Water Infrastructure Standard Details

Connections and Developer Services

Construction Requirements for Self-Lay Developments
December 2017 (Revision 03)

Document IW-CDS-5020-01
### Revision Log

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Background

Technical Documentation has been developed by Irish Water’s Connections and Developer Services which outlines the requirements for water services infrastructure within developments.

These standard details have been developed to outline to developers Irish Water’s requirements for the provision of water infrastructure that is to be installed in developments and that would be connected to Irish Water’s networks and subsequently vested in Irish Water.

The aim is to provide details to developers for water infrastructure, which will outline design and construction requirements to ensure consistency in the provision of materials, equipment and workmanship, etc. The standard details will also provide the basis for developers’ detailed design proposals for water infrastructure, leading to the provision of infrastructure that is suitable for connection to Irish Water’s networks and easy operation and maintenance of the new infrastructure.

The standard details are based on best practice within the water industry. They take account of the experience of Local Authorities in the provision of these services to new developments. They have been successfully used by Irish Water’s own internal functions for a variety of projects and they are in line with water utility industry norms.

There are 40 No Standard Details dealing with water infrastructure covering all aspects of such infrastructure.

These standard details are accompanied by a Design Risk Assessment (DRA) (document number IW-CDS-5020-02), which outlines the residual health and safety responsibilities of developers and their designers/contractors in the provision of such infrastructure.

The use of the standard details is mandatory in all new Irish Water Connection Agreement Offers issued after 1st June 2016.
### Standard Details for Water Networks

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These Standard Details show the acceptable typical details and outline on the minimum standards that are required by Irish Water for the provision of water pipes and related infrastructure which are to be connected to the Irish Water Network. They shall be used in conjunction with the associated Design Risk Assessments that have been developed which identify the risks that designers shall take into account in the detailed design of the water and wastewater pipes and related infrastructure to be connected to the Irish Water Network. The pipes and related infrastructure to be provided in accordance with these Standard Details. Ultimate responsibility (including, but not limited to, any losses, costs, demands, damages, actions, expenses, negligence and claims) for the detailed design, construction and provision of such pipes and related infrastructure shall rest entirely with the Developer, his/her Designer(s), Contractor(s) or other connected party. Irish Water assumes no responsibility for and gives no guarantees, undertakings or warranties in relation to the pipes and related infrastructure to be provided in accordance with these Standard Details. No part of the Standard Details shall be reproduced or transmitted in any form or stored in any retrieval system of any nature without the prior written permission of Irish Water as copyright holder, except as agreed for use.

These Standard Details shall be used in conjunction with current Irish Water Codes of Practice, which will take precedence over the Standard Details.

These Standard Details may also be used for the installation of water & wastewater infrastructure for Asset Delivery Works & Capital Project Works Programmes at the discretion of Irish Water.
1. Water main layouts shall be arranged in loops or rings so as to avoid "dead ends" or terminal points. All mains shall terminate in a loop or ring to accommodate one-directional flushing of the network. Loops shall have a minimum of 4 houses and 1 hydrant.

2. The minimum pipe size shall be 100mm internal diameter in housing developments of 40 and up to 100 houses. Developments of 100 houses and above shall have a minimum pipe size of 150mm internal diameter. Supply main. Mains smaller than 100mm may be allowed in smaller developments but not where hydrants are located and only after prior written agreement from Irish Water.

3. The minimum pipe size shall be 150mm in industrial, commercial or other developments.

4. Every premise should have a separate service connection. The use of common service pipes is not allowed. Service connections shall be as short as reasonably possible. Long service connections in excess of 15m will not be allowed. A rider main at the opposite side of the road to the main water main may be required subject to approval from Irish Water. Service connections shall be a minimum pipe size of 20mm.

5. Water mains should be laid to provide the optimum circulation in the local water network. Water mains may terminate in a dead end only with Irish Water approval, in which case an on-line washout hydrant shall be provided at the dead end, located within a chamber or kiosk.

6. Valves shall be arranged in such a manner to allow the network to be managed to ensure that no more than 40 properties lose water from a burst on the system, at any one time.

7. No domestic property shall be more than 40m from a hydrant. Hydrant details and locations shall be subject to the approval of the relevant local authority fire department.

8. Water supply mains shall be laid in common areas and not through individual private gardens or driveways etc.

9. A three-way valve arrangement shall be provided at all junctions, as a minimum.

10. The water main pipework to new developments should be located at the right hand side of the entrance to the new development (from a view facing into the development) if possible and where the properties are equally and reasonably distributed at both sides of the estate roadway.

11. Air valves to be located at points where air is likely to build up.

12. The developer is to liaise with the fire services authority in order to ensure fire flows are available throughout the development.

13. Bulk flow meters shall be fitted in all developments with a demand in excess of 20m³ per day. Bulk flow meters shall have a factory fitted AMR and installed in a suitably sized chamber. Developments with demand less than 20m³ per day shall be provided with dedicated bypass pipework and chamber to accommodate location of a temporary night flow meter.

14. Water mains to be located in grass verge. If grass verge is not available, water mains to be located under footpath away from kerb. Refer to STD-W-11 for typical utility layout.

15. Three-way valve arrangement shall be provided at all junctions as a minimum.

16. The developer is to liaise with the fire services authority in order to ensure fire flows are available throughout the development.

17. Bulk flow meters shall be fitted in all developments with a demand in excess of 20m³ per day. Bulk flow meters shall have a factory fitted AMR and installed in a suitably sized chamber. Developments with demand less than 20m³ per day shall be provided with dedicated bypass pipework and chamber to accommodate location of a temporary night flow meter.

18. Water mains to be located in grass verge. If grass verge is not available, water mains to be located under footpath away from kerb. Refer to STD-W-11 for typical utility layout.

19. To comply with Irish Water requirements, water mains shall be laid in common areas and not through individual private gardens or driveways etc.

20. Water mains shall be laid in grass verge. If grass verge is not available, water mains to be located under footpath away from kerb. Refer to STD-W-11 for typical utility layout.

21. Irish Water requirements shall be complied with regarding the layout of water mains within developments.
**General Notes:**

1. All dimensions are in millimetres (mm) unless noted otherwise.
2. For connection to an existing main, the connection shall be as per the pipe manufacturer’s specification.
3. Electrofusion coupling to be installed in accordance with manufacturer’s instructions.
4. All concrete to be in accordance with IS 206.

**Boundary Box Notes:**

1. The boundary box is to be in accordance with the Irish Water specification, incorporating a G1.5 manifold, stop-tap, frost plug & non-return valve.
2. The boundary box shall be positioned in public space & as close as possible to the property boundary but not part of fixing to be within 225mm of the property line.
3. The boundary box shall be located where it is safe to open the cover & access the stop tap or visually read the meter, i.e. on a footpath or verge, & not in a carriageway.
4. The surface box cover on the boundary box should be not less than grade C (BS 5004:2011) & the boundary box should be located such that heavier grades of cover would not be required.
5. The shaft of the boundary box is to be installed vertically & the surface box/cover inclined to match the surface gradient.
6. The boundary box is to be installed at a minimum depth of 900mm (+/−25mm) to the crown of the inlet & outlet fittings on the outside of the box.
7. The service connection pipe shall not be wrapped around the shaft of the boundary box or bent in any radius less than that approved by the manufacturer.
8. The pipe fittings to the boundary box shall be approved by the boundary box manufacturer.
9. The boundary box shall be installed hydraulically & left clean & free of construction waste or dirt for Irish Water installation by Irish Water.
10. Box shall be founded on 100mm depth of C12/15 concrete and surrounded with Clause 808 granular material.
11. The desirable minimum cover from the finished ground level to the external crown of a service connection shall be 750mm with an absolute minimum depth of 600mm for short distances (subject to Irish Water agreement). The desirable maximum cover for a service connection pipe should be 1200mm, where practicable.
12. Customer distribution pipes within the premises should be suitably sized to accommodate flow from 25mm internal diameter service pipe.

**Concrete Surround to Boundary Box Cover:**

- The connection pipe is to be laid slack with no kinks to manufacturer’s specification.
- The connection pipe is to be laid slack with no kinks to manufacturer’s specification.

**Customer Connection and Boundary Box (25mm OD Pipe):**

- **For D.I. Water Mains:**
  - Proposed saddles & ferrules shall be made from non-ferrous material in accordance with WRAS 4-22-02 and shall be suitable for use on AC, CI, HDPE, PVC & UPVC pipework. Saddle bolts shall be stainless steel.

- **For Polyethylene (PE) Water Main Only:**
  - Electrofusion tapping tee (25mm outlet) for PE water main only.
  - Electrofusion transition coupler.
  - Electrofusion manifold for PE water main only.

**Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment:**

**Standard Details - Water:**

- **Title:** Customer Connection and Boundary Box (25mm OD Pipe)
- **Drawing No.:** STD-W-03
- **Rev:** 3
- **Scale:** Not to Scale
- **Date:** Sept. 2015

**Refer to Note 3 STD-W-13 for Bedding Details**

**Refer to Note 5 STD-W-13 for Backfill Details**
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. ALL BENDS, TEES, DEAD ENDS, ETC. OF PIPELINES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.
3. BUTT FUSION WELDING AND ELECTRO FUSION JOINTING OF PIPES SHALL ONLY BE CARRIED OUT BY TRAINED OPERATIVES IN POSSESSION OF A CURRENT TRAINING CERTIFICATE. USING FULLY AUTOMATIC, APPROVED JOINTING MACHINERY IN ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS. THE IDENTITY OF THE PE PIPELINE MANUFACTURER SHALL BE MADE KNOWN TO IRISH WATER PRIOR TO COMMENCEMENT OF THE INSTALLATION. CERTIFICATION AND TESTING INCLUDING INDEPENDENT THIRD PARTY CERTIFICATION SHALL BE PROVIDED TO CONFIRM QUALITY ASSURANCE COMPLIANCE. EACH JOINT SHALL BE CLEARLY MARKED WITH THE JOINT LOGGED AUTOMATICALLY ON THE JOINTING MACHINE. A PRINTOUT OF THE JOINT DETAIL, WITH A GPS LOCATION OF EACH JOINT, SHALL BE PROVIDED AND RETAINED FOR QUALITY ASSURANCE PURPOSES.

4. CONNECTING TO EXISTING MANS IS TO BE CARRIED OUT BY IRISH WATER OR AN APPROVED IRISH WATER AGENT.
5. WHEN EXISTING AC WATERMANS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL, DETAILING THE PROTECTION TO BE PUT IN PLACE TO EXISTING MANS, METHOD OF REMOVAL OF EXISTING AC, METHOD OF DISPOSAL OF AC MARLIPPETS AND METHOD OF CONNECTION TO EXISTING AC.

6. PIPE MATERIAL REFERENCES AS FOLLOWS:
AC - ASBESTOS CEMENT
DI - DUCTILE IRON
CI - CAST IRON
PE - POLYETHYLENE
PV - UNPLASTICISED POLY VINYL CHLORIDE
ST - STEEL
OTHER - REFERS TO ALL EXISTING PIPE MATERIALS OTHER THAN PE (TYPICAL AC, DI, CI, PVC & ST).

7. SLUICE VALVE CHAMBERS TO BE IN ACCORDANCE WITH STD-W-14 (DI) AND STD-W-15 (PE). CHAMBERS NOT SHOWN FOR CLARITY.
8. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.
10. VALVES SHALL BE ARRANGED IN SUCH A MANNER TO ALLOW FOR THE NETWORK TO BE MANAGED TO ENSURE THAT NO MORE THAN 40 PROPERTIES LOSE WATER FROM A BURST ON THE SYSTEM AT ANY ONE TIME.
NEW PE - EXISTING AC / CI / uPVC / DI / PE

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. ALL BENDS, TEES, DEAD ENDS, ETC. OF PIPELINES TO BE ADEQUATELY RESTRANDED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.
3. BUTT FUSION WELDING AND ELECTRO FUSION JOINTING OF PIPES SHALL ONLY BE CARRIED OUT BY TRAINED OPERATIVES IN POSSESSION OF A CURRENT TRAINING CERTIFICATE. USING FULLY AUTOMATIC APPROVED JOINTING MACHINES IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. THE IDENTITY OF THE PE PIPELINE MANUFACTURER SHALL BE MADE KNOWN TO IRISH WATER PRIOR TO COMMENCEMENT OF THE INSTALLATION. CERTIFICATION AND TESTING (INCLUDING INDEPENDENT THIRD PARTY CERTIFICATION) SHALL BE PROVIDED TO CONFIRM QUALITY ASSURANCE COMPLIANCE. EACH JOINT SHALL BE CLEARLY MARKED WITH THE JOINT LOGGED AUTOMATICALLY ON THE JOINTING MACHINE. A PRINTOUT OF THE JOINT DETAILS, WITH A GPS LOCATION OF EACH JOINT, SHALL BE PROVIDED AND RETAINED FOR QUALITY ASSURANCE PURPOSES.
4. CONNECTING TO EXISTING MAINS IS TO BE CARRIED OUT BY IRISH WATER OR AN APPROVED IRISH WATER AGENT.
5. WHEN EXISTING AC WATERMAINS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL. DETAILING THE PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS, METHOD OF REMOVAL OF EXISTING AC, METHOD OF DISPOSAL OF EXISTING AC AND METHOD OF CONNECTION TO EXISTING AC.
6. PIPE MATERIAL REFERENCES AS FOLLOWS:
   - AC - ASBESTOS CEMENT
   - DI - DUCTILE IRON
   - CI - CAST IRON
   - PE - POLYETHYLENE
   - uPVC - UNPLASTICISED POLY VINYL CHLORIDE
   - ST - STEEL
   - OTHER - REFERS TO ALL EXISTING PIPE MATERIALS OTHER THAN PE (TYPICALLY AC, DI, uPVC & ST)
7. SLUICE VALVE CHAMBERS TO BE IN ACCORDANCE WITH STD-W-14 (DI) AND STD-W-15 (PE). CHAMBERS NOT SHOWN FOR CLARITY.
8. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.
9. DOUBLE FLANGED SEPARATION PIPE, UP TO 5m IN LENGTH, MAY BE REQUIRED TO ALLOW SEPARATION DISTANCE BETWEEN VALVE CHAMBERS.
10. A HIGH LEVEL OF HEALTH & SAFETY PROCEDURES IS REQUIRED WHEN WORKING ON AC MAINS, & THE OPERATION OF DISMANTLING/R-EMOVAL OF AC PIPES & JOINTS.
11. VALVES SHALL BE ARRANGED IN SUCH A MANNER TO ALLOW FOR NETWORK TO BE MANAGED TO ENSURE THAT NO MORE THAN 40 PROPERTIES LOSE WATER FROM A BURST ON THE SYSTEM AT ANY ONE TIME.

NEW DI - EXISTING AC / CI / uPVC / DI / PE

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

STANDARD DETAILS - WATER

GENERAL PIPE CONNECTIONS

(Sheet 3 of 7)
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. ALL BENDS, TEES, DEAD ENDS, ETC. OF PIPELINES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.

3. BUTT FUSION WELDING AND ELECTRO-FUSION JOINING OF PIPES SHALL ONLY BE CARRIED OUT BY TRAINED OPERATIVES IN POSSESSION OF A CURRENT TRAINING CERTIFICATE. USING FULLY AUTOMATIC APPROVED JOINING MACHINERY AS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE IDENTITY OF THE PE PIPELINE MANUFACTURER SHALL BE MADE KNOWN TO IRISH WATER PRIOR TO COMMENCEMENT OF THE INSTALLATION. CERTIFICATION AND TESTING (INCLUDING INDEPENDENT THIRD-PARTY CERTIFICATIONS) SHALL BE PROVIDED TO CONFIRM QUALITY ASSURANCE COMPLIANCE. EACH JOINT SHALL BE CLEARLY MARKED WITH THE JOINT LOGGED AUTOMATICALLY ON THE JOINTING MACHINE. A PRINTOUT OF THE JOINT DETAILS, WITH A GPS LOCATION OF EACH JOINT, SHALL BE PROVIDED AND RETAINED FOR QUALITY ASSURANCE PURPOSES.

4. CONNECTING TO EXISTING MAINS IS TO BE CARRIED OUT BY IRISH WATER OR AN APPROVED IRISH WATER AGENT.

5. WHEN EXISTING AC WATERMAINS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL, DETAILING THE PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS. METHOD OF REMOVAL OF EXISTING AC, METHOD OF DISPOSAL OF EXISTING AC AND METHOD OF CONNECTION TO EXISTING AC.

6. PIPE MATERIAL REFERENCES AS FOLLOWS:
- AC - ASPEROS CEMENT
- DI - DUCTILE IRON
- CI - CAST IRON
- PE - POLYETHYLENE
- uPVC - UNPLASTICISED POLY VINYL CHLORIDE
- ST - STEEL
- OTHER - REFERS TO ALL EXISTING PIPE MATERIALS OTHER THAN PE (TYPICALLY AC, CI, uPVC & ST)

7. SLUICE VALVE CHAMBERS TO BE IN ACCORDANCE WITH STD-W-14 (DI) AND STD-W-15 (PE). CHAMBERS NOT SHOWN FOR CLARITY.

8. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.

9. DOUBLE FLANGED SEPARATION PIPE, UP TO 5m IN LENGTH, MAY BE REQUIRED TO ALLOW SEPARATION DISTANCE BETWEEN VALVE CHAMBERS.

10. VALVES SHALL BE ARRANGED IN SUCH A MANNER TO ALLOW FOR NETWORK TO BE MANAGED TO ENSURE THAT NO MORE THAN 40 PROPERTIES LOSE WATER FROM A BURST ON THE SYSTEM AT ANY ONE TIME.
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. ALL BENDS, TEES, DEAD ENDS, ETC. OF PIPELINES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-26. THRUST BLOCKS NOT SHOWN FOR CLARITY.

3. BUTT FUSION WELDING AND ELECTRIC FUSION WELDING OF PIPE SHALL ONLY BE CARRIED OUT BY TRAINED OPERATIVES IN POSSESSION OF A CURRENT TRAINING CERTIFICATE. USING FULLY AUTOMATED APPROVED WELDING MACHINERY IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. THE QUALITY OF THE WELDING AND TESTING INCLUDING INDEPENDENT THIRD PARTY CERTIFICATION SHALL BE IN ACCORDANCE WITH THE WATER QUALITY ASSURANCE REQUIREMENTS.

4. CONNECTING TO EXISTING MAINS IS TO BE CARRIED OUT BY IRISH WATER OR AN APPROVED IRISH WATER AGENT.

5. WHEN EXISTING AC WATERMAINS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL, DETAILING THE PROTECTION TO BE PUT IN PLACE TO GUARD AGAINST THE COMMISSIONING OF THE NEW PIPELINES. INCIDENTS OF EXISTING MAINS, METHOD OF REMOVAL OF EXISTING AC, METHOD OF DISPOSAL OF EXISTING AC AND METHOD OF CONNECTION TO EXISTING AC.

6. PIPE MATERIAL REFERENCED AS FOLLOWS:

- AC - ASPHALT CEMENT
- DI - DUCTILE IRON
- CI - CAST IRON
- PE - POLYTHYLENE
- uPVC - UNPLASTICISED POLY VINYL CHLORIDE
- ST - STEEL
- OTHER - REFERS TO ALL EXISTING PIPE MATERIALS OTHER THAN PE (TYPICALLY AC, DI, CI, uPVC & ST)

7. SLUICE VALVE CHAMBERS TO BE IN ACCORDANCE WITH STD-W-14 (DI) AND STD-W-15 (PE). CHAMBERS NOT SHOWN FOR CLARITY.

8. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-26. THRUST BLOCKS NOT SHOWN FOR CLARITY.

9. DOUBLE FLANGED SEPARATION PIPE, UP TO 5m IN LENGTH, MAY BE REQUIRED TO ALLOW SEPARATION DISTANCE BETWEEN VALVE CHAMBERS.

10. FLANGE ARRANGEMENTS MUST BE IN ACCORDANCE WITH THE WATER QUALITY ASSURANCE REQUIREMENTS.

11. THE JOINT DETAILS, WITH A SPECULATION OF EACH JOINT, SHALL BE PROVIDED AND RETAINED FOR QUALITY ASSURANCE PURPOSES.

12. REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT.
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

3. BUTT FUSION WELDING AND ELECTRO FUSION JOINTING OF PIPES SHALL ONLY BE CARRIED OUT BY TRAINED OPERATIVES IN POSSESSION OF A CURRENT TRAINING CERTIFICATE, USING FULLY AUTOMATIC APPROVED JOINTING MACHINE/RIGS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE IDENTITY OF THE PE PIPELINE MANUFACTURER SHALL BE MADE KNOWN TO IRISH WATER PRIOR TO COMMENCEMENT OF THE INSTALLATION, CERTIFICATION AND TESTING (INCLUDING INDEPENDENT THIRD-PARTY CERTIFICATION) SHALL BE PROVIDED TO CONFIRM QUALITY ASSURANCE COMPLIANCE. EACH JOINT SHALL BE CLEARLY MARKED WITH THE JOINT LOGGED AUTOMATICALLY ON THE JOINTING MACHINE. A PRINTOUT OF THE JOINT DETAILS, WITH A GPS LOCATION OF EACH JOINT, SHALL BE PROVIDED AND RETAINED FOR QUALITY ASSURANCE PURPOSES.

5. WHEN EXISTING AC WATERMAINS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL, DETAILING THE PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS, METHOD OF REMOVAL OF EXISTING AC, METHOD OF DISPOSAL OF EXISTING AC AND METHOD OF CONNECTION TO EXISTING AC.

8. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.

9. DOUBLE FLANGED SEPARATION PIPE, UP TO 5m IN LENGTH, MAY BE REQUIRED TO ALLOW SEPARATION DISTANCE BETWEEN VALVE CHAMBERS.
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. ALL BENDS, TEES, DEAD ENDS, ETC. OF PIPELINES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.

3. BUTT FUSION WELDING AND ELECTRO FUSION JOINTING OF PIPES SHALL ONLY BE CARRIED OUT BY TRAINED OPERATIVES IN POSSESSION OF A CURRENT TRAINING CERTIFICATE, USING FULLY AUTOMATIC APPROVED JOINTING MACHINE/RIGS IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. THE IDENTITY OF THE PE PIPELINE MANUFACTURERS SHALL BE MADE KNOWN TO IRISH WATER PRIOR TO COMMENCEMENT OF THE INSTALLATION. CERTIFICATION AND TESTING (INCLUDING INDEPENDENT THIRD PARTY CERTIFICATION) SHALL BE PROVIDED TO CONFIRM QUALITY ASSURANCE COMPLIANCE. EACH JOINT SHALL BE CLEARLY MARKED WITH THE JOINT LOGGED AUTOMATICALLY ON THE JOINTING MACHINE. A PRINTOUT OF THE JOINT DETAILS, WITH A GPS LOCATION OF EACH JOINT, SHALL BE PROVIDED AND RETAINED FOR QUALITY ASSURANCE PURPOSES.

4. CONNECTING TO EXISTING MAINS IS TO BE CARRIED OUT BY IRISH WATER OR AN APPROVED IRISH WATER AGENT.

5. WHEN EXISTING AC WATER MAINS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL. DETAILING THE PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS, METHOD OF REMOVAL OF EXISTING AC, METHOD OF DISPOSAL OF EXISTING AC AND METHOD OF CONNECTION TO EXISTING AC.

6. PIPE MATERIAL REFERENCES AS FOLLOWS:

   - AC - ASPEROS CEMENT
   - DI - DUCTILE IRON
   - CI - CAST IRON
   - PE - POLYETHYLENE
   - uPVC - UNPLASTICISED POLY VINYL CHLORIDE
   - ST - STEEL
   - OTHER - REFERS TO ALL EXISTING PIPE MATERIALS OTHER THAN PE (TYPICALLY AC, DI, CI, uPVC & ST)

8. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.

9. DOUBLE FLANGED SEPARATION PIPE, UP TO 5m IN LENGTH, MAY BE REQUIRED TO ALLOW SEPARATION DISTANCE BETWEEN VALVE CHAMBERS.
1. The separation distances outlined are minimum requirements.
2. Specific separation clearance distances in excess of these minima shall be provided for services such as gas, electricity, fibre-optic or oil-filled cables as the case may be. The particular utility providers shall be consulted to determine these minimum separation distances and evidence of this consultation, with the specified separation distances, shall be provided to Irish Water at design stage.
3. Watermain (proposed) separation distances

   **Horizontal**
   - 300mm to distribution mains of less than 300mm diameter.
   - 500mm to trunk mains between 300mm and 450mm diameter.
   - 3m to arterial water mains of greater than 450mm diameter.

   **Vertical**
   - 350mm to distribution mains of less than 300mm diameter.
   - 500mm to trunk/arterial mains of diameter greater than 300mm.

   Any proposed pipe crossing should be located mid-way between the water joints with minimum clear distance of 300mm and up to 500mm. All crossings should be at least 900mm away from fittings or joints.

4. Watermain (existing) separation distances

   **Horizontal**
   - 500mm at either side of mains up to and including 200mm in diameter.
   - 1m at either side of mains of 225mm to 250mm in diameter.
   - 2m at either side of mains of 300mm to 375mm in diameter.
   - 5m at either side of mains of 400mm and 450mm in diameter.

   Specific Irish Water advised distances for mains in excess of 475mm diameter.

   **Vertical**
   - 300mm to distribution mains of less than 300mm diameter.
   - 500mm to trunk/arterial mains of diameter greater than 300mm.

   Where ducts or pipes are to be laid close to an existing watermain or sewer in the ownership of Irish Water, notification in writing shall be provided a minimum of 10 days ahead of advancement of the work.

   Notification in writing is required should works be within 1.5m distance of a wastewater sewer.

   Requirements shall also apply to trial holes or slt trenches to locate the main or gain ground info data.

   Larger diameters >300mm distribution and trunk mains, Irish Water must be notified at least 1 month in advance.

   Developers shall also comply with any notification requirements of other utility providers (ESB, gas main, telecommunication etc).

5. Notification in writing is required should works be within the following distances from an existing water main or wastewater rising main:

   **Horizontal**
   - 1000mm at either side of existing mains less than or equal to 200mm diameter.
   - 2000mm at either side of existing mains of 250mm to 350mm diameter.
   - 5000mm at either side of existing mains of diameter greater than 350mm diameter.

   Where ducts or pipes are to be laid close to an existing watermain or sewer in the ownership of Irish Water, notification in writing shall be provided a minimum of 10 days ahead of advancement of the work.

   Notification in writing is required should works be within 1.5m distance of a wastewater sewer.

   Requirements shall also apply to trial holes or slt trenches to locate the main or gain ground info data.

   Larger diameters >300mm distribution and trunk mains, Irish Water must be notified at least 1 month in advance.

   Developers shall also comply with any notification requirements of other utility providers (ESB, gas main, telecommunication etc).

6. Detailed proposals, including work method statements, insurance confirmation and details of work completed of a similar nature must be submitted to Irish Water for review. All such works in the vicinity of arterial water mains and sewer mains greater than 400mm shall be subject to written agreement with Irish Water before construction commences on site. This agreement shall also include any necessary protection for water mains.

7. Any damage shall be notified immediately to Irish Water. The person who causes the damage to a water main or fitting will be deemed to have committed an offence under Section 45 of the Water Services Act 2007.

8. Watermain (proposed) separation distances

   **Horizontal**
   - 300mm to distribution mains of less than 300mm diameter.
   - 500mm to trunk mains between 300mm and 450mm diameter.
   - 3m to arterial water mains of greater than 450mm diameter.

   **Vertical**
   - 300mm to distribution mains of less than 300mm diameter.
   - 500mm to trunk/arterial mains of diameter greater than 300mm.

   Any proposed pipe crossing should be located mid-way between the water joints with minimum clear distance of 300mm and up to 500mm. All crossings should be at least 900mm away from fittings or joints.

9. Under no circumstances will Irish Water accept water main installations under structures, existing or proposed, or in close proximity to any existing structures or features that will inhibit access for post installation maintenance and access.

10. Where the design deviates from this standard detail, the design shall be subject to the review of Irish Water.

11. Separation distances between utilities may be increased to provide for chamber & thrust blocks at bends.

---

**Table: Diameter vs. C’ (mm)**

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>A’ (mm)</th>
<th>B’ (mm)</th>
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<tbody>
<tr>
<td>&lt;300</td>
<td>300</td>
<td>300</td>
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<tr>
<td>300 - 450</td>
<td>500</td>
<td>500</td>
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<tr>
<td>&gt;450</td>
<td>3000</td>
<td>5000</td>
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</tbody>
</table>

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**Figure: Typical Service Layout Indicating Separation Distances**

- **Boundary Wall**
- **Footpath**
- **Grass verge**
- **Kerb**
- **Cable TV**
- **Water main**
- **Storm water**
- **Foul sewer**
- **Telecommunications**
- **Foundation**
- **Electrical Corridor (depth and layout)**
- **Requirements to be confirmed with service provider**

---

**Refer to index sheet for notes regarding design responsibility & risk assessment**

**Standard Details - Water**

**Typical Service Layout**

**Scale: Not to Scale**

**Date: Sept. 2015**

**Drawing No.: STD-W-11**

**Rev.: 1**
Girth (Circumference of Tree measured at 1.5m above ground level)

**Precaution Area:**

Excavations for pipework should not be undertaken within this area, unless agreed with Irish Water.

Works within the precaution zone must be supervised by a qualified arborist. Works shall be subject of a clear method statement outlining all works adjacent to the trees/shrubs which is to be prepared and agreed in advance of the works.

Material, plant & spoil shall not be stored within this zone.

**Exclusion Area:**

Works in this area are to be avoided, unless absolutely necessary & agreed with Irish Water.

Excavations for pipework should not be undertaken within this area, unless necessary and no other options available. Works within the exclusion zone must be supervised by a qualified arborist and agreed with Irish Water. Works shall be subject of an arboricultural impact assessment as per BS 5837 & a clear method statement outlining all works adjacent to the trees/shrubs is to be prepared and agreed in advance of the works.

Material, plant & spoil shall not be stored within this zone.

**Prevention Measures Required in line with landscaping design & special protection required:** (e.g. by use of appropriate barriers, high performance joints, or by use of polyethylene with welded joints). The landscape design and details of the special protection measures must be agreed with Irish Water.

**Existing Planting**

Reference to index sheet for notes regarding design responsibility & risk assessment.
**DIAGRAM 1: DECISION FLOW CHART**

**STEP 1**
- Check Table A.1. of BS 5837.
  1. Establish minimum distance from trees to utility.
  2. Assume no protection measures.

**STEP 2 (DIAGRAM 2)**
- Check STD-W12A for species & size.
- Depending on the choice of tree species or shrubs:
  1. Establish increased (or decreased) distance from utility.
  2. Assume no protection measures.

**Outcome**
- Are root barriers &/or protection measures to be used?
  - Yes: Proceed to next step.
  - No: Continue with current planting.

**Main Decision**
- Trees required in proximity to Water infrastructure:
  1. Do Nothing (No).
  2. Yes:

**DIAGRAM 2: PLANTING DISTANCES FOR DIFFERENT SPECIES WITHOUT BARRIER PROTECTION**

- **Examples of Large Size Amenity Trees**
  - Field Maple, Wild Cherry, Crab Apple, Cobnut, Birch, Elder, Ornamental Pear.

- **Examples of Small Size Amenity Trees**
  - Mountain Ash, Whitebeam, Hornbeam CV.

- **Examples of shrubs and bushes**
  - Holly, Laurel, Rhododendron, Dogwood, Christmas Tree, Magnolia, Fruit bushes, Spindle Tree, Guelder rose, Roses.

- **Examples of hedge plants and ground covers including herbaceous and annuals**
  - Privet, Blackthorn, Snowberry, Berbers, Heathers, Cotoneaster & Groundcovers, Herbaconia & Annals.

**NOTE:** Restrictions relate to infrastructure without root intrusion protection.

**TABLE A.1. BS 5837**

<table>
<thead>
<tr>
<th>Services</th>
<th>Final stem dia. &lt; 300mm</th>
<th>Final stem dia. 300mm to 600mm</th>
<th>Final stem dia. &gt; 600mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1m deep</td>
<td>0.5</td>
<td>1.5</td>
<td>3.0</td>
</tr>
<tr>
<td>&gt; 1m deep</td>
<td>--</td>
<td>1.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

The distances given in Table A.1. of BS 5837 must be further informed by the species & Diagram 2 below. Diagram 1 above provides a flow chart to the decision process whilst Diagram 2 below is to be used to inform the planting regime.

Please note that Table A.1. of BS 5837 (below) is to be used to calculate the absolute minimum distance between new tree planting from the Water Infrastructure (the services). The distance is required to avoid direct damage to the infrastructure from future growth. The distance is a function of the depth of the services and the (final expected) stem diameter of the tree at maturity (i.e. final expected growth).

Thus, for example:
- For a service less than 1 metre deep, the minimum distance is to be 1.5m for a tree between 300 and 600mm stem diameter at maturity.
- For a service greater than 1 metre deep, the minimum distance is to be 1.0m for a tree between 300 and 600mm stem diameter at maturity.

**NOTE:** The design of landscaping shall be undertaken in conjunction with the design of Water Infrastructure, etc. The tree/bush/shrub shall not be located closer to the Water Infrastructure than indicated above, except where special protection measures are provided. Where there is a risk of tree/root intrusion, the Water Infrastructure shall be resistant to tree root ingress (e.g. by use of appropriate barriers, high performance joints, or by use of polyethylene with welded joints). The landscape design and details of the special protection measures must be agreed with Irish Water.

Please ensure that these distances are adhered to in order to protect the trees from any future maintenance. Reference should also be made to BS 5837, BS 8545 and the NJUG Guidelines Volume 4 for further information.
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED GROUND LEVEL TO THE EXTERNAL CROWN OF THE PIPE SHALL BE 900mm WHERE THE PIPE IS TO BE LOCATED IN HOUSING ESTATE ROADS, GREATER DEPTHS OF COVER AND/OR PIPE STRENGTH AND/OR A HIGHER CLASS OF BEDDING MATERIAL MAY BE REQUIRED WHERE HIGH TRAFFIC LOADING IS ANTICIPATED. THE DESIRABLE COVER FOR A WATERMAIN SHOULD BE 1200mm, WHERE PRACTICAL & SHOULD NOT EXCEED 3.0m.

3. CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE WATER MAIN IS LOCATED IN ROADS. FOOTPATHS OR WHEN THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE PAVED EDGE OF THE ROADWAY. CLAUSE 804 / 808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. CLAUSE 808 IS TO BE USED WITHIN 500mm OF CEMENT BOUND MATERIALS, CONCRETE PAVEMENTS, CONCRETE STRUCTURES OR CONCRETE PRODUCTS.

4. SELECTED EXCAVATED MATERIAL MAY BE USED IN GREENFIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER.

5. PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE TO IS EN 13242.

6. IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE EXCAVATED OUT AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT ARRANGEMENTS, INCLUDING PLINING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORK.

7. PIPES SHALL NOT BE SUPPORTED ON STONES OR ROCKS, OR ANY HARD OBJECT AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THE VOID BACKFILL MATERIAL.

8. SHOULD MINIMUM COVER NOT BE ACHIEVABLE, CONCRETE GRADE C8/10 SHALL BE USED AS BACKFILL MATERIAL.

9. MARKER TAPE TO BE 400mm WIDE BLUE POLYETHYLENE MATERIAL IN ACCORDANCE WITH EN 12163, PLASTIC PIPES SHALL HAVE WARNING TAPE INCORPORATED A REINFORCED BAND BRACING WIRE. SERVICE PIPES SHALL HAVE 200mm WIDE MESH TAPE. MARKER TAPE TO BE LAID AT TOP OF PIPE BEDDING LAYER.

10. TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE <500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.

11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.

12. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUICE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO BS 261 OR BS 8934. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. SLUICE VALVES SHALL BE RESILIENT SEATED AND SHALL COMPLY WITH BS 5163-3, BS 5163-2, IS EN 1074-1, IS EN 1074-2, OR EQUIVALENT E.U. SPECIFICATIONS.
4. ALL SLUICE VALVES SHALL BE ANTI-CLOCKWISE CLOSING.
5. VALVE CHAMBERS TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PRE-PARTICIPATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS ARE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVISION. COMPLIANCE TO BS 5911, Part 3.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS NOT SHOWN ON DRAWING TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS ANDPIPES AT STEEP SLOPES.
10. ANY CORROSION TANK TIE TO BS PROVIDED AROUND BURIED PLINTHS.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. ALL THRUST BLOCKS TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-W-28. THRUST BLOCKS NOT SHOWN FOR CLARITY.
13. 450 x 450mm INTERNAL DIMENSION CHAMBERS MAY BE PROVIDED SUBJECT TO REVIEW BY IW. SUCH CHAMBERS SHALL BE PROVIDED WITH GRADE "A" HEAVY DUTY COVER & FRAME & STAMPED "SV".
14. ANY SPECIAL ROAD REHABILITATION AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
15. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
16. EXISTING ROAD REHABILITATION TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.

SECTION

FINISHED GROUND LEVEL

CONCRETE ANTI-TORQUE SUPPORT

DISMANTLING JOINT

PIPE CUT TO SUIT

FLANGED / PLAIN ENDED

SECTION

FINISHED GROUND LEVEL

CONCRETE ANTI-TORQUE SUPPORT

DISMANTLING JOINT

PIPE CUT TO SUIT

FLANGED / PLAIN ENDED

SLUICE VALVE

SLUICE VALVE CHAMBER

(FLEXIBLE LONG BODY COUPLING)

PRECAST CONCRETE UNITS

(REFER TO NOTE 5)

215mm THICK COVER IN ACCORDANCE WITH IS EN 1771-3

STANDARD DETAILS - WATER

SLUICE VALVE

FOR DUCTILE IRON (D.I.) PIPE (< 350mm DIA.)

(Sheet 1 of 2)

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

REW: 3

DRAWING No.

DATE

SEPT. 2015

SCALE

NOT TO SCALE

REV

STD-W-14

0 2015

AC TDC

Initial Issue

SL

1 24/15

AC TDC

Added Couplings (2 details)

W3

2 28/16

AC TDC

Rev 2 1.3.5

W3

3 11/15

AC TDC

Revised & Added Notes

W3

IW-CDS-5020-01 Rev. 03 December 2017
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUICE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY Metal. COVERS TO IS 281 OR BS 5634. COVERS AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. SLUICE VALVES SHALL BE RESILIENT SEATED AND SHALL COMPLY WITH BS 5163-1, BS 5163-2, IS EN 1074-1, IS EN 1074-2, OR EQUIVALENT E.U. SPECIFICATIONS.
4. ALL SLUICE VALVES SHALL BE ANTI-CLOCKWISE CLOSING.
5. VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK, ALTERNATIVELY PROPRIETARY PRE-FABRICATED CHAMBER UNITS MAY ALSO BE USED. SUBJECT TO REVIEW BY IRISH WATER. PRECAST CONCRETE UNITS DESIGNED TO CARRY LIVE LOADS & DEAD LOADS, & CONFORM TO A REINFORCED CONCRETE SLAB OF C30/37 WITH A MINIMUM THICKNESS OF 100mm ALTERNATIVELY PRE-CAST CONCRETE ROOFS MAY BE USED. SUBJECT TO IRELAND WATER REVIEW & COMPLIANCE WITH BS 5511 Part 4.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS 2619. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201-2011.
8. 200mm ALL AROUND, 150mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING) TO BE PROVIDED AS PER STANDARD DRAWING STD-W-29 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. 450 x 450mm INTERNAL DIMENSIONS MAY BE PROVIDED TO SUIT 445 x 280 OPE.
13. THRUST BLOCKS TO BE PROVIDED AROUND BURIED FLANGES.
14. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
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59. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
60. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
61. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
1. All dimensions in millimetres (mm), unless noted otherwise.
2. Hydrant chambers shall be covered with approved heavy duty metal covers to IS 261 or BS 834 cover and frame shall be suitable for road and traffic conditions and is subject to review by Irish Water.
3. All hydrants, surface box frames & covers shall comply with the relevant provisions of IS 1432, IS 1074-4 & BS 750. Fire hydrants shall be type 2. Fire hydrant inlet shall be 65mm diameter with phi.
4. All hydrants shall be clockwise closing.
5. Hydrant chamber to be constructed of precast concrete units or high density blockwork. Alternatively proprietary prefabricated chamber units may also be used. Subject to review by Irish Water. Roof slabs shall be designed to carry all live loads & dead loads, & consist of a reinforced concrete slab of in-situ concrete, grade C33/37, with a minimum thickness of 150mm. Alternatively, pre-cast concrete roofs may be used, subject to Irish Water review, & compliance with BS 5911 Part 4.
6. Concrete chambers shall be surrounded by a minimum of 100mm compacted Clause 806 material as per Std-W-13.
7. Ductile iron pipes and fittings to be in accordance with IS EN 545.
8. 200mm all around, 100mm deep concrete plinth around covers in green areas.
9. Thrust blocks (not shown on drawing), to be provided as per standard drawing STD-W-28 at all tees, bends, cutters, dead ends and pipes at steep slopes.
10. Anti corrosion tape to be provided around buried flanges.
11. All concrete to be in accordance with IS 291.
12. Any special road reinstatement around cover & frame shall be to road authority’s requirements.
13. New road construction & surface finish to be to road authority requirements.
14. Existing road reinstatement to comply with current version of “Guidelines for Managing Openings in Public Roads” by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland’s requirements.

**Standard Details - Water**

**Title:** On - Line Hydrant

**For Ductile Iron (D.I.) Pipe**

**Sheet 1 of 4**

**Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment**

**Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment**

**Drawing No:** STD-W-16

**Scale:** Not to Scale

**Date:** Sept. 2015

**Description:**

- Fire Hydrant Chamber
- Precast Concrete Construction

**Cover to be set in C50/60 mortar
- Class B Engineering Brick
- Set in C50/60 Mortar

**Concrete Roof Slab
- C30 / 37 Reinforced Slab
**

**Notes:**

1. All dimensions in millimetres (mm), unless noted otherwise.
2. Hydrant chambers shall be covered with approved heavy duty metal covers to IS 261 or BS 834 cover and frame shall be suitable for road and traffic conditions and is subject to review by Irish Water.
3. All hydrants, surface box frames & covers shall comply with the relevant provisions of IS 1432, IS 1074-4 & BS 750. Fire hydrants shall be type 2. Fire hydrant inlet shall be 65mm diameter with phi.
4. All hydrants shall be clockwise closing.
5. Hydrant chamber to be constructed of precast concrete units or high density blockwork. Alternatively proprietary prefabricated chamber units may also be used. Subject to review by Irish Water. Roof slabs shall be designed to carry all live loads & dead loads, & consist of a reinforced concrete slab of in-situ concrete, grade C33/37, with a minimum thickness of 150mm. Alternatively, pre-cast concrete roofs may be used, subject to Irish Water review, & compliance with BS 5911 Part 4.
6. Concrete chambers shall be surrounded by a minimum of 100mm compacted Clause 806 material as per Std-W-13.
7. Ductile iron pipes and fittings to be in accordance with IS EN 545.
8. 200mm all around, 100mm deep concrete plinth around covers in green areas.
9. Thrust blocks (not shown on drawing), to be provided as per standard drawing STD-W-28 at all tees, bends, cutters, dead ends and pipes at steep slopes.
10. Anti corrosion tape to be provided around buried flanges.
11. All concrete to be in accordance with IS 291.
12. Any special road reinstatement around cover & frame shall be to road authority’s requirements.
13. New road construction & surface finish to be to road authority requirements.
14. Existing road reinstatement to comply with current version of “Guidelines for Managing Openings in Public Roads” by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland’s requirements.
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. HYDRANT CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 386 OR BS 5534 COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRELAND WATER.
3. ALL HYDRANTS, SURFACE BOX FRAMES & COVERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF IS EN 14339, IS EN 1074-6 & BS 7350. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT INLET SHALL BE 80mm DIAMETER WITH PROF.
4. ALL HYDRANTS SHALL BE COUNTERCLOCKWISE CLOSING.
5. HYDRANT CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED. SUBJECT TO REVIEW BY IRELAND WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED. SUBJECT TO IRELAND WATER REVIEW, & COMPLIANCE WITH BS 5911, PART 4.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GRASS AREAS.
9. THRUST BLOCKS NOT SHOWN ON DRAWINGS, TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. TEE BRANCH IF DEPTH OF TAKE-OFF PIPEWORK < 900mm, TAKE-OFF TEE MAY BE ROTATED TO ENSURE MIN. DEPTH OF COVER IS MAINTAINED, OR ALTERNATIVELY PROVIDE PROTECTION TO TAKE-OFF PIPE.
13. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
14. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
15. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.

**Standard Details - Water**

**Off - Line Hydrant for Ductile Iron (D.I.) Pipe**

**Sheet 2 of 4**

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**Index Sheet for Notes Regarding Design Responsibility & Risk Assessment**

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1. All dimensions in millimetres (mm) unless noted otherwise.
2. All hydrants shall be covered with approved heavy-duty metal covers to BS 301 or BS 302A cover and frame shall be suitable for road and traffic conditions and be subject to review by Irish Water.
3. All hydrants, surface box frames & covers shall comply with the relevant provisions of IS EN 1429, IS EN 12464-1 and BS 789. Fire hydrants shall be type 2. The hydrant inlet shall be 80mm diameter with PN16.
4. All hydrants shall be clockwise closing.
5. Hydrant chambers shall be constructed of precast concrete units or high density blockwork, alternatively proprietary prefabricated chamber units may also be used. Subject to review by Irish Water, roof slabs shall be designed to carry live loads & dead loads, & consist of a reinforced concrete slab of in-situ concrete, grade C30/37, with a minimum thickness of 150mm. Alternatively, precast concrete roof slabs may be used. Subject to Irish Water review, compliance with BS 911, Part 4.
6. Concrete chambers shall be surrounded by a minimum of 150mm compacted clay material as per STD-W-13.
7. Ductile iron pipes & fittings to be in accordance with IS EN 545. PE pipes & fittings to be in accordance with IS EN 12201:2011.
8. 200mm all around, 100mm deep concrete plinth around covers in green area.
9. Thrust blocks not shown on drawing, to be provided as per standard draking STD-W-26 at all risers, bends, tapers, dead ends and pipes at steep slopes.
10. Anti-corrosion tape to be provided around buried flanges.
11. All concrete to be in accordance with IS EN 206.
12. Any special road reinstatement around cover & frame shall be to road authority’s requirements.
13. New road construction & surface finish to be to road authority requirements.
14. Existing road reinstatement to comply with current version of “Guidelines for Managing Openings in Public Roads” by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland requirements.

**PLINTH DETAIL**

IN GRASS AREA

**FLOOR PLAN**

(FIRE HYDRANT CHAMBER)

(PRECAST CONCRETE CONSTRUCTION)

**ROOF PLAN**

(FIRE HYDRANT)

**SECTION**

**SECTION**

(ROOF PLAN)

(FLOOR PLAN)

(FIRE HYDRANT CHAMBER)

(BLOCKWORK CONSTRUCTION)

REFER TO STANDARD DETAILS - WATER

TITLE

ON - LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPE

(Sheet 3 of 4)

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

STANDARD DETAILS - WATER

ON - LINE HYDRANT FOR POLYETHYLENE (P.E.) PIPE

(Sheet 3 of 4)

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. HYDRANT CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 OR BS 5834 COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND BE SUBJECT TO REVIEW BY IRISH WATER.
3. ALL HYDRANTS, SURFACE BOX FRAMES & COVERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF IS EN 14339, IS EN 1074-6 & BS 750. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT INLET SHALL BE 80mm DIAMETER WITH PN16.
4. ALL HYDRANTS SHALL BE CLOCKWISE CLOSING.
5. HYDRANT CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED. SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37 WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED. SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5011, Part 4.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLASSE 808 MATERIAL AS PER STD-W-13.
7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH ISO 12201:2011.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING) TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF “GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS” BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.

Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment.
### Standard Details - Water

**Title:** ON - LINE AIR VALVE FOR DUCTILE IRON (D.I.) PIPE

### Drawing Information

- ** IW-CDS-5020-01 Rev. 03  December 2017**
- **Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment**

### Table: Diameter of Main

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<td>Diameter of Branch</td>
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<tr>
<td>Bore of Valve Inlet</td>
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### Notes:

1. All dimensions in millimetres (mm) unless noted otherwise.

2. Air Valve Chambers shall be covered with approved ventilated heavy duty ductile iron covers to IS EN 124 Rating D400. Cover and frame shall be suitable for road and traffic conditions and is subject to review by Irish Water.

3. Air valves shall comply with the requirements of IS EN 1074-4. Air valves shall be double orifice type and shall include an isolating valve. The isolating valve shall be either a gate valve conforming to IS EN 1074-2 & shall be of a boltless proprietary design, or a butterfly valve to IS EN 592.

4. Service connections shall not be provided within 2m of the air valve location.

5. Air Valve Chambers to be of precast concrete units or high density blockwork. Alternative proprietary prefabricated chamber units may also be used. Subject to review by Irish Water.

6. Precast concrete chambers shall be surrounded by a minimum of 150mm compacted Clause 808 material as per STD-W-13.

7. Ductile iron pipes and fittings to be in accordance with IS EN 545.

8. 200mm All around, 100mm deep concrete plinth around covers in green areas.

9. Thrust blocks not shown on drawing, to be provided as per standard drawing STD-W-26. At all tees, bends, tapers, dead ends and pipes at steep slopes.

10. Anti corrosion tape to be provided around buried flanges.

11. The location of the air valve shall be the subject of particular agreement with Irish Water to ensure that the risk of contamination through the valve is eliminated.

12. All concrete to be in accordance with IS EN 206.

13. Any special road reinstatement around cover & frame shall be to Road Authority's requirements.

14. New road construction & surfacing from to be to Road Authority's requirements.

15. Existing road reinstatement to comply with current version of "Guidelines for managing openings in public roads" by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland requirements.

### Diagrams:

- **Floor Plan - Double Air Valve**
- **Roof Plan - Double Air Valve**
- **Plinth Detail in Grass Area**

Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment.
1. All dimensions in millimetres (mm) unless noted otherwise.
2. Air valve chambers shall be covered with approved ventilated heavy duty ductile iron covers to IS EN 124 rating D400. Cover and frame shall be suitable for road and traffic conditions and is subject to review by Irish Water.
3. Air valves shall comply with the requirements of IS EN 1074-4. Air valves shall be double orifice type and shall include an isolating valve. The isolating valve shall be either a gate valve conforming to IS EN 1074-2 & shall be of a boltless bonnet design, or a butterfly valve to IS EN 1074-5.
4. Service connections shall not be provided within 2m of the air valve location.
5. Air valve chambers to be of precast concrete units or high density blockwork. Alternative proprietary pre-fabricated chamber units may also be used, subject to review by Irish Water.
6. Precast concrete chambers shall be surrounded by a minimum of 150mm compacted Clause 808 material as per STD-W-13.
7. Ductile iron pipes and fittings to be in accordance with IS EN 545.
8. 200mm all around. 100mm deep concrete plinths around covers in green areas.
9. Thrust blocks not shown on drawing, to be provided as per standard drawing STD-W-28. At all tees, bends, tapers, dead ends and pipes at steep slopes.
10. Anti corrosion tape to be provided around buried flanges.
11. The location of the air valve shall be the subject of particular agreement with Irish Water to ensure that the risk of contamination through the valve is eliminated.
12. All concrete to be in accordance with IS EN 206.
13. Any special road reinstatement around cover & frame shall be to road authority's requirements.
14. New road construction & surface finish to be to road authority requirements.
15. Existing road reinstatement to comply with current version of guidelines for managing openings in public roads by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland requirements.

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<td>BORE OF VALVE INLET</td>
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**Not to Scale**

**Drawing No.** STD-W-21

**Title**

STD-21 - Line Air Valve for Ductile Iron (D.I.) Pipe

**Scale**

Not to Scale

**Date**

Sept. 2015

**Rev.**

3

**Issuer**

SL

**Description**

Yes

**Ref. to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment**

OFF - LINE AIR VALVE

FOR DUCTILE IRON (D.I.) PIPE

(Sheet 2 of 4)
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AIR VALVE CHAMBERS SHALL BE COVERED WITH APPROVED VENTILATED HEAVY DUTY DUCTILE IRON COVERS TO IS EN 1540-3 RATING D400. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. AIR VALVES SHALL COMPLY WITH THE REQUIREMENTS OF IS EN 1074-4. AIR VALVES SHALL BE DOUBLE ORIFICE TYPE AND SHALL INCLUDE AN ISOLATING VALVE. THE ISOLATING VALVE SHALL BE EITHER A GATE VALVE CONFORMING TO IS EN 1074-2 AND SHALL BE OF A BOLTED BODY DESIGN, OR A BUTTERFLY VALVE TO IS EN 1074-2.
4. SERVICE CONNECTIONS SHALL NOT BE PROVIDED WITHIN 2m OF THE AIR VALVE LOCATION.
5. AIR VALVE CHAMBERS TO BE OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVE PROPRIETARY PREFabricATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER.
6. PRECAST CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-W-13.
7. DUCTILE IRON PIPES / FITTINGS AND PE PIPES / FITTINGS TO BE IN ACCORDANCE WITH IS EN 545 AND IS EN 12201 2011.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRU BLOCKS NOT SHOWN ON DRAWING, TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
11. THE LOCATION OF THE AIR VALVE SHALL BE THE SUBJECT OF PARTICULAR AGREEMENT WITH IRISH WATER TO ENSURE THAT THE RISK OF CONTAMINATION THROUGH THE VALVE IS ELIMINATED.
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
13. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.
14. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
15. EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF “GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS” BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
## Standard Details - Water

**Title:** Off - Line Air Valve For Polyethylene (P.E.) Pipe  
(Sheet 4 of 4)

### Table

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<tr>
<td>Bore of Valve Inlet</td>
<td>80mm</td>
<td>100mm</td>
</tr>
</tbody>
</table>

### Notes

1. All dimensions in millimetres (mm) unless noted otherwise.
2. Air Valve Chambers shall be covered with approved ventilated, heavy duty ductile iron covers to IS EN 124 rating D400. Cover and frame shall be suitable for road and traffic conditions and are subject to review by Irish Water.
3. Air Valves shall comply with the requirements of IS EN 1074-4. Air Valves shall be double office type and shall include an isolating valve. The isolating valve shall be either a gate valve conforming to IS EN 1074-2 & shall be of a boltless bonnet design, or a butterfly valve to IS EN 1074-2.
4. Service connections shall not be provided within 2m of the air valve location.
5. Air Valve Chambers to be of precast concrete units or high density blockwork. Alternative proprietary prefabricated chamber units may also be used. Subject to review by Irish Water.
6. Precast Concrete Chambers shall be surrounded by a minimum of 150mm compacted Clause 808 material as per STD-W-13.
7. Ductile Iron pipes and fittings to be in accordance with IS EN 545. PE pipes and fittings to be in accordance with IS EN 12201:2011.
8. 200mm all around, 100mm deep concrete plinths around covers in green areas.
9. Thrust blocks (not shown on drawing) to be provided as per standard drawing STD-W-28 at all tees, bends, taps, dead ends and pipes at steep slopes.
10. Anti-corrosion tape to be provided around buried flanges.
11. The location of the air valve shall be the subject of particular agreement with Irish Water to ensure that the risk of contamination through the valve is eliminated.
12. All concrete to be in accordance with IS EN 206.
13. Any special road reinstatement around cover & frame shall be to road authority’s requirements.
14. New road construction & surface finish to be to road authority requirements.
15. Existing road reinstatement to comply with current version of "Guidelines for Managing Openings in Public Roads" by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland requirements.

### Drawing Information

- **Scale:** Not to Scale  
- **Date:** Sept. 2015
- **Drawing No.:** STD-W-23  
- **Rev.:** 3

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**Plinth Detail**

- In Grass Area
- Finished Ground Level

**Section**

- Cover to be set in Concreting Mortar
- Precast Concrete units (refer to note 8)
- 215mm thick 3000mm concrete blockwork in accordance with IS EN 771-3
- Double Air Valve
- Isolating Valve

**75mm Concrete Blinding Grade C12/15**

- Ope to be clean cut and sealed using a suitable material
- 125 / 36 reinforced slab

**200mm All Around, 100mm Deep Concrete Plinth Around Covers in Green Areas**

**215mm Thick 3000mm Concrete Blockwork in Accordance with IS EN 771-3**

**Cover to be Sealed Using a Suitable Material**

**Bull Nose Finish**

---

**Notes:**

1. All dimensions in millimetres (mm) unless noted otherwise.
2. Air Valve Chambers shall be covered with approved ventilated, heavy duty ductile iron covers to IS EN 124 rating D400. Cover and frame shall be suitable for road and traffic conditions and are subject to review by Irish Water.
3. Air Valves shall comply with the requirements of IS EN 1074-4. Air Valves shall be double office type and shall include an isolating valve. The isolating valve shall be either a gate valve conforming to IS EN 1074-2 & shall be of a boltless bonnet design, or a butterfly valve to IS EN 1074-2.
4. Service connections shall not be provided within 2m of the air valve location.
5. Air Valve Chambers to be of precast concrete units or high density blockwork. Alternative proprietary prefabricated chamber units may also be used. Subject to review by Irish Water.
6. Precast Concrete Chambers shall be surrounded by a minimum of 150mm compacted Clause 808 material as per STD-W-13.
7. Ductile Iron pipes and fittings to be in accordance with IS EN 545. PE pipes and fittings to be in accordance with IS EN 12201:2011.
8. 200mm all around, 100mm deep concrete plinths around covers in green areas.
9. Thrust blocks (not shown on drawing) to be provided as per standard drawing STD-W-28 at all tees, bends, taps, dead ends and pipes at steep slopes.
10. Anti-corrosion tape to be provided around buried flanges.
11. The location of the air valve shall be the subject of particular agreement with Irish Water to ensure that the risk of contamination through the valve is eliminated.
12. All concrete to be in accordance with IS EN 206.
13. Any special road reinstatement around cover & frame shall be to road authority’s requirements.
14. New road construction & surface finish to be to road authority requirements.
15. Existing road reinstatement to comply with current version of "Guidelines for Managing Openings in Public Roads" by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland requirements.

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**Off - Line Air Valve**

- For Polyethylene (P.E.) Pipe

---

**Standard Details - Water**

### Index Sheet for Notes Regarding Design Responsibility & Risk Assessment
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. DETAILS OF THE PROPOSED BOOSTING ARRANGEMENT SHALL BE PROVIDED TO IRISH WATER AT CONNECTION APPLICATION STAGE AND AT THE DETAILED DESIGN STAGE OF THE DEVELOPMENT FOR ASSESSMENT.

3. KIOSK TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED STEEL, MINIMUM 4MM THICKNESS, IN ACCORDANCE WITH BS EN 1461. STAINLESS STEEL OR NON-METALLIC MATERIALS, SUCH AS GLASS REINFORCED PLASTIC (GRP), MAY BE USED AS AN ALTERNATIVE KIOSK MATERIAL, PARTICULARLY IN SEVERE ENVIRONMENTS, SUBJECT TO AGREEMENT WITH IRISH WATER.

4. KIOSK TO HAVE SINGLE OR DOUBLE STEEL/GRP DOORS WITH MULTIPLE LOCKS TO UPS 1175 SIN OR EN 679 MINIMUM DOUBLE LOCKS (WITH BREAKS THAT ENGAGE INTO THE SILL & HEADER AS WELL AS BETWEEN THE TWO LEAVES OR LEAF & FRAME). LEADING EDGE OF LEAVES TO HAVE EITHER REBATED EDGES OR FITTED WITH ASTRAGALS.

5. COLOUR TO BE HOLLY GREEN 14 C 39 IN ACCORDANCE WITH BS 4800:2011.

6. THE QUALITY OF KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
   (a) A THERMAL TRANSMITTANCE OF 1.5W PER MK.
   (b) A FIRE RESISTANCE (RETENTION OF STABILITY, INTEGRITY AND INSULATION) EQUIVALENT TO CLASS 2 OF BS 476, WHEN TESTED IN ACCORDANCE WITH BS 476 FOR A PERIOD EXCEEDING 30 MINUTES.
   (c) AN IP RATING OF IP58 OR EQUIVALENT.

7. ALL DUCTING TO BE INSTALLED WITH DRAW CORDS.

8. WATER TIGHT SEALS TO BE PROVIDED AROUND ALL DUCTING ENTERING/EXITING THE BOOSTER PUMP STATION.


10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.

11. BOOSTER PUMPS TO BE LOCATED IN AN AREA THAT IS NOT PRONE TO FLOODING.

12. PROVISION TO BE MADE IN THE SIZING OF THE KIOSK FOR THE SAFE REPAIR/Maintenance OF THE BOOSTER PUMPS & FOR THEIR REMOVAL IF REQUIRED.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

STANDARD DETAILS - WATER

BOOSTER PUMP STATION ARRANGEMENT

DRAWING No. STD-W-25

SCALE NOT TO SCALE

DATE SEPT. 2015

REV
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. STRUCTURAL DESIGN AND REINFORCEMENT DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRI SH WATER. REVIEW ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & ROADS LOADS & CONSIST OF A REINFORCED CONCRETE SLAB OF 140mm THICKNESS, WITH MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, Part 4.

3. CONCRETE PIPES FOR FLOW METER CHAMBER TO BE CS137.

4. PRECAST UNITS COMPLETED WITH RUBBER SEALING MENU BETWEEN UNITS. COMPLYING WITH THE REQUIREMENTS OF IS 13201 AND BS 5911-TABLE 2, COMPLETE WITH 100mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE. CONCRETE SURROUND TO BE GRADE CH20 IN ACCORDANCE WITH IS 13201.

5. METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS EN 124 RATING 124. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRI SH WATER.

6. 200mm ALL ROUND, 100mm DEEP CONCRETE PLINTH AROUND COVER IN GRASS AREAS.

7. 200mm ALL ROUND, 100mm DEEP CONCRETE PLINTH AROUND COVER IN GRASS AREAS.

8. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.

9. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRI SH WATER.

10. PIPEWORK TO BE DOWNSIZED TO ACCOMMODATE THE REQUIRED RANGE OF THE FLOW METER. STRAIGHT PIPE LENGTHS UPSTREAM AND DOWNSTREAM OF THE METER TO BE PROVIDED.

11. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.

12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.

13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.

14. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.

15. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRI SH WATER.

16. PIPEWORK TO BE DOWNSIZED TO ACCOMMODATE THE REQUIRED RANGE OF THE FLOW METER. STRAIGHT PIPE LENGTHS UPSTREAM AND DOWNSTREAM OF THE METER TO BE PROVIDED.

17. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRI SH WATER.

18. PIPEWORK TO BE DOWNSIZED TO ACCOMMODATE THE REQUIRED RANGE OF THE FLOW METER. STRAIGHT PIPE LENGTHS UPSTREAM AND DOWNSTREAM OF THE METER TO BE PROVIDED.

19. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRI SH WATER.
1. Where practical marker plates shall be fixed to adjacent walls or alternatively attached to marker posts.
2. Plates to be fixed in position using wall plugs and stainless steel screws.
3. Marker plates to be manufactured in accordance with BS 3251.
4. For hydrant plate all characters should be black and the remainder of the front face should conform to colour reference No. 309 (Canary Yellow) of BS 381C.
5. Pipe diameter on hydrant plate to refer to watermain not branch.
6. Sluice valve, air valve, scour valve, washout hydrant and meter plates should be cast iron. All characters should be black on white paint background. Alternative material may be used subject to acceptance by Irish Water.
7. Concrete surround to marker post to be grade C25/30 and in accordance with IS EN 206/2013.
8. Plastic marker posts are not acceptable.
9. All concrete to be in accordance with IS EN 206.
Refer to index sheet for notes regarding design responsibility & risk assessment.

Standard Details - Water Supply

Water Main Thrust and Support Blocks

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<th>Title</th>
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<th>Date</th>
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<tr>
<td>STD-W-28</td>
<td></td>
<td>Sept. 2015</td>
<td>1</td>
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</table>
1. All dimensions are in millimetres (mm) unless noted otherwise.
2. Structural design and reinforcement details to be provided by the developer and submitted to Irish Water for review.
3. Duct arrangement may vary depending on requirements.
4. Cable ducts to be in accordance with BS 4460 and BS EN 1401. Ducts for ESB use to be in accordance with ESB specification.
5. Proprietary duct chamber may be used subject to review from Irish Water.
6. Long radius bends may be used for changes in direction of up to 45°. Duct chambers shall be provided for all bends greater than 45°.
7. Duct chambers to be located at 5m intervals maximum.
8. Appropriate marker tape shall be laid 250mm above the external crown of the duct and should incorporate reinforced tracing wire. Tracing wires shall be connected across chambers. Electrical marker tape to be used in accordance with ESB specification.
9. All chambers to be checked for uplift by the developer based on ground conditions within the site. Should anti-floating measures be required they shall be subject to review from Irish Water.
10. All concrete to be in accordance with IS EN 206.
11. All ducting to be installed with draw cord/ropes, to allow pull through of cables.
12. Cable duct interface with chamber wall to be sealed to prevent ingress of groundwater to chamber.
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

2. STRUCTURAL REINFORCEMENT AND DESIGN DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, PART 4.

3. CONCRETE FOR SCOUR CHAMBER AND HEADWALL TO BE C30 / 37.

4. PREFABRICATED CHAMBER AND HEADWALL MAY ALSO BE USED, SUBJECT TO REVIEW FROM IRISH WATER.


6. 200mm AROUND ROAD. 100mm DEEP CONCRETE PLANTAR & COVERING IN GRASS AREAS.

7. FINAL DETAIL TO BE REVIEWED BY IRISH WATER AND RELEVANT REGULATORY AUTHORITIES.

8. THRUST BLOCKS NOT SHOWN ON DRAWING, TO BE PROVIDED AS PER STANDARD DRAWINGS STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.

9. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.

10. ALL PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545, PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.

11. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED, THEY SHALL BE SUBJECT TO AGREEMENT WITH IRISH WATER.

12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.

13. BACKFILL AND REINSTATEMENT OF RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH IRISH WATER & RELEVANT AUTHORITIES.

NOT TO SCALE

STANDARD DETAILS - WATER

SCOUR CHAMBER AND HEAD WALL ARRANGEMENTS

FUNCTION OF WATERMAIN

DIAMETER OF WATERMAIN (mm)

DIAMETER OF SCOUR (mm)

NOT EXCEEDING 75
100 TO 200
200 TO 350

100
75
100

DIAMETER OF WATERMAIN (mm)

DIAMETER OF SCOUR (mm)

NOT EXCEEDING 75
100 TO 200
200 TO 350

100
75
100

DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.

STRUCTURAL REINFORCEMENT AND DESIGN DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, PART 4.

CONCRETE FOR SCOUR CHAMBER AND HEADWALL TO BE C30 / 37.

PREFABRICATED CHAMBER AND HEADWALL MAY ALSO BE USED, SUBJECT TO REVIEW FROM IRISH WATER.


200mm AROUND ROAD. 100mm DEEP CONCRETE PLANTAR & COVERING IN GRASS AREAS.

FINAL DETAIL TO BE REVIEWED BY IRISH WATER AND RELEVANT REGULATORY AUTHORITIES.

THRUST BLOCKS NOT SHOWN ON DRAWING, TO BE PROVIDED AS PER STANDARD DRAWINGS STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.

ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.

ALL PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545, PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.

ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED, THEY SHALL BE SUBJECT TO AGREEMENT WITH IRISH WATER.

ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.

BACKFILL AND REINSTATEMENT OF RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH IRISH WATER & RELEVANT AUTHORITIES.
SECTION (PRECAST CONCRETE CHAMBER OPTION)

D.I. SCOUR VALVE AND CHAMBER (COVER STAMPED "ScV" REFER TO STD-W-14)

COVER TO BE SET IN C50/60 MORTAR

REFER TO DRG. No. STD-W-17 FOR HYDRANT, PRECAST CONCRETE CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

WASHOUT HYDRANT CHAMBER (COVER STAMPED "WO")

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

WASHOUT HYDRANT

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

SECTION (BLOCKWORK CHAMBER OPTION)

D.I. SCOUR VALVE AND CHAMBER (COVER STAMPED "ScV" REFER TO STD-W-14)

COVER TO BE SET IN C50/60 MORTAR

REFER TO DRG. No. STD-W-17 FOR HYDRANT, PRECAST CONCRETE CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

WASHOUT HYDRANT CHAMBER (COVER STAMPED "WO")

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

WASHOUT HYDRANT

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

PLAN (DUCTILE IRON WATER MAIN)

P.E. WATER MAIN

FUSION WELD

STUB FLANGE WITH BACKING RING

D.I. SCOUR VALVE AND CHAMBER (COVER STAMPED "ScV" REFER TO STD-W-14). SEE NOTE 14 BELOW

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DISMANTLING JOINT

SEE NOTE 14 BELOW

ALL FLANGED LEVEL INVERT TEE

WASHOUT HYDRANT CHAMBER (PRECAST CONCRETE OPTION)

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

PLINTH DETAIL IN GRASS AREA

WASHOUT HYDRANT CHAMBER (BLOCKWORK OPTION)

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

WASHOUT HYDRANT

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

PLAN (POLYETHYLENE WATER MAIN)

P.E. WATER MAIN

FUSION WELD

STUB FLANGE WITH BACKING RING

D.I. SCOUR VALVE AND CHAMBER (COVER STAMPED "ScV" REFER TO STD-W-14). SEE NOTE 14 BELOW

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DISMANTLING JOINT

SEE NOTE 14 BELOW

ALL FLANGED LEVEL INVERT TEE

WASHOUT HYDRANT CHAMBER (PRECAST CONCRETE OPTION)

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

PLINTH DETAIL IN GRASS AREA

WASHOUT HYDRANT CHAMBER (BLOCKWORK OPTION)

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

WASHOUT HYDRANT

REFER TO DRG. No. STD-W-17 FOR HYDRANT, BLOCKWORK CHAMBER & COVER DETAILS

DI, DOUBLE FLANGED, DNB, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS

DOUBLE FLANGED 90° BEND WITH CONC. THUST BLOCK TO BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE
2. STRUCTURAL REINFORCEMENT AND DESIGN DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW
3. HYDRANT CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834 COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER
4. HYDRANTS SHALL BE DOUBLE FLANGED DRILLED TO PN 16. THEY SHALL COMPLY WITH BS 750: 2012. THE HYDRANT SHALL INCORPORATE A SCREW DOWN GATE VALVE, UNDERGROUND "GUIDE TO HEAD" TYPE WITH SCREW DOWN CONNECTION OUTLET AND FALSE SPINDLE CAP AND IRON CHAIN
5. ALL HYDRANTS SHALL BE CLOCKWISE CLOSING
6. HYDRANT CHAMBER & SCOUR VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREPACKAGED CHAMBER UNITS MAY ALSO BE USED. SUBJECT TO REVIEW FROM IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 100mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED. SUBJECT TO IRISH WATER REVIEW. & COMPLIANCE WITH BS 5911, PART 4
7. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-W-13
8. 200mm ALL ROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GRASS AREAS
9. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES
10. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES
11. ALL PIPEWORK AND FITTINGS FOR WASHOUT HYDRANT CHAMBER CONNECTION SHALL BE DUCTILE IRON. PIPES AND FITTINGS ON MAIN LINE SHALL BE: PE PIPES & FITTINGS IN ACCORDANCE WITH IS 12201.1, OR DUCTILE IRON PIPES AND FITTINGS IN ACCORDANCE WITH IS EN 1436.
12. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO AGREEMENT WITH IRISH WATER
13. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
14. WHERE HYDRANTS ARE INSTALLED ON TRUNK MAINS OR PRINCIPAL MAINS, A SEPARATE SCOUR VALVE IS REQUIRED. THE PURPOSE OF THE SCOUR VALVE IS TO ISOLATE THE WASHOUT HYDRANT FOR MAINTENANCE PURPOSES & ALSO TO REDUCE THE VELOCITY OF THE DISCHARGE FLOW WHERE HIGH HEAD VALUES ARE CONCERNED. A "SANDWICH" OR "SPADE" VALVE MAY BE USED IN LIEU OF A SEPARATE SCOUR VALVE, SUBJECT TO PRIOR REVIEW BY IRISH WATER

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE AS INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK AT CROSSING POINT TO BE POLYETHYLENE JOINED USING BUTT FUSION WELDING.
5. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
6. THRUST BLOCKS TO BE PROVIDED AS PER STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. ALL DUCTILE IRON PIPEWORK AND FITTINGS SHALL BE IN ACCORDANCE WITH IS EN 545. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
9. PIPEWORK FOR WATER MAIN CAN BE EITHER DUCTILE IRON OR POLYETHYLENE. PIPEWORK AT CROSSING POINT TO BE PE IN BOTH CASES.
10. BACKFILL AND REINSTATEMENT OF RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH RELEVANT AUTHORITY & IRISH WATER.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

TYPICAL
DITCH / STREAM CROSSING
FOR WATER MAIN
1. All dimensions in millimetres (mm) unless noted otherwise.
2. At bridge crossing all pipework to be ductile iron in accordance with IS EN 545.
3. O.D. refers to outside diameter of pipes or collars.
4. Bends at respective crossings shall be indicated on the longitudinal section drawing.
5. The developer is to seek advice from Irish Water as to whether a duplicate main is to be provided through the bridge crossing. If necessary the developer is to submit a design to Irish Water for review.
6. Thrust blocks to be provided as per STD-W-24 at all tees, bends, tapers, dead ends and pipes at steep slopes.
7. The quality of the kiosk construction shall ensure that the following is achieved:
   (a) a thermal transmittance of 1.5W per m² per °K
   (b) a fire resistance (retention of stability, integrity and insulation) equivalent to Class 2 of BS 476. When tested in accordance with BS 476 for a period exceeding 30 minutes.
8. Kiosk (min. 600 high x 450 wide x 300mm deep) - to be constructed from thermosetting U.V. & weather resistant plastic powder coated & hot dipped galvanised mild steel. Min. 4mm thickness for BS EN 1411, stainless steel or nonmetallic materials such as glass reinforced plastic (GRP), may be used as an alternative kiosk material, particularly in severe environments, subject to agreement with Irish Water. Colour to be Holly Green BS 4800 14 C 39. Kiosk to have hinged, lockable access door (hinges and locks to be stainless steel)
9. The kiosk shall be located off the footpath so as not to impede pedestrians and positioned so as to facilitate safe access for maintenance personnel.
10. All concrete to be in accordance with IS EN 206.
11. Detail for PE watermain to be as per this detail. Bridge crossing pipework to be DI in both cases.

**SECTION A - A**
(AIR VALVE CONNECTION)

**PLAN**

Refer to index sheet for notes regarding design responsibility & risk assessment.
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK AT CROSSING POINT TO BE JOINED USING BUTT FUSION WELDING.
5. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
6. THRUST BLOCKS TO BE PROVIDED AS PER STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. THE DEVELOPER IS TO SEEK ADVICE FROM IRISH WATER AS TO WHETHER A DUPLICATE MAIN IS TO BE PROVIDED AT THE BRIDGE CROSSING. IF NECESSARY THE DEVELOPER IS TO SUBMIT A DESIGN TO IRISH WATER FOR REVIEW.
8. BACKFILL AND REINSTATEMENT REQUIREMENTS OF THE RIVER BED AND BANK IS SUBJECT TO AGREEMENT WITH RELEVANT AUTHORITY & IRISH WATER.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
10. ALL DUCTILE IRON PIPEWORK TO BE IN ACCORDANCE WITH IS EN 545. ALL POLYETHYLENE PIPEWORK TO BE IN ACCORDANCE WITH IS EN 12201.
11. PIPEWORK FOR WATERSHED CAN BE EITHER DUCTILE IRON OR POLYETHYLENE. PIPEWORK AT THE CROSSING POINT TO BE PE IN BOTH CASES.

AIR VALVE TO BE LOCATED AT BOTH SIDES OF THE CROSSING. FOR AIR VALVE / CHAMBER DETAILS, REFER TO STD-W-20, 21, 22 & 23.

DI / PE OR DUCTILE IRON PIPEWORK

SAFE DISTANCE TO ENSURE STRUCTURE IS NOT IMPACTED
500mm MIN. OR TO REQUIREMENTS OF RELEVANT AUTHORITY
LONG BODY FLEXIBLE JOINT
500mm

PLASTIC SHEETING IN ACCORDANCE WITH BS 6076

CROSS SECTION (CONCRETE SURROUND)

REFER TO NOTE 3 FOR BENDS
FOR THRUST BLOCK DETAILS REFER TO STD-W-28

DI / PE

FOR AIR VALVE / CHAMBER DETAILS, REFER TO STD-W-20, 21, 22 & 23.

AIR VALVE TO BE LOCATED AT BOTH SIDES OF THE CROSSING.

STUB FLANGE WITH BACKING RING
POLYETHYLENE PIPEWORK
CONCRETE SURROUND GRADE C 25/30.
FUSION WELD

500mm MIN. OR TO REQUIREMENTS OF RELEVANT AUTHORITY

FOR SCOUR VALVE / CHAMBER DETAILS REFER TO STD-W-30

500mm

FOR SCOUR VALVE / CHAMBER DETAILS REFER TO STD-W-30

FOR FINAL WALL DETAILS REFER TO STD-W-32

POLYETHYLENE OR DUCTILE IRON PIPEWORK

TYPICAL
BRIDGE CROSSING FOR WATER MAIN
(Sheet 2 of 2)
1. All dimensions in millimetres (mm) unless noted otherwise.
2. Security fencing shall comprise 2.4m high, corrosion resistant mild steel fencing, galvanised and plastic coated finished, with similar type access gates.
3. The access gates shall be of sufficient width to accommodate maintenance vehicles, tankers, etc. The security gates shall be provided with size bolts, shooting bolts and padlocks. If opening outwards, the access gates shall be set back from parking and access areas by a width of the leaf of the gate.
4. Bolts, unless tamper resistant fixings are used, shall all bolts to the access gates & fencing shall be buried over.
5. Gate hinges shall be designed so that it is impossible to remove the gate by lifting when it is in a closed & locked position. Drop bolts shall be fitted to each gate leaf in such a way that they cannot be removed but allow the gate to be secured in both the open & closed position.
6. The security rating shall be either Basic +, Enhanced or Enhanced +. The fence standard will be based on the security rating of the site & is to be agreed with Irish Water.
7. Corner bracing and post detail to manufacturers specification.
8. All concrete to be in accordance with IS EN 206.
9. All fence materials and workmanship to be in accordance with IS EN 1722-1:
10. Dimensions of gate pillars, gate frame, fence pillars, fence runners, diagonals, etc. to be to manufacturers specification.
11. Fence gate design and details to be provided to Irish Water for review before manufacture.
12. Pedestrian gate shall be provided if deemed necessary by Irish Water.
13. Colour to be holy green 14 C 39 in accordance with BS 4800:2011.
14. A 125mm wide x 150mm deep concrete sill, grade C20/25 concrete shall be provided to Irish Water’s requirements (enhanced + security rating only).

### Panel - Elevation

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<th>Security Rating</th>
<th>Mesh Spacing A x B</th>
<th>Bar Thickness Type</th>
<th>Height</th>
<th>Additional Features</th>
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**Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment**
LEGEND:
1. STAINLESS STEEL WRAP AROUND CLAMP (GRADE 1.4571), ELASTOMER RUBBER GASKET WITH VULCANIZED REINFORCEMENT SHEET OF STAINLESS STEEL.
2. EXISTING ST / uPVC / DI OR CI PIPE.
3. REPLACEMENT SECTION (MINIMUM 1.0 M ) OF Plain Ended Ductile Iron Pipe.
4. MULTI FIT UNIVERSAL COUPLING.
5. EXISTING CAST IRON OR DUCTILE IRON PIPE.
6. EXISTING ASBESTOS MAIN.
7. REPLACEMENT OF FULL SECTION OF AC MAIN WITH A FULL LENGTH OF AN ALTERNATIVE IRISH WATER APPROVED PIPE MATERIAL.
8. SPECIAL TRANSITIONAL COUPLER (TO FIT TURNED END OF AC PIPE).
9. EXISTING PVC MAIN.
10. REPLACEMENT SECTION OF AN ALTERNATIVE IRISH WATER APPROVED PIPE MATERIAL (MINIMUM 1.0m) CUT TO LENGTH.
11. EXISTING PE PIPE.
12. REPLACEMENT SECTION OF PE PIPE.
13. FUSION WELDED COUPLING.
14. PIPE MATERIAL REFERENCES AS FOLLOWS:
   AC - ASPEROS CEMENT.
   DI - DUCTILE IRON.
   CI - CAST IRON.
   PE - POLYETHYLENE.
   uPVC - UNPLASTICISED POLY VINYL CHLORIDE.
   ST - STEEL.
15. REPAIRS TO EXISTING WATER MAINS THAT ARE IN OWNERSHIP OF IRISH WATER SHALL BE CARRIED OUT BY IRISH WATER OR AN AGENT OF IRISH WATER.
16. REPAIRS TO EXISTING WATER MAINS TO BE CARRIED OUT BY CONTRACTORS WHO ARE DEEMED COMPETENT BY IRISH WATER TO CARRY OUT SUCH REPAIRS. THESE REPAIRS SHALL BE CARRIED OUT IN ACCORDANCE WITH AN AGREED METHOD STATEMENT, SAFETY AND HEALTH PLAN AND HYGIENE PLAN.
17. A HIGH LEVEL OF HEALTH & SAFETY PROCEDURES IS REQUIRED WHEN WORKING ON AC MAINS, & THE OPERATION OF DISMANTLING REMOVAL OF AC PIPES & JOINTS.
1. All dimensions are in millimetres (mm) unless noted otherwise.
2. The kiosk shall be located off the footpath so as not to impede pedestrians and positioned so as to facilitate safe access for maintenance personnel.
3. Kiosk to be constructed from thermosetting U.V. & weather resistant plastic powder coated & hot dipped galvanised mild steel plate (minimum 4mm thickness) to BS EN 1461. Stainless steel or non-metallic materials such as glass reinforced plastic (GRP) may be used as an alternative kiosk material, particularly in severe environments, subject to agreement with Irish Water.
4. Kiosk to have single or double steel/GRP doors with multiple locks to LPS 1175 SR4 or EN 1627. Minimum double locks with bolts that engage into the sill & header as well as between the two leaves or leaf & frame. Leading edge of leaves to have either rebated edges or fitted with astragals.
5. Colour to be holly green BS 4800 14 C39, interior finish to be white unless approved by Irish Water.
6. The quality of kiosk construction shall ensure that the following is achieved:
   (a) A thermal transmittance of 1.5W per m²K.
   (b) A fire resistance (retention of stability, integrity and insulation) equivalent to Class 2 of BS 476, when tested in accordance with BS 476 for a period exceeding 30 minutes.
6. IP rating of IP65 or equivalent.
7. Kiosk to be bolted to the plinth through a bottom flange with galvanised mild steel anchor bolts.
8. The bottom flange shall be seated on a neoprene gasket and sealed with mastic.
9. Rear wall shall be reinforced with stainless steel sections to which a marine ply wood, 18mm thick board is fixed.
10. The developer shall be responsible for the ultimate sizing of the kiosk to ensure adequate space requirements.
11. Telemetry ducting to be in accordance with BS 4660 and BS EN 1401.
12. Electrical requirements to be in accordance with ESB specification.
13. The roof of the kiosk shall be removable (bolts) to facilitate backboard removal.
14. All exposed pipework to be adequately insulated with pipe lagging.
15. A 750mm wide x 150mm thick footpath of C25/30 concrete on 50mm sand blinding on 300mm Clause 804 granular material to be provided around kiosk.
16. All concrete to be in accordance with IS EN 206.
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. LAMP BOLLARD TO BE REVIEWED BY IRISH WATER.
3. LAMP STANDARD TO BE REVIEWED BY IRISH WATER.
4. ELECTRICAL DUCTING TO BE IN ACCORDANCE WITH ESB SPECIFICATION.

LAMP BOLLARD AND LAMP STANDARD

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

STANDARD DETAILS - WATER

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<th>DRAWING No.</th>
<th>DATE</th>
<th>DESCRIPTION</th>
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<td>STD-W-37</td>
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<td>Initial Issue</td>
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# STANDARD DETAILS FOR WATER NETWORKS: REVISION LOG - 03 (1st Dec. 2017)

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