



General Construction Notes:	
G1	Construction to comply with Unitywater's Connections Policy and the South-East Queensland Water Supply and Sewerage Design and Construction Code and is not negotiable.
G2	All work to be undertaken in accordance with relevant Workplace Health and Safety Standards, including confined space entry, trench shoring etc.
G3	Levels of existing water/sewer services and connection points to be verified prior to commencing construction.
G4	As per the conditions of the Private Works quotation; You must ensure work can commence within 60 days once quote has been paid to Private Works. Unitywater reserves the right to requote beyond the stated period.
Sewer Main Construction:	
SA	Unitywater's Development Inspector must be notified to inspect construction of all sewer property connections House connections: Minimum 0.5m into property Minimum 1m off sewer line Minimum 0.6m and Maximum 1.5m deep unless approved
SB	Minimum cover of sewer mains 600mm
SC	The invert of all ends of all sewer lines and house connection are to be marked by single length, 2m long, Ø40mm, orange, PVC conduit in accordance with SEQ-SEW-1106-2 to 5
SD	All SEQ Service Providers accept only Plain Wall uPVC for non-pressure sewerage system. Other type of uPVC such as foam core sandwich and solid core sandwich are not accepted. Ensure all fittings such as long radius bends, moulded oblique junctions, bends, inspection I.O junctions, shorts, sanded shorts, maintenance shaft rise's and maintenance shaft connections have been constructed from Plain Wall uPVC.
SE	Pre-Cast Manhole are not acceptable in the following cases <ul style="list-style-type: none"> • NUSEWERS (PE) systems. • Deeper sewer systems greater than 6 meters • In areas subject to Q100 flooding • In areas where there is a risk of surcharge • in water charged ground • in conjunction with bolt down lids • in sulphide control sewer maintenance hole (e.g. rising main receiving manhole) • in areas with unsuitable soil conditions
SF	Sewer MH internal joints are NOT to be bagged or repaired, unless approved prior by Unitywater in accordance with SEQ-SEW-1300-1.
SG	Apply a 150mm wide external bitumastic seal tape (DENZO) over a coat of manufacturer's recommended prime seal to all external joints in accordance with SEQ-SEW-1300-1.
SH	PE sewer pipe cannot be connected to Pre-Cast Manhole bases
SI	Maintenance Shaft rises minimum DN300. DN225 diameter risers are not accepted.
SJ	All Maintenance Shaft connection pipes, couplings, flat top taper etc. shall be Plain Wall uPVC, rubber ringed and fibreglass reinforced
SK	All uPVC house connection branch fittings such as moulded oblique junctions, bends, inspection I.O. junctions and Maintenance shaft connections shall be Plain Wall uPVC, rubber ringed and fibreglass reinforced in accordance with SEQ-SEW-1 104-1.
SL	Detectable cream marker tape "SEWER" shall be provided either above the embedment zone of the sewer main or 1000 below the F.S.L., whichever is closest to F.S.L.
SM	Vacuum Testing of all sewer mains and manholes, and Pressure Testing of rising mains to be undertaken by a NATA accredited testing agent. Unitywater must be notified of scheduled test time. Refer to attached "Unitywater Testing Requirements Summary". Manholes and sewers are not to be tested before all earthworks have been completed and large machinery has been removed from site.

SN	<p>CCTV of all sewers on USB drive and accompanying independent consulting RPEQ report and certification to be forwarded to Unitywater with both the on and off-maintenance application submissions. All CCTV inspections in general shall be carried out in accordance with the latest version of the WSAA Conduit Inspection Reporting Code of Australia WSA 05.</p> <p>Manholes and sewers are not to be CCTV's before all earthworks have been completed and large machinery has been removed from site.</p> <p>The CCTV surveys shall comply with but not limited to the following requirements.</p> <ol style="list-style-type: none"> The CCTV survey shall be carried out from the centre of the start maintenance structure to the centre of the finish maintenance structure. Each maintenance structure shall be fully scanned using the pan/tilt and zoom functions of the CCTV camera and the video footage recorded as part of the overall CCTV survey. All pipe joints shall be scanned by a 360 degree pan. <p>Refer to attached "Unitywater Testing Requirements Summary" for the general CCTV requirements. All of the requirements shall be complied with.</p> <p>The operator shall use Appendix F to highlight all unacceptable defects in the CCTV report.</p>
SO	<p>Proving Tool (Ovality) testing of all sewer lines to be undertaken by NATA accredited testing agent. Refer to attached "Unitywater Testing Requirements Summary". All of the requirements shall be complied with. Do not conduct deflection testing until at least 14 days after completion of placement and compaction of trench and embedment fill material and not before all earthworks have been completed and large machinery has been removed from site.</p>
SP	<p>Compaction test results of all embedment, trench fill and site filling works in accordance with WSAA requirements. Please take special note of trafficable testing requirements. Refer to attached "Unitywater Testing Requirements Summary". All of the requirements shall be complied with.</p>
SQ	<p>Work Health and safety requires all live sewer works undertaken by the developer's contractor to be supervised by Unitywater's Private Works Staff. Noncompliance of the requirement will result in Unitywater reporting the unsafe work process to Work Health Safety Queensland</p>
Water Main Construction:	
WA	<p>All water main fittings are to be fusion powder coated.</p>
WB	<p>Water service connections to use pre-tapped connectors (i.e. Ready Taps) in accordance with SEQ-WAT-1108-2. Tapping bands are not an approved product and are not to be installed on water mains.</p>
WC	<p>Approved water meters in accordance with Appendix A of the 'South East Queensland Water Supply and Sewerage Design and Construction Code' to be provided to each lot in accordance with SEQ-WAT-1108 series drawings.</p> <p>An excel spread sheet file of lot No's and their associated water meter No's is to be forwarded to Unitywater as part of the on-maintenance application submissions.</p> <p>All water meters are to have a Unitywater coded number. All Unitywater meters numbers will begin with a letter "U"</p>
WD	<p>Water Meters shall be installed in accordance with SEQ-WAT-1108-1 to 3</p> <p>The Water Meters construction shall comply with but not limited to the following requirements at both the on-maintenance and off maintenance inspections.</p> <ol style="list-style-type: none"> Ball Valve must be lockable and unobstructed within the box. Ball Valve must be 500mm from front boundary and 300 from side boundary Lockable ball valve, water meter and meter box to be approved fitting as per SEQ code IPAM List. Meter box lid shall have non slip pattern, lettering cast into lid indicating "water meter" and be black in colour. Meter box lid to be left so that it sits flush with turf surround. Turf surround to extend a minimum of 600 mm on all sides of meter box. <ol style="list-style-type: none"> Geotextile fabric to be laid around and underneath meter box taped each side & around pipe to prevent ingress of sand, soil and mud. Water Meter Box must be void of all sand, soil and mud at on maintenance inspection. Water meters must be clean of all mud and facing straight upwards. Water Meter components to sit high, level & centred within the box with a min. 20mm air gap between the bottom of the water meter and bottom of the water meter box.
WE	<p>Water Service Pipes shall be installed in accordance with SEQ-WAT-1108-1 to 3</p> <p>The Water Service Pipes shall comply with but not limited to the following requirements.</p> <ol style="list-style-type: none"> Water service pipework shall be PE100 PN16 black polyethylene pipe with blue stripe in accordance with AS/NZS 4130. DN25 pe100 pn16 pipe with blue stripe for service < 20 m long DN32 pe100 pn16 pipe with blue stripe for service > 20 m long Any pipework showing signs of kinking or strain from over bending will be rejected. All connections to polyethylene pipe to be approved brass or plastic mechanical fittings.

	<p>f) PE100 pipe shall be laid with 100 mm minimum surround of sand or approved granular material.</p> <p>g) PE100 pipe must be continuous without joints. No Joints permitted between the ready tap/tapping saddles and water meters</p>												
WF	Water main alignment – 1.5 m from boundary (±0.05m tolerance)												
WG	Detectable blue marker tape, thrust blocks and strapping of valves required to all PVC mains in accordance with WSAA.												
WH	Minimum cover to water main:												
	<table border="1"> <thead> <tr> <th>Location</th> <th><=150NB</th> <th>>=200NB</th> </tr> </thead> <tbody> <tr> <td>Non-roadways /Sealed Roads</td> <td>600</td> <td>1000</td> </tr> <tr> <td>Major Roads/embankment</td> <td>750</td> <td>1000</td> </tr> <tr> <td>Freeway</td> <td>1200</td> <td>1200</td> </tr> </tbody> </table>	Location	<=150NB	>=200NB	Non-roadways /Sealed Roads	600	1000	Major Roads/embankment	750	1000	Freeway	1200	1200
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WI	No bending or curving of oPVC pipes												
WJ	Polythene sleeving of D.I.C.L. pipe and fittings as per manufacturer's specifications.												
WK	<p>Maximum 1° deflection out of a RRJ oPVC spigot joint or 105mm over 6 metre</p> <p>Maximum 5° deflection out of DICL fittings or 502mm over 6 metre</p> <p>Unitywater prefer the use of DICL RRJ Connectors when there is a requirement to deflect pipes within joints</p> <p>Deflection out of RRJ oPVC spigot joints requires an approved certified design, detailing lengths and offset distances. Pipes deflected without this approved certified design will be required to be removed from the trench.</p>												
WL	Water mains (future extensions) must be constructed and terminated in accordance of SEQ-WAT-1303-1.												
WM	<p>Hydrant Spacing on water mains shall strictly comply with the following requirements:</p> <ol style="list-style-type: none"> Every property shall have a hydrant within 40 m of its front boundary hydrants shall be installed at a maximum spacing of 80 m; hydrants shall be installed at crests, low points and other points determined by the SEQ-SP for operational purposes; in urban areas, every property, other than properties that are part of a community title scheme, shall have a hydrant within 90 m of the furthest point of any existing, proposed or future Class 1 buildings, measured along the street to the property entrance and around the perimeter of the building (where this requirement cannot be met from hydrants on SEQ-SP mains in public streets, a private fire main must be provided on the property); 												
WN	<p>Hydrants must be installed in accordance to SEQ-WAT-1302-1. The hydrants shall comply with but not limited to the following requirements at both the on-maintenance and off maintenance inspections.</p> <ol style="list-style-type: none"> Top of hydrant lugs/claws to be a maximum 225mm and minimum 75mm in depth Hydrants shall be located in line (+/- 200 mm) with the side real property boundary. Hydrant must be centralised within box Blue marker tape must be accessible from within the hydrant box Hydrants and hydrant boxes to be void of mud and dirt Hydrants are to be installed so that the lugs/claws are either side of the main. Hydrants at the end of lines shall be installed so that the lugs/claws and lid are at 90° to the main. 												
WO	<p>Hydrants identification in accordance to with SEQ-WAT-1300-1.</p> <ul style="list-style-type: none"> Blue Bi-Directional Raised Reflective Pavement marker (RRPM) Golden Yellow (AS2700 Y14) Thermoplastic Reflective Direction Arrow 200m wide Golden Yellow (AS2700 Y14) Thermoplastic Kerb Marking <p>Brass (only) "HP" Marker with inscribed (8mm high) distance</p>												
WP	<p>Valve must be installed in accordance to SEQ-WAT-1301-1. The valves shall comply with but not limited to the following requirements at both the on-maintenance and off maintenance inspections.</p> <ul style="list-style-type: none"> Top of valve spindle to be a maximum 225mm and minimum 75mm in depth Valves must be centralised within box Blue marker tape must be accessible from within the valve box Valve and valve box to be void of mud and dirt 												
WQ	<p>Valves identification in accordance to with SEQ-WAT-1300-1.</p> <ul style="list-style-type: none"> White (AS2700 Y35) Thermoplastic Reflective "V" and Direction Arrow 200m wide White (AS2700 Y35) Thermoplastic Kerb Marking Brass (only) "V" Kerb Marker 												
WR	Pavement marking paint shall be of an approved thermoplastic reflective paint, incorporating applied glass beads, manufactured and applied as per the requirements of Main Roads MRTS45. Refer to attached "Unitywater Testing Requirements Summary".												

WS	Pressure Testing of reticulation water mains to 1200 KPA, as close as practicable to the lowest point of the main by NATA accredited testing agent at completion of all water main works. Unitywater must be notified of time of test. Refer to attached “Unitywater Testing Requirements Summary”.
WT	Water mains must be flushed, chlorinated, pressure and bacterial tested and samples to be collected by NATA registered laboratory, prior to Unitywater connecting to existing system. (WSA19.5.3). Refer to Unitywater’s “Procedure for determination of acceptance of new water mains” and “Unitywater Testing Requirements Summary”. Bacteriological testing is valid for a maximum period of 10 days . As such Unitywater will permit bacteriological results being submitted after a successful On Maintenance inspection of the new water main works (and subsequent defects, if applicable, rectified). Bacteriological test results must be submitted directly to Unitywater within 48 hours of the date of result being issued.
SU	All construction works on Unitywater mains water mains can only be undertaken by Unitywater staff under a private works agreement/quote.
On-Maintenance Acceptance Process:	
MA	Prior to the issuing of the Certificate of Completion, all water supply and sewerage construction works must be accepted “On-Maintenance” Request for the On-Maintenance Inspection must be made by the consulting engineer by completing the On-Maintenance Inspection Request Form. The form, together with <u>all</u> the mandatory testing items specified on the form and in the SEQ WS&S D&C Code Asset Information Specification <u>must</u> be submitted to Unitywater by email to: development.Certification@unitywater.com as a <u>single submission package</u> at least 7 business days before the intended inspection date. Incomplete and non-compliant applications may be failed, which will require resubmission of a complete application and with the relevant application fee. Once Unitywater have audited the submission for compliance and completeness the Unitywater Development Services Inspector will contact the Consulting Engineer to arrange an On-Maintenance inspection.
MB	All email correspondence for the project shall include the Unitywater Development Approval Application Number (UW) within the subject title.
MC	The On-Maintenance Submission will include an As- Constructed Information Package, in accordance with the SEQ WS&S D&C Code Asset Information Specification. The As-Constructed Information Package will comprise of the following: <ol style="list-style-type: none"> 1. RPEQ certified design redline mark-ups in adobe .pdf format 2. ADAC XML data file 3. Documentation for approvals for changes to approved design 4. RPEQ Certified As-Constructed drawings <ol style="list-style-type: none"> a. AutoCAD .dwg drawing file b. RPEQ signed .pdf file
MD	Provide easements over all water & sewerage mains and or rising mains in accordance with the South East Queensland Water Supply and Sewerage Design Code. Easement term will be Unitywater’s most current registered dealing held by the Department of Natural Resources & Mines and will not be altered or amended
ME	Unitywater’s Asset Template is to be completed for all active asset installations (e.g. SPS, PRV or water booster installations).
MF	Water/Sewer connection, cut-ins, modification of existing water/sewer systems (live works) and Water Meter installation require a quote from Unitywater Private Works to enable the works to be completed. Complete the “Water supply and sewerage services private works application” form. Attach approved design drawings and all relevant information to enable Unitywater to quote the job correctly, and email to privateworks@unitywater.com . Provide a copy of the Private Work quote letter and receipt of payment in the single On-Maintenance Submission Package. Authorisation of the live works to proceed will occur upon successful On Maintenance acceptance of the works. This includes satisfactory submission of all On Maintenance acceptance documents, successful bacteriological test results and payment of the appropriate maintenance security bond and Infrastructure charges.
MG	The Maintenance security bond amount must be approved and a copy of the receipt of payment must be provided in the single on-maintenance submission package.