to the OTR and property owner within seven days of completing the work.

1.4.3 OTR Responsibilities

The OTR administers the certificate of compliance scheme to ensure that appropriately licensed persons comply with legislation requirements relating to the plumbing work that they have carried out.

Overall, the responsibilities of the OTR relating to on-site non-drinking water plumbing installations are:

- Ensure on-site non-drinking water services comply with the objective and performance requirements of the PCA.
- Audit in-wall and in-ground non-drinking water installations.
- Audit water industry entity/water supplier and appropriately licensed person (where applicable) for documentation but not limited to safety management plans, cross-connection tests and site visits.
- Performance reporting.

Further information relating to OTR responsibilities and requirements are available on the [OTR Website](#).

1.4.4 Water Industry Entity

The legislative responsibilities of a water industry entity are included in Section 68 of the *Water Industry Act 2012*. As a minimum, a water industry entity must ensure:

- All infrastructure, equipment, products or materials are compliant with and are used in accordance with, technical and safety requirements specified by relevant standards.
- Only appropriately licensed persons can install non-drinking water services and conduct cross-connection testing/audits.
- On-site non-drinking water connections are appropriately activated, including conducting the cross-connection test, and documenting and retaining all relevant records.

A Safety, Reliability, Maintenance and Technical Management Plan is prepared, approved and complied with for all retail water supply services (including non-drinking services), when requested by the OTR.

- Any risks associated with the drinking water supply is managed through preventive measures, such as ensuring no cross-connections exist by undertaking 5-yearly audits and/or an audit on the sale of properties that are serviced with non-drinking water. For further information refer to *Part 1 – Infrastructure of the Guidelines for Non-Drinking Water in South Australia*.

1.4.5 Customer

The legislative responsibilities of a customer supplied with a retail non-drinking water service are included in Section 69 of the *Water Industry Act 2012*.

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A customer should have basic knowledge of non-drinking water uses and risks associated with its use, and as a minimum must ensure:

- Only appropriately licensed persons can install and maintain non-drinking water services.
- All on-site non-drinking water pipework and equipment located on their property complies with technical and safety requirements.
- All on-site non-drinking water pipework and equipment located on their property is identifiable and operates in a technically safe and reliable manner.
- Certificates of compliance are received for all installations or maintenance performed.
- Non-drinking water is used for its intended uses.

1.5 Design Standards

1.5.1 General

The key objective when designing non-drinking water systems is to ensure that the equipment and installation can provide continuing technical safety and reliability. The design of a non-drinking water system must comply with relevant codes and standards in the following sections.

1.5.2 *National Construction Code Volume Three (Plumbing Code of Australia) (PCA)*

The Technical Regulator regulates on-site plumbing installations including non-drinking water to ensure they comply with the plumbing standard published under Section 66 of the *Water Industry Act 2012*.

The PCA Part B3 Non-Drinking Water Services sets out the requirements for any part of a non-drinking water service on a property. It covers from the point of connection to the points of discharge. The objectives of this part are to:

- a) Safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a non-drinking water installation.
- b) Ensure that a non-drinking water installation (including an installation provided for the use by people with a disability) is suitable.
- c) Conserve water and energy.
- d) Safeguard the environment.
- e) Safeguard public and private infrastructure.
- f) Ensure that a non-drinking water installation throughout its serviceable life will continue to satisfy the requirements of objectives a) to e).

The Performance Requirements of PCA Part B3 Non-Drinking Water Services

B3P1 Non-drinking Water Supply

A *non-drinking water* service must not have a *cross-connection* with a *drinking water* service.

B3P2 Identification

- (1) Pipes, pipe outlets, fittings, storage and holding tanks that are part of a non-drinking water service must be clearly identified.
- (2) A non-drinking water service must only be connected to outlets clearly identified for non-drinking use.

B3P3 Velocity

Non-drinking water service pipework must ensure that pipework water velocity does not exceed 3 m/s for more than 1% of the time that the water is required during the annual peak hour.

B3BP Access and Isolation

(1) A non-drinking water service must ensure access for maintenance of mechanical components and operational controls.

(2) A non-drinking water service must ensure the system, appliances and devices can be isolated for testing and maintenance.

B3P5 Pressure

The points of discharge for a non-drinking water service must—

- (a) Have -
 - i. a working pressure of not less than 50 kPa; and
 - ii. a static pressure within the building of not more than 500 kPa; or
- (b) have water pressures suitable for the correct functioning of the fixture or appliance where water pressures outside of (a)(i) and (a)(ii) are required.

B3P6 Uncontrolled Discharge

A non-drinking water service must avoid failure or uncontrolled discharge.

B3P7 Water Efficiency

A non-drinking water service must ensure the efficient use of non-drinking water by—

- A. limiting water usage from—
 - i. a cistern or flushing device for a urinal, to a flush volume of not more than 2.5 litres for each—
 - a. single urinal stall; or
 - b. 600mm length of a continuous urinal wall; and
 - ii. a dual flush cistern or flushing valve that is connected to a water closet pan, to a flush volume of not more than—
 - a. 6 and 3 litres; or
 - b. 4.5 and 3 litres; or
- B. water saving measures equivalent to or greater than those described in (a).

Exemptions: The requirements of B3P7 do not apply to a vacuum drainage system.

Deemed to Satisfy Provisions of the PCA Part B3 Non-Drinking Water Services

B3D1 Deemed to Satisfy Provisions

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1. Where a Deemed-to-Satisfy Solution is proposed, Performance Requirements B3P1 to B3P7 are satisfied by complying with B3D2 and B3D5.
2. Where a Performance Solution is proposed, the relevant Performance Requirements must be determined in accordance with A2G2(3) and A2G4(3) as applicable.

B3D2 Distribution of Non-drinking Water

A non-drinking water service must not be connected to any outlet that supplies water for—

- A. human consumption; or
- B. food preparation; or
- C. food utensil washing; or
- D. personal hygiene.

B3D3 General Requirements

A *non-drinking water* service must be in accordance with Section 9 of AS/NZS 3500.1.

B3D4 Bushfire Prone Areas

A *non-drinking water* service in *designated bushfire prone areas* must be in accordance with AS 3959.

B3D5 Water Efficiency

1. A tap or outlet for an external hose tap or laundry trough must be a minimum of 3 Star Water Efficiency Labelling and Standards (WELS) rated and discharge not more than 9 litres per minute.
2. Cisterns or flushing devices for water closets must—
 - A. have a dual flushing mechanism; and
 - B. be a minimum 3 Star WELS rating, discharging not more than 6 litres or 4.5 litres for a full flush.
3. Cisterns or flushing devices for urinals must—
 - A. be a minimum 2 Star WELS rating, discharging a volume of not more than 2.5 litres for each—
 - i. single urinal stall; or
 - ii. 600mm length of continuous urinal wall; and
 - B. not be set-cycled or activated by any method other than manual or use activation.

1.5.3 WaterMark Certification

Materials and products used in a non-drinking water service must meet the requirements of Part A2 of the PCA.

1.5.3.1 Backflow prevention and cross-connection control

Water services must be designed, constructed and installed to avoid contamination, this applies to cold water, heated water, non-drinking water and fire-fighting water services.

Backflow prevention requirements are set out in Part B5 of the Plumbing Code of Australia.

1.5.4 Australian Standards

AS/NZS 3500 Part 1 provides deemed to satisfy provisions to meet the performance requirements of the PCA for the installation of non-drinking water services.

There are also other Standards relevant to non-drinking water, including but not limited to:

- AS/NZS 1547 2012 for on-site recycled water reuse.
- AS/NZS 1546.3 for aerated water treatment system incorporating treatment systems for recycled water reuse.
- AS/NZS 1546.4 for domestic greywater reuse systems.
- AS 2700 for colour coding of pipework.

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2. Installation Requirements

2.1 Non-drinking Water Supply Connection - Meters

Non-drinking water meters are supplied and installed by the water industry entity or water supplier. For domestic and commercial premises, a connection size of 20mm and greater is provided. If a property is located within an area that has a dual water supply system, it may be a prerequisite by the water industry entity to have both a drinking water connection and a non-drinking water connection, regardless of whether either supply is utilised or not.

Further information regarding non-drinking water meters and their installation is included in *Part 1 – Infrastructure of the Guidelines for Non-Drinking Water in South Australia*.

2.2 Pipework and Equipment

All non-drinking water pipework and equipment must be appropriately identified and installed in accordance with the PCA and AS/NZS 3500.1.

All pipes shall be identified by a purple colour being no darker than P24 Jacaranda or P12 Purple, and no lighter than P23 Lilac. Refer to AS 2700 for referenced colours. Where pipes are not coloured purple, identification may be achieved by means of close-fitting durable purple coloured sleeving, netting or spirally wrapped tape. Although all pipework shall be coloured purple in accordance with AS 2700, it is not necessary to use purple coloured service fittings.

All buried pipes shall have an identification tape complying with AS/NZS 2648.1, and marked with the following:

- a) Contrasting purple lettering installed on top of the pipe, running longitudinally, and fastened to the pipe at not more than 3m intervals.
- b) Statement in accordance with AS 1345 –

“RECYCLED OR RECLAIMED WATER-DO NOT DRINK”

Please note that the underground marking tape requirement still applies if P24 Jacaranda or P12 Purple, and no lighter than P23 Lilac pipe is used or not and the pipe has been identified by means of close-fitting durable purple coloured sleeving, netting or spirally wrapped tape.

Identification of directionally bored pipework must meet the performance requirements of the PCA.

In addition to correctly identifying a non-drinking water service, above ground accessible non-drinking water pipework within class 2 to class 9 buildings shall be marked in accordance with AS 1345 and placed at spacings not exceeding 6 metres, adjacent to branches, junctions, service appliances, bulkheads, wall and floor penetrations at every floor level within vertical ducts and riser cupboards.

Pipes that are coloured as part of the manufacturing process are acceptable.

External hose tap outlets, other than those installed as part of a fire service, shall comply with the following:

- a) They shall be clearly marked with either a warning sign in accordance with Figure 2-2 or prohibition sign in accordance with AS 1319: Section 0.
- b) They shall be of a type that has a removable handle, except where the outlet is installed 1200 mm or more above the finished surface level.
- c) They shall be colour-coated purple permanently.

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All other outlets (including fire services) shall be clearly marked with either a warning sign or prohibition sign in accordance with AS 1319: See Section 0.

For proximity to other services, the following requirements apply:

- a) Above ground installations of non-drinking water services shall not be installed within 25mm parallel of any drinking or non-drinking water service.
- b) Below ground installations of non-drinking water services shall not be installed within 300mm of any parallel drinking water supply and 100mm from any non-drinking water supply.

2.3 Pipework Installation

The installation of non-drinking water pipework shall be in accordance with the requirements of drinking water in terms of:

- Materials and products (WaterMarked).
- Sizing requirements (Flow, pressure, velocity, pipe size limitations).
- Cross-connection control and backflow prevention.
- Installation requirements (Proximity to other services, bedding, backfill, depth of cover).
- Flushing and hydrostatic testing.

Figure 2-1 shows a compliant plumbing installation with in-wall drinking water and non-drinking water pipework.



Figure 2-1 In-wall non-drinking and drinking water pipework

2.4 Non-drinking Water/Alternative Water Supply Installation Requirements

AS/NZS 3500¹ Clause 4.2.4 for alternative water supplies states that: “Where water supplied from one source is connected to another water source, appropriate backflow prevention shall be provided.”

Where an alternative supply is non-drinking water, piping shall be clearly and permanently identified in accordance with AS/NZS 3500.

Where the non-drinking water alternative supply is installed below ground, the service shall be identified as non-drinking water and have a continuous marker tape, installed in the trench above the service as per section 2.2 of the non-drinking water guideline, which shall state the following:

“RECYCLED OR RECLAIMED WATER-DO NOT DRINK”

Pipework and outlets supplied by a *drinking water* source downstream of *individual protection or zone protection* are considered to convey *drinking water* from an *unprotected water service*.

Piping conveying water downstream of a backflow prevention device installed for high or medium hazard protection, other than used for containment purposes, shall be clearly and permanently labelled at every outlet with a prohibition sign in accordance with AS/NZS 3500 clause 9.7.2.

2.5 Signage

2.5.1 General

All non-drinking water plumbing installations require appropriate warning and prohibition signage indicating that the non-drinking water is not suitable (fit) for human consumption in accordance with AS 1319 as shown in Figure 2-2.



Figure 2-2 Non-drinking water warning sign and prohibition sign

2.5.2 Signage for Outlets

Signage is required at all outlets of a non-drinking water installation as shown in Figure 2-3. These examples of signage for non-drinking water installations show a connection to a toilet cistern, and an external hose tap with a removal handle (located less than 1200mm from finished surface level).

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Figure 2-3 Examples of non-drinking water plumbing signage

2.5.3 Signage for Recreational Sites

Warning signage is required for non-drinking water irrigation installations. The signage must be placed in a prominent position and clearly indicate, in English (and any other primary language predominantly spoken in that area) that non-drinking water is for irrigation purposes and not for drinking purposes, i.e., 'Recycled Water – Do Not Drink'. An example of a non-drinking water irrigation installation is included in Figure 2-4.

All recreation sites shall be signed according to the relevant regulatory authority or licence conditions.

In addition, non-drinking water detention basins and storage areas may contain appropriate prominent warning signage indicating that the water is not suitable for drinking or swimming, e.g., 'Stormwater Detention Basin – Do Not Drink or Swim'.



Figure 2-4 Non-drinking water irrigation sign

2.6 Backflow Prevention

2.6.1 General

Section B3F2 of the PCA states: 'Non-drinking water must be supplied through plumbing installations in a way that avoids the likelihood of inadvertent contamination of any drinking water service, minimise any adverse impact on building occupants, the Network Utility Operator's infrastructure, property and the environment'.

Section B3P1 of the PCA states: 'A non-drinking water service must not have a cross-connection with a drinking water service'.

Section B5D3 of the PCA nominates the following backflow prevention requirements for non-drinking water services:

- (1) A hazard exists wherever it is possible for water or contaminants to enter a non-drinking water service or supply via any potential cross-connection between itself and another separate non-drinking water service on the same site.
- (2) Each hazard must—
 - (a) be assigned a Containment protection Hazard Rating in accordance with S41C6; and
 - (b) be isolated from the non-drinking water service by appropriate containment protection which is selected and installed in accordance with Section 4 of AS/NZS 3500.1.

Cross-connection control and backflow prevention requirements apply to both drinking and non-drinking water supplies and will vary depending on property type, water quality, and use.

2.6.2 Backflow Hazard Ratings

Cross-connections are rated using three degrees of hazard as follows:

- 1) High hazard, any condition, device or practice that, in connection with the water supply system, has the potential to cause death.
- 2) Medium hazard, any condition, device or practice that, in connection with the water supply system, has the potential to endanger health.
- 3) Low hazard, any condition, device or practice that, in connection with the water supply system constitute a nuisance but does not endanger health or cause injury.

The hazard rating is determined to be high, if the irrigation system is injected with fertilizers, herbicides, nematicides, and insecticides or similar chemicals.

2.6.3 Types of Backflow Device

There are several devices that provide backflow prevention, including but not limited to:

- High hazard rating – reduced pressure zone devices (Figure 2-5), registered air gaps and break tanks.
- Medium hazard rating – double check valve assemblies.
- Low hazard rating – dual check valves.



Figure 2-5 Reduced pressure zone valves installation – Typical connection manifold to non-drinking water supply

2.6.4 Backflow Prevention Requirements for Properties with Non-Drinking Water

Where a property is serviced by a non-drinking water supply, a backflow prevention device, suitable for the degree of hazard and supply capacity, must be fitted to the drinking water service at the meter or the point of connection if a meter is not fitted.

A low hazard backflow prevention device must be fitted to each external drinking water hose tap outlet as a minimum.

Backflow protection shall be appropriate to the cross-connection hazard rating. This can be achieved by the selection of the appropriate device as per the PCA and installing it in accordance with AS/NZS 3500.1 Section 4.

Testable backflow prevention devices shall be fitted with an upstream line strainer, except in fire service installations, to prevent particles and corrosion products from the pipework rendering the device ineffectiveness.

2.6.4.1 Backflow Prevention Requirements for Residential Class 1a

For residential Class 1a housing sites, low hazard backflow is required at the drinking water meter to meet the requirements of the PCA. Sometimes the water entity will provide a low hazard device integral to the drinking water meter but practitioners will need to confirm. If not, the appropriately licensed person must install a low hazard backflow prevention device located as close as practicable to the drinking water meter.

2.6.4.2 Backflow Prevention Requirements for Commercial Properties

For all other sites, a testable backflow prevention device in accordance with the PCA must be installed at the point of connection to the network utility operator's drinking water supply where a non-drinking water supply is installed.

In lieu of installing an RPZD or DCV for the purpose of containment protection, there is an option of installing a registered break tank (Refer to AS/NZS 3500.1 Section 8 and AS 2845.2).

Examples of non-drinking water backflow installations are available in Appendix B.

2.6.5 Backflow Prevention Requirements for Drinking and Non-Drinking Water Interconnections

If a drinking water supply is interconnected with a non-drinking water supply for the purpose of a backup water supply, the drinking water supply must be fitted with a high hazard backflow prevention device at the point of interconnection to protect the drinking water supply from the non-drinking water supply. Refer to Figure 2-7 for an example of an interconnection fitted with a high hazard backflow prevention device. A backup drinking water supply configuration may also be achieved via an above ground non-drinking water storage tank with a registered air gap in accordance with AS 2845.2 which is protecting the drinking water supply top up.

A concession to hazard rating may be granted if it can be demonstrated that the risk to the drinking water posed by the non-drinking water installation is not consistent with a high hazard rating. This will be determined only on request and in consultation with DHW.

2.7 Testing and Commissioning of Non-drinking Water Systems

2.7.1 Temporary Bypass

When the non-drinking water has not been activated by the water industry entity, a temporary bypass must be installed for the purpose of testing and commissioning.

This bypass must be adjacent to the water meters and in an accessible location. Examples of the temporary bypass can be seen in Figure 2-6. The bypass must be removed when the non-drinking water service is activated. This can only occur upon confirmation that there are no cross-connections within the property by following and verifying the non-drinking water commissioning procedure detailed in AS/NZS 3500.1 and with the network utility operator's authorisation. Further information can be found in Table 2-1.

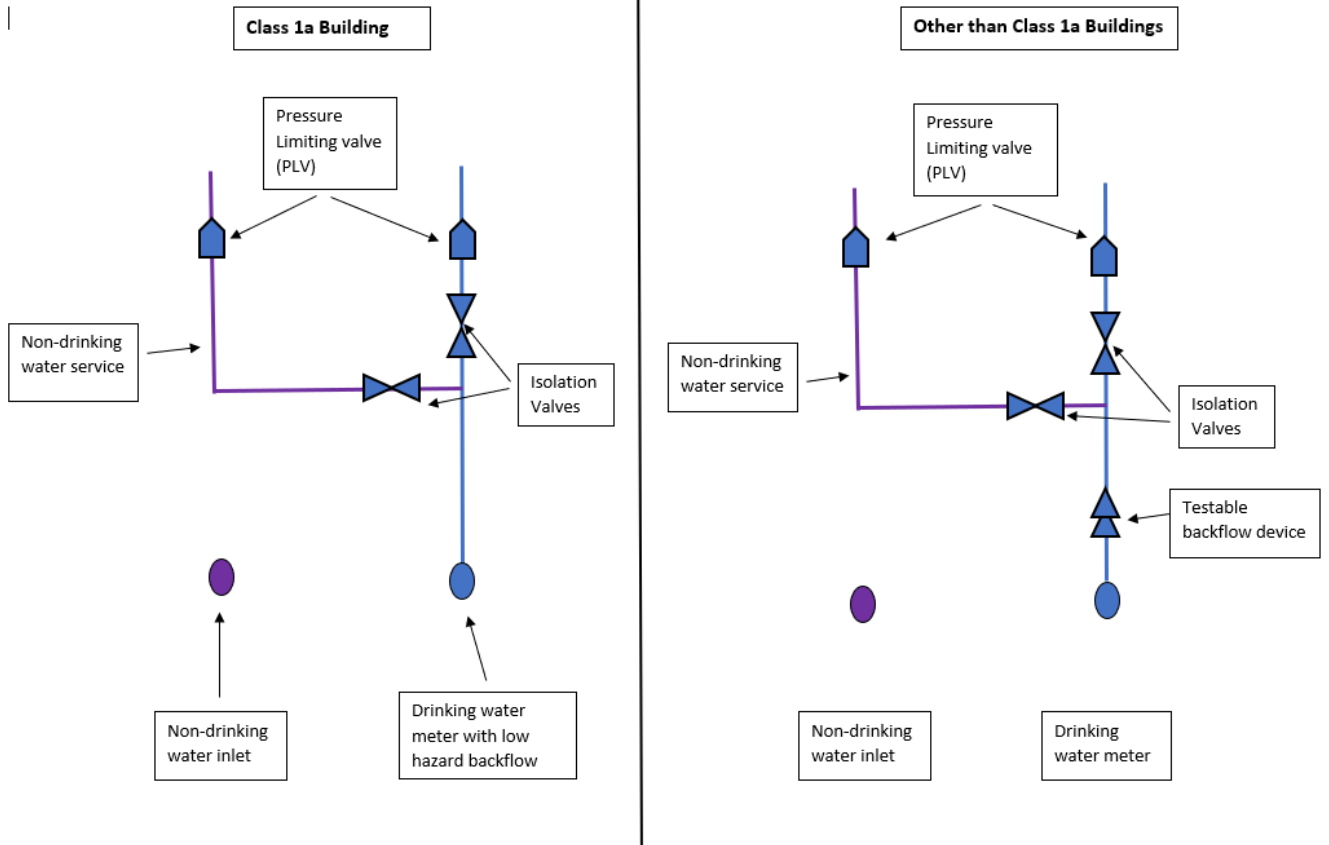


Figure 2-6 Examples of connection between non-drinking water and drinking water services

As building envelopes will sometimes cover the entire boundary of the property, the temporary bypass may have to be installed in an alternative location. This may happen on townhouses or when the water meters are located in the footpath. In situations where the temporary bypass cannot be installed adjacent to the water meters, it can be installed:

- a. Attached above ground to an external wall of the building or
- b. Inside a garage and
- c. in an accessible location that will not cause nuisance or undue damage.

Figure 2-6 provides an example of a temporary bypass in cases where it cannot be provided at the meter locations.

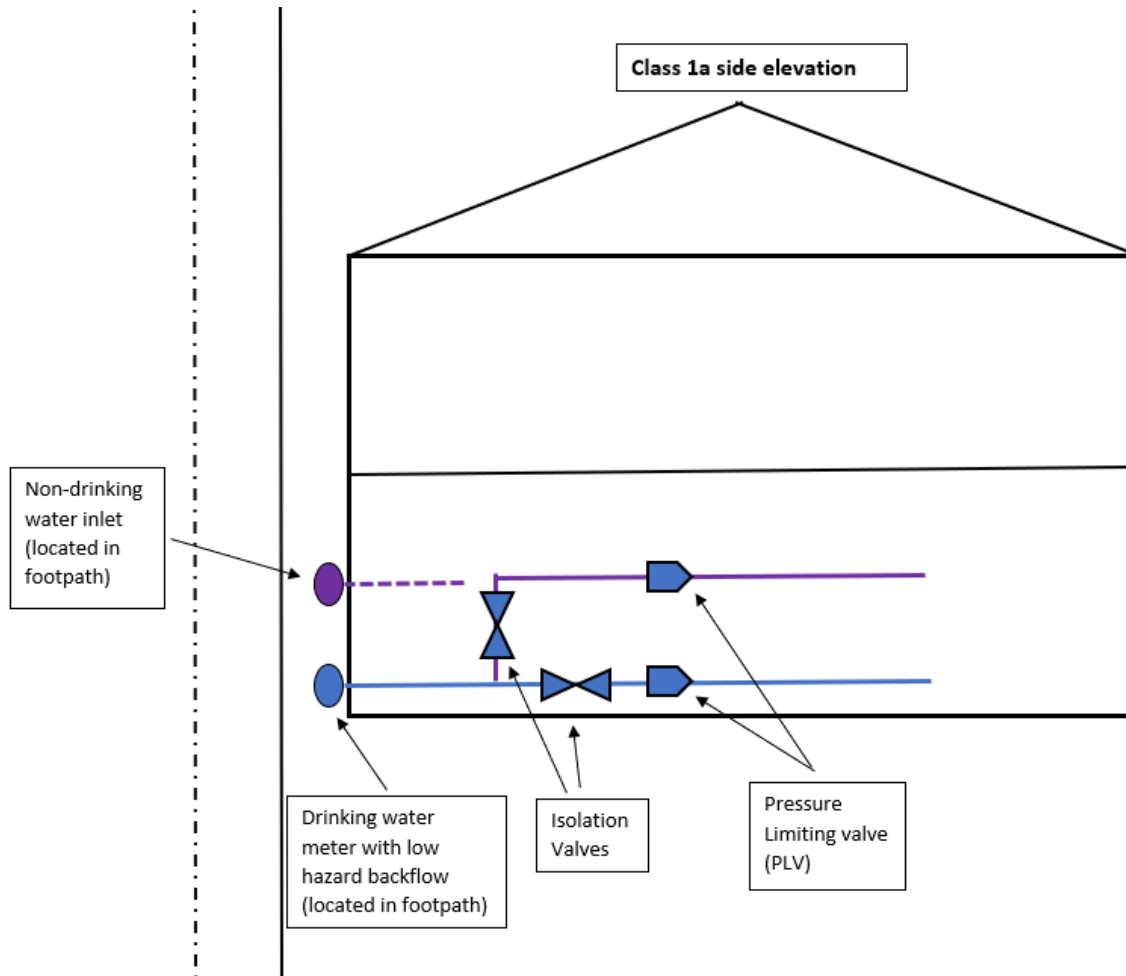


Figure 2-6 Connection between non-drinking water and drinking water services in garage

2.7.2 Non-drinking Water Plumbing Installations Testing and Reporting Requirements

Testing and reporting requirements are essential to ensure the correct installation and operation of non-drinking water systems. AS/NZS 3500 sets out clear requirements for the testing of all non-drinking water plumbing installations.

All non-drinking water installations, including those within a Class 1a building, are to be tested in accordance with AS/NZS 3500.1¹. This testing requires a cross-connection test, referred to as a commissioning procedure, to be conducted. The procedure for conducting the cross-connection test for Class 1a buildings is detailed in Table 2-1.

Table 2-1 Cross-connection test procedure for Class 1a buildings

CLASS 1a FOR CROSS-CONNECTION TEST PROCEDURE	
TASK	DESCRIPTION
1.	Check that the non-drinking water supply to the property is turned off at the meter (or the isolating valve if looped to the drinking water supply); check that the drinking water supply is turned on at the meter (or by isolating the valve downstream of the loop).
2.	Turn on all hot and cold tapware including appliances' (one by one). Ensure all tap outlets, including appliances, are to be operational.

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3.	Flush all toilets. The toilets will not fill if they are connected to the non-drinking water service. The inlet for the toilet shall be clearly identified with appropriate warning/prohibition signs.
4.	Turn on all outside taps. Taps that continue to run are connected to the drinking water service and taps that run dry are connected to the non-drinking water service. All external hose tap outlets connected to the non-drinking water shall be coloured purple, have removable handles and shall be clearly marked with appropriate warning/prohibition signs.
5.	Turn off the drinking water supply at the meter (or isolating valve downstream of the loop) and turn on the non-drinking water supply at the meter (or isolating valve if looped to the drinking water supply).
6.	Turn on all hot and cold tapware including appliances one by one. All tap outlets including appliances are to be non-operational.
7.	Flush all toilets; the toilets should now fill.
8.	Turn on all outside taps., Drinking water taps will run dry and the non-drinking water taps will be operational.
9.	Turn on the drinking water meter slowly and turn on the tap connected to the drinking water service that is located furthest from the meter so that all the air will purge from the pipeline while it is being charged.

A cross-connection test must be conducted by the appropriately licensed person who installs the pipework on the property.

An additional cross-connection test must also be carried out by an appropriately licensed person in conjunction with the water industry entity or water supplier who supplies the non-drinking water. This occurs when the non-drinking water service is activated. The results of this cross-connection test must be retained by the water industry entity or water supplier.

The cross-connection test shall be conducted at the isolation valves located adjacent to the drinking and non-drinking water services as shown in AS/NZS 3500.1.

¹ Copied by the SA Office of the Technical Regulator with the permission of Standards Australia under Licence 1606-c139.

2.7.3 Booking Non-Drinking Water Audits and Issuing Certificates of Compliance

For all non-drinking water installations connected to network utility operator connection points, the appropriately licensed person must book an audit for the in-ground, in-wall non-drinking water pipework and for making the connection to the non-drinking water meter if authorised to do so with the OTR on 1300 884 055 or www.plumbbooking.sa.gov.au. This applies to non-drinking water irrigation installations on commercial and recreational sites.

Following the completion of the installation and compliant cross-connection test, the appropriately licensed person/s is required to provide a certificate of compliance within 7 days of completion of the work to the OTR and owner of the property.

Certificates of compliance are used by the plumbing industry to verify to customers and water industry entities that the installation and equipment (including water services) installed on the customer's property is compliant with the Plumbing Standard published by the Technical Regulator under the *Water Industry Act 2012*.

The certificate of compliance also verifies that the work falls within the terms of the contractor's licence and the worker's registration.

Further information on certificates of compliance can be found at the [OTR Website - Certificates of Compliance Section](#).

2.7.4 Backflow Device Commissioning, Testing, Maintenance and Reporting Requirements

The Plumbing Standard published by the Technical Regulator states “Testable backflow prevention devices on the customer’s side of any water connection point must be commissioned and tested after installation in compliance with AS 2845.3.” Further to this they shall be maintained in working order and tested for operational function at intervals not exceeding 12 months in accordance with AS2845.3. Reduced pressure zone devices, double check valve assemblies, pressure type vacuum breakers, registered break tanks and registered air gaps shall only be used with a maintenance program for device registration and test certification.”

Testable backflow prevention devices and registered break tanks must be commissioned and tested annually by an appropriately licensed person.

A completed Commission, inspection and maintenance report and a certificate of compliance (if applicable) must be sent to the OTR by the appropriately licensed person within seven days of completing the work.

¹ Copied by the SA Office of the Technical Regulator with the permission of Standards Australia under Licence 1606-c139.

2.7.5 Test Gauge Kit for Backflow Prevention

The test kits used for testing backflow prevention valves are precision instruments and need to be treated with appropriate care. They need to be calibrated and certified every 12 months in compliance with AS 2845.3. The OTR monitor test kits for current (up-to-date) calibration/certification.

2.8 Irrigation Installation Requirements

2.8.1 General

For irrigation sites, a plumbing hydraulic design showing all drinking water and non-drinking water reticulation pipework including backflow prevention details must be submitted to the OTR prior to commencement of the water service installation on the site.

Consideration should be given to ensuring that dedicated playgrounds and BBQ areas are not irrigated by non-drinking water and appropriate separation distances are provided in case of spray drift.

Further information on lodging plumbing hydraulic designs is available in the Plumbing Advisory Note on the OTR website.

Figure 2-8 shows the backflow setup for an irrigation site which uses drinking water as a back-up or supplementary supply.

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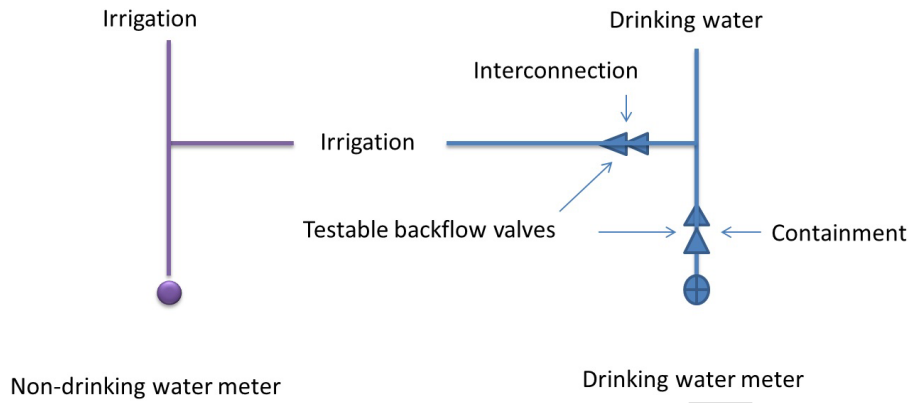


Figure 2-8 Backflow setup for irrigation sites using drinking water as a backup supply

Examples of non-drinking water irrigation installations are available in Appendix B.

2.8.2 Irrigation Installations Testing and Reporting Requirements

The appropriately licensed person must book an audit with the OTR for all non-drinking water irrigation installations at recreation, commercial and residential sites. Bookings can be made on 1300 884 055 or www.plumbbooking.sa.gov.au.

WATER INDUSTRY ACT 2012

Plumbing Standard

Published by the Technical Regulator

The Plumbing Standard published on 9 January 2014 (as varied on 2 May 2019 and 3 December 2020) is revoked.

This Standard is published by the Technical Regulator pursuant to sections 66 and 67 of the *Water Industry Act 2012* (the Act).

This Standard comes into effect on the date on which it is gazetted.

This Standard relates to plumbing, including plumbing work or any equipment, products or materials used in connection with plumbing.

1. For the purposes of section 67(3)(b) of the Act, the persons to whom section 67(2) of the Act applies are:

- (1) licensed plumbing contractors (under the *Plumbers, Gas Fitters and Electricians Act 1995*) contracting for plumbing work.
- (2) licensed building work contractors (under the *Building Work Contractors Act 1995*) contracting for plumbing work.
- (3) registered plumbing workers (under the *Plumbers, Gas Fitters and Electricians Act 1995*) carrying out plumbing work.

2. The above-mentioned persons, must comply with the following requirements:

- (a) Relevant components of the National Construction Code Volume 3 (Plumbing Code of Australia) (including any standards referred to therein) as amended from time to time, as follows:
 - (i) Preface
 - (ii) Section A Governing Requirements, Section A, Parts A1, A2, A3, A4, A5, A6 and A7;
 - (iii) Section B Water Services, Parts B1, B2, B3, B4, B5, B6 and Specification 41;
 - (iv) Section C Sanitary Plumbing and Drainage Systems, Parts C1, C2 and C3;
 - (v) Section D Excessive Noise, Part D1;
 - (vi) Section E Facilities, Part E1;
 - (vii) Schedule 1 Definitions;
 - (viii) Schedule 2 Referenced documents;

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(ix) Schedule 8 South Australia as modified to insert in clause SA B2D2 after sub-clause (1)(e) “(f) A demand response capable water heater that complies with AS/NZS 4755.2(when published) or AS/NZS 4755.3.3:2014 DRM1”.

(b) Persons Constructing, installing, replacing, repairing, altering and maintaining pipes or any other equipment, products or materials used in connection with plumbing are required to book the following plumbing categories for audit with the Office of the Technical Regulator:

- (i) Sanitary plumbing and drainage systems;
- (ii) Fire-fighting water services (in-ground pipework and testable backflow prevention devices only);
- (iii) Greywater plumbing and drainage systems;
- (iv) Non-drinking water services;
- (v) Drinking water services in parks and recreational areas;
- (vi) Final inspections of completed commercial plumbing installations; and
- (vii) Such other plumbing categories as determined by the Technical Regulator.

3. The persons referred to in paragraph 1, (1) and (3) above must comply with the following requirements:

(a) Testable backflow prevention devices on the customer's side of any water connection point must be commissioned and tested after installation in compliance with AS 2845.3.

4. The Technical Regulator may grant an exemption from this Standard, or specified provisions of this Standard, with or without conditions as the Technical Regulator considers appropriate.

Dated 1 May 2023



R. FAUNT

TECHNICAL REGULATOR

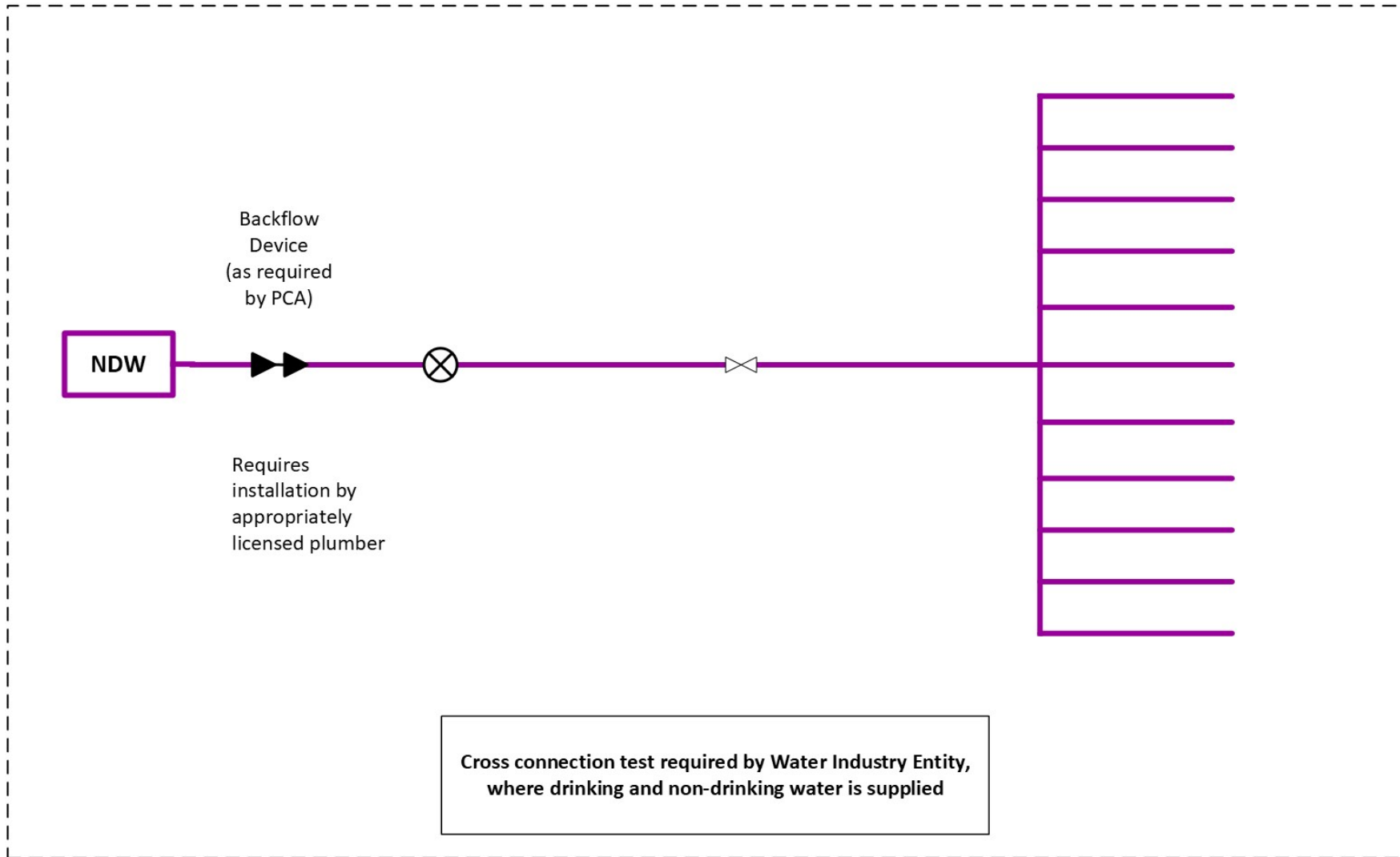
Appendix B Case Studies (including Typical Drawings)

Drawing No.	Final Drawings Titles
1	Typical requirements for a non-drinking water irrigation system
2	Residential property supplied with non-drinking water and separate rainwater supplies
3	Residential property supplied with separate non-drinking water and drinking water supplies
4	Residential class 1 property (multiple dwelling) supplied with separate non-drinking water and drinking water supplies
5	Non-drinking water and drinking water supplies through registered break tank (including back-up drinking water supply)
6	Commercial property supplied with non-drinking water and back-up drinking water supplies
7	Municipal parks and gardens supplied with non-drinking water supply only (no drinking water supply to site)
8	Municipal parks and gardens supplied with non-drinking waters and back-up drinking water supplies
9	Municipal park supplied with non-drinking water and back-up drinking water supplies and separate drinking water supply to site
10	Municipal park supplied with separate non-drinking and drinking water supplies (including back-up drinking water supply to irrigation)
11	Municipal park supplied with separate non-drinking and drinking water supplies through registered break tanks (including back-up drinking water supply)
12	Municipal park supplied with separate non-drinking and drinking water supplies (including back-up drinking water supply to irrigation)
15	Example of a hydraulic design submission
16	Legend

Note: All typical drawings provided are diagrammatic for information purposes only. All installations must comply with the relevant legislation.

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DRAWING NO. 1 – TYPICAL REQUIREMENTS FOR A NON-DRINKING WATER IRRIGATION SYSTEM

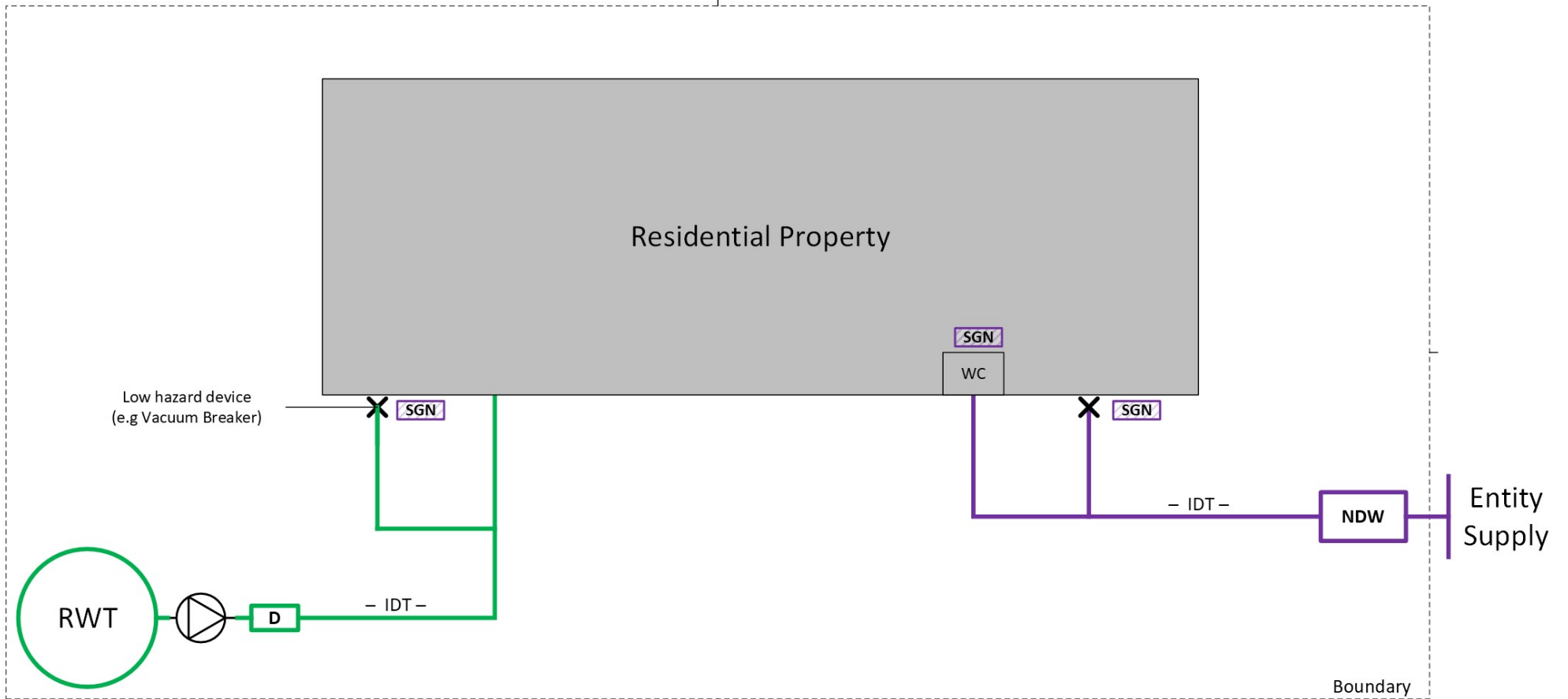


Cross connection test required by Water Industry Entity, where drinking and non-drinking water is supplied

Legend							
	Non-drinking water meter		Non-drinking water service		Master valve		Isolating Valve

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DRAWING NO. 2 – RESIDENTIAL PROPERTY SUPPLIED WITH NON-DRINKING WATER AND SEPARATE RAINWATER SUPPLIES



Notes

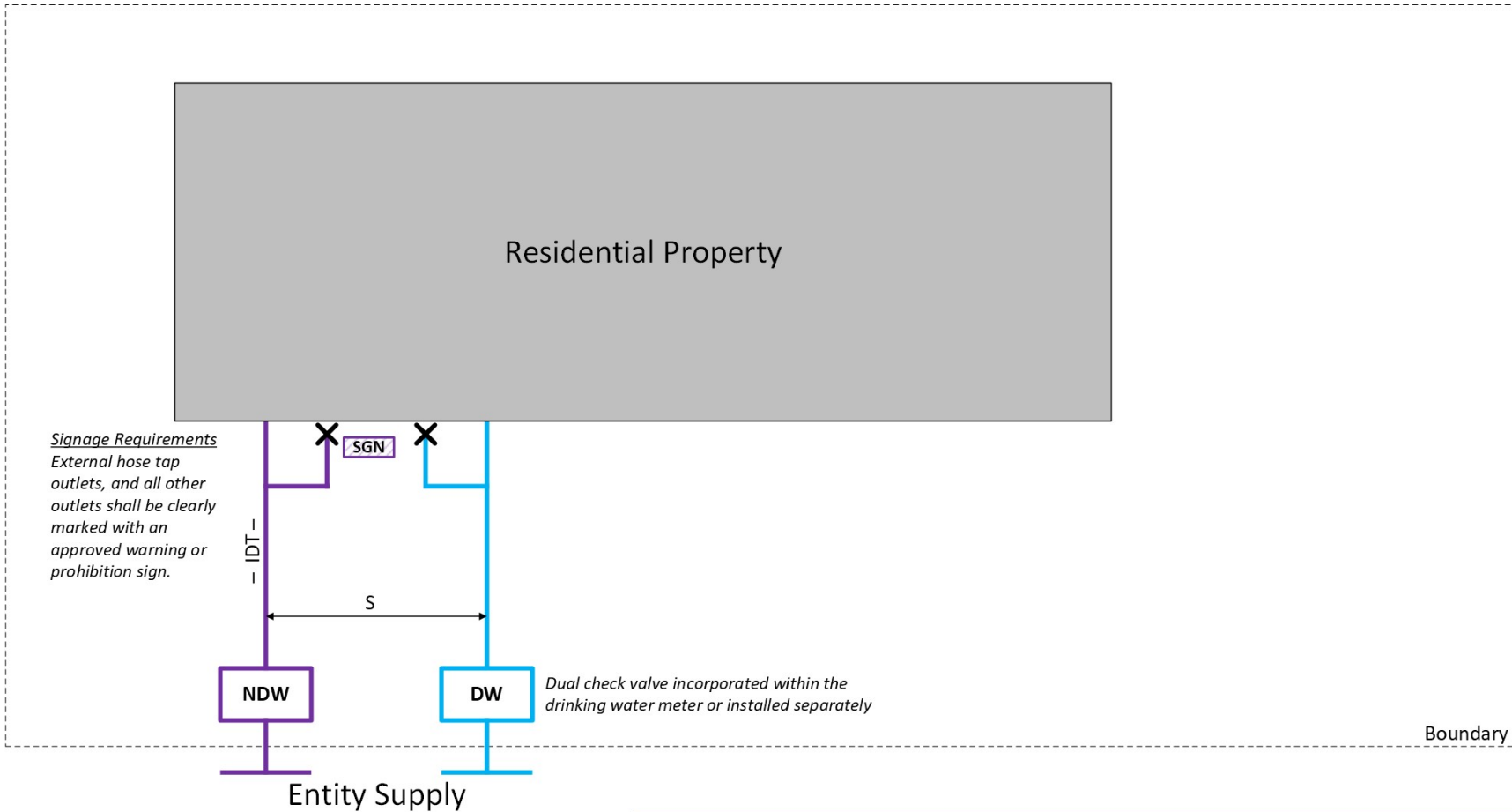
Signage Requirements

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
NDW	Non-drinking water meter	RWT	Rain water tank
—	Non-drinking water service	—	Rain water service
X	Hose tap	D	Dual check non testable backflow prevention valve
	Pump	SGN	Not for drinking warning sign
- IDT -	Identification tape		

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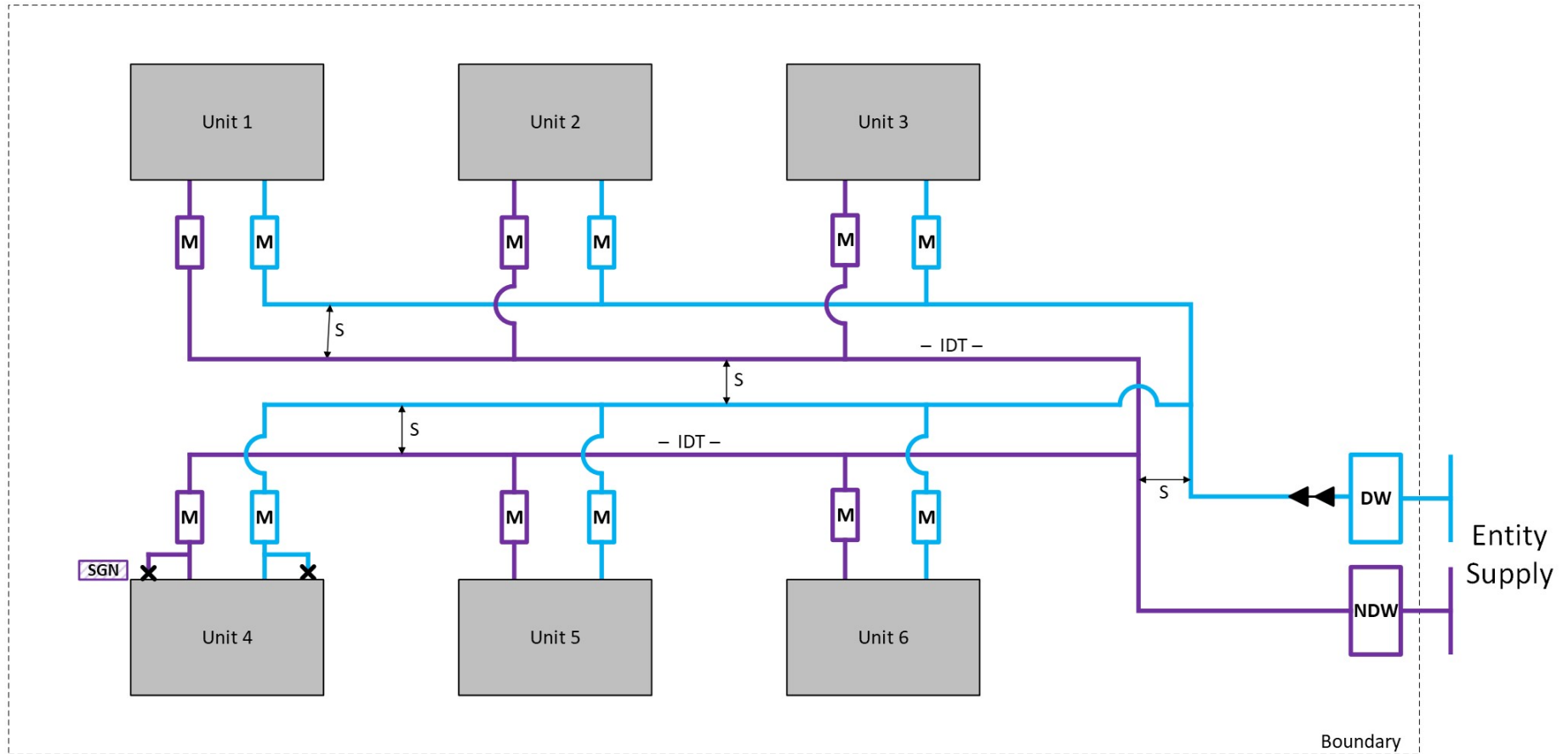
DRAWING NO. 3 – RESIDENTIAL PROPERTY SUPPLIED WITH SEPARATE NON-DRINKING WATER AND DRINKING WATER SUPPLIES



Legend			
DW	Drinking water meter	NDW	Non-drinking water meter
	Drinking water service		Non-drinking water service
X	Hose tap		Separation (>300mm)
- IDT -	Identification tape	SGN	Not for drinking warning sign

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DRAWING NO. 4 – RESIDENTIAL CLASS 1 PROPERTY (MULTIPLE DWELLING) SUPPLIED WITH SEPARATE NON-DRINKING WATER AND DRINKING WATER SUPPLIES



Notes

- Backflow containment device to meet the requirements of the Plumbing Code of Australia.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

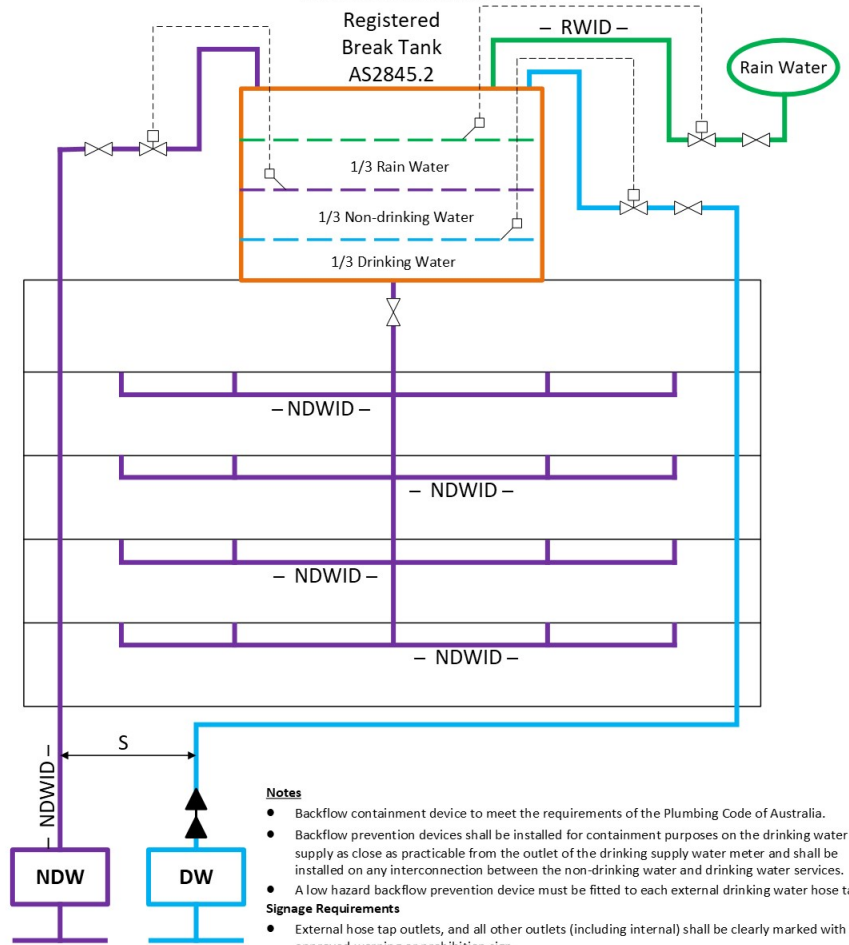
Signage Requirements

- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
	Drinking water meter		Non-drinking water meter
	Drinking water service		Non-drinking water service
	Private drinking water meter		Private non-drinking water meter
	Backflow prevention valve		Separation (>300mm)
	Identification tape		Hose tap
	Not for drinking warning sign		

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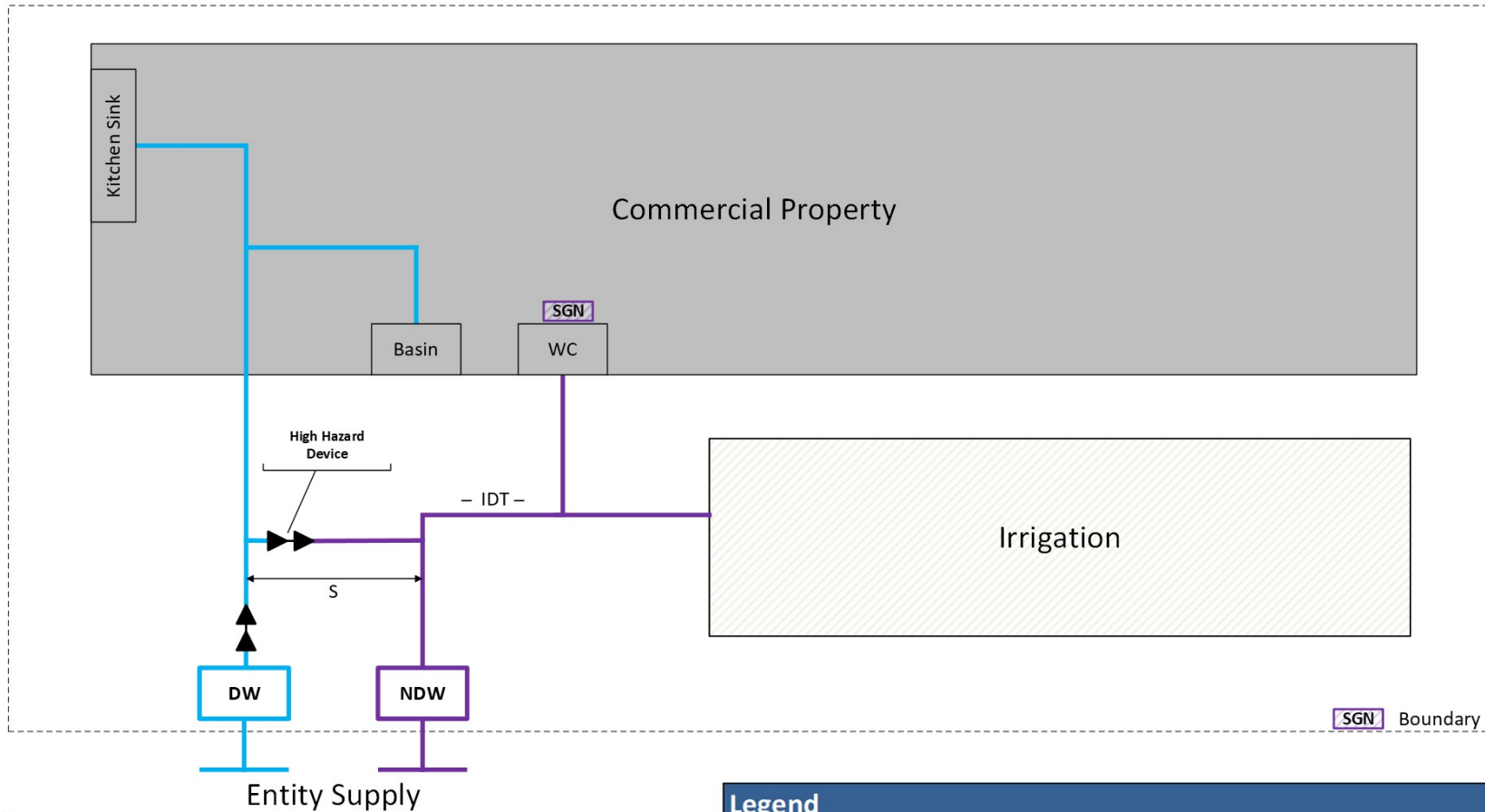
DRAWING NO. 5 – NON-DRINKING WATER AND DRINKING WATER SUPPLIES THROUGH REGISTERED BREAK TANK (INCLUDING BACK-UP DRINKING WATER SUPPLY)



Legend			
	Drinking water meter		Non-drinking water meter
	Drinking water service		Non-drinking water service
	Rain water service		Separation (>300mm)
	Backflow prevention device		Non drinking water Identification
	Isolating valve		Automated control valve
	Float valve		Rainwater Identification

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DRAWING NO. 6 – COMMERCIAL PROPERTY SUPPLIED WITH NON-DRINKING WATER AND BACK-UP DRINKING WATER SUPPLIES




Notes

- Backflow containment device to meet the requirements of the Plumbing Code of Australia.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap
- High Hazard backflow prevention device for interconnection between drinking and non-drinking water supply

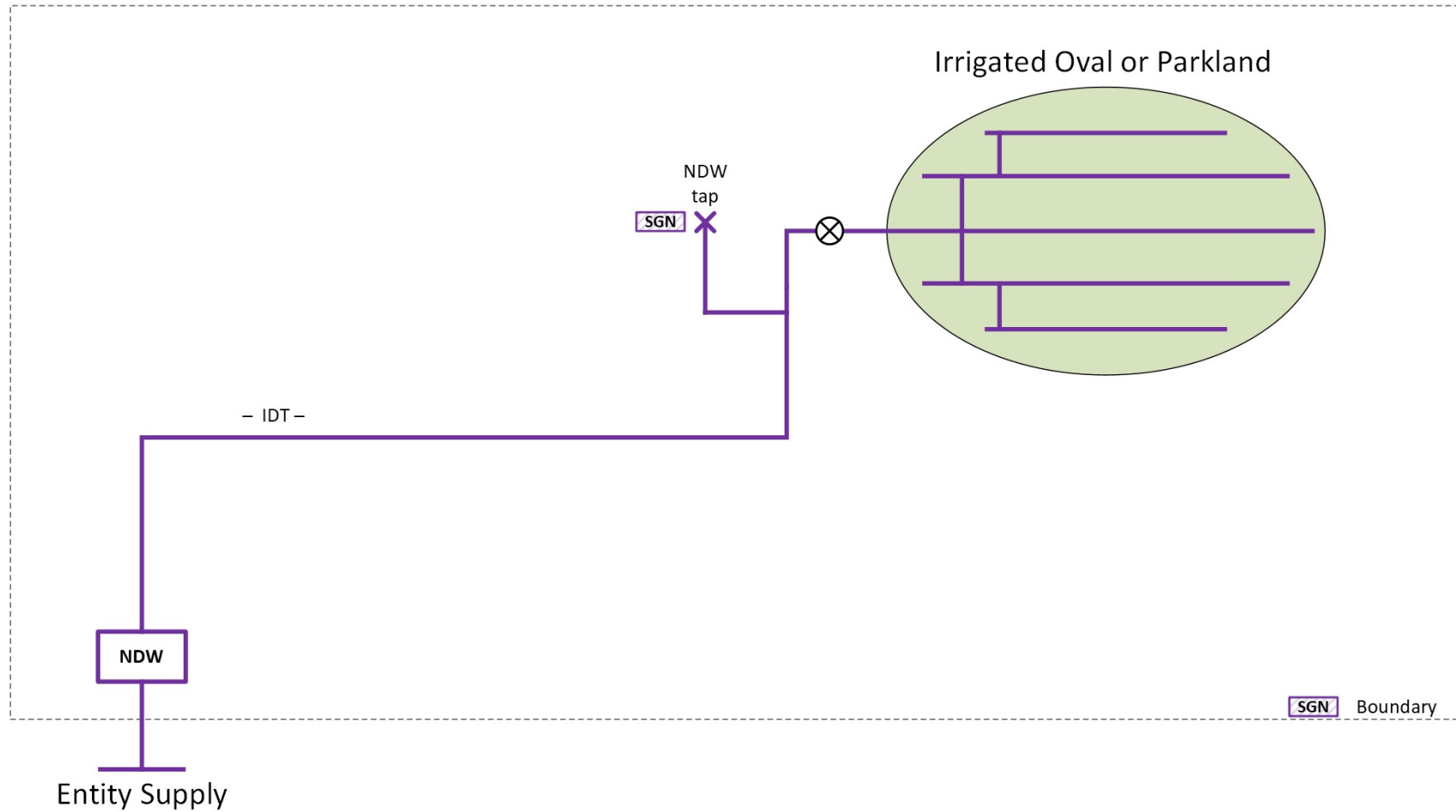
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating "Warning Not for Drinking" and shall be appropriately located.
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
DW	Drinking water meter	NDW	Non-drinking water meter
—	Drinking water service	—	Non-drinking water service
	Testable backflow prevention valve	\updownarrow S	Separation (>300mm)
SGN	Not for drinking warning sign	- IDT -	Identification tape

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DRAWING NO. 7 – MUNICIPAL PARKS AND GARDENS SUPPLIED WITH NON-DRINKING WATER SUPPLY ONLY (NO DRINKING WATER SUPPLY TO SITE)



Notes

All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).

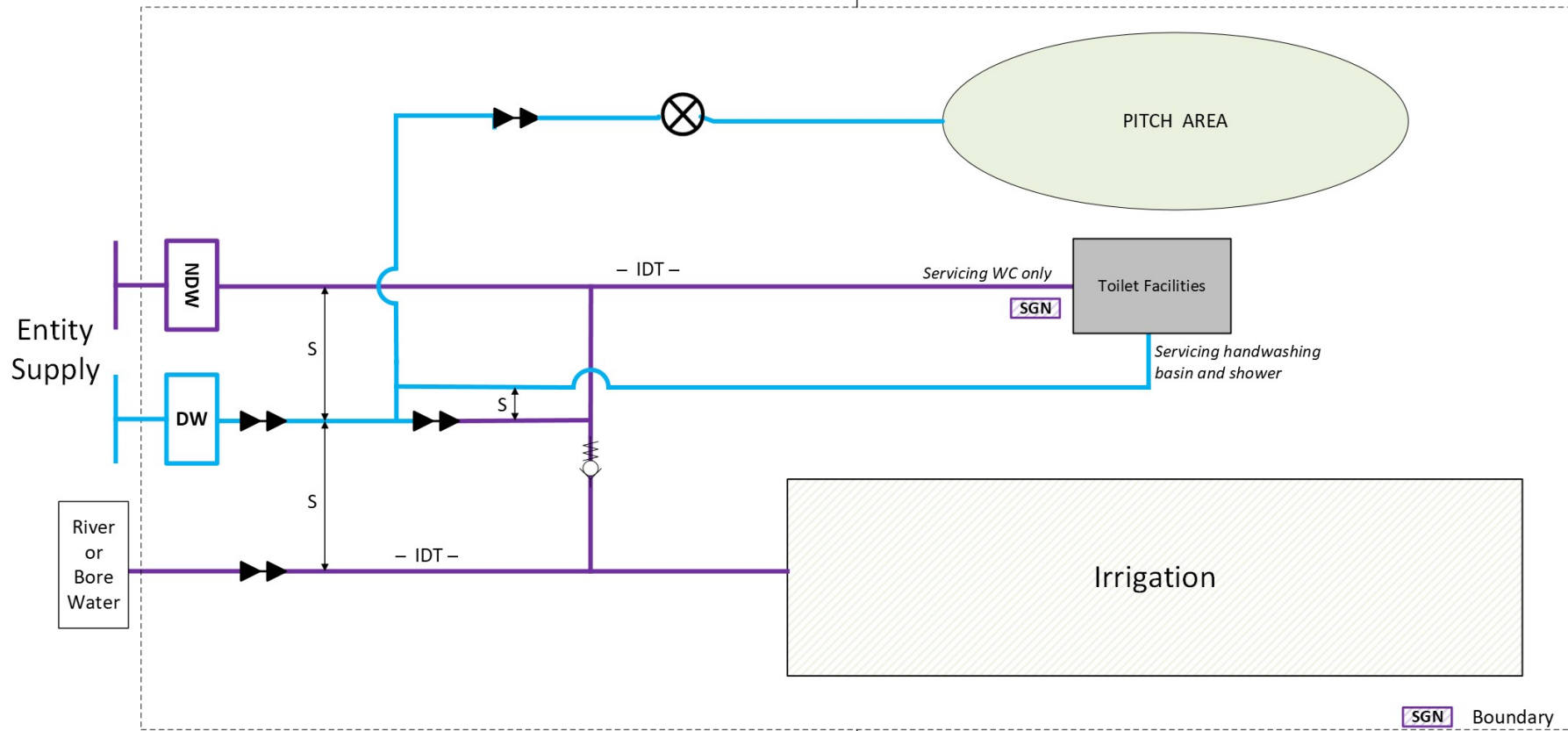
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.
- Backflow prevention for the purpose of containment maybe required by the network utility operators supply agreement for non-drinking water.

Legend			
	Non-drinking water meter		Master valve
	Non-drinking water service		Non-drinking water tap
	Not for drinking warning sign		Identification tape

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DRAWING NO.8 – MUNICIPAL PARKS AND GARDENS SUPPLIED WITH NON-DRINKING WATERS AND BACK-UP DRINKING WATER SUPPLIES



Notes

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Backflow containment protection must meet the requirements of the Plumbing Code of Australia.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

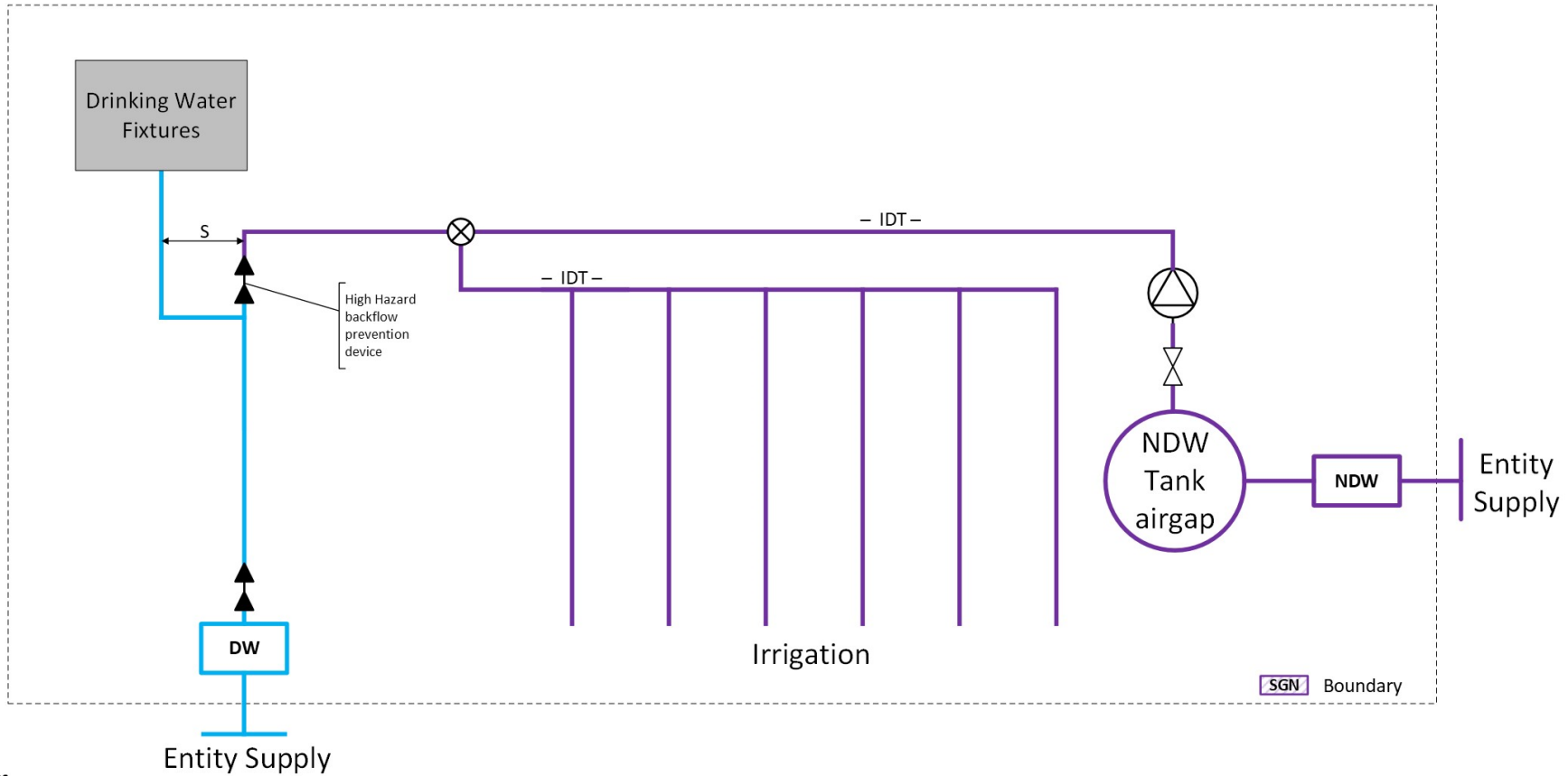
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
DW	Drinking water meter	NDW	Non-drinking water meter
—▶▶	Drinking water service	—▶▶	Non-drinking water service
▶▶	Backflow prevention device	↕S	Separation (>300mm)
- IDT -	Identification tape	SGN	Not for drinking warning sign

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DRAWING NO. 9 – MUNICIPAL PARK SUPPLIED WITH NON-DRINKING WATER AND BACK-UP DRINKING WATER SUPPLIES AND SEPARATE DRINKING WATER SUPPLY TO SITE



Notes

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Containment device to meet the requirements of the Plumbing Code of Australia
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

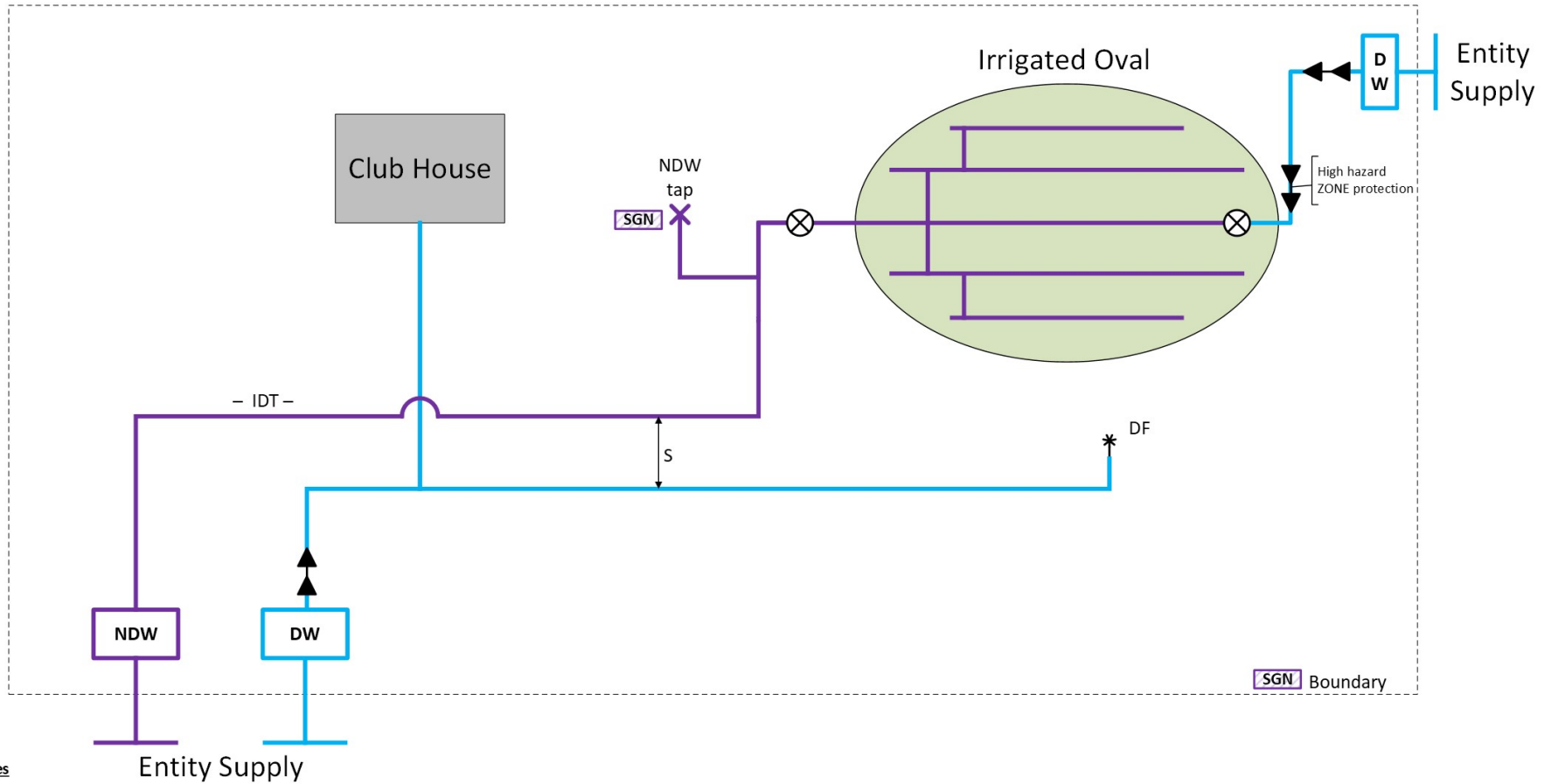
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating "Warning Not for Drinking" and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
	Drinking water meter		Non-drinking water meter
	Drinking water service		Non-drinking water service
	Backflow prevention device		Non-drinking tank with airgap
	Isolating valve		Separation (>300mm)
	Master solenoid valve		Identification tape
	Pump		Not for drinking warning sign

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DRAWING NO. 10 – MUNICIPAL PARK SUPPLIED WITH SEPARATE NON-DRINKING AND DRINKING WATER SUPPLIES (INCLUDING BACK-UP DRINKING WATER SUPPLY TO IRRIGATION)



Notes

- Containment device to meet the requirement of the Plumbing Code of Australia.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

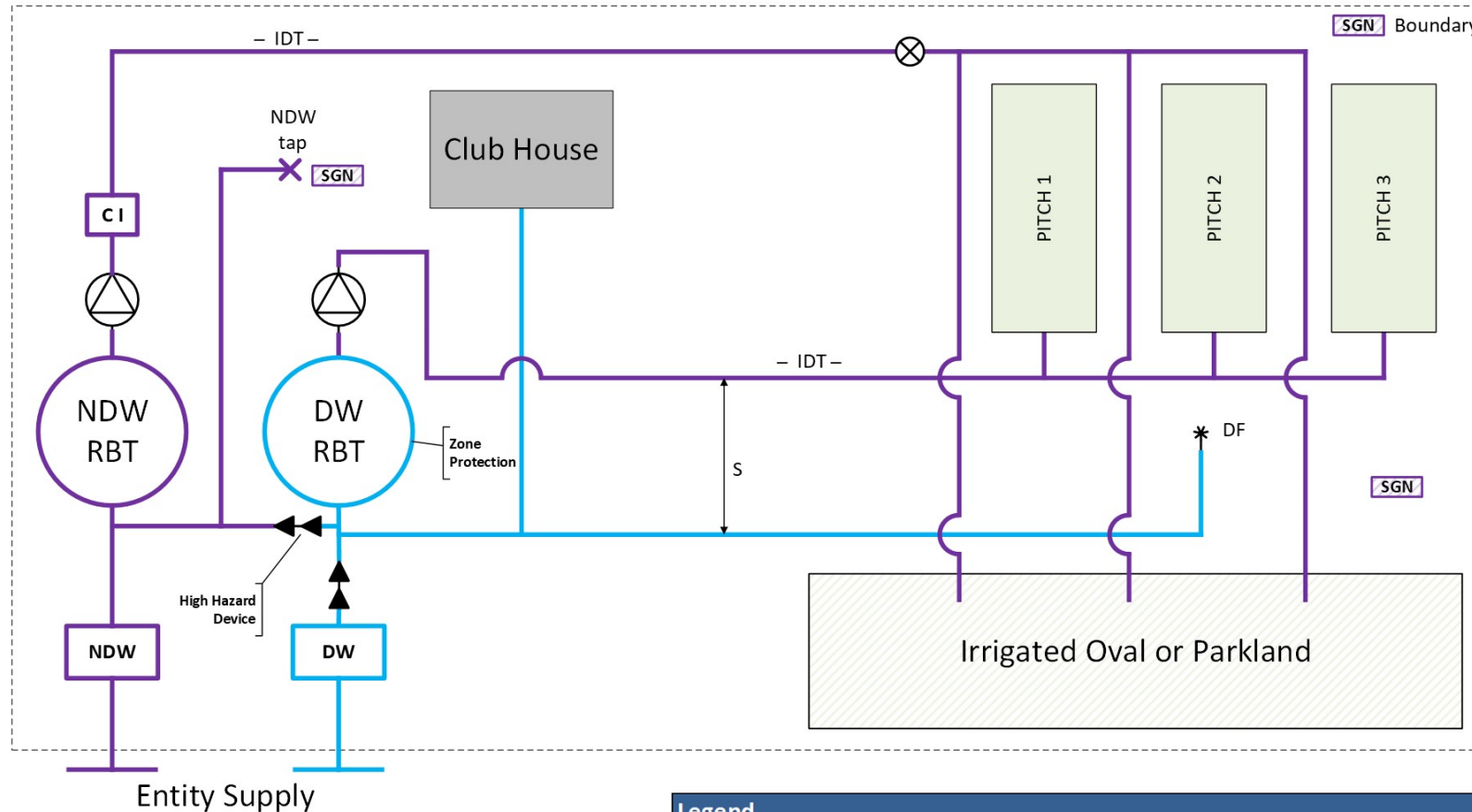
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
DW	Drinking water meter	NDW	Non-drinking water meter
—	Drinking water service	—	Non-drinking water service
† DF	Drinking water fountain	✕	Non-drinking water tap
▶▶	Backflow prevention device	↕ S	Separation (>300mm)
⊗	Master valve	- IDT -	Identification tape
SGN	Not for drinking warning sign		

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DRAWING NO. 11 – MUNICIPAL PARK SUPPLIED WITH SEPARATE NON-DRINKING AND DRINKING WATER SUPPLIES THROUGH REGISTERED BREAK TANKS (INCLUDING BACK-UP DRINKING WATER SUPPLY)



Notes

- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Backflow containment device to meet the requirements of the Plumbing Code of Australia.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

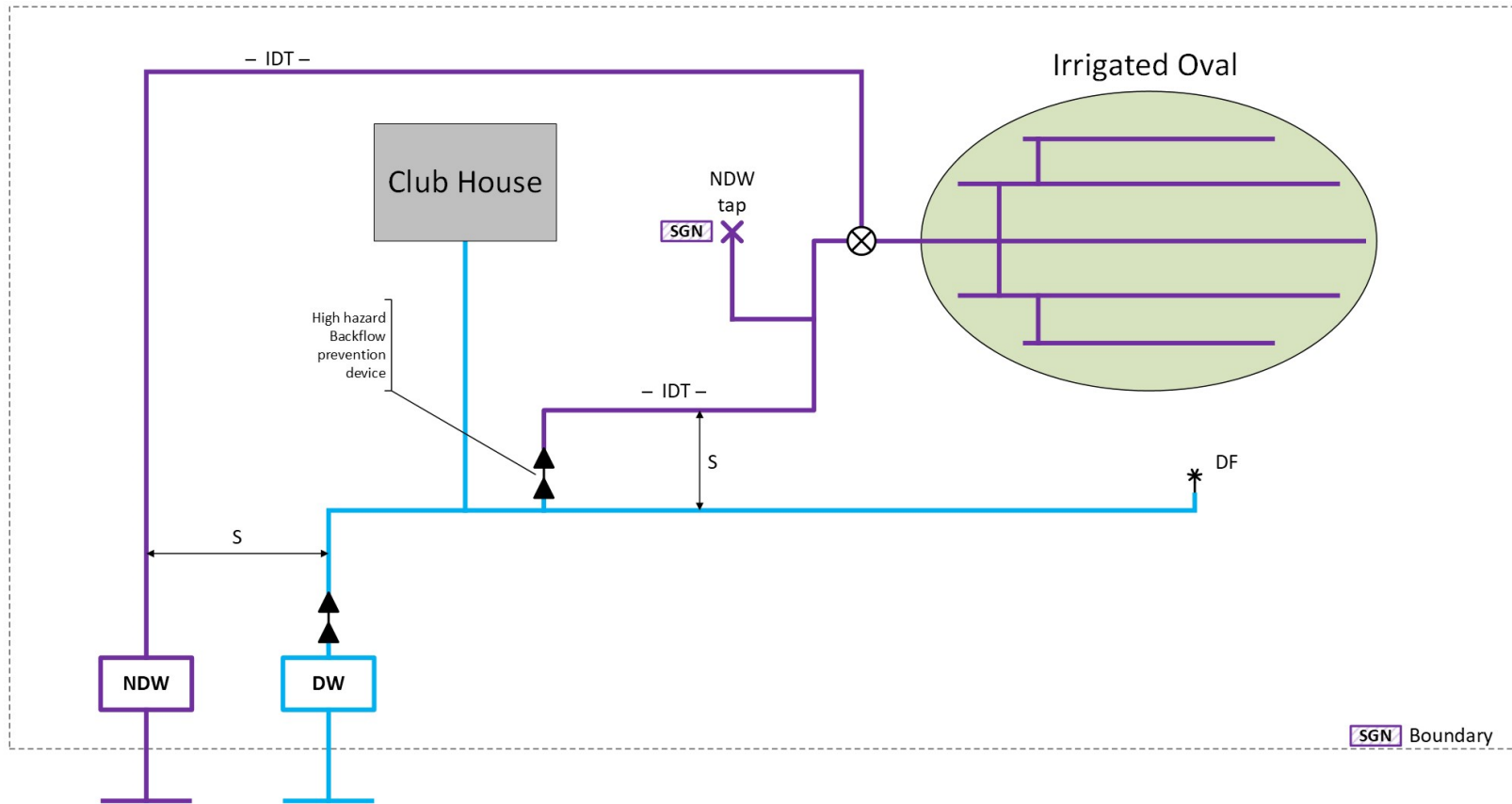
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating "Warning Not for Drinking" and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
	Drinking water meter		Non-drinking water meter
	Drinking water service		Non-drinking water service
	Drinking water Registered Break Tank		Non-drinking water Registered Break Tank
	Drinking water fountain		Non-drinking water tap
	Testable backflow prevention valve		Chemical Injection
	Master valve		Separation (>300mm)
	Pump		Identification tape
	Not for drinking warning sign		

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DRAWING NO. 12 – MUNICIPAL PARK SUPPLIED WITH SEPARATE NON-DRINKING AND DRINKING WATER SUPPLIES (INCLUDING BACK-UP DRINKING WATER SUPPLY TO IRRIGATION)



Notes

- Containment device to meet the requirements of the Plumbing Code of Australia.
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

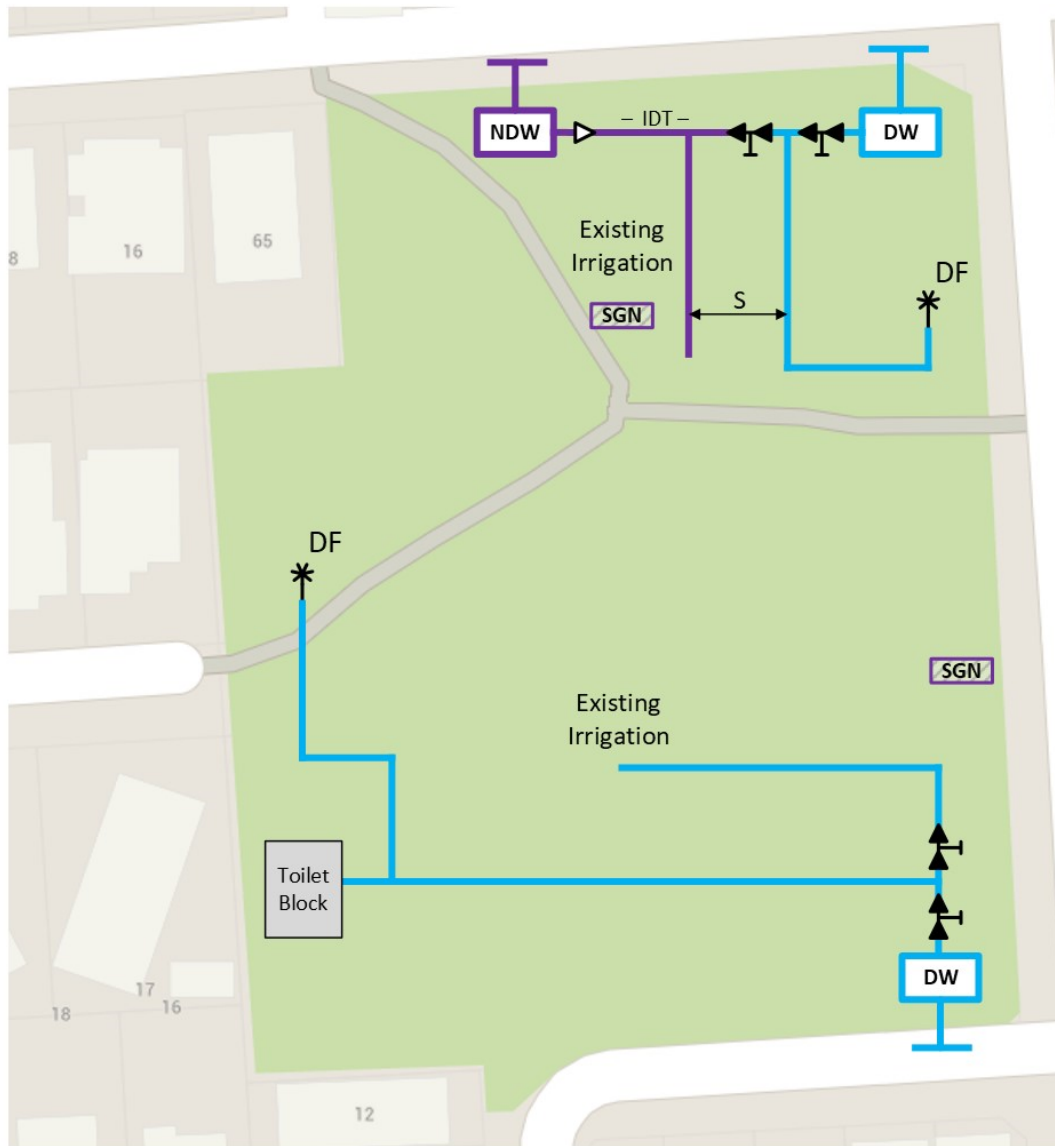
Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating “Warning Not for Drinking” and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

Legend			
DW	Drinking water meter	NDW	Non-drinking water meter
—	Drinking water service	—	Non-drinking water service
† DF	Drinking water fountain	X	Non-drinking water tap
▶▶	Backflow prevention device	↕ S	Separation (>300mm)
⊗	Master valve	- IDT -	Identification tape
SGN	Not for drinking warning sign		

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DRAWING NO. 15 – EXAMPLE OF A HYDRAULIC DESIGN SUBMISSION



Legend	
	Drinking water meter
	Drinking water service
	Drinking water fountain
	Non-drinking water meter
	Non-drinking water service
	RPZ backflow assembly
	Non return valve
	Identification tape
	Separation (>300mm)
	Not for drinking warning sign

Notes


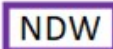







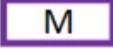













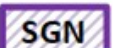
- Backflow prevention devices shall be installed for containment purposes on the drinking water supply as close as practicable from the outlet of the drinking supply water meter and shall be installed on any interconnection between the non-drinking water and drinking water services.
- Where irrigation systems are injected with fertilisers, herbicides, nematicides and insecticides or similar the backflow prevention devices for containment and interconnections a reduced pressure zone device is required.
- A low hazard backflow prevention device must be fitted to each external drinking water hose tap

Signage Requirements

- All sites irrigated with non-drinking water must have warning signs stating "Warning Not for Drinking" and shall be appropriately located (e.g. at park entrances).
- External hose tap outlets, and all other outlets (including internal) shall be clearly marked with an approved warning or prohibition sign.

OFFICIAL

DRAWING NO. 16 – LEGEND

Legend			
	Drinking water meter		Non-drinking water meter
	Drinking water service		Non-drinking water service
	Drinking water Registered Break Tank		Non-drinking water Registered Break Tank
	Drinking water fountain		Non-drinking water tap
	Private drinking water meter		Private non-drinking water meter
	Rain water service		Chemical Injection
	Rain water tank		Hose tap
	Identification tape		Separation (>300mm)
	Master Solenoid valve		Isolating valve
	Backflow prevention device		Diaphragm valve
	Double check non testable backflow prevention valve		Floating valve
	Pump		Not for drinking warning sign

Appendix C Frequently

OFFICIAL Asked Questions

The following questions are commonly asked questions regarding non-drinking systems and supplies that are received from the water and plumbing industries, and general public.

Question	Answer
What legislation regulates how to install non-drinking water pipework?	The <i>Water Industry Act 2012</i> calls up the <i>National Construction Code</i> Volume Three (PCA) and AS/NZS 3500.
Do I have to be a plumber to install non-drinking water pipework?	Appropriately licensed persons, including plumbers and plumbing contractors must install all non-drinking water pipework including backflow prevention devices up to the master valve on irrigation systems. Pipework installed downstream of a master valve must be installed by appropriately licensed person (including plumbers, plumbing contractors, irrigation workers etc.).
Do I have to submit a hydraulic design for non-drinking water installations?	Yes. A plan showing the hydraulic design of the drinking water and non-drinking water system (including backflow prevention devices) must be submitted to the OTR other than for domestic installations (e.g., Class 1a).
Who conducts the cross-connection test on non-drinking water pipework?	The appropriately licensed person conducts a cross-connection test when the plumbing work has been completed. Then the water industry entity or water supplier that supplies the non-drinking water must conduct an additional cross-connection test when the non-drinking water is activated and document the results.
Are audits required to be booked with the OTR for non-drinking water pipework?	Yes. All in-ground and in-wall pipework is required to be booked with the OTR, including irrigation sites.
What type of backflow prevention device is required to be installed on drinking water supplies where the property is also served by non-drinking water?	For residential properties, a low hazard backflow prevention device is to be installed at the water meter. Some water industry entities, such as SA Water, incorporate the valve in the water meter assembly. The appropriately licensed person is required to install a low hazard backflow prevention device on all drinking water hose taps. For commercial, industrial and recreational sites, a testable backflow prevention device suitable to the degree of hazard must be installed .e.g., minimum double check-valve testable device.
Where should the non-drinking water meter be installed?	In a dual reticulation setting it is required that the non-drinking water meter is located 300mm to the left of the drinking water meter when facing the property from the street. Further information about non-drinking water meter installation is provided in the Standard for Dual Reticulation Infrastructure .