

# Standard Notes for Building Developments, Extensions and Subdivisions

Ensure your development drawings comply with this checklist before submitting to PWC Indigenous Community Development. For more information visit [powerwater.com.au](http://powerwater.com.au)

- Note
- PWC reserve the right to request variation to, or add notes as required.
  - Variations to PWC's standard notes may be requested by the consultant with PWC's approval.
  - Show other project notes in a separate section to PWC's standard notes.

<b>Northern Region</b>		<b>Southern Region</b>	
In person	Ben Hammond Complex Iliffe Street, Stuart Park 0810	In person	Sadadeen Valley Berger Court, Alice Springs 0871
Mail	PO Box 37471, Winnellie NT 0821	Mail	PO Box 1521, Alice Springs NT 0871
Phone	8924 5094	Phone	8951 7273
Fax	8924 5121	Fax	8951 7347
Email	<a href="mailto:RemoteCommunityServicingNorth@powerwater.com.au">RemoteCommunityServicingNorth@powerwater.com.au</a>	Email	<a href="mailto:RemoteCommunityServicingSouth@powerwater.com.au">RemoteCommunityServicingSouth@powerwater.com.au</a>

## 1. General

- G.1. Construction of the water and sewerage works shall be carried out in accordance with the latest amendment of the approved project drawings, site servicing plans, project specification, as signed by a PWC Indigenous Community Development Officer, in accordance with the PWC Master Specification.
- G.2. Construction site design drawings must be signed as 'approved for construction' by a PWC Indigenous Community Development officer.
- G.3. Changes requested by any party to the design of the works during any stage of the development must be endorsed by the certifying hydraulic consulting engineer/designer with amended drawings submitted to PWC for approval prior to the change being carried out.
- G.4. Seven (7) days written notice must be given to PWC Indigenous Community Development with a 'Notice of intention to start work' prior to commencement of work.
- G.5. The PWC accredited project plumber is to lodge a copy of the approved project drawings and/or site servicing plan, an application for connection of water and/or sewer; and collect the water meter from PWC prior to commencing works.
- G.6. All contractors approved to perform connections or access PWC infrastructure must have previously completed the PWC 'Access to Apparatus Training'.
- G.7. The PWC accredited project electrician must lodge a 'Notice of Intention' to carry out electrical installation work and collect the power meter from PWC prior to commencing works.
- G.8. An 'Application for Electricity Connection' must be lodged online or with PWC Customer Services by the person responsible for the electricity account, prior to the installation of the service fuse.
- G.9. The contractor should confirm with Indigenous Community Development if a start-up meeting is required with PWC, the hydraulic certifier and the developer prior to commencement of site works. If a start-up meeting is required, the contractor is to arrange a meeting onsite a minimum of one week prior to starting work. Documents to be submitted before the start up meeting include the construction work plan, inspection and test plan, project contact details and milestone dates. The meeting is to include the constructor and a PWC Indigenous Community Development officer, and the independent certifier and client representative is also recommended. The constructor is responsible for all costs associated with the start-up meeting, including any airfare or charter costs.
- G.10. Prior to commencement of works the constructor shall perform a Dial Before You Dig enquiry ([www.1100.com.au](http://www.1100.com.au)), check the location of all underground services, confirm finished surface levels and check the material, diameter, alignment, level and location of existing pipework at the connection point. It is not guaranteed that all services have been shown on the drawings.
- G.11. Existing service connections to remain in service at all times prior to the completion of construction.
- G.12. Service corridors are to comply with PWC Std. Drg. S02-4-1-14 Service Allocations in Road Reserves Rural and Arterial Roads. All levels given are to A.H.D.

- G.13. All dimensions are in millimetres and all chainages and levels in metres unless shown otherwise.
- G.14. Minimum cover to pipe is 750mm in trafficable areas, 600mm in other areas. 1500mm cover required for thrust boring under road.
- G.15. Clearances between water/sewer and underground services is to be in accordance with the Water Supply Code of Australia WSA 02-2003 Table 4.2 for sewer, and WSA 03-2003 Table 4.1 for water.
- G.16. The developer is responsible for ensuring all stakeholder development approvals and the Aboriginal Areas Protection Authority (AAPA) clearance for the works and associated activities have been obtained.
- G.17. All water and sewerage (hydraulic) works shall be carried out as shown on the latest amendment of the design drawings.
- G.18. All costs associated with the installation of power, water and sewerage services to this development are to be borne by the Developer.

## 2. Excavation and Backfilling

- G.19. Obtain permit/s from the relevant road authority or Council prior to any excavation within the road reserve, including a traffic management plan.
- G.20. Backfilling material outside road pavement or drain must comply with the specification requirements for general backfill. Use type 2 embedment wrapped with geotextile with selected backfill or 2% cement stabilised sand backfill for all road crossings. Use 5% cement stabilised gravel backfill beneath all OUD crossings.
- G.21. Provide a minimum of Type 2 embedment for PVC pipe or Type 4 embedment for steel pipe unless geotechnical investigations have been completed and the resultant report supports the use of lower quality embedment. Any change to the proposed bedding type must be approved by PWC.
- G.22. When embedment type changes, a vertical geotextile barrier shall be inserted between the embedment types.
- G.23. Reinstate all surfaces upon completion of works as specified or as good as existing to the satisfaction of the relevant Authority.
- G.24. Construction progress (photos) must be provided to PWC Indigenous Community Development prior to handover inspection. Ensure all As-constructed information has been picked up by the surveyor prior to backfilling.

## 3. Commissioning

- G.25. At no stage shall any contractor carry out work on PWC infrastructure unless approved by PWC.
- G.26. The constructor is responsible for all connection applications, excavation, shoring (if required), backfilling, reinstatement of area, supply of digging and lifting machinery (where required), permits, traffic control, supply of materials, testing, disinfecting and gaining compliance certificates. Connections to existing water and sewer mains will only be carried out when all works upstream of the connection are complete (i.e. tested, disinfected where applicable, backfilled and certificates submitted) in accordance with the approved design drawings, and have satisfactorily passed final handover inspection.
- G.27. A copy of the approved site servicing plan and a "Water and Sewer Connection Applications Form – Remote Operations" must be lodged by the project plumber prior to starting work on the water or sewer services.
- G.28. 'As-Constructed' drawings to be certified by the certifying engineer. 'As-Constructed' survey by a registered surveyor.
- G.29. Certifier to contact PWC Indigenous Community Development to arrange for handover inspections. Seven (7) days notice must be provided prior to handover inspections.
- G.30. For building development where there is no extension of PWC Infrastructure, signed printable A3 electronic format (both \*.pdf and CAD \*.dgn/\*.dwg) 'As-constructed' drawings, other installation documentation, and appropriate records of construction progress. For extensions and subdivisions refer to the Indigenous Community Asset Handover guidelines.

#### 4. Acceptance and Defects Liability Period

- G.31. At least seven (7) working days notice must be provided to PWC Indigenous Community Development for application of a Certificate of Final Compliance/Development Permit Clearance allowing for an inspection and report of outstanding defects/issues. Upon notice to Indigenous Community Development that rectification of outstanding defects/issues has been addressed, an additional seven (7) working days should be allowed for. The constructor is responsible for all costs associated with the meeting, including any airfare or charter costs.
- G.32. A twenty-four (24) month defects liability period for extensions and subdivisions, and a twelve (12) month defects liability period for building developments, will commence once the Certificate of Final Compliance/Development Permit Clearance has been issued. All defect liabilities identified within this period are the responsibility of the Developer. Any works subject to a defect during the defect period that requires PWC to undertake an emergency repair shall be subject to an extended defect period of 5 years.

#### 5. Water

- W.1. Water pipes shall be buried PVC-M series 1 class 12 for pipe DN150 and DN100, and series 2 class 16 for pipes DN200 and above, with DICL fittings, unless noted otherwise. Class 16 pipes shall be used for all areas where design pressure is above 350kPa.
- W.2. All ductile iron cement lined (DICL) pipes shall be class PN16 flanged or class 35 rubber ring jointed (RRJ). All buried DICL pipes and fittings shall be wrapped in polyethylene sleeving before and during installation. Markings on pipes shall face upwards.
- W.3. Pipes under road pavement, open drain and drainage structures shall be DICL class 16 flange jointed or class 35 Tyton-Lok, RRJ.
- W.4. If works to be undertaken concern existing asbestos pipework refer to the PWC Asbestos handling instructions, available on request. If works other than hot tapping are required then a complete length of pipe will need to be replaced with PVC or DICL pipework to PWC standards.
- W.5. Provide anchorage for all valves, reducers, vertical bends and terminal/end points. Provide Thrust block for all horizontal bends and tees.
- W.6. All sluice valves shall be resilient seated flanged class 16 to PWC standards with raised flanges, unless noted otherwise.
- W.7. All flanges shall be class 16 raised type complying with AS 4087 figure B5 for DICL and figure B7 for MSCL, unless noted otherwise.
- W.8. Water mains shall be offset from property boundaries a distance of 2.4m in road reserves. Water mains inside allotments should be avoided, except where shown otherwise on the drawings.
- W.9. The coating on the fittings shall be fully protected by a felt or geotextile barrier when the thrust block is poured and thrust blocks must not overlap the joint.
- W.10. Watermains shall be laid over storm water, sewer, non-potable and recycled water pipes.
- W.11. The superintendent shall confirm water pipe embedment type after inspection of the excavated trench.
- W.12. Joint deflection and bending are not allowed for PVC pipes. Use SO-SO DICL connectors to achieve a maximum 2 degrees joint deflection or bends for larger deflection.
- W.13. Marking tape coloured green and marked 'Water Main' shall be laid continuously and located 300mm above the water pipework.
- W.14. Hydrostatic test pressure shall be 1000kPa for reticulation mains and 1200kPa for DICL or MSCL distribution mains over a 4 hour period. Hydrostatic test shall be in accordance with PWC Std. Drg. W1-2-07.

- W.15. Connections to existing water mains will only be carried out when all works and testing (hydrostatic testing, disinfection flushing and microbiological testing) are completed in accordance with the approved design drawings and procedures, and have satisfactorily passed final handover inspection.
- W.16. Any existing services on the site to be confirmed and upgraded to meet current PWC standards as required.

## 6. Sewer

- S.1. All gravity sewer pipes shall be uPVC class SN8 with styrene-butadiene rubber ring joints (SBR), unless noted otherwise.
- S.2. Sewers shall be offset from property boundaries a distance of 1.6m in road reserves and 1.5m in private property, except where shown otherwise on the drawings.
- S.3. For sewer show position (MGA and levels to AHD) of all maintenance holes, maintenance shafts, inspection openings, separation distances/levels to crossing services, and all other values required to certify compliance of the drawings.
- S.4. All gravity sewers are to be a minimum of DN150, unless noted otherwise.
- S.5. Maintenance hole/shaft covers and slabs shall finish at finished surface level in road reserves and footpaths and match cross fall away from maintenance holes, 150 mm above surface level in private property and open space (backfill to be graded at 1 in 10 from maintenance holes to finished surface level).
- S.6. The constructor shall either inscribe or attach a plate to the maintenance hole or maintenance shaft cover with the identifying number as shown on the drawings.
- S.7. Flexible joints with concrete surround shall be constructed on both upstream and downstream sides of the maintenance holes.
- S.8. Depth to invert at maintenance hole is calculated from the top of maintenance hole.
- S.9. The superintendent shall confirm sewer pipe embedment type after inspection of the excavated trench.
- S.10. Minimum concrete strength for all sewerage structures including maintenance holes shall be N50. Use GP cement with silica fume content as specified.
- S.11. Align maintenance hole covers such that the long side of the lid is parallel with the sewer main.
- S.12. All sewer rising mains shall be PVC class 16 RRJ, unless noted otherwise.
- S.13. Use DIFBL SO-SO connectors (of maximum 2 degrees deflection) or DIFBL bends for sewer rising mains, unless noted otherwise.
- S.14. Marking tape coloured orange and marked 'Sewer Main' shall be laid continuously and located 300mm above the water pipework.
- S.15. Connections to existing sewer mains will only be carried out when all works and testing (hydrostatic and CCTV) are complete in accordance with the approved design drawings and procedures, and have satisfactorily passed final handover inspection.
- S.16. Maintenance hole covers shall finish at a) finished surface level in road reserves and footpaths; b) 150mm above surface level in private property and open space.
- S.17. The constructor shall inscribe the maintenance hole cover with an identifying number as shown on the drawings.
- S.18. Sewers property connections shall be set out from property boundaries in accordance with PWC Std. Drg. W2-1-04.
- S.19. The sewer connection inspection opening is to be brought to the surface within the Lot and a heavy duty cover is to be installed in accordance with PWC Std. Drg. W2-1-05.
- S.20. Any existing services on the site to be confirmed and upgraded to meet the current PWC standards as required.
- S.21. Construction photos of all underground works included in documentation and estimates in accordance with the Inspection Test Plan.

## 7. Electrical

- E.1. Centreline of powerpoles and conductors shall be offset from property boundaries a distance of 3.2m in road reserves, except where shown otherwise on the drawings.
- E.2. All work is to comply with Networks Policies, NP003 Installation Rules, NP007 Service Rules and NP010 Meter Manual with the exception of variations stated in section 8 Project Specific.

## 8. Project Specific (modify and include as necessary)

### Electrical

1. Any Road Clearance Poles (RCP) are to be provided and installed by the developer's electrical contractor.
2. The RCP is to be 9m x 100mm Nominal diameter for single phase and 9m x 150mm dia for three phase fabricated in accordance with PWC Std. Drg. S01-1-1-39.
  - a. The footing depth is to be 1800mm with a hole diameter of 450mm in accordance with PWC Std. Drg. S01-4-1-19
  - b. The concrete footing is to be 20mm above finished surface level and graded so that water flows away from the pole at base.
3. The service conductor is to be terminated on the MCB leaving the remainder of the service conductor coiled on the roof of the building.
4. The contractor is to install a bottom connect XX phase meter in accordance with the PWC Metering Manual. The meter will be provided by PWC.
5. The bottom wired meter will need to be collected from Power and Water, Remote Operations Darwin, Katherine or Alice Springs centres.
6. PWC will provide the aerial service and make the connection to the distribution system.

### Water

1. There is no existing water service to lot XX.
2. The existing water service will need to be disconnected at the main.
3. A XXmm PE water service with dual XXmm water meters is to be installed by the Developer.
4. The water service is to be installed in accordance with PWC Std. Drg. XX.

### Sewer

1. There is no existing sewer connection to lot XX.
2. The Developer will need to install a sewer connection.
3. The existing sewer connection requires upgrade to current standards.
4. MH X/X is down stream of MH X/X.
5. A type X sewer connection is to be constructed into the proposed lot in accordance with PWC Std. Drg. XX.