23/07/2020

Re: Codes of Practice and Standard Details (Revision July 2020)

A chara,

Irish Water's Connections and Developer Services (CDS) developed Technical Documentation comprising Standard Details and Codes of Practice and these have been in use since 2016. The Standard Details/Codes of Practice outline the requirements for developer provided Self-Lay water services infrastructure within developments which will be vested by Irish Water following connection to the Irish Water Networks. These documents were developed to ensure that new water supply and wastewater collection infrastructure provided within developments are robust, fit for purpose and future proofed against leakage, ingress, subsidence, etc., with a minimum requirement for future capital or operational maintenance. The current versions of the Standard Details (Revision 03, December 2017) and the Codes of Practice (Revision 1, December 2017) are available on the Irish Water website at www.water.ie/connections/.

The Standard Details and Codes of Practice are based on best custom within the water industry. They require periodic updating to reflect best practice and to take into account experiences in their application and feedback from internal and external stakeholders, material suppliers, developers and their representatives. The content of the Standard Details and Codes of Practice has been successfully used in Self-Lay developments since they were first published in April 2016 and December 2016 respectively. There has been significant buy-in from the construction industry for the use of the Standard Details and Codes of Practice and this has resulted in noticeable improvements in the quality of water services assets. Their content is also used by Irish Water's own internal functions for a variety of projects.

Please note that revisions of the current versions of the Codes of Practice and Standard Details will be published on Friday the 24th of July. The revised Standard Details (Revision 4, July 2020) and Codes of Practice (Revision 2, July 2020) will be available on the Irish Water

website at www.water.ie/connections/ from Friday the 24th 2020. It is intended to remove the current set of Standard Details and Codes of Practice at that time and archive them.

The update version of the Codes of Practice and Standard Details include amendments to a significant number of areas, many of which were designed to respond in a proactive manner to representations from stakeholders and customers and will further support development. A summary of the key amendments is available in **Attachment 1** and **Attachment 2** appended herewith.

A more detailed list of the revisions of the Codes of Practice for water and wastewater infrastructure will be included in the appendices of the revised Codes of Practice. This will outline the differences between the Codes of Practice (sets that were uploaded in December 2017 (Revision - December 2017) and the new revised/updated Codes of Practice (Revision 2 - July 2020). These Appendices will be found at the end of each set of the revised Codes of Practice.

The revised Standard Details for water and wastewater infrastructure will include a Revision Log outlining the differences between the Standard Details (Revision 3 - December 2017) and the new Standard Details (Revision 4 - July 2020). These Revision Logs will be found as the last page at the end of each set of the revised Standard Details.

The current Standard Details and Codes of Practice are accompanied by Design Risk Assessments (DRAs), which outline residual design health and safety responsibilities that developers and their designers/contractors should take into account in the provision of these Self-Lay water services infrastructure assets. These DRAs will also be revised and updated to reflect the proposed changes to the Standard Details and Codes of Practice and these will also be uploaded on the Irish Water website - www.water.ie/connections/ - in the near future.

Since the issue of the last set of Standard Details and Codes of Practice in December 2017, Irish Water commenced using the Self-Lay Connection Agreement in April 2018 as the basis of Connection Offers. This has fully mandated the quality assurance requirements that are outlined in the current set of Codes of Practice and Standard Details. This quality assurance requirement will also apply to the new set of Standard Details and Codes of Practice.

It should be noted, for developments for which detailed design is ongoing **and** where the development infrastructure design is at an advanced stage using the provisions of the currently published Codes of Practice and Standard Details, the requirements of the Standard Details (Revision 3 – December 2017) and Codes of Practice (Revision 1 – December 2017) will still apply for a transition period of three months. From October 2020 the requirements of the Standard Details (Revision 4 – July 2020) and Codes of Practice (Revision 2 – July 2020) will apply in full for all developments' designs that are submitted to Irish Water.

For developments that are under construction and are the subject of a Self-Lay Connection Agreement based on the current version of the requirements of the Standard Details (Revision 3 – December 2017) and Codes of Practice (Revision 1 – December 2017), the provision of the current versions will still apply as these form part of the requirements of the Connection Agreement.

All Self-Lay Connection Agreements issued from October 2020 will include requirements to comply with the Standard Details (Revision 4 – July 2020) and Codes of Practice (Revision 2 – July 2020).

Queries on the Standard Details and Codes of Practice should be directed to Irish Water through the e-mail address standarddetails@water.ie.

Please bring the content of this communication to the attention of relevant individuals within your organisation.

Yours Sincerely,

Sean Laffey
Head of Asset Management
Irish Water

ATTACHMENT 1 – Revisions to Codes of Practice

List of main specific revisions to the Code of Practice for Wastewater Infrastructure

- Alignment of the Glossary of Terms and Definitions with the Self-Lay Connection Agreement definitions;
- Alignment of technical requirements with the Irish Water Amendments of the Civil Engineering Specification for the Water Industry (CESWI) in a number of areas, e.g.
    - bedding of MH and Chamber covers and frames,
    - bedding mortar for riser brickwork,
    - testing of liquid retaining structures,
    - pipe bedding material,
    - pipe and MH testing acceptance criteria, etc.;
- Alignment of the design criteria for Gravity Sewers with Irish Water's own internal design Technical Standard for Design of Gravity Sewers (these requirements are set out in **Appendix B** and **Appendix C**);
- Alignment of pipe maintenance responsibility for service connections up to the property boundary to agree with the Irish Water's Pipe Responsibility Diagrams (amendment to **Section 1.7**);
- Amendment to indicate submission of information of Storm Water Systems is mandatory for developments whose storm water is discharged to Irish Water's combined system (amendment to **Section 1.8**);
- Amendment to indicate PI to be kept in place for six years after issue of Completion Certificate, rather that Conformance Cert (amendment of **Section 2.2**);
- Amendment to require submission of additional information where infrastructure is founded on fill, engineered or made ground, where phasing of developments is proposed (including layout plans), etc., (amendments to **Section 2.3** and **Section 2.4**);
- Amendment to emphasis modelling of wastewater collection systems is required for developments exceeding 330 units (amendment of **Section 2.5**);
- Amendments to allow some flexibility on the size and location of private side inspection chambers (set out in **Section 3.11**) and separation distances for service connections (amendments to **Section 3.5** (new Table));
- Amendments to outline requirements for maximum pipe gradients criteria (amendment of **Section 3.6**);

- Amendments to clarify requirements for pipe protection for shallow sewers and to also set absolute minimum depth of pipes with protection measures in place (outlined in **Section 3.9**);
- Amendment to restrict use of pre-cast MHs in high water tables or areas prone to flooding and perched water tables as well as restricting the use of pre-cast MH without concrete surround where their depth exceeds 4m or where the wall of unit is penetrated (amendments to **Section 3.12**);
- Amendment to outline additional requirements for PE welding and joint testing (amendments to **Section 3.16**);
- Amendment to provide greater clarity on separation distances between pipes and requirements to notify Irish Water when undertaking work near existing assets (amendments to **Section 3.20**);
- Amendment to include requirements for marker tape and marker posts for wastewater pipes (new **Section 3.26** and **Section 3.27**);
- Amendment to tighten up requirements for the derogation letter on the non-use of Clause 804/808 backfill that the Developer obtains from LA (**Section 4.8**) and to include clarification on the use of backfill for trenches in green areas next to roads;
- Amendments to include clarity and to simplify requirement for pressure testing of wastewater rising mains for DI & PE pipe materials based on IGN 4-01-03 requirements (amendments to **Section 4.11**);
- Amendments of **Part 5** – **Pumping Stations** – to include revised electrical specification requirements for cables, cable installation, control panels, control philosophy, testing, abnormal operations, telemetry, cable ducting, etc.;
- Amendment to exclude the need for fencing around pump stations except where external lifting equipment is provided or where fencing is required by Planning Permission (amendment to **Section 5.6**);
- Amendments to outline that over-excavated areas on the PS site are to be backfilled with acceptable material where located beneath hard standing areas (amendment to **Section 5.7**);
- Amendments to emphasise and clarify that the PS wet well chamber construction options of cast-in-situ, composite pre-cast (with concrete surround) or pre-cast concrete are to be designed to IS EN 1992 Part 3 (Liquid Retaining Structures) and to indicate that the depth of wet well to be restricted to 6.0m, greater depths to be specifically agreed with IW (amendments to **Section 5.10**);

- Amendments to emphasise and clarify that the PS emergency storage chamber and valve chamber construction options of cast-in-situ, composite pre-cast (with concrete surround) or pre-cast concrete are to be designed to IS EN 1992 Part 3 (Liquid Retaining Structures) (amendments to **Section 5.11** for emergency storage tanks and **Section 5.12** for valve chambers);
- Amendment to outline revised requirements for emergency storage at Pump Stations (amendments to **Section 5.11**);
- Amendment to outline revised requirements for pump station access covers, including that these covers are to be flush with the roof slab (amendments to **Section 5.14**);
- Amendments to outline a requirement for mechanical ventilation, if such are deemed necessary, of pump stations (amendments to **Section 5.15**).
- Expansion of **Appendix A** for additional EU and National Standards referred to in the COP and Standard Details;
- Include **Appendix D**, outlining the Changes between the current COP Issue (Revision 1, December 2017) and the new Code of Practice (Revision 2, July 2020).

List of main specific revision to the Code of Practice for Water Infrastructure

- Alignment of the Glossary of Terms and Definitions with the Self-Lay Connection Agreement definitions;
- Alignment of the technical requirements with the Irish Water Amendments of the Civil Engineering Specification for the Water Industry (CESWI) in a number of areas, e.g.
  - bedding of surface box and Chamber covers and frames,
  - bedding mortar for riser brickwork, pipe bedding material,
  - specification for bedding/surround material to IS EN 13242,
  - Testing and commissioning of water mains;
- Allowance of relaxation for connection to the Network after a successful water quality test – connection allowed after 14 days and up to 28 days (amendment of **Section 1.5** and **Section 4.12**);
- Alignment of pipe maintenance responsibility for service connections up to the property boundary to agree with the Irish Water's Pipe Responsibility Diagrams (amendment to **Section 1.6**);
- Amendment to indicate PI to be kept in place for six years after issue of Completion Certificate, rather that Conformance Cert (amendment of **Section 2.2**);

- Amendment to require submission of additional information where infrastructure is founded on fill, engineered or made ground, where phasing of developments is proposed (including layout plans), etc. (amendments to **Section 2.3** and **Section 2.4**);
- Requirements for material in contact with water intended for human consumption amended and expanded (amendments to **Section 3.3**);
- Reiteration of Irish Water's requirements for pipe material for water mains to be DI or PE, with only very exceptional circumstances where other material might be allowed (amendments to **Section 3.9**);
- Amendment to outline additional requirements for PE welding and joint testing (amendments to **Section 3.10**);
- Amendments to clarify requirements for pipe protection for shallow water mains now provided, concrete protection slab only allowed (no concrete surround allowed) (outlined in **Section 3.11**);
- Greater clarity provided for water meters, domestic meters, multi-unit metering, non-domestic meters and bulk flow meters (amendments in **Section 3.15**):
  - Developer provides the meter chamber with a spool piece, IW provides and installs the meter subsequent in the chamber,
  - Mechanical meters to be used in developments of 40 to 250 units, non-mechanical for developments > 250 units),
  - Night flow measurement system required where bulk flow meters not installed (developments with demand <20 cu. m per day),
  - Greater clarity provided on meter chamber sizes for different meter diameters (spool piece to be provided by Developer in advance of fitting of meter by IW),
  - Strainer and strainer chamber requirements outlined and when these are or are not required;
- Clarification provided on alternative valve, hydrant chamber sizes which will be allowed in non-trafficked areas (amendments to **Section 3.18**);
- Greater clarity provided on separation distances between pipes and requirements to notify Irish Water when undertaking work near existing assets (amendments to **Section 3.27**);
- Increased guidance provided for water storage in relation to hotels and restaurants and other non-domestic establishments (amendments of **Section 3.28**);

- Amendment to tighten up requirements outlined for the derogation letter on the non-use of Clause 804/808 backfill that the Developer obtains from LA (**Section 4.9**) and to include clarification on the use of backfill for trenches in green areas next to roads;
- Amendments to outline testing and commissioning of water mains aligned with Irish Water's Amendments to CESWI, as well as setting out a better split of requirements for cleaning, pressure testing, swabbing after pressure test (optional), flushing, disinfection, water quality testing, connection to Network (amendments to **Section 4.10**);
- Amendments to include clarity and to simplify requirement for pressure testing of water mains for DI & PE pipe materials based on IGN 4-01-03 requirements (amendments to **Section 4.10.3**);
- Requirements clarified for service pipe connections to water mains and to supply distribution systems (amendment of **Section 4.14**);
- Amendments of **Part 5 – Booster Pumping Stations, Kiosks and Ancillary Works** – to include revised electrical specification requirements for cables, cable installation, control panels, control philosophy, flow measurement, testing, abnormal operations, telemetry, cable ducting, dial-out alarm system, etc.;
- Amendment to outline information to be provided in the design submission where a booster pump station is proposed (new **Section 5.2**);
- Amended requirements provided for type, speed, control philosophy, etc. of pump units (amendments of **Section 5.3** and **Section 5.4**);
- Expansion of **Appendix B** for additional EU and National Standards referred to in the Code of Practice and Standard Details;
- Inclusion of **Appendix C**, outlining the Changes between the current Code of Practice Issue (Revision 1 - December 2017) and the new Code of Practice (Revision 2 -July 2020).

ATTACHMENT 2 – Revisions to Standard Details

List of specific revisions to the Standard Details for Wastewater Infrastructure

- Revision to take account of pipe maintenance responsibility for service connections up to the property boundary (**STD-WW-01** and **STD-WW-03**);
- Additional details included for interface between Self-Lay infrastructure and connection infrastructure (**STD-WW-02**);
- Revisions to sewer/service pipe connection detail showing connection angles for saddle and Y-branch (**STD-WW-04**);
- Revision of separation distances for sewers and manholes (**STD-WW-05**);
- Inclusion of new detail for vertical separation requirements for wastewater service connections (**STD-WW-05A**);
- Inclusion of additional information for pipe bedding and surround material, marker tape etc. (**STD-WW-07**);
- Revisions showing pipe protection requirements for shallow sewers and poor ground conditions (**STD-WW-08**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick and mortar for blockwork in blockwork manhole option (**STD-WW-09**);
- Note added to outline restriction on use of pre-cast concrete manholes where high water table, perched water table of where CEFRAM indicates flood risk of 1:10 (**STD-WW-10, STD-WW 10A, STD-WW 10B, STD-WW 10C** and **STD-WW 12** (MHs));
- Revision showing revised requirements for cover seating, mortar for riser engineering brick, thickness of roof slab, new detail for manhole shaft in pre-cast manhole/cast in situ base option (**STD-WW-10**);
- New Standard Detail showing requirements for full pre-cast concrete manhole option (**STD-WW-10A**);
- New Standard Detail showing requirements for pre-cast concrete pump station inlet manhole with cast in situ base (**STD-WW-10B**);
- New Standard Detail showing requirements for pre-cast concrete pump station inlet manhole with pre-cast base (**STD-WW-10C**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick for cast in-situ manhole option (**STD-WW-11**);

- New Standard Detail showing requirements for cast-in-situ concrete pump station inlet manhole (**STD-WW-11A**);
- Revision showing cascade manhole and additional details for stopper, vertical rodding pipe, etc. for backdrop manholes (**STD-WW-12**);
- Revision to inspection chamber details showing revised requirements for cover seating, mortar for riser engineering brick and revised base thickness as well as detail for proprietary plastic inspection chamber units (**STD-WW-13**);
- Inclusion of additional Note (11) for wrapping PE pipe thrust blocks and support block detail (**STD-WW-14**);
- Revision to scour valve chamber details showing revised requirements for cover seating, mortar for riser engineering brick and surround to covers in green areas (**STD-WW-15**);
- Revision to valve chamber details showing revised requirements for cover seating, mortar for riser engineering brick, surround to covers in green areas and position of thrust flange (**STD-WW-16** and **STD-WW-17**);
- Revision to air valve chamber detail showing revised requirements for cover seating, mortar for riser engineering brick, surround to covers in green areas and additional detail for pre-cast concrete option (**STD-WW-18**);
- Revision to cable duct chamber detail showing revised requirements for cover seating, mortar for riser engineering brick, surround to covers in green areas and drain point (**STD-WW-19**);
- Revision to overflow details showing additional detail for connection to storm water manhole (**STD-WW-20**);
- Minor revisions to ditch and stream crossing for sewers showing pipe material types (**STD-WW-21**);
- Minor revisions to ditch and stream crossing for rising mains showing detail for change of pipe material types for DI material (**STD-WW-22**);
- New Standard Details showing ditch and stream crossing for rising mains showing detail of crossing using PE material (**STD-WW-22A**);
- Minor revisions to bridge crossing for rising mains showing detail for change of pipe material types for DI/PE connection (**STD-WW-23**);
- Minor revisions to bridge/stream crossing for rising mains showing detail for change of pipe material types for DI/PE connection (**STD-WW-24**);
- New Standard Detail showing various culvert and pipe crossings (**STD-WW-24A**);

- New Standard Detail showing palisade fence requirements (**STD-WW 25**) and increased dimension for anti-burrow slab at the fencing base;
- Revisions showing amended requirements for wire mesh fencing option (**STD-WW-25A**) and increased dimension for anti-burrow slab at the fencing base;
- Revision to indicative pump station with lay-by showing revised layout for pump station elements and to exclude fencing and dedicated wash-down area (**STD-WW-26**);
- New Standard Detail for pump station layout showing direct access option from public road (**STD-WW-26A**);
- Revision of flow meter chamber details to show reduced chamber size and details of associated separate sluice valve (**STD-WW-27**);
- New Standard Details for flow meter chamber showing sluice valve included in larger cast in situ concrete chamber unit (**STD-WW-27A**);
- New Standard Details for flow meter in pre-cast concrete chamber unit with separate sluice valve (**STD-WW-27B**);
- New Standard Details for flow meter chamber showing sluice valve included in larger pre-cast concrete chamber unit (**STD-WW-27C**);
- Inclusion in **STD-WW-27, STD-WW-27A, STD-WW-27B** and **STD-WW-27C** of Table with spool pieces lengths and Note amended in relation to requirement for design to be submitted;
- Revision to outline modified layout for cast-in-situ concrete pump station showing omission of overflow chamber, inclusion of emergency storage chamber, omission of lifting davit, setting roof-slab at finished ground level, inclusion of information on cut in/cut out levels and other minor amendments (**STD-WW-28**);
- Revision to outline modified layout for pre-cast concrete pump station with cast in situ valve chamber showing inclusion of emergency storage chamber overflow, omission of lifting davit, setting roof-slab at finished ground level, inclusion of information on cut in/cut out levels and other minor amendments (**STD-WW-28A**);
- New Standard Details for pre-cast concrete pump station with pre-cast concrete valve chamber showing inclusion of emergency storage chamber overflow, omission of lifting davit, setting roof-slab at finished ground level, inclusion of information on cut in/cut out levels and other minor amendments (**STD-WW-28B**);
- Notes also amended to outline requirement for design of the cast-in-situ structure and pre-cast composite and pre-cast structures to be in accordance with IS EN 1992-3 in **STD-WW-28**, **STD-WW-28A** and **STD-WW-28B;**

- Revision of rising main discharge manhole showing revised requirements for cover seating, mortar for riser engineering brick and invert benching (**STD-WW-29**);
- Revision of details for Type 1 Pump Station control kiosk, revised dimensions, revised plate metal thickness (3mm), nomination of cable ducts, revision of IP rating (IP55 rather than IP65) (**STD-WW-30**);
- Revision of details for Type 2 and Type 3 Pump Station control kiosk, revised dimensions, plate metal thickness (3mm), nomination of cable ducts, revision of IP rating (IP55 rather than IP65), inclusion of Note indicating alternative blockwork structure with concrete roof allowed (**STD-WW-30A**);
- Revised detail for pump station wet well kiosk showing water connection and Boundary Box requirement (**STD-WW-31**) and new Standard Detail (**STD-WW-31A**) showing water service connection;
- Revision of hardstanding (impermeable and permeable) area for pump station sites, details of filter drain included for surface run off (**STD-WW-32**);
- Revision of vent stack details to reduce height to 6m and to include a passive odour control unit (**STD-WW-34**);
- New Standard Detail showing rising main rodding chamber details for cast in situ concrete construction (**STD-WW-35**);
- New Standard Detail showing rising main rodding chamber details for pre-cast concrete construction (**STD-WW-35A**);
- New Standard Detail showing requirement for marker post and marker plates (**STD-WW-36**)
- New Standard Details showing possible layouts of wastewater service connection in typical high density development sites (**STD-WW-37, STD-WW-38, STD-WW-39** and **STD-WW-40**);
- Inclusion of **Revision Log** for the updated/revised Standard Details.

List of specific revisions to the Standard Details for Water Infrastructure

- Revision to take account of pipe maintenance responsibility for service connections up to the property boundary (**STD-W-01, STD-W-03**);
- Additional details included for interface between Self-Lay infrastructure and connection infrastructure (**STD-W-02**);

- Minor revisions to pipe connection details (**STD-W-04** to **STD-W-10**) mainly relating to position of thrust flanges;
- Revision of notes on separation distances to agree with Code of Practice for Water Infrastructure Section 3.27 (**STD-W-11**);
- Revision to include new detail for pipe protection slab (**STD-W-13**);
- Revision to include additional information for pipe bedding and surround material (**STD-W-13**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick and mortar for blockwork in blockwork valve chambers, valve chamber alternative sizes also set out. (**STD-W-14** and **STD-W-15**);
- Revision of position of thrust flange on detail for DI pipe sluice valve (**STD-W-14**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick and mortar for blockwork in blockwork hydrant chambers for online and offline hydrants on DI pipes. Hydrant outlet options included, Chamber alternative size also outlined. (**STD-W-16** and **STD-W-17**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick and mortar for blockwork in blockwork hydrant chambers for online and offline hydrants on PE pipes. Hydrant outlet options included, Chamber alternative size also outlined, Branch PE pipe allowed. (**STD-W-18** and **STD-W-19**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick and mortar for blockwork in blockwork air valve chambers for online and offline air valves on DI pipes. (**STD-W-20** and **STD-W-21**);
- Revision showing revised requirements for cover seating, mortar for riser engineering brick and mortar for blockwork in blockwork air valve chambers for online and offline air valves on PE pipes. Branch PE pipe allowed. (**STD-W-22** and **STD-W-23**);
- Revision of PRV and PSV chamber and pipe layout details (**STD-W-24**);
- Inclusion of revised Notes (3) for the material used in kiosks (3mm steel plate or stainless steel and omission of GRP kiosks options) for booster pump station kiosks (**STD-W-25**);
- Revisions to electromagnetic meter chamber details, spool piece table is now included, revised requirements for cover seating, mortar for riser engineering brick, reference to IS 420 for pre-cast option. (**STD-W-26**);
- Revisions to mechanical meter chamber details, spool piece table is now included, revised requirements for cover seating, mortar for riser engineering brick, reference to IS

420 for pre-cast option, downstream hydrant omitted, options included for provision of reducer fittings if deemed necessary. (**STD-W-26A**);

- Ditto changes as above in STD-W-26A but for combined mechanical meter chamber with separate strainer chamber where strainers are deemed necessary (**STD-W-26B**);
- New Standard Detail for threaded rotary piston flow meter, DN30 & DN40, chamber (cast in situ concrete option) (**STD-W-26C**);
- New Standard Detail for threaded rotary piston flow meter, DN30 & DN40, chamber (pre-cast concrete option) (**STD-W-26D**);
- New Standard Detail for threaded rotary piston flow meter, DN30 & DN40, chamber (blockwork option) (**STD-W-26E**);
- New Standard Detail for night flow measuring system for estates with daily demand less than 20 cu. m per day where bulk flow meter is not provided (**STD-W-26F**);
- New Standard Detail for inline flow meter, DN 25 & DN 30, Boundary Box arrangement (**STD-W-26G**);
- Revision of Standard Detail showing requirement for marker post and marker plates, additional plates added, dimensions of plates amended to align with BS 3251 (**STD-W-27**);
- Minor changes to Standard Detail for pipe ducts showing revised requirements for cover seating, mortar for riser engineering brick and drain pipe from lowest chamber (**STD-W-29**);
- Minor changes to Standard Detail for scour chamber and headwall arrangements showing revised requirements for cover seating, mortar for riser engineering brick (**STD-W-30**);
- Minor changes to Standard Detail for washout hydrant arrangements showing revised requirements for cover seating, mortar for riser engineering brick and including option for PE pipe use (**STD-W-30A**);
- New Standard Detail showing scour chamber and connection to storm sewer, where this is allowed (**STD-W-30B**);
- Minor revisions to ditch and stream crossing for water main, change of title of the Standard Detail indicating it relates DI pipe material (**STD-W-31**);
- New Standard Details for ditch and stream crossing for water main showing PE pipe material (**STD-W-31A**);
- Minor revisions to bridge/stream crossing for water mains to included references to other Standard Details for DI/PE connection (**STD-W-33**);
- New Standard Detail showing various culvert and pipe crossings (**STD-W-33A**);

- New Standard Detail showing palisade fence requirements (**STD-W 34**) and showing dimension for anti-burrow slab at the fencing base;
- Revisions showing amended requirements for wire mesh fencing option (**STD-W-34A**, previously STD-W-34) and showing increased dimension for anti-burrow slab at the fencing base;
- Revision of details for kiosk, revised dimensions, revised plate metal thickness (3mm), nomination of cable ducts, revision of IP rating (IP55 rather than IP65) and title changed from “Telemetry and Wet Kiosk” to “Flow Meter Kiosk” (**STD-W-36**);
- New Standard Details for PRV/PSV kiosk (**STD-W-36A**);
- Revision of Standard Detail for lamp standard and bollard to show revised ducting to lamp bollard (**STD-W-37**);
- New Standard Detail showing flushing loop for DI water mains (**STD-W-38**);
- New Standard Detail showing flushing loop for PE water mains (**STD-W-39**);
- New Standard Details showing possible layouts of water service connection in typical high density development sites (**STD-W-40**, **STD-W-41**, **STD-W-42** and **STD-W-43**);
- Inclusion of **Revision Log** for updated/revised Standard Details.