

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**



Material Notes

1. All components in contact with the water supply shall be Certified to AS/NZS 4020.
2. All Copper alloys shall meet the requirements of AS 2345 Dezincification resistance of copper alloys. Lead content shall not exceed the limit specified in relevant Australian Standards.
3. All fittings and valves shall have a minimum operation pressure of 1600kPa.
4. Polyethylene pipe connections shall be manufactured in accordance with AS/NZS 4129 Fittings for polyethylene (PE) pipes for pressure applications and be capable of accepting a Series 1 SDR11 PN16 PE100 AS/NZS 4130 polyethylene pipe.
5. Polyethylene pipe fittings threaded end connections shall be manufactured in accordance with Clause 1.8 of AS/NZS 4129.
6. Female Iron threaded end connectors for valves and other assembly fittings shall be a Parallel BSPP Series G thread to AS 1722.2 or to an equal "Pipe Thread" as defined in ISO 228. Male Iron threaded end connectors for valves and other assembly fittings shall be a Tapered BSPT Series R thread to AS ISO 7. Where a Male Iron Parallel threaded pipe section is joined to a Female Iron fitting that has a Parallel thread, this type of joint shall be made with a 2mm thick Fibre Washer located at the internal end of the fitting with the Male Iron Parallel threaded pipe section fully tightened onto the fibre washer together with the use of a thread sealant/adhesive as shown in the Detail in Std Dwg 11-134.
7. Ductile iron components shall be coated in accordance with AS4158 Thermal-bonded polymeric coatings on valves and fittings for water industry purposes applied by the fluidised bed technique.
8. Cadmium plate is an unacceptable material and will not be considered by the Council under any circumstances.
9. Screw on Flanges for DN40 assembly components shall be Oval flanges in accordance with Clause 2.6 of AS3565.1-2010 with a Female Iron thread in accordance with Item 5 above and for DN50 assembly components shall be Round flanges in accordance with Clause 2.5 of AS3565.1-2010 with a Female Iron thread in accordance with Item 5 above. Screw on Flanges shall be a material complying with Material Note 1 above. Integral DN50 flanges shall comply with AS 4087 for Figure B5 flanges.
10. Gaskets shall comply with the shape requirements of item 9 above and shall be manufactured from an elastomer complying with AS 1646 and may contain a reinforcement material. The minimum working pressure for gaskets shall be 1600kPa at 3.0mm thick.
11. Stainless steel nuts, bolts and washers used in the meter assemblies and fittings shall be manufactured from grade 316 stainless steel to AS2837. Stainless steel of A4 grade to ISO designations is acceptable.
12. All stainless steel nuts, bolts and washers other than those which form an integral part of an article shall comply with the metric standards AS1111 ISO metric hexagon commercial bolts and screws, AS1112 ISO metric hexagon nuts, including thin nuts, slotted nuts and castle nuts and AS1237 flat metal washers for general engineering purposes.
13. Stainless Steel bolt length shall be equal to the sum of the thickness of the flanges, gaskets, washers and nuts rounded to the next longer standard size subject to the following. The thread length on the provided bolts shall be long enough, when assembled as described, to provide a minimum of three ( 3 ) **unused** threads between the bolt head and the bolts assembled and tightened nut and a minimum of three ( 3 ) **unused/excess** threads after the bolts assembled and tightened nut.
14. Stainless Steel bolt and nut threads shall preferably be 'rolled' rather than 'cut' and shall exhibit a clean thread with no burrs or torn peaks on the thread. Nuts must turn freely on the threads without binding.
15. DN20 Meter and Sub-Meter assemblies are Approved Product Assemblies that are to be supplied by retail representatives listed in the SEQ Civil IPAM Product List and these assemblies consist of Component Items 8 to 14 in the Components List below. **Individually sourced and assembled Component Items provided through the Developments Plumber are Not Approved.**
16. DN25 and larger Meter and Sub-Meter assemblies are individually sourced and assembled Approved Component Items complying with the below Components List and are provided through the Developments Plumber.
17. Approved means approved by City of Gold Coast Council as the owner of the Asset whether this approval is for an individual Component or for an assembly of Approved Components, refer to the defined SEQ Code Product Approval process.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 1 of 9

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**



18. Individual Component suitability for Approval in the first instance is based on Third Party StandardsMark Certification to the nominated Australian Standard/s and where unavailable, the components suitability would be based on a WaterMark Certification to the nominated Australian Standard/s. Approved products are listed below and in the SEQ Civil IPAM List.
19. The Standard Drawings define both approved master meter and sub-meter assemblies that are inclusive of the Property Service Pipe, and individual SEQ approved components that are sourced by the Plumber and handed over to City of Gold Coast Council. The approved meters, meter assemblies and individual components may be sourced through council's Supply Contracts.
20. AMR components shall be Approved and the installed form and function shall be in accordance with the Guidelines and Specifications.

Assembly Notes - all meter types

1. For installation requirements not covered by this document, refer to the SEQ Water Supply Code and it's associated Standard Drawings.
2. The City of Gold Coast Council meter installation (up to and including DN40) shall be located within the footpath verge perpendicular to the boundary as shown in the Standard Drawings.
3. The Developer provided Sub-Meter assemblies shall be located as shown in the Approved Plumbing Plans. The assembled format and material components of the Sub-Meter installation shall in the first instance comply with City of Gold Coast Councils requirements and then with the requirements of AS/NZS 3500.1 and the relevant Queensland Legislation.
4. The Water Services and the Meters shall be located 1000mm clear of Energex services.
5. The bedding material or the native soil shall not surround or cover any components within the meter box.
6. For open trench installed water service road crossing conduit installations details, refer to SEQ-WAT-1106-1 as appropriate. For HDD installations the water service pipe shall be PE100 SDR9 and for Bored conduits installation the conduits shall be a larger pipe than the PE100 service pipe to the details in SEQ-WAT-1211-1 to SEQ-WAT-1214-1.
7. Meter Box installations in trafficable pavements shall be provided with a foundation pad or box support system equal to the hydrant and valve box support system as shown in the Standard Water Reticulation Drawings.
8. In-ground Water Service PE pipes and Water Meter box assemblies shall be installed with Bedding Sand, refer Component Item 35 below and as shown in the Standard Drawings.
9. Water Service DICL pipes shall be installed with Bedding Gravel ( Item 36 below ) and as shown in the Standard Drawings.
10. The directional arrow on the Meter or Dirt Box or DCV or control Valve shall point downstream to the property.
11. Where an alternative Water Supply such as Dual Reticulation or Rainwater tanks are part of the allotments Water Supply outcomes, all Domestic Meter and Sub-Meter installations shall be provided with a Non-Return Valve, refer Component Items 4 and 19 below and as shown on the Standard Drawings.
12. Connections to the Reticulation main shall be supervised and controlled by City of Gold Coast Council and will consist of either a Tapping band and TPFNR, or a "cut in" method for DN100 and larger or by an approved under pressure tapping method.
13. All Meter capsule reading dials shall be no more than 300mm below the surface level of the Box.
14. DN100 and larger Electromagnetic Flow meters shall be approved by City of Gold Coast Council and shall be battery powered. The installation shall include a set of Grounding Rings and their associated Earthing Cables and all associated cable to flange connections as per the manufacturer's requirements. The flow meter shall be provided with a NATA Flow Test Certificate and shall be capable of ongoing in-situ performance assessment. All new Electromagnetic Flow meters installations shall be Calibrated and Commissioned by the meter supplier prior to Council accepting the installation.
15. DN100 and larger Property Service pipe shall be either ductile iron or PE100 with above ground and riser pipes shall be ductile iron, refer Component Item 29 and 29A below and as shown on the Standard Drawings.
16. DN50 ID (DN63 PE) and smaller Property Services pipe shall be PE pipe for all in ground non-commercial domains. For all above ground and riser pipes and all commercial domains copper pipe shall be used. Refer Component Item 6 below and as shown on the Standard Drawings.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 2 of 9

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

17. DN20 and DN25 Sub-Meters and their associated pipe work, where assembled in parallel, refer Standard Drawing 11-135, shall be separated by 150mm centreline to centreline.
18. DN40 Sub-Meters and their associated pipe work, where located in parallel, shall be separated by 300mm from flange OD to flange OD.
19. DN20 and DN25 Sub-Meter assemblies, including any AMR facilities that are located within the Cabinet, shall provide the Upstream and Downstream and side and front clearances shown in Standard Drawing 11-135.
20. AMR components shall be attached and located so that they do not obscure the meters visual reading panel or block or restrict access to any valve or fitting or other mechanical assembly nut or flange.
21. All Sub-Meters shall be tagged with a permanent Tag to the details shown in Standard Drawing 11-136. The Tag shall be attached, to the Sub-Meter or to the Sub-Meter pipe work adjacent to the Sub-Meter, with a metal Split Ring and where required a non-corrosive metal chain with 10mm long by 5mm wide links made of 1mm minimum thick metal wire .
22. Sub-Meter assemblies provided within a pit shall be provided so that the pit and it's lid do not create a Slip or Trip hazard to pedestrians. The pit and it's lid shall be level with the surrounding surface finish.
23. Prior to the plumber installing the Sub-Meter, the plumbing pipe work down stream of the Sub-Meter shall be flushed in accordance with the requirements of Section 18 of AS/NZS 3500.1 so that the Sub-Meter assembly is free of any " foreign matter ". For A+ Class Recycled water services, the system shall be separately flushed for water quality and separately tested for any cross connections in accordance with the requirements of Section 9 of AS/NZS 3500.1.
24. The Code Reference, in addition to the below listed nominals, is a reference to the current SEQ Water Supply and Sewerage Design and Construction Code documents as published from July 2013.
25. Council will use water service flow restriction inserts to Restrict Water Supply where permitted to by Legislation. Lockable Ball valves are no longer required for Supply Restriction and are acceptable for use in all 20mm meter applications except for use at the Ready Tap fitting.

Assembly Notes – on-lot meter installations

1. 50mm or larger meter assemblies are installed on-lot and are above ground.
2. Water service pipes that travel through the building shall be suitable for their compliance to maintain the Building Code of Australia required Fire Resistance Level between building elements.
3. Water service pipes shall be supported by standard embedment Type C Support where buried. Thrust where required shall be managed by standard thrust blocks for embedded pipe. Flanges or Restraint joints shall be used for water service pipes and meter assemblies.
4. The Water Meter assembly shall be provided with at least two ( 2 ) Assembly Support Brackets that are Hot-Dip Galvanised min DN65 Steel Tube or equivalent with M12 Galvanised Bolt sets for the pipe clamp similar to the format shown in std dwg 11-154 and SEQ-WAT-1312-1. EPDM rubber or similar shall be used between pipes and supports/clamps and all dissimilar metal contacts.
5. The Water Meter assembly shall be provided with min 300mm clearance from all sides.
6. For meter reading and meter maintenance needs, the Water Meter assembly shall be provided with 900mm of clear space along one side of the complete assembly.
7. Backflow management where required shall be installed after the Water Meter assemblies DS Butterfly Valve and is Private infrastructure.
8. Security mesh where required shall be colour coded aluminium security mesh to AS/NZS 2803 with locks where fitted to comply with the requirements within Std Dwg 11-137 . Any security mesh installation shall not prevent the meter being manually read.
9. The installed Water Meter assembly and any associated pressure pipe and fittings are a "Pressure Pipeline" as defined by the requirements of the Queensland Development Code MP 1.4.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 3 of 9

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

Components List – all meter types

Item	Description	Code Reference	Specification
1	PE Pipe Connector	Brass mechanical compression fittings - WSA PS-247	DN20 to DN63 PE pipe fitting to AS/NZS 4129, refer Material Note 3 above.
2	Ball Valve	WSA PS274	DN20 and DN25 Ball Valves for Ready Tap fittings and both side of meter assemblies – not lockable, refer Note 25 of Assembly Note-all meter types above.  Ball valves with integral PE pipe connectors are preferred.
3	Meter Tail and Nut Assembly	AS 3565.1-2010	Copper alloy Nuts and Tail to comply with Material Notes 2 and 3 and 4 above and are to be threaded to Table 2.2 of AS 3565.1 with the Tail to be a Male iron thread to Material Note 6 above. This assembly may be integral with a Ball Valve in Approved Product Assemblies, refer Material Note 16. The gasket rebate on the tail shall be no longer than 4mm so that it does not interfere with the meter's integral dual check valves.
4	Master Meters DN20 and DN25 and DN40 and DN50 and DN100 and DN150 and Larger	NSC/NMI Pattern Approved for DN20 and DN25 and DN40 meters. AS3565.1 – 2010 certified and SEQ Code IPAM Listed for all meters.	Select Master Meters in accordance with the nominated Code references and to the listed Specifications. Colour definition of meters to be Lilac/Purple for Class A+ Recycled water systems and the colour of cast brass for small diameter Potable meters and a Blue coloured FBPE coating for larger diameter Potable meters. All DN20 and DN25 meter installations shall be provided with integral Dual Check Valves. External Non-Return valves for DN40 and larger meters are only required for Dual Reticulation areas. All DN20, DN25 and DN40 Meters shall have integral strainer/filters. DN50 and larger meters shall have Flanges that comply with Figure B5 of AS4087 and shall be provided with an external Dirt Box/Strainer for all mechanical meters. A register with ten times (x10) factor is not acceptable. Q3/Q1 Ratios required for Mechanical Meters DN20 = 200 DN25 = 200 DN40 = 160 DN50 = 100 DN100 = 100 DN150 = 100 DN100 and Larger Battery Powered open bore Ultrasonic or Magflow meters shall be for fire or combined service lines whereas DN50 Flow meters can be used for dedicated domestic sprinklers. Meter length for DN20, DN25, DN40 and DN50 are standard meter lengths which are 154mm, 178mm, 232mm and 311mm. Meter length for DN100, DN150, DN200 and larger sizes are ISO lengths which are 250mm, 300mm, 350mm and so on.
5	Meter Tail and Nut Assembly	AS 3565.1-2010	See Item 3 above.
6	Property Service Pipe less than DN100	PE Pipe – WSA PS-207; Copper Pipe – WSA PS-214; SEQ Code IPAM lists.	<u>PE Pipe – Standard Service pipe for in ground pipe work within non-Commercial Domains.</u> PE Property Service pipe is OD based. DN25 and DN32 and DN50 and DN63 Property Service Pipe are Developer installed (equivalent to DN20 and DN25 and DN40 and DN50 copper pipes respectively). Property Service Pipe is PN16 PE100 material. Colour definition of Property Service Pipes in accordance with SEQ Code IPAM List. <u>Copper Pipe – Service pipe for Commercial Domains (where full pavement exists across verge/s) and all above ground and riser pipes.</u> Copper Property Service pipe is Imperial based. DN 20, DN25, DN40 and DN50 pipe shall be Type A copper pipes to WSAA Product Specification No.214 as Annealed pipe with Natural pipe colour for Drinking Water and Blue sleeved and Purple sleeved for Dual Reticulation areas.  A fitting of stainless steel pipe with rotating DI or steel flange is accepted to be used as straight spool pipes for above ground 50mm meter assemblies.
7	On-Lot Water Service Pipe	AS/NZS 3500.1 and City Plan Policy - Land Development guidelines	On-Lot Water Service Pipes shall be in accordance with the nominated Code references.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 4 of 9



**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

7A	On-Lot Water Service Pipe for Dual Reticulation	AS/NZS 3500.1 and City Plan Policy - Land Development guidelines	On-Lot Water Service Pipes and the required Colour definition of the Pipes shall be in accordance with the nominated Code references.
7B	Property Service Pipe for Dual Reticulation	PE Pipe – WSA PS207	Refer nominated PE Pipe Component Item 6 above and it's associated Code reference with the Colour definition of Pipes to be in accordance with SEQ Code IPAM List.
8	On-Lot Water Service Pipe fitting	AS/NZS 3500.1-2003	DN25 and DN32 PE On-Lot Water Service pipe to Male Iron threaded end connector (refer Material Note 5 above) or equal compression fitting for other acceptable On-Lot Water Service pipe in accordance with the referenced Code.
9	Lockable Ball Valve	WSA PS274	Refer nominated Component Item 2 above and it's associated Code reference. The handle may be able to be locked to the valve body in the open and in the closed positions through the alignment of a 10mm diameter hole in the handle with a 10mm diameter hole in the body lock facility. Locking Ball Valves are <u>no longer mandatory</u> but are acceptable for use, refer Note 25 of Assembly Note-all meter types.
10	Meter Assembly Wall Mount Bracket	Std Dwg No. 11-134, 11-135 and 11-138	Stainless steel 304 material or approved alternative, refer Material Note 16. Sharp corners to be rounded and all sharp edges to be made safe. Bracket/s to be attached to the building or cabinet with screws or bolts that can be disassembled. The bracket shall not impede the safe operation of the ball valve.
11	DN20 and DN25 Slip Coupling	SEQ Code IPAM List	DN20 and DN25 Slip Couplings are Approved Products to be used for DN20 and DN25 Wall Mount Bracket meter assemblies. The slip coupling comes with a Meter Nut in accordance with Component Item 3 and has on the other end of the Coupling a Female Iron threaded end as defined in Material Note 5 above or with an integral Ball Valve. The Coupling may have two internal EPDM "O" Ring Seals and shall be restricted from self-disassembly and from <b>any hydraulic movement at all</b> by the use of an integral external compression joint that can act as a coupling seal. The Coupling shall have between 5 mm and 20 mm of movement and is assembled with a minimum of 5 mm or 2/3'rds of the movement still available and is generally attached to the Bracket (Component Item 10) by the use of two copper alloy locking nuts on an external Parallel thread to the standard of the manufacturer.
12	Brass threaded tube	AS 2345 Dezincification resistance of copper alloys	DN20 and DN25 threaded tubes shall be made of Brass complying with Material Note 1 and threaded as defined in Material note 5 above except that it shall be a parallel thread. Fibre gaskets shall be provided to all parallel threaded tube ends so that upon full insertion of the tube into the fitting, the tube compresses the gasket. In addition to the fibre gasket, thread sealing media shall also be provided to the assembled joint.
13	Meter Nut		Refer nominated Component Item 3 above and it's associated Code reference. This Meter Nut may be incorporated with Component Item 12 above.
14	Non-AMR Sub-Meters and AMR Sub Meters	NSC/NMI Pattern Approved for DN20 and DN25 and DN40 meters. AS3565.1 – 2010 certified and SEQ Code IPAM Listed for all meters.	Refer nominated Component Item 4 above and the associated Code reference. Positive Displacement meters can be in Vertical or Horizontal orientation.  <b>Multi-jet meters are only permitted in a Horizontal orientation and are not permitted to be used for Hard Wired AMR systems utilising Reed Switches. Incorrect placement and use of any brand of meter will require the meter to be removed and replaced with a compliant meter assembly.</b>
14 Cont'	AMR Systems		Hardwire AMR systems only. All Reed Switches are to be supplied by the Meter supplier. Refer Component Item 46 herein for wire/cable specification.  <b>Wireless Radio AMR systems are not permitted.</b>
15	Pre-Assembled Dual & Single Meter Boxes	Std Dwg No. 11-134 SEQ Code IPAM List	Refer nominated Components Item 4, Item 9, Item 11, Item 12, Item 13 and Item 14 above together with Item 16 below and their associated Code references. DN 20 Pre-Assembled Meter and Sub-Meter assemblies in Box are Approved Products, refer Material Note 15.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 5 of 9

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

16	Meter Boxes	SEQ Code IPAM List and Std Dwg No. 11-134 to 11-139	<p>Selected components shall be in accordance with the nominated Code references and to the listed Specification.</p> <p>DN20, DN25, DN40 Water Meter Boxes (including Sub-meter use) in Green or Black are constructed from virgin and/or regrind high density polyethylene (HDPE) and for DN20 assemblies shall be supplied with an integral or attached base plate.</p> <p>DN20, DN25 and DN40 short Water Meter Box Lids are coloured Green or Black and are constructed from virgin high density polyethylene (HDPE) with an integral snap lock to enable the lid to remain fitted to the meter box unless deliberately removed and the meter box lid shall be attached to the meter box by a galvanized chain of stainless steel cable that prevents the lid from being removed from the immediate vicinity of the box. All Plastic lids shall have a metal device suitably molded to the lid which is capable of detection by electronic means.</p> <p>DN40 short boxes are for retrofitting only.</p> <p>DN40 long boxes are P7 pit with Aluminum lids.</p> <p>All the lids shall have the wording 'WATER METER' cast into the lid surface or applied as a Brass Engraved label with fixing bolts with bruised threads.</p> <p>All the meter boxes and lids shall be capable of sustaining exposure to footpath traffic, pressures created by backfill and light vehicular loadings to a Class A performance outcome in accordance with AS 3996. Class B or higher boxes may be required as per AS 3996 load classifications.</p> <p>All aluminum lids shall have applied to the external surface an anti-slip coating and shall have a 25mm hole for manual opening.</p> <p>The anti-slip coating shall have slip resistance testing results to AS/NZS 3661.1 Slip resistance of pedestrian surfaces or AS/NZS 4586 Slip resistance classification of new pedestrian surface materials or recognised equivalents.</p> <p>All metallic lids where required shall be made of 6mm checker plate manufactured to AS/NZS1734 at grade 6061 T6 and shall be coated with an anti-slip coating system in accordance with the nominated Code Reference.</p>
17	Gate Valve - Brass	AS 1628	<p>DN 40 and DN50 Metallic Bodied Gate valves shall comply with the nominated Code and be PN16 and comply with Material Note 1 and have a Female Iron thread at each end that complies with Material Note 5.</p> <p>The handle shall be either a brass tee or a cast iron hand-wheel that has a FBPE or 2-pack epoxy coating applied to the cast iron hand-wheel.</p> <p>Pressed steel or aluminium alloy hand wheel materials <b>are not acceptable</b> even where provided with an anti-corrosive coating.</p> <p>The Handle or other permanent marking on the Valve shall define the directions for Open and Close.</p> <p>Approved stainless steel ball valves are acceptable.</p>
18	Screw on Flange Connector	AS 2345 Dezincification resistance of copper alloys	<p>DN40 and DN50 Screw on Flange connectors and their gasket and bolts shall comply with Material Notes 8, 9 and 10 above.</p> <p>An adaptor fitting where required for brazed joints shall comply with Material Notes 2, 3 and 6.</p>
19	DN40, DN50, DN100 and larger Non-Return Valve Non-Testable	AS 4794 or AS/NZS 2845.1; SEQ Code IPAM List	<p>DN40 Non-Return valves Male Iron threaded end connectors shall comply with Material Note 5 above.</p> <p>DN40 threaded Double Check Valves are acceptable.</p> <p>DN50 and larger are flanged joints to AS4087 Figure B5.</p> <p>The body of the Non-Return Valve shall be either Stainless Steel Grade 316 or Ductile iron, Grade 304 Stainless Steel may be acceptable where Grade 316 is not available.</p> <p>Ductile iron Non-Return valve bodies shall be coated in accordance with AS4158 with a thermal-bonded polymeric coatings that has been applied by the fluidised bed technique. The Non-Return Valve shall be certified to the nominated Code Reference and AS4020.</p> <p>The diaphragms, valves, disc seat facing and other flexible non-metallic parts shall be designed for continuous exposure to water at the maximum operating temperature of the device without change in physical characteristics.</p> <p>Non-Return valves shall have a maximum rated working pressure of at least 1600 kPa. Dual Check Valves or equals are acceptable</p> <p>DN50 and larger flanged Double Check Valves are acceptable.</p>
20	Meter Boxes – DN 40		See Item 16 above.

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

21	DN50, DN100 and larger top entry Dirt Box/Strainer	AS2345 AS4087 AS4158	Selected components shall be in accordance with the nominated Code references and to the listed Specification. Dirt Boxes shall be either Ductile Iron or a Copper Alloy and shall be certified to AS4020. Dirt Box flanges shall conform to AS4087 Metallic flanges for waterworks purposes, Figure B5. Ductile Iron Dirt-box bodies shall have a protective thermal-bonded polymeric coating internally & externally in accordance with AS4158. Copper alloy Dirt Box bodies and components which are in contact with water shall comply with AS 2345. Strainer mesh shall be minimum 1mm thick 304 Stainless Steel with between 3mm and 5mm diameter perforations through the mesh. The Internal mesh of the dirt box shall be easily accessible via a bolt fixed access plate for cleaning, inspection, repair or replacement while in-situ. Coated Mild Steel bodied Dirt Boxes are not acceptable.
22	Ductile Iron FI-FI short with Thrust Flange	SEQ Code IPAM List and AS/NZS 2280	Either Flange Class pipe with screw on Flanges or a FI-FI fitting with a Thrust Flange centrally attached in accordance with the nominated Code reference. The Flange face internal and external to the Concrete Box shall be a minimum of 100mm clear of the Concrete face.
23	Ductile Iron or Stainless Steel FI-FI short pipe	SEQ Code IPAM List and AS/NZS 2280	Ductile Iron short pipe – either FI-FI factory made fitting or uni-flange with PN35 DI pipe. Stainless Steel short pipe – a grade 316 seamless stainless steel case with integral rotating powder coated carbon steel flanges. Where required a DN25 stainless steel socket with internal threads is welded by factory on the pipe for the installation of test port.
24	Dismantling Joint thrust restraining	SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references and to the listed Specification. This fitting may only be used for in ground concrete pit or retrofitting.
24A	DI flanged telescopic flexible fitting	SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references and to the listed Specification. This fitting may only be used for retrofitting.
25	Uni flange	AS2129 and AS4087 SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references and to the listed Specification. Uni-Flanges shall be in accordance with the nominated Code.
26	Resilient Seated Gate Valve- RSGV	WSA PS-260 SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references and to the listed Specification.
27	Blank Flange	Ductile Iron fittings WSA PS-201 SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references.
28	Electro-Mag Flow Meter	Std Dwg. 11-153 SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references and to the listed Specification. Electro-Mag Flow meters shall not be used for Sub-Metering. Q3/Q1 Ratio required for Electromagnetic Flow Meters is = 400. See Item 4 for required meter length.
28A	Ultrasonic Flow Meter	Std Dwg. 11-153 SEQ Code IPAM List	Selected components shall be in accordance with the nominated Code references. Ultrasonic Flow meters shall not be used for Sub-Metering. Q3/Q1 Ratios required for Ultrasonic Meters is = 500. See Item 4 for required meter length.
29	Ductile Iron Water service pipe	SEQ Code IPAM List and AS/NZS 2280	Selected components shall be in accordance with the nominated Code references and to the listed Specification. In accordance with the nominated Codes, Ductile Iron pipe shall be Flange Class and Ductile Iron fittings shall be a minimum of PN16 and Ductile Iron pipe and/or fitting Flanges shall be PN16 to AS 4087 Figure B5 .
29A	PE water service pipe	SEQ Code IPAM List and AS/NZS 4130	Selected components shall be in accordance with the nominated Code references and to the listed Specification. PE100 water service may be used between the water mains and the water meter assembly riser pipes and shall be flanged joints with stainless steel backing rings.
30	Ductile Iron Flange - Spigot pipe with Thrust Flange	SEQ Code IPAM List and AS/NZS 2280	Selected components shall be in accordance with the nominated Code references and to the listed Specification. The fitting is used in concrete pit.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 7 of 9

**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

31	Ductile Iron Spigot – Spigot Tee with Flange off take	SEQ Code IPAM List and WSA PS-201	Selected components shall be in accordance with the nominated Code references and to the listed Specification.
32	Ductile Iron Gibault Joint	SEQ Code IPAM List and WSA PS-270	Selected components shall be in accordance with the nominated Code references and to the listed Specification.
33	Sluice Valve Flange - Flange	SEQ Code IPAM List and WSA PS-260	Selected components shall be in accordance with the nominated Code references and to the listed Specification.
34	Stainless Steel Grade 316 Tapping Saddle with Flanged off take	SEQ Code IPAM List and WSA PS-313	Selected components shall be in accordance with the nominated Code references and to the listed Specification.
35	Bedding Sand	SEQ Code IPAM List	Sand shall have 100% of the material passing a 2.36mm AS metric sieve and shall have not more than 5% passing a 75 micron sieve in accordance with the nominated Code references and to the listed Specification. Minimum 75mm thick surrounding all PE property Service Pipes.
36	Bedding Gravel	SEQ Code IPAM List and WSA PS-351	Selected single sized 5mm or single sized 7mm crushed rock shall be in accordance with the nominated Code references and to the listed Specification. Material thickness as per Type C Support in SEQ-WAT-1201-1.
37	Ductile Iron Flange - Flange Tee with Flange off take	SEQ Code IPAM List and WSA PS-201	Selected components shall be in accordance with the nominated Code references and to the listed Specification.
38	Ductile Iron Flange off take sized to suit	Ductile Iron fittings WSA PS-201	Selected components shall be in accordance with the nominated Code references and to the listed Specification. Reduced size DN50 and smaller off take shall use a Blank Flange that has been BSP tapped to suit the off take DN.
39	Tapping Band – mechanical attachment existing mains	SEQ Code IPAM List and WSA PS-310. SEQ Code IPAM List and WSA PS-327 for PE	<u>DICL, CICL, PVC and AC mains</u> - Selected components shall be in accordance with the nominated Code references. The Type F and/or Type R tapping band shall be either Copper Alloy, Stainless Steel or Coated Ductile Iron or a combination of these materials. Electrical Isolation not required. Outlet thread shall be a Female Rp thread to AS ISO 7.1. <u>PE mains</u> - Selected components shall be in accordance with the nominated Code references.
40	TPFNR - Tapping Point Ferrule Non Return	SEQ Code IPAM List nominated Standards	1 - Compliance with AS/NZS3718, AS/NZS4020, DR brass to AS2345 and AS3688. 2 - PN16 with ability for under pressure tapping. 3 - Male R thread to AS ISO 7.1. 4 - Outlet fitting PE to WSA PS 207 or Copper to WSA PS 214. 5 - DN50 to include 90 degree bend with union connection to AS3688 at outlet.
41	Water Service Footpath Box and Road Box	Std. Dwg. 11-134 SEQ Code IPAM List	1 - Concrete Footpath – Installed as per details in Std. Dwg. 11-134. 2 - Roadway Pavement – Installed with Concrete surround under support as per Socketed Sluice Valve details in Std. Dwg. SEQ-WAT-1301-1 with DN225 PVC Shroud Pipe and Base Plate. 3 – Equal box formats acceptable. 4 - For soft ground in Footpath area and in all roadway installations provide surround support to the box as per the details in Std Dwg SEQ-WAT-1302-1.
42	Water Service TPFNR valve access tube	SEQ Code IPAM List and WSA PS-230	1 - Concrete Footpath - SN6 minimum DN100 uPVC tube. Base of tube shall be supported and shall not be in contact with valve bonnet or valve body. 2 - Roadway Pavement - SN6 minimum DN225 uPVC tube. Base of tube shall be supported on Base Plate and shall not be in contact with valve bonnet or valve body.
43	Water Service Road Crossing Conduit	SEQ-WAT-1106-1	PN12 Series 1 SCJ White pipe to WSA Product Specification No.209. DN100 for Residential for 2 x DN25 PE service pipes. DN150 for Commercial/Industrial for 2 x DN63 PE service pipes.
44	Earthing Spool	Std Dwg 11-153	SS316 Schedule 40 pipe with PN16 welded on flanges. All DN sizes are 150mm long. Spool piece is pickled and passivated after fabrication. Use of this fitting is <u>dependent on</u> meter manufacturer's installation requirements.



**CITY OF GOLD COAST COUNCIL**  
**MATERIALS AND ASSEMBLY SPECIFICATIONS AND COMPONENT SCHEDULES**  
**FOR PROPERTY SERVICE INSTALLATIONS AND METER AND SUB-METER ASSEMBLIES**

45	Earthing Wires	Std Dwg 11-153	4mm Square Tin coated Copper wire – Earth Wire colour with 0.6/1kV PVC Insulation – At each end provide Tin coated Crimp Lugs for 1 x Flange Bolt and 1 x Earth Ring connection and 1 x direct attachment to Flow Meter being 6 Crimp Lugs all up. Use of this component is <u>dependent on</u> meter manufacturer's installation requirements.
46	AMR Wire and Cable	ANSI/TIA/EIA-568-A	1 - All on site cabling and conduit is to be supplied and installed by the Developer. All Reed Switch cabling from meters is to be CAT5E minimum rated, and each pair used from each cable is to be correctly labelled with unit number at each end of the pair. Where a manufacturer requires a different cable to CAT5E, such as the Layson 2 TPS, this cable shall be supplied and installed and labelled similarly. CAT5E cable must be sourced from a supplier that can certify cable is compliant with ANSI/TIA/EIA-568-A CAT5E specifications. This will be deemed a non-conformance issue if non-compliant cable used. Cable with a nylon spine is preferred as adds to mechanical strength. 2 - All cables must be mechanically protected and not be subjected to movement or stretching of any kind. Cable should follow cable duct routes with a minimum clearance of 300 mm from power conductors. 3 - Knife type encapsulated connectors must not be used on "stranded" core cables but can only be used on single core wire and be approved by the AMR system supplier. Soldered and double heat shrunk insulation is the required method of connection. Connections that prevent water ingress are required. The method of connection shall be submitted to the City for endorsement. Cable runs should not be exposed to water spray or rain unless enclosed in conduit. 4 - Backbone communication cables between data gathering units (data loggers, data units etc.) and the meter reading panel (meter display units, meter processor, interface panel etc.) should have a minimum of two (2) spare pairs.
47	Test Port		For DN40 services, Test Ports shall be a DN40xDN25 brass tee with a DN25 brass ball valve. SS316 tees and ball valves are acceptable. A threaded SS316 or brass plug shall be provided with ball valves. For DN50 services, either stainless steel or copper short pipes can be used. DN25 internal threaded SS316 or brass sockets are welded onto pipes by factory. Test Ports are the DN25 brass or SS316 ball valves which are connected into factory welded sockets. A threaded SS316 or brass plug shall be provided with ball valves. For DN100 and larger services, Test Ports shall be DN25 gun metal tapping bands with DN25 brass or SS316 ball valves. A threaded SS316 or brass plug shall be provided with ball valves. Where stainless steel short pipes are used for a meter assembly, DN25 stainless steel internal threaded sockets are welded on short pipes by factory. In this case Test Ports are SS316 or brass ball valves connected into factory welded sockets. A threaded SS316 or brass plug shall be provided with ball valves.

<b>AMENDMENT HISTORY</b>	<b>STANDARD DRAWING</b>	<b>11-133 G</b>
July 2021	STANDARD METER NOTES AND SCHEDULE OF COMPONENTS	Page 9 of 9