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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 57 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.
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These Standard Details show the acceptable typical details and outline 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 pipes and related infrastructure to be connected to the Irish Water Network. The pipes and related infrastructure to be put in place within developments shall comply fully 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 Code of Practice IW-CDS-5020-03, which will take precedence over the Standard Details.

These Standard Details may also be used for the installation of water infrastructure for Asset Delivery Works & Capital Project Works Programmes at the discretion of Irish Water.

July 2020
NOTE:
The position of the meter does not represent the change of ownership in the service pipe. That point is normally at the property boundary.

Maintenance responsibility of the water service connections from the watermain to the boundary is set out in the pipe maintenance responsibility diagrams included on the Irish Water website @ www.water.ie

1. All dimensions in millimetres (mm) unless noted otherwise.
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 150mm 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 180mm INTERNAL DIAMETER. NORMAL INTERNAL DIAMETERS OF 80mm AND LESS 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 OR COMMERCIAL 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 PROPOSED 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 OUTSIDE DIAMETER, 20mm INTERNAL DIAMETER.

5. WATER MAINS SHOULD BE LAID TO PROVIDE THE OPTIMUM CIRCULATION IN THE LOCAL WATER NETWORK. WATER MAINS MAY TERMINATE IN A GRASS VERGE. IF GRASS VERGE IS NOT AVAILABLE, WATERMAINS TO BE LOCATED UNDER FOOTPATH.

6. WATER MAINS WITHIN DEVELOPMENTS SHALL BE ARRANGED IN LOOPS OR RINGS SO AS TO AVOID "DEAD ENDS" OR TERMINAL POINTS. ALL MAINS SHALL TERMINATE IN A GRASS VERGE ONLY WITH IRISH WATER APPROVAL, IN WHICH CASE AN ONLINE WASHOUT HYDRANT SHALL BE PROVIDED AT THE DEAD END. LOCATED WITHIN A CHAMBER OR KERB.

7. NO DOMESTIC PROPERTY SHALL BE MORE THAN 46m 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. 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 DEAD END ONLY WITH IRISH WATER APPROVAL, IN WHICH CASE AN ONLINE WASHOUT HYDRANT SHALL BE PROVIDED AT THE DEAD END. LOCATED WITHIN A CHAMBER OR KERB.

11. AIR VALVES TO BE LOCATED AT POINTS WHERE AIR IS LIKELY TO BUILD UP.

12. WATER SUPPLY MAINS SHALL BE DISTRIBUTED AT BOTH SIDES OF THE ESTATE ROADWAY.

13. IRISH WATER SHALL BE PROVIDED WITH A DEDICATED BYPASS PIPEWORK AND CHAMBER IN ACCORDANCE WITH STD-W-26F TO ACCOMMODATE THE 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.

14. WATERMAINS TO BE LOCATED IN GRASS VERGE. IF GRASS VERGE IS NOT AVAILABLE, WATERMAINS TO BE LOCATED UNDER FOOTPATH.

15. WHERE A GRASS VERGE IS NOT AVAILABLE AND A FOOTPATH IS LESS THAN 1.2m WIDE, THE WATERMAIN IS PERMITTED ON THE ROADWAY.

16. WHERE A GRASS VERGE IS NOT AVAILABLE, WATERMAINS TO BE LOCATED UNDER FOOTPATH AWAY FROM KERBS REFER TO STD-W-11 FOR TYPICAL UTILITY LAYOUT.

17. WHERE A GRASS VERGE IS NOT AVAILABLE AND A FOOTPATH IS LESS THAN 1.2m WIDE, THE WATERMAIN IS PERMITTED ON THE ROADWAY.

REFERENCE TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT.
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 OR FITTING 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 COVER ON THE BOUNDARY BOX SHOULD NOT BE LESS THAN GRADE C (BS 8644-2:2011); & 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 600mm (+/- 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 BOUNDARY BOX MANUFACTURER.
8. THE PIPE FITTINGS TO THE BOUNDARY BOX SHALL BE APPROVED BY THE BOUNDARY BOX MANUFACTURER.
9. THE BOUNDARY BOX SHALL BE INSTALLED HYGIENICALLY & LEFT CLEAN & FREE OF CONSTRUCTION WASTE OR DIRT FOR LATER METER INSTALLATION BY IRISH WATER.
10. BOX TO 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 MINIMUM COVER FOR A SERVICE CONNECTION PIPE SHOULD BE 1200mm, WHERE PRACTICABLE.
12. CUSTOMER’S DISTRIBUTION PIPEWORK WITHIN THE PREMISES SHOULD BE SUITABLY SIZED TO ACCOMMODATE FLOW FROM 20mm INTERNAL DIAMETER SERVICE PIPE.
13. WHERE A GRASS VERGE IS NOT AVAILABLE AND A FOOTPATH IS LESS THAN 1.5m WIDE, THE WATERMAIN IS PERMITTED ON THE ROADWAY.
14. THE POSITION OF THE METER DOES NOT REPRESENT THE CHANGE OF OWNERSHIP IN THE SERVICE PIPE. THAT POINT IS NORMALLY AT THE PROPERTY BOUNDARY.
15. THE BOUNDARY BOX ACCOMMODATES DN15, DN20 AND DN25 CONCENTRIC METERS. A G1.5 MANIFOLD IS TO BE USED FOR DN15 & DN20 METERS. A G2 MANIFOLD IS TO BE USED FOR ENDS METERS.
16. BOX TO BE LOCATED AWAY FROM VEHICULAR AXIAL LOADING WHERE POSSIBLE.

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 MANUFACTURERS SPECIFICATION.
3. ELECTRO FUSION COUPLING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS.
4. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
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 600mm (+/- 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 BOUNDARY BOX MANUFACTURER.
8. THE PIPE FITTINGS TO THE BOUNDARY BOX SHALL BE APPROVED BY THE BOUNDARY BOX MANUFACTURER.
9. THE BOUNDARY BOX SHALL BE INSTALLED HYGIENICALLY & LEFT CLEAN & FREE OF CONSTRUCTION WASTE OR DIRT FOR LATER METER INSTALLATION BY IRISH WATER.
10. BOX TO 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 MINIMUM COVER FOR A SERVICE CONNECTION PIPE SHOULD BE 1200mm, WHERE PRACTICABLE.
12. CUSTOMER’S DISTRIBUTION PIPEWORK WITHIN THE PREMISES SHOULD BE SUITABLY SIZED TO ACCOMMODATE FLOW FROM 20mm INTERNAL DIAMETER SERVICE PIPE.
13. WHERE A GRASS VERGE IS NOT AVAILABLE AND A FOOTPATH IS LESS THAN 1.5m WIDE, THE WATERMAIN IS PERMITTED ON THE ROADWAY.
14. THE POSITION OF THE METER DOES NOT REPRESENT THE CHANGE OF OWNERSHIP IN THE SERVICE PIPE. THAT POINT IS NORMALLY AT THE PROPERTY BOUNDARY.
15. THE BOUNDARY BOX ACCOMMODATES DN15, DN20 AND DN25 CONCENTRIC METERS. A G1.5 MANIFOLD IS TO BE USED FOR DN15 & DN20 METERS. A G2 MANIFOLD IS TO BE USED FOR ENDS METERS.
16. BOX TO BE LOCATED AWAY FROM VEHICULAR AXIAL LOADING WHERE POSSIBLE.

CUSTOMER CONNECTION AND BOUNDARY BOX

FOR D.I. WATER MAINS
FOR POLYETHYLENE (PE) WATER MAIN ONLY

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

STANDARD DETAILS - WATER

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SCALE NOT TO SCALE  DATE  SEPT. 2015

REV  DRAWING No.

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<td>2</td>
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<td>3</td>
<td>Added dimensions &amp; notes</td>
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<td>4</td>
<td>Servo control or ownership revised, notes added</td>
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1. All dimensions are in millimetres (mm) unless noted otherwise.
2. All bends, tees, dead ends, etc., of pipes 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 electro fusion jointing of pipes shall only be carried out by trained operatives in possession of a current training certificate, using fully automatic approved joining machines 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.
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. Methods 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 polyvinyl chloride
   - ST - Steel
   - OTHER - Refers to all existing pipe materials other than PE (typically AC, CI, uPVC & ST).
7. Valve chamber to be in accordance with STD-W-14 (DD) and STD-W-15 (PE). Chamber 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 removal of pipes & joints.
11. 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.
12. Unequal tees may be used instead of concentric tapers (where applicable).
13. ON-LINE WASHOUT HYDRANT. PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS, METHOD OF PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS. METHOD OF PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS. METHOD OF PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS. METHOD OF PROTECTION TO BE PUT IN PLACE TO EXISTING MAINS.
14. NORTH: EIREANN - IRISH WATER

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

- **NEW PE PIPE**
  - LONG BODY FLANGE ADAPTOR
  - STEPPED OR FLEXIBLE COUPLING
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (TO SUIT VALVE CHAMBER ARRANGEMENT)
  - DISMANTLING JOINT
  - LONG BODY FLEXIBLE COUPLING

- **EXISTING DI PIPE**
  - NEW PE PIPE
  - LONG BODY FLANGE ADAPTOR
  - STEPPED OR FLEXIBLE COUPLING
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (TO SUIT VALVE CHAMBER ARRANGEMENT)
  - DISMANTLING JOINT
  - LONG BODY FLEXIBLE COUPLING

- **NEW PE PIPE**
  - LONG BODY FLANGE ADAPTOR
  - STEPPED OR FLEXIBLE COUPLING
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (TO SUIT VALVE CHAMBER ARRANGEMENT)
  - DISMANTLING JOINT
  - LONG BODY FLEXIBLE COUPLING

- **EXISTING DI PIPE**
  - NEW PE PIPE
  - LONG BODY FLANGE ADAPTOR
  - STEPPED OR FLEXIBLE COUPLING
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (TO SUIT VALVE CHAMBER ARRANGEMENT)
  - DISMANTLING JOINT
  - LONG BODY FLEXIBLE COUPLING

**NEW PE / DI - EXISTING PE**

- **NEW PE PIPE**
  - LONG BODY FLANGE ADAPTOR
  - STEPPED OR FLEXIBLE COUPLING
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (TO SUIT VALVE CHAMBER ARRANGEMENT)
  - DISMANTLING JOINT
  - LONG BODY FLEXIBLE COUPLING

- **EXISTING PE PIPE**
  - NEW PE PIPE
  - LONG BODY FLANGE ADAPTOR
  - STEPPED OR FLEXIBLE COUPLING
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (TO SUIT VALVE CHAMBER ARRANGEMENT)
  - DISMANTLING JOINT
  - LONG BODY FLEXIBLE COUPLING

**STANDARD DETAILS - WATER**

- **GENERAL PIPE CONNECTIONS**

**NEW PE - EXISTING PE**

- **TEMPORARY "DEAD-END" DETAIL (FOR FUTURE EXTENSION) - PE**
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (THRUST BLOCK NOT SHOWN)
  - BLANK FLANGE
  - ON-LINE WASHOUT HYDRANT. REFER TO STD-W-16 FOR DETAILS.

- **TEMPORARY "DEAD-END" DETAIL (FOR FUTURE EXTENSION) - DI**
  - NEW FLANGED PLAIN ENDED DI PIPE / THRUST FLANGE
  - DOUBLE FLANGED DI PIPE (THRUST BLOCK NOT SHOWN)
  - BLANK FLANGE
  - ON-LINE WASHOUT HYDRANT. REFER TO STD-W-16 FOR 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 JOINING 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 JOINING MACHINE. A PRINTOUT OF THE JOINT DETAILS, WITH 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 WATERSHEDS ARE PRESENT A SPECIFIC METHOD STATEMENT SHALL BE SUBMITTED TO IRISH WATER PRIOR TO WORKS TAKING PLACE AND SUBJECT TO WRITTEN APPROVAL. DETAILS 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, CI, uPVC & ST)
7. ELIGE 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 REMOVAL 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.
12. UNEQUAL TEES MAY BE USED INSTEAD OF CONCENTRIC TAPERS (WHERE APPLICABLE).

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 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 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.
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 - 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, 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.
11. Unequal tees may be used instead of concentric tapers (where applicable).

Refer to Index Sheet for notes regarding design responsibility & risk assessment.
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 MACHINES AS PER 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.
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, 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. UNEQUAL TEES MAY BE USED INSTEAD OF CONCENTRIC TAPERS (WHERE APPLICABLE).

**Diagram:**

- NEW PE - EXISTING PE
- NEW PE - EXISTING OTHER MATERIAL

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

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**General Pipe Connections**

(Sheet 6 of 7)
1. **DISMANTLING JOINT**
   - **10.** Unequal tees may be used instead of concentric tapers (where applicable).

2. **GENERAL PIPE CONNECTIONS**
   - **9.** Double flanged separation pipe, up to 5m in length, may be required to allow separation distance between valve chambers.

3. **PIPE MATERIAL REFERENCES AS FOLLOWS:**
   - AC - Asbestos cement
   - DI - Ductile iron
   - PE - Polyethylene
   - uPVC - Unplasticised polyvinyl chloride
   - ST - Steel
   - Other - Refers to all existing pipe materials other than PE (Typically AC, DI, uPVC & ST)

4. **Connecting to Existing Mains**
   - It is to be carried out by Irish Water or an approved Irish Water agent.

5. **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.

6. **Pipe Material References as Follows:**
   - uPVC - Unplasticised Polyvinyl Chloride
   - PE - Polyethylene
   - DI - Ductile Iron
   - CI - Cast Iron
   - 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**

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. **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.

10. **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.
1. **SEPARATION DISTANCES BETWEEN WATERMAINS ASSOCIATED WITH THE WORKS FROM OTHER UTILITY PIPES AND ACCESSORIES SHALL BE IN ACCORDANCE WITH SECTION 3.6 OF THE CODE OF PRACTICE.** SEPARATION DISTANCES FOR ALL NEW INSTALLATIONS FROM EXISTING IRISH WATER PIPES SHALL BE AS OUTLINED IN SECTION 3.27 OF THE CODE OF PRACTICE. THE SEPARATION DISTANCES SPECIFIED ARE MINIMUM DISTANCES.

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

   ANY PROPOSED PIPE CROSSING SHOULD BE LOCATED MID-WAY BETWEEN THE WATER JOINTS WITH MINIMUM CLEARANCE OF 300mm and up to 500mm. ALL CROSSINGS SHOULD BE AT LEAST 500mm AWAY FROM FITTINGS OR JOINTS.

4. **WATERMAIN (EXISTING) SEPARATION DISTANCES**

   **HORIZONTAL**
   - WHERE A GRASS VERGE IS NOT AVAILABLE AND A FOOTPATH IS LESS THAN 1.5m WIDE, THE WATERMAIN IS PERMITTED ON THE ROADWAY.
   - SEPARATION DISTANCES BETWEEN UTILITIES MAY BE INCREASED TO PROVIDE FOR CHAMBER & THRUST BLOCKS AT BENDS.
   - WHERE THE DESIGN DEVIATES FROM THIS STANDARD DETAIL, THE DESIGN SHALL BE SUBJECT TO THE REVIEW OF IRISH WATER.
   - 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.
   - 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.
   - DEVELOPERS SHALL ALSO COMPLY WITH ANY NOTIFICATION REQUIREMENTS OF OTHER UTILITY PROVIDERS (ESB, GAS MAIN, TELECOMMUNICATION ETC).
   - SPECIFIC WRITTEN APPROVAL WILL BE REQUIRED FROM IRISH WATER BEFORE PROCEEDING WITH THE WORK.

5. **NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN THE FOLLOWING DISTANCES FROM AN EXISTING WATER MAIN OR WASTEWATER RISING MAIN WHERE THE DEPTH OF THE EXISTING INFRASTRUCTURE DOES NOT EXCEED 1.5m.**

   **HORIZONTAL**
   - 5m at either side of existing pipes less than 200mm diameter.
   - 2m at either side of existing pipes of 200mm to 350mm diameter.
   - 5m at either side of existing pipes of 350mm or greater.

   **VERTICAL**
   - SEPARATION DISTANCES FOR ALL NEW INSTALLATIONS FROM EXISTING IRISH WATER PIPES SHALL BE AS OUTLINED IN SECTION 3.27 OF THE CODE OF PRACTICE. THE SEPARATION DISTANCES SPECIFIED ARE MINIMUM DISTANCES.

6. **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. THE SEPARATION DISTANCES SPECIFIED ARE MINIMUM DISTANCES.

7. **DETAILED PROPOSALS, INCLUDING WORK METHOD STATEMENTS, INSURANCE CONFIRMATION AND DETAILS OF WORK COMPLETED OF A SIMILAR NATURE MUST BE PROVIDED TO IRISH WATER.** DEVELOPERS SHALL ALSO COMPLY WITH ANY NOTIFICATION REQUIREMENTS OF OTHER UTILITY PROVIDERS (ESB, GAS MAIN, TELECOMMUNICATION ETC).

8. **NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN THE FOLLOWING DISTANCES FROM AN EXISTING WATER MAIN OR WASTEWATER RISING MAIN WHERE THE DEPTH OF THE EXISTING INFRASTRUCTURE DOES NOT EXCEED 1.5m.**

   **HORIZONTAL**
   - 1m at either side of mains of 200mm to 250mm diameter.
   - 2m at either side of mains of 250mm to 300mm diameter.
   - 3m at either side of mains of 300mm and up to and including 400mm diameter.
   - 5m at either side of gravity sewer of 300mm and up to and including 450mm diameter.
   - 1.5m at either side of gravity sewer of 400mm diameter and greater.

9. **NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN THE FOLLOWING DISTANCES FROM AN EXISTING WATER MAIN OR WASTEWATER RISING MAIN WHERE THE DEPTH OF THE EXISTING INFRASTRUCTURE DOES NOT EXCEED 1.5m.**

   **HORIZONTAL**
   - 1.5m at either side of gravity sewer of 400mm diameter and greater.
   - 5m at either side of gravity sewer of 500mm diameter and greater.

10. **NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN THE FOLLOWING DISTANCES FROM AN EXISTING WATER MAIN OR WASTEWATER RISING MAIN WHERE THE DEPTH OF THE EXISTING INFRASTRUCTURE DOES NOT EXCEED 1.5m.**

   **HORIZONTAL**
   - 10m at either side of mains of 200mm or greater diameter.
   - 5m at either side of mains of 200mm to 350mm diameter.
   - 10m at either side of mains of 350mm or greater diameter.

   **VERTICAL**
   - SEPARATION DISTANCES FOR ALL NEW INSTALLATIONS FROM EXISTING IRISH WATER PIPES SHALL BE AS OUTLINED IN SECTION 3.27 OF THE CODE OF PRACTICE. THE SEPARATION DISTANCES SPECIFIED ARE MINIMUM DISTANCES.

11. **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.

12. **ANY PROPOSED PIPE CROSSING SHOULD BE LOCATED MID-WAY BETWEEN THE WATER JOINTS WITH MINIMUM CLEARANCE OF 300mm and up to 500mm. ALL CROSSINGS SHOULD BE AT LEAST 500mm AWAY FROM FITTINGS OR JOINTS.**

---

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<th>C (mm)</th>
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</tr>
<tr>
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<td>750</td>
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<td>1000</td>
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<td>&gt;600</td>
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**Diagram:**

- **Title:** TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES
- **Scale:** 1:50
- **Note:** Refer to index sheet for notes regarding design responsibility & risk assessment.
EXISTING PLANTING:

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 ARBOURIST. WORKS SHALL BE SUBJECT OF A CLEAR METHOD STATEMENT OUTLINING ALL WORKS ADJACENT TO THE TREES/ShRUBS WHICH IS TO BE PREPARED & 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 ARBOURIST AND AGREED WITH IRISH WATER. WORKS SHALL BE SUBJECT OF AN ARBOURCULTURAL 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.

OUTSIDE RADIUS OF PRECAUTION AREA = 4 x Girth of Tree

PRECAUTION AREA

EXCLUSION AREA

PRECAUTION AREA

Girth (Circumference of Tree measured at 1.5m above ground level)

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.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
**DIAGRAM 1: DECISION FLOW CHART**

**Main Decision**
- Trees required in proximity to water infrastructure
  - No
  - Yes

**Decision Process**
1. **STEP 1**
   - Check Table A.7 of BS 5837.
   - Check 1. Utility depth
   - 2. Final expected stem diameter
   - Establishment distance from tree to utility
   - 3. Assume no protection measures

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

**Outcome**
- Are root barriers or protection measures to be used?

**Not To Scale**
- Refer to index sheet for notes regarding design responsibility & risk assessment.

**STANDARD DETAILS - WATER**

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

- **WATERMAINS**
  - Note that values refer to planting distances without root barriers or protection measures.

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<td>-</td>
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**TABLE A.1, BS 5837**

- Minimum distance between young trees or new planting & structures, in metres (m).

**NOTE:**
- Other species not named to be planted to the same spacings depending on root formation.

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

**STANDARD DETAILS - WATER**

**TITLE**
- Restrictions on New Trees / Shrubs

**DRAWING No.**
- STD-W12A

**REVIEW**
- 0

**DATE**
- Jul. 2017

**SCALE**
- Not to scale
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 PRACTICABLE & 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 5m 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 500m OF CEMENT BOUND MATERIALS, CONCRETE PAVEMENTS, CONCRETE STRUCTURES OR CONCRETE PRODUCTS. OTHERWISE CLAUSE 804 MAY BE USED. ALTERNATIVE BACKFILL MATERIAL TO THAT DESCRIBED ABOVE (CLAUSE 804 OR CLAUSE 808) OF THE PIPE TRENCH WILL ONLY BE ALLOWED BY IRISH WATER WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED, PROVIDES WRITTEN APPROVAL TO THE DEVELOPER TO USE SUCH ALTERNATIVE MATERIAL.

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

5. PIPE BEDDING SHALL COMPLY WITH WS 4-08-02 AND WS 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm (d) SINGLE SIZED AGGREGATE TO BS EN 13242. SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER.

6. IN SOFT GROUND CONDITIONS (CBR < 0.5) 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 THIS 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 SUPPORT ARRANGEMENTS, INCLUDING PILING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY IRISH WATER.

10. TRENCH WIDTHS FOR PIPE SIZES 150mm MAY BE <500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.

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

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

13. FOR ANY SLABBING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR APPROVAL BY IRISH WATER.

14. MARKER TAPE TO BE PLACED ABOVE THE PROTECTION SLAB ALONG THE DIRECTION OF THE PIPELINE.

15. CONCRETE TO BE GRADE C30/35.

16. MINIMUM COVER TO STEEL REINFORCEMENT =40mm

17. SLABS TO BE DESIGNED FOR USE UNDER A HB25 LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION.

18. THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER WHERE THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED AND REPLACED WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY IRISH WATER.

19. IF DIRECTION OF PIPELINE AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW.

20. IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR IMPACT PROTECTION & OVERALL DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY BE INCREASED AFTER CONSULTATION WITH IRISH WATER.
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 5834. 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 5163-1, BS 5163-2, IS 1074-1, IS 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 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. G.C.30/37 with a minimum thickness of 150mm. Alternatively, precast concrete roofs may be used, subject to Irish Water review, & compliance with IS 1074-1 & -2. PVC chamber riser units should be interlocking when stacked to prevent lateral movement of individual units.
6. Concrete chambers shall be surrounded by a minimum of 150mm compacted clause B material as per STD-W-13.
7. Ductile iron pipes and fittings to be in accordance with IS 58.
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 2206.
12. All thrust flanges to be adequately restrained by thrust blocks as per drawing No. STD-W-18, thrust block shown for clarity.
13. 450 x 450mm internal dimension chambers may be provided subject to review by Irish Water. Such chambers shall be provided with grade "A" heavy duty cover & frame & stamped "SV" bearing slab to be 350 x 350mm in all cases.
14. Any special road reinstatement around covers & frame shall be to road authority requirements.
15. New road construction & surface finish to be to road authority requirements.
16. 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.

Cover to be set in cementitious epoxy resin/polyester mortar 300mm thick.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT.
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUICE VALVE 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 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. SLUICE VALVE 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 100mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED. SUBJECT TO IRISH WATER REVIEW, A COMPLIANCE WITH IS EN 1917 & IS 430. PCC CHAMBER RISER UNITS SHOULD BE INTERLOCKING WHEN STAKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.
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 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. 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" CLASS D400. DIMENSIONS OF 450 x 600mm & 75mm HIGH.
13. ANY SPECIAL ROAD REINSTALLATION 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 REINSTALLATION 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**

COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR. 300mm thick.
1 TO 2 COURSES OF CLASS B SOLID ENGINEERING BRICK SET IN M30 MORTAR TO IS EN 968
CONCRETE ROOF SLAB C30 / 37 REINFORCED SLAB
EXTENSION SPINDLE
PRECasters CONCRETE UNITS (REFER TO NOTE 5.)
900 x 900mm C25/30  PRECAST CONCRETE BEARING SLAB
REFER TO STD. W-13 FOR BEEDING AND BACKFILLING DETAILS.

**FLOOR PLAN**

SLUICE VALVE CHAMBER
(PRECAST CONCRETE CONSTRUCTION)

PRECAST CONCRETE UNITS (REFER TO NOTE 6.)

**ROOF PLAN**

SLUICE VALVE CHAMBER
(BLOCKWORK CONSTRUCTION)

215mm THICK 250mm² CONCRETE BLOCKWORK IN ACCORDANCE WITH IS EN 771-3

**REFERENCE DRAWINGS**

REFER TO STANDARD DRAWING STD-W-28 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.

**NOTES**

- REFER TO CLAUSE 808 FOR POLYETHYLENE (P.E.) PIPE (< 350mm DIA.)
- REFER TO NOTE 2 ON STD-W-13
- FOR VALVES 250mmØ & GREATER CONCRETE ANTI-TORQUE SUPPORT JOINED TO COVER & FRAME STAMPED "SV" CLASS D400
- 75mm HIGH LETTERING HEAVY DUTY COVER AND FRAME STAMPED "SV" CLASS D400 (TO SUIT 445 x 280 OPE)
- CONCRETE ROOF SLAB C30 / 37 REINFORCED SLAB
- ALTERNATIVE INTERNAL PLAN DIMENSIONS OF 450 x 600mm & 450 x 450mm MAY BE ALLOWED SUBJECT TO IRISH WATER APPROVAL.
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 5894. 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 14339, IS EN 1074-6 & BS 750. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT NUTS SHALL BE 445MM DIAMETER WITH FH.
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, & Consistent A REINFORCED CONCRETE SLAB OF MAGTO 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 IS EN 1917 & IS 425. PVC CHAMBER REINS UNITS SHOULD BE INTERLOCKING WHEN STACKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 190mm COMPACTED CLAUS B8 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-4 AT ALL TELS, 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.
15. THE FIRE HYDRANT OUTLET TYPE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE OFFICER FOR THE AREA AND SHALL BE AGREED PRIOR TO THE COMMENCEMENT OF WORKS.
16. THE HYDRANT SHALL BE DOUBLE FLANGED DRILLED TO PN 16. THEY SHALL COMPLY WITH IS EN 14339, IS EN 1074-6 & BS 750: 2012. THE HYDRANT SHALL INCORPORATE A SCREW DOWN GATE VALVE, UNDERGROUND "GUIDE TO HEAD" TYPE WITH A FALSE SPINDLE CAP. THE OUTLET SHALL BE "F" IN ACCORDANCE WITH ITEM 19 ABOVE.
17. 450 x 450mm INTERNAL DIMENSIONS MAY BE PROVIDED SUBJECT TO REVIEW BY IW. SUCH CHAMBERS SHALL BE PROVIDED WITH GRADE "A" HEAVY DUTY COVER & FRAME & STAMPED "SV". BEARING SLABS TO BE 900 x 900mm IN ALL CASES.
18. 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 MAGTO 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 IS EN 1917 & IS 425. PVC CHAMBER REINS UNITS SHOULD BE INTERLOCKING WHEN STACKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.
19. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 190mm COMPACTED CLAUS B8 MATERIAL AS PER STD-W-13.
20. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545.
21. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
22. THRUST BLOCKS (NOT SHOWN ON DRAWING) TO BE PROVIDED AS PER STANDARD DRAWING STD-W-4 AT ALL TELS, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
23. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
24. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
25. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
26. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
27. 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.
28. THE FIRE HYDRANT OUTLET TYPE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE OFFICER FOR THE AREA AND SHALL BE AGREED PRIOR TO THE COMMENCEMENT OF WORKS.
29. THE HYDRANT SHALL BE DOUBLE FLANGED DRILLED TO PN 16. THEY SHALL COMPLY WITH IS EN 14339, IS EN 1074-6 & BS 750: 2012. THE HYDRANT SHALL INCORPORATE A SCREW DOWN GATE VALVE, UNDERGROUND "GUIDE TO HEAD" TYPE WITH A FALSE SPINDLE CAP. THE OUTLET SHALL BE "F" IN ACCORDANCE WITH ITEM 19 ABOVE.
30. 450 x 450mm INTERNAL DIMENSIONS MAY BE PROVIDED SUBJECT TO REVIEW BY IW. SUCH CHAMBERS SHALL BE PROVIDED WITH GRADE "A" HEAVY DUTY COVER & FRAME & STAMPED "SV". BEARING SLABS TO BE 900 x 900mm IN ALL CASES.
31. 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 MAGTO 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 IS EN 1917 & IS 425. PVC CHAMBER REINS UNITS SHOULD BE INTERLOCKING WHEN STACKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.
32. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 190mm COMPACTED CLAUS B8 MATERIAL AS PER STD-W-13.
33. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545.
34. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
35. THRUST BLOCKS (NOT SHOWN ON DRAWING) TO BE PROVIDED AS PER STANDARD DRAWING STD-W-4 AT ALL TELS, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
36. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
37. 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 8534 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 EN 14339, IS EN 1074 & BS 795. FIRE HYDRANTS SHALL BE TYPE 2. THE HYDRANT INLET SHALL BE 80mm DIAMETER WITH PN 16.
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.

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

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**Detector Details - FIRE HYDRANT CHAMBER (BLOCKWORK CONSTRUCTION)**

- **COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²**
- **HEAVY DUTY COVER AND FRAME, STAMPED “FH” CLASS D400 (TO SUIT 445 x 280 OPE)**
- **CONCRETE ROOF SLAB C30/37 REINFORCED SLAB**
- **CONCRETE ROOF SLAB C30/37 REINFORCED SLAB**
- **PRECAST CONCRETE UNITS (REFER TO NOTE 5)**
- **DI, DOUBLE FLANGED, DI, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS**

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**Detector Details - FIRE HYDRANT CHAMBER (PRECAST CONCRETE CONSTRUCTION)**

- **COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²**
- **HEAVY DUTY COVER AND FRAME, STAMPED “FH” CLASS D400 (TO SUIT 445 x 280 OPE)**
- **CONCRETE ROOF SLAB C30/37 REINFORCED SLAB**
- **PRECAST CONCRETE UNITS (REFER TO NOTE 5)**
- **DI, DOUBLE FLANGED, DI, RISER PIPE OF SUITABLE LENGTH TO SUIT SITE CONDITIONS**

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**Scale Not to Scale**: STD-W-17

**Drawing No.**: REV

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**Date**: SEPT. 2015

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**Refers to 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 5844 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 EN 14339, IS EN 1074 & BS 730. 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 PROPERTY REFRIGERATED 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 C25/30, WITH A MINIMUM THICKNESS OF 100mm. ALTERNATIVELY, PRECAST CONCRETE ROOFS MAY BE USED. SUBJECT TO IRISH WATER REVIEW, A COMPLIANCE WITH IS EN 1917 & IS 430. PC1 CHAMBER RISER UNITS SHOULD BE INTERLOCKING WHEN STACKED TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL UNITS.


7. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. PIPE AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12011, 2011.

8. 300mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS. 75mm HIGH.

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 EN 206.

12. ANY SPECIAL ROAD RESURFACING AROUND CURB & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.

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

14. EXISTING ROAD RESURFACING TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MAKING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.

15. THE FIRE HYDRANT OUTLET PIPE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE OFFICER FOR THE AREA AND SHALL BE AGREED PRIOR TO THE COMMENCEMENT OF WORKS.

16. THE HYDRANT SHALL BE DOUBLE FLANGED DRILLED TO PN 16. THEY SHALL COMPLY WITH IS EN 14339, IS EN 1074 PART 6 AND BS 750: 2012. THE HYDRANT SHALL INCORPORATE A SCREW DOWN GATE VALVE, UNDERGROUND "GUIDE TO HEAD" TYPE WITH A FALSE SPINDLE CAP. THE OUTLET SHALL BE IN ACCORDANCE WITH ITEM 15 ABOVE.

17. 450 x 600mm INTERNAL DIMENSION CHAMBERS MAY BE PROVIDED SUBJECT TO REVIEW BY IRISH WATER. SUCH CHAMBERS SHALL BE PROVIDED WITH GRADE "A" HEAVY DUTY COVER & FRAME & STAMPED "SV".

FINISHED-GROUND LEVEL

COVER TO BE SET IN CEMENTITIOUS EPSOXY RESIN/POLYESTER MORTAR
300mm/2

CONCRETE ROOF SLAB
C30/37 REINFORCED SLAB

PRECAST CONCRETE UNITS (REFER TO NOTE 5.)
900 x 900mm C25/30 PRECAST CONCRETE BEARING SLAB

ROOF PLAN
1 TO 2 COURSES OF CLASS B SOLID ENGINEERING BLOCK IN LIGHT GREY.(RISER CAN BE PE MATERIAL)

ROOF PLAN
1 TO 2 COURSES OF CLASS B SOLID ENGINEERING BLOCK IN LIGHT GREY.(RISER CAN BE PE MATERIAL)

FINISHED-GROUND LEVEL

COVER TO BE SET IN CEMENTITIOUS EPSOXY RESIN/POLYESTER MORTAR
300mm/2

CONCRETE ROOF SLAB
C30/37 REINFORCED SLAB

PRECAST CONCRETE UNITS (REFER TO NOTE 5.)
900 x 900mm C25/30 PRECAST CONCRETE BEARING SLAB

1150 x 1150mm C28/30 PRECAST CONCRETE BEARING SLAB

ALTERNATIVE INTERNAL PLAN DIMENSIONS OF 450 x 880mm & 450 x 525mm MAY BE ALLOWED SUBJECT TO IRISH WATER APPROVAL.

ALTERNATIVE INTERNAL PLAN DIMENSIONS OF 450 x 880mm & 450 x 525mm MAY BE ALLOWED SUBJECT TO IRISH WATER APPROVAL.

PORE PLAN
FIRE HYDRANT CHAMBER
(PRECAST CONCRETE CONSTRUCTION)

PORE PLAN
FIRE HYDRANT CHAMBER
(BLOCKWORK CONSTRUCTION)

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

REVIEWED & ADDED NOTES
REV

REVIEWED NOTES 2.3 & 6
REV

INITIAL ISSUE
REV
1. All dimensions in millimetres (mm). Unless noted otherwise.
2. Hydrant chambers shall be covered with approved heavy duty metal covers to IS 281 or BS 5434 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 14299, IS 14294 & BS 763. Fire hydrants shall be type 2.
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 IS-F60 concrete. Grade C30/37. With a minimum thickness of 150mm. Alternatively, precast concrete roofs may be used. Subject to Irish Water review & Compliance with IS 1917 & IS 420. Precast chamber riser units should be interlocking when stacked to prevent lateral movement of individual units.
6. Concrete chambers shall be surrounded by a minimum of 100mm compacted clay material as per STD-W-13.
7. Ductile iron pipes and fittings to be in accordance with IS 445. PE pipes and fittings to be in accordance with IS 12201-2011.
8. 200mm all around, 100mm deep concrete punt & round covers in green areas.
9. Thrust blocks not shown on drawing, to be provided as per standard drawing STD-W-30 at all tees, bends, tees, 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 250.
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.
15. The fire hydrant outlet type shall be in accordance with the requirements of the fire officer for the area and shall be agreed prior to the commencement of works.
16. The hydrant outlet shall be double flanged drilled to PN 16. They shall comply with IS EN 14339, IS EN 1074-6 and BS 750:2012.
17. The fire hydrant outlet shall be in accordance with the requirements of the fire officer for the area and shall be agreed prior to the commencement of works.
18. The hydrant shall be double flanged drilled to PN 16. They shall comply with IS EN 14339, IS EN 1074-6 and BS 750:2012. The hydrant shall incorporate a screw down gate valve, underground "guide to head" type with a false spindle cap. The outlet shall be in accordance with item 15 above.
19. 445 x 280mm internal dimension chambers may be provided subject to review by IW. Such chambers shall be provided with grade ‘I’ heavy duty cover & frame & stamped "FH".

**PLINTH DETAIL IN GRASS AREA**

- **Bull nose finish**
- **50mm high lettering**
- **Concrete cover & frame, stamped "FH" (class D40) to suit 445 x 280 mm (refer to note 3)***

**SECTION**

- **Precast concrete units (Refer to Note 5)**
- **Concrete roof slab C30/37 reinforced slab**

**ROOF PLAN**

- **Fire hydrant chamber (precast concrete construction)**
- **Precast concrete units (Refer to Note 5)**

**FLOOR PLAN**

- **Fire hydrant chamber (blockwork construction)**
- **Precast concrete units (Refer to Note 5)**

**COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²**

**NOTE**

3. All hydrants, surface box frames & covers shall comply with the relevant provisions of IS 14299, IS 14294 & BS 763. Fire hydrants shall be type 2.
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 IS-F60 concrete. Grade C30/37. With a minimum thickness of 150mm. Alternatively, precast concrete roofs may be used. Subject to Irish Water review & Compliance with IS 1917 & IS 420. Precast chamber riser units should be interlocking when stacked to prevent lateral movement of individual units.
6. Concrete chambers shall be surrounded by a minimum of 100mm compacted clay material as per STD-W-13.
7. Ductile iron pipes and fittings to be in accordance with IS 445. PE pipes and fittings to be in accordance with IS 12201-2011.
8. 200mm all around, 100mm deep concrete punt & round covers in green areas.
9. Thrust blocks not shown on drawing, to be provided as per standard drawing STD-W-30 at all tees, bends, tees, 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 250.
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.
15. The fire hydrant outlet type shall be in accordance with the requirements of the fire officer for the area and shall be agreed prior to the commencement of works.
16. The hydrant outlet shall be double flanged drilled to PN 16. They shall comply with IS EN 14339, IS EN 1074-6 and BS 750:2012.
17. The fire hydrant outlet shall be in accordance with the requirements of the fire officer for the area and shall be agreed prior to the commencement of works.
18. The hydrant shall be double flanged drilled to PN 16. They shall comply with IS EN 14339, IS EN 1074-6 and BS 750:2012. The hydrant shall incorporate a screw down gate valve, underground "guide to head" type with a false spindle cap. The outlet shall be in accordance with item 15 above.
19. 445 x 280mm internal dimension chambers may be provided subject to review by IW. Such chambers shall be provided with grade ‘I’ heavy duty cover & frame & stamped "FH".
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.**
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. **Ductile iron riser pipes and fittings to be in accordance with IS EN 545.**
9. **DUCTILE IRON SOCKETTED TEE WITH FLANGED BRANCH**
10. **DOUBLE AIR VALVE**
11. **PLINTH DETAIL IN GRASS AREA**

**NOTE 2 ON STD-W-13**

**COVERAGE TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²**

**CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.**

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

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

**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.**

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

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

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

**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. 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 BE 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 1074-4.
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. 300mm ALL AROUND, 150mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. THRUST BLOCKS (NOT SHOWN ON DRAWING) TO BE PROVIDED AROUND BURIED FLANGES.
10. AIR VALVE INLET TO 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 BE SUBJECT TO REVIEW BY IRISH WATER.
11. THE LOCATION OF THE AIR VALVE CHAMBERS 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. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
14. NEW ROAD CONSTRUCTION & SURFACE TREATMENT TO BE IN ACCORDANCE WITH IS EN 124 RATING D400.
15. REQUIREMENTS OF IS EN 1074-4 TO BE COMPLIANCE WITH CURRENT VERSION OF STANDARDS, NIS 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
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 1074-2.
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 CLAY 8IB MATERIAL AS PER STD-W-13.
7. DUCTILE IRON PIPES / FITTINGS AND PE PIPES / FITTINGS TO BE IN ACCORDANCE WITH IS EN 1654 AND IS EN 12201:2011.
8. ALL AIR VALVES 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.
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. NO SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’S REQUIREMENTS.
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 PAVING 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 & SPORTS, ON TRANSPORT INFRASTRUCTURE RELEVANT REQUIREMENTS.

**DOUBLE AIR VALVE**

**PRECAST CONCRETE BEARING SLAB**

**POLYETHYLENE (P.E.) PIPE**

**SECT. TO STD-W-13 FOR BEDDING AND BACKFILLING DETAILS**

**COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²**

**215mm THICK 20N/mm² CONCRETE BLOCKWORK IN ACCORDANCE WITH IS EN 771-3**

**DOUBLE AIR VALVE**

**POLYETHYLENE TEE WITH FLANGED BRANCH**

**HEAVY DUTY DUCTILE IRON COVERS AND FRAME, STAMPED “AV” CLASS D400. ALL CLASS D400 COVERS TO HAVE A FRAME DEPTH OF 100mm AND PIPE SIZE TO BE 800mm x 600mm**

**PRECAST CONCRETE UNITS (REFER TO NOTE 6)**

**200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.**

**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.**

**ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.**

**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.**

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

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

**NEW ROAD CONSTRUCTION & SURFACING PAVING TO BE TO ROAD AUTHORITY’S REQUIREMENTS.**

**EXISTING ROAD REINSTATEMENT TO COMPLY WITH CURRENT VERSION OF GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS” BY THE DEPT. OF TRANSPORT, TOURISM & SPORTS, ON TRANSPORT INFRASTRUCTURE RELEVANT REQUIREMENTS.**

**REFERR TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT**

**STANDARD DETAILS - WATER**

**ON - LINE AIR VALVE**

**FOR POLYETHYLENE (P.E.) PIPE**

(Sheet 3 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 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 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 CLAUS 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. 300mm 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-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 MUST BE TO ROAD AUTHORITY REQUIREMENTS.
15. EXISTING ROAD REHABILITATION TO COMPLY WITH CURRENT VERSION OF GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS IN THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRLAND REQUIREMENTS.

**PLINTH DETAIL IN GRASS AREA**

- **AV**
- 90° POLYETHYLENE BEND
- POLYETHYLENE TEE WITH FLANGED BRANCH
- 1 TO 2 COURSES OF CLASS B SOLID ENGINEERING BRICK SET IN M30 MORTAR TO IS EN 771-3
- 215mm THICK 20N/mm² CONCRETE BLOCKWORK IN ACCORDANCE WITH IS EN 771-3
- OPE TO BE SEALED USING A SUITABLE MATERIAL
- 75mm HIGH LETTERING

**SECTION**

- **AV**
- 215mm THICK 20N/mm² CONCRETE BLOCKWORK IN ACCORDANCE WITH IS EN 771-3
- OPE TO BE SEALED USING A SUITABLE MATERIAL
- CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²

**FLOOR PLAN**

- **AV**
- 215mm THICK 20N/mm² CONCRETE BLOCKWORK IN ACCORDANCE WITH IS EN 771-3
- OPE TO BE SEALED USING A SUITABLE MATERIAL
- CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²

**RECOMMENDATIONS**

- COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm²
- PRECAST CONCRETE UNITS (REFER TO NOTE 6)
- 75mm CONCRETE BLINDING GRADE C12 / 15
- CONCRETE THRUST BLOCK TO DUCKFOOT BEND (REFER TO DRG. No. STD-W-28 FOR DETAILS)
- CONCRETE FLOOR SLAB 120 / 200 REMOURED SLAB
- 1 TO 2 COURSES OF CLASS B SOLID ENGINEERING BRICK SET IN M30 MORTAR TO IS EN 771-3
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 IRISH WATER FOR REVIEW.
3. CONCRETE FOR PRESSURE REDUCING / SUSTAINING CHAMBER TO BE C30/37. 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.
4. SLUDGE VALVE, HYDRANT, AND AIR VALVE CHAMBERS TO BE OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK, ALTERNATING PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER.
5. PRESSURE REDUCING VALVES REQUIRE A MINIMUM LENGTH OF PIPE EQUIVALENT TO 5 TIMES THE DIAMETER, ON EACH SIDE OF THE VALVE TO BE COMPLETELY FREE OF FITTINGS, VALVES, REDUCERS ETC., OR TO PRV/PSV MANUFACTURER'S REQUIREMENTS.
6. P.P.V. / P.S.V. CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL 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.
7. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY REQUIREMENTS.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
9. PIPEWORK TO BE DOWNSIZED IF REQUIRED TO ACCOMMODATE THE REQUIRED RANGE OF PRESSURE REDUCTION.
10. ALL CONCRETE 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.
11. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER, BASED ON GROUND CONDITIONS WITHIN THE SITE, SHOULD ANTI-FLOTATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
13. PRESSURE REDUCING / SUSTAINING CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL 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.
14. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY REQUIREMENTS.
15. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
16. PRESSURE REDUCING / SUSTAINING CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL 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.
17. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
18. PRESSURE REDUCING / SUSTAINING CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL 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.
19. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
20. PRESSURE REDUCING / SUSTAINING CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL 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.
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. A WEATHER-RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED STEEL, MINIMUM 3mm THICKNESS, IN ACCORDANCE WITH BS EN 1461. STAINLESS STEEL 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 DOORS WITH MULTIPLE LOCKS TO ENGAGE IN 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 1.5 W/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.
   (c) AN IP RATING OF IP55 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.
9. A 750mm WIDE x 100mm THICK FOOTPATH OF C25/30 CONCRETE ON 50mm SAND BLINDING ON 300mm CLAUSE 804 GRANULAR MATERIAL TO BE PROVIDED AROUND KIOSK.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS-406.
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  REV 2

NOT TO SCALE

SCALE NOT TO SCALE DATE SEPT. 2015

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Refer to Table for Notes Regarding Design Responsibility & Risk Assessment.
1. Dimensions are in millimetres unless noted otherwise.

2. Structural design and reinforcement details to be provided by the developer and submitted to Irish Water for review. Roof slabs shall be designed to carry all live loads and dead loads and consist of a reinforced concrete slab of at least grade C30/37 with a minimum thickness of 225mm. Alternatively, precast concrete roofs may be used, subject to Irish Water’s approval.

3. Concrete for floor meter chamber to be C30/37.

4. Precast units completed with rubber sealing gasket between units. Complying with the requirements of EN 1917 and IS 420. Complete with 150mm concrete surround may be used as an acceptable alternative.

5. Meter chamber shall be covered with approved heavy duty metal covers to IS EN 124 (C30/37) standard. The cover and frame shall be suitable for road and traffic conditions and is subject to review by Irish Water.

6. 200mm all round deep concrete plinth around cover in grass areas.

7. Anti-corrosion tape to be provided around buried flanges.

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 dimensions are in millimetres unless noted otherwise.

10. Pipe work to be downsized to accommodate the required range of the flow meter. Straight pipe lengths upstream and downstream of the meter to be provided. The meter shall be capable of accurate flow measurement.

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 comply with current version of "Guidelines for Managing Openings in Public Roads" by the Dept. of Transport, Tourism & Sport, or Transport Infrastructure Ireland 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.

15. Developer to provide spool piece. Irish Water to provide meter. (See Table below for spool piece lengths)

### ELECTROMAGNETIC WATER METER SPOOL PIECE LENGTHS

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### ROOF PLAN

- **Sump:** 400mm x 400mm x 200mm deep
- **Cable duct to kiosk to be installed with draw cord (up to 20m) (Refer to STD-WMIP-20)
- **Duct end to be sealed**

### FLOOR PLAN

- **Spool piece (with PAI flanges) to be replaced with electromagnetic meter by Irish Water.**

### TAPER DETAIL OPTION (if required)

- **Steel flange with backing ring**
- **Oranged**
- **Di flanged taper**
- **Di flanged pipe cut to suit with thrust flange and thrust block**
- **Manhole steps to comply with IS EN 1311, Type D, Class 1, galvanised Mild Steel & Plastic Encapsulated**
- **Thrust flange**

### STANDARD DETAILS - WATER

<table>
<thead>
<tr>
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<th>DATE</th>
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</thead>
<tbody>
<tr>
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<td>4</td>
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</tbody>
</table>

**Title:** Electromagnetic Water Meter Chamber (80 - 250mm Dia.)
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

2. STRUCTURAL DESIGN AND REINFORCEMENT DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER. REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS AND DEAD LOADS. A CONCRETE SLAB OF 200mm THICKNESS IS RECOMMENDED TO BE PROVIDED.

3. CONCRETE FOR CHAMBERS IS TO BE C20/25.

4. PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF EN 124 (TO SUIT 750 SQ. OPE).

5. CHAMBERS SHALL BE COVERED WITH ANTI-CORROSION TAPE AROUND BURIED FLANGES.

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

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

8. LONG BODY FLEXIBLE COUPLING

9. A SLUICE VALVE WITH A PUMP TYPE TAIL END TO BE PROVIDED.

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. IF THE METER IS NOT CAPABLE OF ACCURATE NIGHT FLOW MEASUREMENTS, A BY-PASS FLOW METER SHALL BE PROVIDED WITH APPROPRIATE VALVES, FITTINGS AND PIPEWORK.

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 REVIEW BY IRISH WATER.

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

13. 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.

14. DEVELOPER TO PROVIDE SPOOL PIECE, IRISH WATER TO PROVIDE METER. (SEE TABLE BELOW (UNLESS NOTED OTHERWISE) FOR STANDARD SPOOL PIECE LENGTHS)

15. EXISTING ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY’s REQUIREMENTS.

16. DEVELOPER TO PROVIDE SPOOL PIECE, IRISH WATER TO PROVIDE METER. (SEE TABLE BELOW (UNLESS NOTED OTHERWISE) FOR STANDARD SPOOL PIECE LENGTHS)

17. DETAILS SHOWN HERE ARE FOR HOUSING DEVELOPMENTS WITH 40-249 UNITS TYPICALLY.

18. KIOSK AND DUCT NOT REQUIRED EXCEPT WHERE FLOW METER CHAMBER IS LOCATED IN A TRAFFICKED AREA OR AS OTHERWISE REQUIRED BY IRISH WATER.

19. HEAVY DUTY PIPE METAL 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.

20. STRUCTURAL DESIGN AND REINFORCEMENT DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS AND DEAD LOADS. A CONCRETE SLAB OF 200mm THICKNESS IS RECOMMENDED TO BE PROVIDED.

21. CONCRETE FOR CHAMBERS IS TO BE C20/25.

22. Pipe sizes and dimensions are shown in the diagram.

23. Manufacturing details for concrete chambers are shown in the diagram.

24. Construction details for concrete slabs are shown in the diagram.

25. The text is not completely transcribed due to the complexity of the diagram.
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 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 IS EN 1917 

3. CONCRETE FOR CHAMBERS TO BE C30/37.

4. PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF IS EN 1917 AND IS 420, COMPLETE WITH 150mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE. CONCRETE SURROUND TO BE GRADE C20/25 IN ACCORDANCE WITH IS EN 206.

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

6. A SINGLE METER CHAMBER MAY BE USED WHERE APPLICABLE, TO THE METER SUPPLIERS REQUIREMENTS. TO LOCATE BOTH THE METER & STRAINER, A STRAINER IS ONLY REQUIRED WHERE THERE IS A WATER QUALITY PARTICULATE ISSUE AS ADVISED BY IRISH WATER.

7. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.

8. ELastic ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.

9. 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.

10. Developer to provide spool piece, Irish Water to provide meter. (See Table below unless noted otherwise for standard spool piece lengths)

**STANDARD DETAILS - WATER**

**CHAMBER FOR FLANGED MECH. METER (DN100 - DN250mm Dia.) WITH SEPARATE STRAINER CHAMBER**

<table>
<thead>
<tr>
<th>METER CHAMBER</th>
<th>TAPER DETAIL OPTION (where required)</th>
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</thead>
<tbody>
<tr>
<td>FOAMED DOUBLE LEAF HEAVY DUTY COVER</td>
<td>(DEP END WYE)</td>
</tr>
<tr>
<td>COVER TO BE SEATED IN ALUMINIUM INTEGRAL FLANGE</td>
<td>(MINIMUM 400mm TWO 50mm TAP)</td>
</tr>
<tr>
<td>SLIDE VALVE TO BE INSTALLED WITH DRAW CASTING (UP TO 200mm)</td>
<td></td>
</tr>
<tr>
<td>DUCT END TO BE SEALED</td>
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**FLOOR PLAN**

<table>
<thead>
<tr>
<th>SPool PIECE (WITH 90°/180° ELBOWS) TO BE PLACED BETWEEN MECHANICAL METER</th>
<th>450mm</th>
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</thead>
<tbody>
<tr>
<td>100 mm UP TO 450mm</td>
<td>250mm</td>
</tr>
<tr>
<td>450mm UP TO 900mm</td>
<td>350mm</td>
</tr>
<tr>
<td>900mm UP TO 1200mm</td>
<td>450mm</td>
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**DRAWING No.**

<table>
<thead>
<tr>
<th>SCALE</th>
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**INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT**

**CHAMBER FOR FLANGED MECH. METER (DN100 - DN250mm Dia.) WITH SEPARATE STRAINER CHAMBER**

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<thead>
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<th>NO.</th>
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<td>000</td>
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<tr>
<td>400</td>
<td>Drawing No.</td>
</tr>
<tr>
<td>300</td>
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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 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 150mm. Alternatively, pre-cast concrete roofs may be used, subject to Irish Water approval & compliance with IS EN 1917, and IS 420.

3. Meter chamber shall be covered with approved heavy duty metal cover to IS EN 124 rating D40. Covers and frames shall be suitable for road and traffic conditions subject to review by Irish Water.

4. Ductile iron pipes and fittings to be in accordance with IS EN 545. PE pipes and fittings to be in accordance with IS EN 1201:2011.

5. Anti corrosion tape to be provided around all buried flanges.

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

7. Reinforcement of existing roads around cover & frame shall be to road authority's requirements.

8. New road construction & surface finish to be to road authority requirements.

9. 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.

10. 200mm all around x 100mm deep, C20/25 concrete plinth complete with bull nose finish and mild steel reinforcement link around covers in green areas.

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**In-Line Rotary Piston Meter Spool Piece Lengths**

<table>
<thead>
<tr>
<th>Ø mm</th>
<th>DN30</th>
<th>DN32</th>
<th>DN40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length mm</td>
<td>260</td>
<td>260</td>
<td>300</td>
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</tbody>
</table>

---

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

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**Standard Details - Water**

**Title:** Threaded Rotary Piston Flow Meter Chamber (DN30 - DN40mm Dia.)

**In-Situ Concrete Option**

---

**Drawing No.:** STD-W-26C

**Rev:** 0

---

**Date:** Sept. 2019
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 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 150mm.
3. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER APPROVAL, & COMPLIANCE WITH IS EN 1917, AND IS 420.
4. METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
5. 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.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
7. REINSTATEMENT OF EXISTING ROADS AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
8. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
9. 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.
10. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
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 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 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER APPROVAL, & COMPLIANCE WITH IS EN 1917, AND IS 420.
3. METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
4. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. FE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
5. ANTI-CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
7. REINSTATEMENT OF EXISTING ROADS AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
8. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
9. 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.
10. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

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**IN-LINE ROTARY PISTON METER SPool PIECE LENGTHS**

<table>
<thead>
<tr>
<th>Ø mm</th>
<th>DN30</th>
<th>DN32</th>
<th>DN40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length mm</td>
<td>260</td>
<td>260</td>
<td>100</td>
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</tbody>
</table>

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**SECTION**

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

**REINSTATEMENT OF EXISTING ROADS AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.**

---

**REF TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT**

---

**STANDARD DETAILS - WATER**

**TITLE**
THREADED ROTARY PISTON FLOW METER CHAMBER (DN30 - DN40mm DIA.) BLOCKWORK OPTION

**DRAWING No.**
STD-W-26E

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**NOTES**

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 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 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER APPROVAL, & COMPLIANCE WITH IS EN 1917, AND IS 420.
3. METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
4. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 545. FE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
5. ANTI-CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
6. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
7. REINSTATEMENT OF EXISTING ROADS AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
8. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
9. 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.
10. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
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 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 150mm.
3. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER APPROVAL, & COMPLIANCE WITH IS EN 1917 & IS 420.
4. SLUICE VALVE 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 IS SUBJECT TO REVIEW BY IRISH WATER.
5. 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.
6. ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
7. 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 IRISH WATER.
8. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
9. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
10. 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.
11. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

NOTE:
- THIS ARRANGEMENT TO BE INSTALLED FOR THE PURPOSE OF TESTING FOR NIGHT FLOWS WHEN CHECKING AN ESTATE FOR LEAKS.
- STOP TAP IN THE METER BOX TO BE IMMAINTAINED IN THE CLOSED POSITION.
IRISH WATER APPROVED BELOW GROUND, SELF CONTAINED, TELESCOPIC, FROST PROOF, POLYPROPYLENE, METER BOX AND COVER TO BS 5834-2 TO BE LOCATED AWAY FROM VEHICULAR AXIAL LOADING WHERE POSSIBLE.

350

THE BELOW GROUND METER BOX IS TO BE INSTALLED AT A MINIMUM DEPTH OF 600mm (+/- 25mm) TO THE CROWN OF THE INLET & OUTLET FITTINGS ON THE OUTSIDE OF THE BOX.

25 - 32mm (O.D.) PE PIPE

MARKER TAPE

WELL COMPACTED
CLAUSE 88
GRANULAR BACKFILL

25 - 32mm (O.D.) PE PIPE

STOP VALVE
WATER METER
& NON-RETURN VALVE

FITTINGS AS APPROVED
BY BOUNDARY BOX MANUFACTURER

MIN. 100mm DEPTH
C12/15 CONCRETE PLINTH.

SECTION

THIS DETAIL APPLIES TO WHERE THE FINISHED SURFACE IS EITHER UNBOUND (GRASS VERGE), BRICK PAVING OR MACADAM, & WHERE A CONCRETE PLINTH IS REQUIRED TO SUPPORT THE TOP OF THE BOUNDARY BOX.

PLAN

25-32mm O.D. Ø INLINE WATER METER CHAMBER DETAILS

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

STANDARD DETAILS - WATER

TITLE
INLINE FLOW METER CHAMBER
(25-32mm O.D. Dia.)

DRAWING No.
STD-W-26G

REV
0
**REINFORCEMENT DETAILS**

**ELEVATION**

**SECTION**

**PLAN**

**HYDRANT**

**AIR VALVE**

**SLUICE VALVE**

**SLUICE VALVE**

**BULK METER**

**WATER MAIN**

**WASHOUT HYDRANT**

**SCOUR VALVE**

**NON RETURN VALVE**

**PRESSURE REDUCING VALVE**

**PRESSURE SUSTAINING VALVE**

**NOTE:** DIAMETER OF WATERMAIN SHOWN FOR ILLUSTRATIVE PURPOSES ONLY AND REFERS TO THE NOMINAL INTERNAL DIAMETER OF THE WATERMAIN (mm). DIMENSIONS AND DISTANCE TO MARKER PLATE WILL VARY.

**REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT**
1. ALL DIMENSIONS ARE MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. CONCRETE THRUST BLOCKS (ANCHORAGE) SHALL BE POSITIONED SYMMETRICALLY WITH RESPECT TO THE CONNECTING PIPE & BENDS.
4. THRUST BLOCKS SHALL BEAR ON UNDISTURBED SOIL. IF FOR ANY REASON THEY CANNOT THEN THE DEVELOPER SHALL NOTIFY IRISH WATER IMMEDIATELY WITH A PROPOSED SOLUTION.
5. THRUST BLOCK REINFORCEMENT REQUIRES SPECIFIC DESIGN.
6. FOR TEST PRESSURES GREATER THAN 18 BAR, THRUST BLOCK DESIGN IS TO BE SUBMITTED TO IRISH WATER FOR REVIEW.
7. THRUST BLOCKS ARE DESIGNED FOR AN AVERAGE BEARING PRESSURE OF 100 KN/m (TYPICAL FOR SOFT CLAY) FOR OTHER CONDITIONS. ACTUAL DIMENSIONS MAY BE ALTERED ON INSTRUCTIONS FROM IRISH WATER.
8. CONCRETE IN THRUST BLOCKS SHALL BE GRADE C20/25.
9. COMPRESSIBLE FILLER FOR CONCRETE PROTECTION TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PLASTIC PIPES. THE THICKNESS OF COMPRESSIBLE FILLER FOR MAINS < 450mm IN DIAMETER IS TO BE 18mm.
10. CONCRETE THRUST BLOCKS FOR POLYETHYLENE PIPE TO COMPLY WITH THE MANUFACTURE'S REQUIREMENTS.
11. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE. ALL CONCRETE TO BE IN ACCORDANCE WITH EN 206.

**TABLE OF DIMENSIONS FOR STEEPLY INCLINED PIPELINES**

<table>
<thead>
<tr>
<th>GRADIENT</th>
<th>SPACING</th>
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<tbody>
<tr>
<td>1 IN 2 &amp; STEEPER</td>
<td>5.5m</td>
</tr>
<tr>
<td>BELOW 1 IN 2 TO 1 IN 4</td>
<td>11.0m</td>
</tr>
<tr>
<td>1 IN 4 TO 1 IN 6</td>
<td>16.0m</td>
</tr>
<tr>
<td>1 IN 6 TO 1 IN 8</td>
<td>22.0m</td>
</tr>
</tbody>
</table>

**STANDARD DETAILS - WATER MAIN THRUST AND SUPPORT BLOCKS**

**NOTES:**
- H FOR 45 DEGREE BEND
- J FOR 22.5 DEGREE BEND
- K FOR 11.25 DEGREE BEND

**REFERENCE:**
- REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
75mm DIA. PVC DRAIN TO NEAREST SURFACE WATER OUTLET FITTED WITH NON-RETURN VALVE.

SECTION C - C

SECTION A - A

SECTION B - B

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 50m INTERVALS MAXIMUM.
8. APPROPRIATE MARKER TAPE SHALL BE Laid 200mm ABOVE THE EXTERNAL CROWN OF THE DUCT AND SHOULD INCORPORATE REINFORCED TRACING WIRE. TRACING WIRE SHALL BE CONNECTED ACROSS CHAMBERS.
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 FROM IRISH WATER.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ALL DUCTING TO BE INSTALLED WITH DRAY CORDS/ROPES, TO ALLOW PULL THROUGH OF CABLES.
12. CABLE DUCT INTERFACE WITH CHAMBER WALL TO BE SEALED TO PREVENT INGRESS OF GROUNDWATER TO CHAMBER.
13. DRAIN POINT TO BE PROVIDED FROM LOWEST LOCATED DUCT CHAMBER.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT.
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 minimum thickness of 200mm. Alternatively, pre-cast concrete roofs may be used, subject to Irish Water review, & compliance with IS EN 1719 & IS 423.
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.
5. Scour chamber shall be covered with approved heavy duty metal covers to IS EN 13101, Type D, Class 1, galvanised mild steel & plastic encapsulated.
6. 200mm all round, 100mm deep concrete plain around covers 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 drawing 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 543. 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 flotation 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 and relevant authorities.

Refer to Index Sheet for Notes Regarding Design Responsibility & Risk Assessment
Section (Precast Concrete Chamber Option)

**D.I. Scour Valve and Chamber (Cover stamped "ScV" Refer to STD-W-14)**

**Cover to be set in cementitious epoxy resin/polyester mortar 30mm**

**Washout Hydrant Chamber (Cover stamped "WO")**

Refer to DRG. No. STD-W-17 for Hydrant, Pre-Cast Concrete Chamber & Cover Details

Di, Double Flanged, DBN, Riser Pipe of Suitable Length to suit Site Conditions

Double Flanged 90° Bend with Conc. Thrust Block to Bend (Refer to DRG. No. STD-W-28 for Details)

Plinth detail in grass area

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Section (Blockwork Option)

D.I. Scour Valve and Chamber (Cover stamped "ScV" Refer to STD-W-14)

Washout Hydrant Chamber (Cover stamped "WO")

Cover to be set in cementitious epoxy resin/polyester mortar 30mm

Refer to DRG. No. STD-W-17 for Hydrant, Blockwork Chamber & Cover Details

Di, Double Flanged, DBN, Riser Pipe of Suitable Length to suit Site Conditions

Double Flanged 90° Bend with Conc. Thrust Block to Bend (Refer to DRG. No. STD-W-28 for Details)

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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).

Pipework between Dismantling Joint & 90° Bend may be PE material as per Watermain

Refer to Note 14 below

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Plan (Polyethylene Water Main)

**Washout Hydrant (Precast Concrete Option)**

Refer to DRG. No. STD-W-28 for Rocker Pipes & Pipe Joint Details

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**Washout Hydrant (Blockwork Option)**

Refer to DRG. No. STD-W-28 for Rocker Pipes & Pipe Joint Details

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**Notes:**

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 790:2012. 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 in accordance with Item 15 below.
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 prefabricated 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 150mm. Alternatively, pre-cast concrete roofs may be used, subject to Irish Water review, & compliance with BS 5991 Part 4.
7. Concrete chambers shall be surrounded by a minimum of 100mm 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 pipe work 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 12201:2011, or ductile iron pipes and fittings in accordance with IS 15154.
12. 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 agreement with Irish Water.
13. All concrete to be in accordance with IS 215.
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.
15. Fire hydrant outlet type shall be in accordance with the requirements of the fire officer for the area and shall be agreed prior to the commencement of works.
1. All dimensions are in millimetres (mm) unless noted otherwise.
2. Structural reinforcement and design details 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. A consist of 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 IS EN 1791 & IS 823.
3. Concrete for scour chamber and headwall to be C15/20.
4. Approval to be obtained from Local Authority for connection to the existing storm sewer.
5. Scour chamber shall be covered with approved heavy duty metal covers to IS EN 124 rating class B. Cover and frame shall be suitable for road and traffic conditions and is subject to review Irish Water.
6. 260mm all round, 100mm deep concrete path around covers in grass areas.
7. Final detail to be reviewed by Irish Water and relevant regulatory authorities.
8. Thrust blocks not shown on drawings, to be provided as per standard drawings STD-W-168 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 546, PE pipes and fittings to be in accordance with IS EN 12201.
11. All chambers to be checked for uplift by the developer based on ground conditions within the site. Should anti-flooding 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 and relevant authorities.

### Diameters of Watermain and Scour Chamber

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<tr>
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<td>75</td>
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<td>200 to 300</td>
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### Diagrams

- **Valve Chamber**
- **Stormwater Manhole**
- **Plan (Ductile Iron Water Main)**
- **Plan (Polyethylene Water Main)**
- **Roof Plan**

### Standard Details - Water

**Title:** Scour Chamber to Storm Sewer Arrangements

**Scale:** Not to Scale

**Date:** Sept. 2019

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**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. Pipe work 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 EN 545. PE pipes and fittings to be in accordance with EN 12201:2011.
8. All concrete to be in accordance with IS 272.
9. Pipe work for watermain can be either ductile iron or polyethylene. Pipe work 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 authorities & Irish Water.

Refer to notes 3 for bends.

Refer to STD-W-28 for thrust block details.

Plastic sheeting in accordance with BS 6076.
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 watermain 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.

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. All concrete to be in accordance with IS EN 206. Backfill and reinstatement of river bed and bank to be subject to agreement with relevant authority & Irish Water.
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-28 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 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.
8. Kiosk (600 high x 450 wide x 300 deep) - to be constructed from thermostetting U.V. & weather resistant plastic powder coated & not dipped galvanised mild steel (min. 4mm thickness) to be 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. Colour to be Holly Green BS 4803 14 C 39. Kiosk to have hinged, lockable access door (hinges and locks to be in 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 DN in both cases.

**SECTION A - A**

**AIR VALVE CONNECTION**

- Single air valve
- Exposed pipework to be insulated using pipe lagging
- Conventional rubber joint

**KIOSK**

- Kiosk (see notes 7, 8 & 9)
- 32mm dia. P.E. pipe
- Ductile iron pipework

**CONCRETE SURROUND**

- Grade C 25/30
- Flexible joint

**POLYETHYLENE OR DUCTILE IRON PIPEWORK**

**SLUICE VALVE**

- To be provided each side of crossing to isolate section

**DUCTILE IRON WATER MAIN**

**CONCRETE PLINTH**

- (300 high x 600 long x 450 wide) with a finished level of 150 above ground

**KIOSK**

- (600 high x 450 wide x 300 deep)

**32mm DIA. P.E. PIPE**

**32mm DIA. P.E. PIPE**

**CONCRETE LEVEL**

- Grade C 25/30

**FLEXIBLE JOINT**

**TAPPING WITH TRANSITION 90° ELBOW (MALE)**

**REVIEW TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT**

**STANDARD DETAILS - WATER**

**TYPICAL BRIDGE CROSSING FOR WATER MAIN**

(Sheet 1 of 2)
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 jointed 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 watermain can be either ductile iron or polyethylene. Pipework at the crossing point to be PE in both cases.

**PLASTIC SHEETING**

Refer to Note 2 for bends.

**For Thrust Block Details**

Refer to STD-W-28.

**Air Valve**

To be located at both sides of the crossing. For air valve / chamber details, refer to STD-W-20, 21, 22 & 23.

**Bend at Respect Crossings**

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. Pipe work 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 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 pipe work to be in accordance with IS:EN 545. All polyethylene pipe work to be in accordance with IS:EN 12201.
11. Pipe work for watermain can be either ductile iron or polyethylene. Pipe work at the crossing point to be PE in both cases.

**Note:** In situations where PE piping is utilised either side of the crossing, thrust blocks and thrust collars are not required.
1. All dimensions in millimetres (mm) unless noted otherwise.

2. Security fencing shall comprise 2.4m high, corrosion resistant mild steel pickets, 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 fencing shall be provided with side bolts, shooting bolts and padlocks. If opening outwards, the access gates shall be set back from parking and access areas by the width of the leaf of the gate.

4. Bolts – unless tamper resistant fixings are used. All bolts to the access gates & fencing shall be buried over.

5. Gate hinges shall be of such a nature and size that it is impossible to remove the gate by lifting when 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 manufacturer’s 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 1722-14:2006.

10. Dimensions of gate pillars, gate frame, fence pillars, fence runners, diagonals, etc. to be in manufacturer’s specification.

11. Fence & gate design and details to be provided to Irish Water for review/vetting before manufacture.

12. Pedestrian gate shall be provided if deemed necessary by Irish Water.

13. Colour to be Holly Green 14 C 39 in accordance with BS 4800:2011.

14. A 300mm wide x 150mm deep concrete all up required by Irish Water. Grade C30/37 concrete shall be provided to Irish Water’s requirements (enhanced + security rating only).

15. The gates shall have the following security features:
   a. Gate locking mechanisms shall include a chastise cover protecting the padlock from attack and the slip bolt shall be of high carbon steel - technical specification to be included in the design submission for review/vetting before manufacture.
   b. 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 and closed position.
   c. Drop bolts shall be a minimum of 650mm in length with 50mm contained in a steel retainer imbedded in concrete, protecting against forced attack of the gate.
   d. The design shall include a metal stay attached to the leaf 2 to prevent the drop bolt from being activated on leaf 1 while the gate is in a locked position and to ensure that the gate cannot be locked by an operator unless a drop bolt is engaged in a receiver.
   e. A crash plate shall be installed on leaf 1 to prevent leaf 2 from swinging passed the close point of the gate. The crash plate shall in addition be installed such that it provides restricted access to the slide bolt, imposing attempts of cutting of same.
   f. Brackets attaching fence panels to fence post to be constructed of 5mm steel with tamper proof connections.

Refer to Index Sheet for notes regarding Design Responsibility & Risk Assessment.
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 SLIDE BOLTS, SHOOTING BOLTS AND PADLOCKS. IF OPENING OUTWARDS, THE ACCESS GATES SHALL BE SET BACK FROM PARKING AND ACCESSES AREAS BY THE WIDTH OF THE LEAF OF THE GATE.
4. BOLTS - UNLESS TAMPER RESISTANT FASTENINGS ARE USED, ALL BOLTS TO THE ACCESS GATES & FENCING SHALL BE BURNT OVER.
5. GATE WIRING 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 BS EN 1722-14:2006.
10. DIMENSIONS OF GATE PILARS, GATE FRAME, FENCE PILLARS, FENCE RUNNERS, DIAGONALS, ETC. TO BE MANUFACTURERS SPECIFICATION.
11. PROPERTIES FIXING CLAMPS TO MANUFACTURERS SPECIFICATIONS.
12. PEDESTRIAN GATE SHALL BE PROVIDED IF DEEMED NECESSARY BY IRISH WATER.
13. THE DESIGN SHALL INCLUDE A METAL STAY ATTACHED TO THE LEAF 2 TO PREVENT THE GATE FROM BEING ACTIVATED ON LEAF 1 WHILE THE GATE IS IN A LOCKED POSITION AND TO ENSURE THAT THE GATE CANNOT BE LOCKED BY AN OPERATOR UNLESS A DROP BOLT IS ENGAGED IN A RECEIVER.
14. A CRASH PLATE SHALL BE INSTALLED ON LEAF 1 TO PREVENT LEAF 2 FROM SWINGING PASSED THE CLOSE POINT OF THE GATE. THE CRASH PLATE SHALL IN ADDITION BE INSTALLED SUCH THAT IT PROVIDES RESTRICTED ACCESS TO THE SLIDE BOLT, IMPEDING ATTEMPTS OF CUTTING OR SAME.
15. THE GATES SHALL HAVE THE FOLLOWING SECURITY FEATURES:
   a. GATE LOCKING MECHANISM SHALL INCLUDE A SHROUD COVER PROTECTING THE PADLOCK FROM ATTACK AND THE SLIP BOLT SHALL BE OF HIGH CARBON STEEL - TECHNICAL SPECIFICATION TO BE INCLUDED IN THE TENDER SUBMISSION FOR REVIEW / VETTING BEFORE MANUFACTURE.
   b. 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 POSITION, AND USING ONE OF THE DROP BOLTS TO LOCK IN A CLOSED POSITION.
   c. DROP BOLTS SHALL BE A MINIMUM OF 200MM LONG WITH 500MM CONCEALED IN A STEEL RETAINER IMBEDDED IN CONCRETE, PROTECTING AGAINST FORCED ATTACK OF THE GATE.
   d. THE DESIGN SHALL INCLUDE A METAL STAY ATTACHED TO THE LEAF 2 TO PREVENT THE CRASH PLATE FROM BEING ACTIVATED ON LEAF 1 WHILE THE GATE IS IN A LOCKED POSITION AND TO ENSURE THAT THE GATE CANNOT BE LOCKED BY AN OPERATOR UNLESS A DROP BOLT IS ENGAGED IN A RECEIVER.
   e. A CRASH PLATE SHALL BE INSTALLED ON LEAF 1 TO PREVENT LEAF 2 FROM SWINGING PASSED THE CLOSE POINT OF THE GATE. THE CRASH PLATE SHALL IN ADDITION BE INSTALLED SUCH THAT IT PROVIDES RESTRICTED ACCESS TO THE SLIDE BOLT, IMPEDING ATTEMPTS OF CUTTING OR SAME.
   f. BRACKETS ATTACHING FENCE PANELS TO FENCE POST TO BE CONSTRUCTED OF S95 STEEL WITH TAMPER PROOF CONNECTIONS.
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 UNIVERAL 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 - ASBESTOS 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.

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

STANDARD DETAILS - WATER

PIPE REPAIR TO EXISTING MAINS

DRAWING No. STD-W-35
SCALE NOT TO SCALE DATE SEPT. 2015

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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 UNIVERAL 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 - ASBESTOS 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 steel (minimum 3mm thickness) in accordance with BS EN 1461. Stainless steel 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 half plate locks to UPS 1175 SR3 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.
   (c) An IP rating of IPX4 or equivalent.
7. Kiosk to be bolted to the plinth through a bottom flange with galvanised steel or stainless 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 EN 50085-1:2005 and ENATS 12-24.
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. All concrete to be in accordance with IS EN 206.
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 steel (minimum 3mm thickness) in accordance with BS EN 1461. Stainless steel 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 U/17.53 or EN 1627. Minimum double locks with bolts that engage into the sill & header as well as between the two leaves or leaf & frame. Leasing 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.
   (c) An IP rating of IP65 or equivalent.
7. Kiosk to be bolted to the plinth through a bottom flange with galvanised mild steel or stainless 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 50085-1:2005 and ENATS 12-24.
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. All concrete to be in accordance with IS EN 206.

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

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

Standard Details - Water

Lamp Bollard and Lamp Standard

Drawing No. STD-W-37

Scale Not to Scale

Date Sept. 2015

Rev 2
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. The hydrant shall be double flanged drilled to PN 16. They shall comply with IS EN 14339, IS EN 1074 part 6 and BS 790:2012. The hydrant shall incorporate a screw down gate valve, underground "guide to head" type with a false spindle cap. The outlet shall be in accordance with item 5 below.
5. Fire hydrant outlet type shall be in accordance with the requirements of the Fire Officer for the area and shall be agreed prior to the commencement of works.
6. All hydrants shall be clockwise closing.
7. Hydrant chamber & scour valve chamber to be constructed of precast concrete units or high density blockwork. Alternatively proprietary prefabricated 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 150mm. Alternatively, pre-cast concrete roofs may be used, subject to Irish Water review, & compliance with IS EN 1917 and IS 470.
8. Concrete chambers shall be surrounded by a minimum of 150mm compacted clause 808 material as per STD-W-13.
9. 200mm all round, 100mm deep concrete plinth around covers in grass areas.
10. 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.
11. Anti corrosion tape to be provided around buried flanges.
12. 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 EN 12201:2011, or ductile iron pipes and fittings in accordance with IS EN 545.
13. 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.
14. All concrete to be in accordance with IS EN 206.
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. THE HYDRANT SHALL BE DOUBLE FLANGED DRILLED TO PN 16. THEY SHALL COMPLY WITH IS EN 14339, IS EN 1074 PART 6 AND BS 750: 2012. THE HYDRANT SHALL INCORPORATE A SCREW DOWN GATE VALVE, UNDERGROUND "GUIDE TO HEAD" TYPE WITH A FALSE SPINDLE CAP. THE OUTLET SHALL BE IN ACCORDANCE WITH ITEM 5 BELOW.
5. FIRE HYDRANT OUTLET TYPE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE OFFICER FOR THE AREA AND SHALL BE AGREED PRIOR TO THE COMMENCEMENT OF WORKS.
6. ALL HYDRANTS SHALL BE CLOCKWISE CLOSING.
7. HYDRANT CHAMBER & SCOUR VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED 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 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS EN 1917 AND IS 470.
8. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-W-13.
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 EN 12201:2011, OR DUCTILE IRON PIPES AND FITTINGS IN ACCORDANCE WITH IS EN 545.
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.
1. For notes refer to STD-WW-13

Refer to Index Sheet for notes regarding design responsibility & risk assessment.

Section showing water services: Separation details in high density developments.

2.5m Wide Footpaths with 6.0m Wide Carriageway

Maintenance responsibility of the water service connections from the watermain to the boundary is set out in the "PPE Maintenance Responsibility" diagrams included on the Irish Water website (www.water.ie).
1. For notes refer to STD-WW-13
2. Minimum distance between service connections and other services connections to be 300mm.

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

Layout plan showing below ground services separation details in high density developments.

2.5m Wide Footpaths with 6.0m Wide Carriageway.
SECTION SHOWING WATER SERVICES
SEPARATION DETAILS IN HIGH DENSITY DEVELOPMENTS
1.8m Wide Footpaths, 2.5m wide Parallel Parking Bays with 6.0m Wide Carriageway.

MAINTENANCE RESPONSIBILITY OF THE WATER SERVICE CONNECTIONS
FROM THE WATERMAIN TO THE BOUNDARY IS SET OUT IN THE PIPE MAINTENANCE
RESPONSIBILITY DIAGRAMS INCLUDED ON THE IV WEBSITE @ WWW.WATER.IE

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT
1. For notes refer to STD-WW-13
2. Minimum distance between service connections and other services connections to be 300mm.
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- General Amendments

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/ Inclusion of STD-WW-77

Drawings revised updated July 2020

Drawing revisions updated July 2020