

DEVELOPMENT CONSTRUCTION SPECIFICATION

C101

GENERAL

Amendment Record for this Specification Part

This Specification is Council's edition of the AUS-SPEC generic specification part and includes Council's primary amendments.

Details are provided below outlining the clauses amended from the Council edition of this AUS-SPEC Specification Part. The clause numbering and context of each clause are preserved. New clauses are added towards the rear of the specification part as special requirements clauses. Project specific additional script is shown in the specification as italic font.

The amendment code indicated below is 'A' for additional script 'M' for modification to script and 'O' for omission of script. An additional code 'P' is included when the amendment is project specific.

Amendment Sequence No.	Key Topic addressed in amendment	Clause No.	Amendment Code	Author Initials	Amendment Date
<i>EXAMPLE 1</i>	<i>Provision for acceptance of nonconformance with deduction in Payment</i>	<i>XYZ.00</i>	<i>AP</i>	<i>KP</i>	<i>June 1997</i>
1	Major Revision as per Aus-Spec Bulletin Board Release 10	All	AMO	SPM	April 2003
2	Revisions as per Aus-Spec Bulletin Board releases 11 & 12	All	AMO	SPM	April 2003
3	Clauses Deleted Location And Description Of Project Extent Of Work Subsurface Conditions Items To Be Supplied By The Principal Schedule Rates	C101.01 C101.02 C101.03 C101.12 C101.13	O O O O O	SPM	February 2004
4	Annexure change DA/BA to DA	C101-A	O	SPM	February 2004
5	Work-As-Executed Submissions	C101-11	MA	JS/ID/ MK	March 2018
6	Wording of C101.05.01	C101.05	M	TJE	June 2021

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C101-A **WORK-AS-EXECUTED CERTIFICATION REPORT**

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SPECIFICATION C101 : DEVELOPMENT CONSTRUCTION - GENERAL

PROJECT SPECIFIC INFORMATION

C101.01 LOCATION AND DESCRIPTION OF PROJECT

deleted

C101.02 EXTENT OF WORK

deleted

C101.03 SUBSURFACE CONDITIONS

deleted

GENERAL REQUIREMENTS

C101.04 DRAWINGS

1. The Drawings which form part of the Contract Documents are bound in a separate volume.

C101.05 STANDARDS AND TEST METHODS

1. Unless otherwise specified and where applicable, materials and workmanship shall be in accordance with the relevant standard of the Standards Association of Australia. Any Technical Direction issued by the relevant Local Government Authority take precedence over any standard or specification

Australian Standards

2. A standard applicable to the Works shall be the edition last published 14 days prior to the closing date for tenders unless otherwise specified.

3. Overseas standards and other standard documents named in the Specification shall be applicable in the same manner as Australian Standards to relevant materials and workmanship.

Overseas Standards

4. Copies of any standards quoted or referred to in the Specification shall be kept on the site if so specified.

Copies to be kept on Site

5. Where no suitable AS test methods are available, those of the relevant State Road Authority shall be used. These are designated T123 etc.

Other Test Methods

C101.06 TESTING AND SURVEY

1. All testing and survey as required by the Technical Specifications shall be arranged and carried out by the Principle and all test results and survey records made available to the Superintendent and Council. The cost of all such testing and survey shall be borne by the Principle.

Contractor's Cost

2. The minimum frequency of testing and survey shall be in accordance with either the Specification for QUALITY SYSTEM REQUIREMENTS or QUALITY CONTROL REQUIREMENTS as appropriate for quality assurance or quality control contracts respectively. The appropriate requirements for this Contract are cited on the Form of Tender.

Minimum Frequency

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C101.07 WORKING AREAS

1. The Principal will not be responsible for the safe-keeping of any of the Contractor's plant, equipment, tools, materials or other property. The Contractor may provide, and pay for, any security fencing considered necessary around any office, workshop or storage area, subject to the Superintendent's approval.

Security

2. If existing fencing is cut or altered by the Contractor, or if there is no existing site fencing, the Contractor shall provide and maintain temporary fencing to the satisfaction of the Superintendent during the Contract to prevent unauthorised entry into the property, and shall reinstate the fencing and remove temporary fencing on completion of the work.

Temporary Fencing

3. The Contractor shall erect appropriate regulatory, hazard, emergency information and fire signs, in accordance with AS1319 Safety signs for the occupational environment, at prominent locations around the working areas and temporary site facilities. Signs shall include, but are not limited to: mandatory signs for personal protective equipment such as eye, head and foot protection, and DANGER signs such as "DANGER, Construction Site. No Unauthorised Access". All words on word-message signs shall be approved by the Superintendent prior to sign manufacture or purchase.

Safety Signs**C101.08 SMOOTH JUNCTIONS**

1. Construction work carried out under this Contract adjacent to or adjoining existing works, shall make smooth junctions with the existing work.

C101.09 SETTING OUT THE WORKS

1. The Superintendent will provide Permanent Marks as shown on the Drawings. The Superintendent will also establish bench marks related to the level datum.

Provision of Marks

2. Before any of the given survey marks on the base lines or the various control lines are affected by the works, the Contractor shall transfer such survey marks to side positions clear of operations and shall note, and inform the Superintendent in writing, of the extent of such movement.

Transfer of Marks

3. The Contractor shall give the Superintendent not less than two full working days' notice of the intention to perform any portion of the relocation of survey control, establishment of recovery pegs, or setting out or levelling, so that suitable arrangements can be made for checking of the work by the Superintendent. If no such notification is given and a control mark is disturbed or destroyed, then the cost of re-establishing the control shall be borne by the Contractor.

Notice for Relocation***Contractor's Cost***

4. The Contractor shall provide and fix adequate recovery pegs in suitable locations adjacent to the elements of work to enable location and construction to be checked.

Recovery Pegs

5. All pegs and profiles placed by the Contractor shall be removed on completion of work unless otherwise directed by the Superintendent.

Removal**C101.10 SITE MEETINGS**

1. Regular site meetings will be held for the purpose of discussion of the progress and co-ordination of the work under the Contract and any matters of doubt regarding the intent or interpretation of the Drawings or the Specification. The Contractor shall arrange for relevant sub-contractors or their responsible representatives to be present at these meetings. The meetings will be held at a time nominated by the Superintendent.

Representation

2. The Superintendent shall also give Council 48 hours notice of the date, time and location of the meetings. A Council representative may attend these meetings.

Advice to Council

3. The Superintendent or Superintendent's Representative shall chair site meetings, keep minutes of the proceedings and shall provide copies of the minutes for the Contractor, all present at the meeting and others concerned with the matters discussed.

**Responsibility
for Minutes**

C101.11 WORK-AS-EXECUTED DRAWINGS

1.

1. Work-as-Executed Drawings are certified plans showing details of work as actually constructed, they also identify departures, additions and deletions from approved design plans. Data for preparing work-as-executed drawings is obtained by measurement and survey as and/or after works are completed. Two categories of Work-as-Executed Drawings as detailed in this specification are to be submitted to Council with a Work-As-Executed Certification Report, being

Submission

- (a) Amended Design Work-as-Executed Drawings; and
- (b) Summary Work-as-Executed Drawings.

2. The Work-As-Executed Certification Report, refer to Annexure C101A, shall be completed by an appropriately qualified Engineer or Surveyor.

3. Amended Design Work-as-Executed Drawings are certified copies of all approved design plans with as constructed departures, deletions and additions clearly noted and detailed on the plans.

**Amended
Design WAE
Drawings**

4. Amended Design Work-as-Executed Drawings are to be submitted to Council in the following formats:-

- (a) One (1) paper copy at the same scale and format as the approved design plans, but, marked appropriately for as constructed information and with original signatures; and
- (b) Electronic copy of above in PDF format and provided to Council on CD, DVD or via email.

5. Summary Work-as-Executed Drawings are to be prepared on a background plan of lot layout and kerb lines with a set of separate plans for each of the following.

**Summary
WAE
Drawings**

- (a) Stormwater Drainage
- (b) Sewerage
- (c) Water supply
- (d) Site Works

6. Summary Work-as-Executed Drawings are not required, in a rural subdivision where only roads were constructed and there are no drainage structures.

7. Summary Work-as-Executed Drawings are to be submitted to Council in the following formats:-

- (a) One (1) paper copy to the drawing requirements provided in Section D1.06 of this specification and with original signatures.
- (b) Electronic copy of the above in AutoCAD DWG or DXF format and provided to Council on CD, DVD or via email. The AutoCAD (DWG or DXF) files are to be spatially referenced to MGA Zone 56.
- (c) Electronic copy of above in PDF format and provided to Council on CD,

**Spatially
Referenced to
MGA Zone 56**

DVD or via email.

8. Amended Design Work-as-Executed Drawings are to be generally in accordance with the format and quality indicated on the Sample Drawings of this specification and shall include:-

Sample Drawings

- (a) Copies of all approved design plans, certified as being a true representation of works as constructed, and endorsed with distinguishable notations showing any as constructed alterations, geometric departures, deletions or additions to the approved plans.
- (b) Approved design plans include
 - (i) all plans of electrical circuits, switchboards, control, mechanical and process plans associated with pumping stations, reservoirs, treatment facilities and other water and sewerage works.
 - (ii) street lighting, signage, traffic control devices, linemarking
 - (iii) all plans of structures, bridges, culverts, drainage structures, retaining walls etc.
 - (iv) all plans of pollution control devices and permanent erosion and sedimentation control devices.
 - (v) water supply, sewerage and drainage works.
- (c) Geometric departures (level, location, dimensions, gradient etc) from approved design plans must be noted in all circumstances where the works or part of the works as constructed, fail to meet the tolerances of this specification.

9. Summary Work-as-Executed Drawings are to be legible and comprehensible and comply with the requirements of relevant SAA standards. They are to be generally in accordance with the format and quality indicated on the Sample Drawings of this specification. Pen sizes must be selected to ensure there is clear definition of pipes etc. compared with property boundaries. Sewerage and drainage pipeline plans may contain complex sections where it is difficult to clearly show details. In these cases information boxes or separate detail plans are required. Information boxes to present specific pipeline sizes, inlet/outlet levels etc. must have leader-lines/arrow heads to connect information boxes with the section of pipe line.

Presentation

10. Summary Work-as-Executed Drawings shall be to the following general requirements:

General Requirements

- (a) All information is to be retained within the borders of the sheet.
- (b) Northpoint to be shown on all plans
- (c) All information to be to the drawing requirements provided in Section D1.06 of this specification. The scale chosen must be sufficiently large to enable all required information to be clearly marked and legible. Catchment plan scales may be selected as appropriate for the site.
- (d) All levels shall be to AHD and shall be shown on plans in italics or sloping text.
- (e) Each plan is to be uncluttered with no other irrelevant information on the plan.
- (f) Each plan is to be on a background plan showing lot boundaries, lot numbers, rights of way, easements and other cadastral details, kerb lines,

retaining walls, structures and other significant features.

- (g) Lot numbering is to be correct in accordance with the final plan of subdivision.
- (h) Future lots are not to be displayed. Should services be provided for future lots then limited dimensions are required to locate lines, pits, fittings, manholes etc. This is to avoid confusion when future lot layouts and numbers change.
- (i) All information is to be captured by accurate survey including location of pipelines, structures, headwalls, pits, inlets, manholes, sidelines, junctions, fittings (valves, hydrants, scours, thrust blocks), kerb lines.
- (j) Any complex arrangements or unusual fittings are to be detailed on the plans.
- (k) All services are to be fully detailed including existing and newly installed.
- (l) Drainage, water supply and sewerage summary WAE drawings are to show the horizontal location of all other underground services and utilities (including, electricity, telecommunications and gas). Dimensioning is required for the horizontal location of all these services and associated pits and structures, distances from lot boundaries may be acceptable where lines are parallel to boundaries, in other circumstances ties may be necessary. Depths from finished surface level and levels (AHD) are to be shown on all these services in the following locations -below kerbs, at changes of grade and direction, dead ends, where they cross the horizontal location of other services.

11. Summary Work-as-Executed Drawings for stormwater drainage shall be to the following requirements:

**Stormwater
Drainage**

- (a) Plot accurately on plans all underground drains, open drains, interallotment drains, subsoil drains, pits, manholes, grates, entries, headwalls, junctions, branches, drainage structures, footbridges, pollution control devices, permanent erosion and sedimentation control devices.
- (b) Plot minimum of 2 downstream existing manholes/gully pits.
- (c) Show sizes, type and class of all underground drains. Show dimensions and cross sections of all open drains. Show dimensions and type of drain lining or revetment.
- (d) Plot and show details of all interallotment drainage including location of pits, branches and junctions.
- (e) Plot and show details and dimensions of scour protection, riprap, energy dissipaters etc.
- (f) Show centreline distances along drains between pits, inlets, outlets, junctions and other structures.
- (g) Provide invert levels for all underground drains at pit inlets and outlets, headwalls, outfalls, inlets, changes of grade and at intervals of not less than 20m.
- (h) Show gradients on all sections of open and underground drains.
- (i) Provide invert levels for all open drains at inlets, outlets, junctions, changes of grade and at intervals of not less than 20m.
- (j) Dimensioning is required for the horizontal location of all pits, inlets,

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outlets, headwalls and structures. Distances from lot boundaries may be acceptable where lines are parallel to boundaries. In other circumstances ties may be necessary.

- (k) Provide catchment plans of all contributing areas to the constructed system. Show catchment areas contributing to each inlet.

12. Summary Work-as-Executed Drawings for sewerage shall be to the following requirements:

Sewerage

- (a) Plot accurately on plans all sewers, manholes, sidelines, junctions, pumping stations, valve pits, rising mains.
- (b) Show all pipe sizes and type (It is acceptable to include a note on plan to the effect:- All sewer pipes are 150mm unless specified otherwise).
- (c) Show all sewer invert levels at manholes (upstream and downstream) and dead ends.
- (d) Show manhole location and invert levels.
- (e) Show sewer junctions serving allotments. The distance of all junctions is to be measured from the nearest downstream manhole and shown on the plan. The depths of sewer junctions to finished surface level is to be accurately determined and shown adjacent to the sewer junction information.
- (f) The location and length of sidelines (house branch lines) is to be measured, plotted and dimensioned on the plan. The ends of sidelines are to be located on the plan by distances from boundaries or ties.
- (g) The horizontal location of all sewers, manholes, rising mains and pumping stations is to be unambiguously shown on the plan by suitable dimensioning. Distances from lot boundaries may be acceptable where lines are parallel to boundaries. In other circumstances ties are required.

13. Summary Work-as-Executed Drawings for water supply shall be to the following requirements:

Water Supply

- (a) Plot accurately on plans all water mains, hydrants, stop valves, reflux valves, air valves, scours, any other significant fittings, thrust blocks, pumping stations, reservoirs, services and conduits.
- (b) Show all pipe sizes and type (It is acceptable to include a note on plan to the effect:- All water mains are 100mm unless specified otherwise).
- (c) The horizontal location of all mains, fittings, structures, services and conduits is to be unambiguously shown on the plan by suitable dimensioning. Distances from lot boundaries may be acceptable where lines are parallel to boundaries. In other circumstances ties are required.
- (d) Show water services. The type and diameter of all services and conduits and depth to top of service or conduit from invert of kerb are to be shown on the plan.

14. Summary Work-as-Executed Drawings for site works shall be to the following requirements:

Site Works

- (a) Plot accurately on plans finished levels and contours. Maximum horizontal spacing for contours is to be 10 metres. Contour information is to extend a minimum 10 metres past all new allotment boundaries including 10 metres into existing adjoining allotments or land.

- (b) Appropriate spot levels are to be surveyed to fully represent the as constructed surface. A 5 metre grid may be required on flat allotments to determine any low points. Changes of grade, open drains and other formations are to be fully surveyed and detailed.
- (c) Plans are to show areas of filling, depth of fill, and pre-existing surface levels.
- (d) Plot and provide spot levels, and verify dimensions (widths / heights etc.) as appropriate, of all features including kerb and gutter, road crown, pathways, cycleways, park furniture, retaining walls, revetments, wharves, jetties, public transport facilities and other structures. Spot levels taken on kerbs and road crowns shall include all tangent points and sag points, and match original design chainages where possible. Identify sections of pathways/cycleways/concrete works that have special strengthened vehicle crossing segments.
- (e) Plot location of all streetlights, linemarking, signage and traffic control devices.

15. Work-as-Executed Drawings for Bridgeworks shall show in red ink all changes to the approved Drawings, including variations to levels, dimensions, concrete, reinforcement, prestressing and other materials, all non-conformances accepted without rectification, suppliers and model numbers of bearings and proprietary joints and type of barrier railings installed where both steel and aluminium alternatives are detailed. The Drawings shall be certified by a suitably qualified engineer with documented experience in bridge construction.

Bridgeworks

C101.12 ITEMS TO BE SUPPLIED BY THE PRINCIPAL

deleted

C101.13 SCHEDULE RATES

deleted

ENVIRONMENTAL REQUIREMENTS

C101.14 PROTECTION OF THE ENVIRONMENT

1. All work shall be carried out in such a manner as to avoid nuisance and/or damage to the environment. The Contractor shall comply with the requirements of the conditions of approval imposed by Council, the Environment Protection Authority, the Protection of the Environment Operations Act and the Rural Fires Act. No variation in costs or extensions of time will be considered due to these requirements.

Conformance to Acts

2. The Contractor shall plan and carry out the Works to avoid erosion, contamination and sedimentation of the site and its surroundings.

Erosion Control

3. Herbicides and other toxic chemicals shall not be used on the site without the prior written approval of the Superintendent.

Herbicides and Toxic Chemicals

4. No noise or smoke or other nuisance, which in the opinion of the Superintendent is unnecessary or excessive shall be permitted by the Contractor in the performance of the Works under this Contract. Should work outside customary working hours be approved, the Contractor shall not use, during such period, any plant, machinery or

Noise, Smoke or Other Nuisances

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equipment which in the opinion of the Superintendent is causing or is likely to cause a nuisance to the public. No noisy works and/or works likely to disturb nearby residents shall be undertaken during the hours precluding such activity as specified by Council in accordance with the requirements for development consent and building approval made under the Local Government Act and the Protection of the Environment Operations Act.

5. The Contractor shall ensure that fugitive dust from disturbed areas is minimised by a method approved by the Superintendent. **Dust Control**

C101.15 DRAINAGE OF WORKS

1. The control and management of stormwater drainage through the site will be important during construction of the Works. **Stormwater Control**

2. The Contractor shall provide for the effectual diversion of surface water from the Works and provide and ensure proper flushing for storm and subsoil water across and beyond the Works at all times. The flow of stormwater and drainage along existing gutters and water tables shall not be interrupted. **Stormwater Diversion**

3. The Contractor shall provide efficient pumping equipment on site and shall keep trenches and excavations dewatered at all times during construction. **Pumping**

4. All permanent retention basins, and temporary erosion and sedimentation control shall be completed prior to commencement of earthworks.

C101.16 BLASTING

1. Blasting will not be permitted without the specific approval of the Council. If such approval is given then blasting shall be carried out strictly in accordance with the Specification - EARTHWORKS.

C101.17 LIMITS ON NOISE

1. The Contractor shall only use plant that have effective residential class silencers fitted to all engine exhaust, have engine covers fitted, are maintained in good order, and in addition meet the following requirements. **Plant with Silencers**

- (a) On purchase have met the NAASRA Specification for Noise levels of plant and equipment, or
- (b) Have a Maximum Noise level (L_{MAX}) less than 80 dB(A) when measured at a distance of 7 metres.

2. Notwithstanding the requirements contained in the General Conditions of Contract, operational hours of plant, including the entry and/or departure of heavy vehicles, shall be restricted to 7am to 6pm Monday to Friday, 7am to 1pm on Saturday and at no times on Sundays or Public Holidays. Work outside of the hours specified shall not be undertaken without the prior approval of the Superintendent. **Working Hours**

3. Notwithstanding noise emission limits on plant, noise emanating from the construction site when measured at any noise sensitive location (such as a residential premise), as determined by the Environment Protection Authority's publication Environmental Noise Control Manual, shall not exceed an assigned L10 sound pressure level threshold (noise level exceeded for 10% of the sample time). The intent of this requirement is to avoid excessive noise and long periods of elevated noise that is reasonably anticipated to annoy or adversely effect the adjacent community. **Maximum Noise Levels**

4. The Contractor will be responsible for any damage and compensation payments as a result of non observance of the above requirements. No claim by the Contractor arising out of these requirements will be considered by the Principal. **Contractor's Responsibility**

C101.18 LIMITS ON GROUND VIBRATION

1. It is the intent of this Specification that ground vibration levels, transmitted from operating items of plant in the vicinity of residential premises, shall not exceed levels that are close to the lower level of human perception inside the premise nor will cause structural damage to the building. Practices and vibration thresholds acceptable shall be determined in accordance with current Statutory Regulations. Where such regulation is not available, or jurisdiction is disputed, the criteria given in paragraphs 2 and 3 shall apply.

Levels

2. Vibration (RMS Z-Axis) generated by construction works shall not exceed

Limits

Curve 4 - for the period of 1 month or less

Curve 2 - for the period of more than 1 month

as defined in British Standard BS6472 "Evaluation of Human Exposure to Vibration in Buildings (1 HZ to 80 HZ)" when measured inside nearby residential premises.

3. Ground vibrations generated by construction works shall not exceed a peak particle velocity (V_R max) limit of 5 mm/sec when measured within one metre of any residential premise.

Peak Particle Velocity

4. The Contractor shall be responsible for any damage and compensation payments as a result of non-observance of the above requirements. No claim by the Contractor will be considered by the Principal.

Contractor's Responsibility**SPECIAL REQUIREMENTS****C101.19 RESERVED****C101.20 RESERVED****C101.21 RESERVED**

----- COUNCIL
WORK-AS-EXECUTED CERTIFICATION REPORT

Project Title: _____

DA No: _____

Design Consultant's Drawing No: ____

Name of Consultant: _____

Name and Address of Developer: _____

I certify that the Work-as-Executed drawings represent the construction of Works for which Quality Records, providing a valid record of construction, is held by me and is available for inspection by Council.

I certify that the Works have been constructed in accordance with the Council approved drawings and standards with the exception of departures indicated on the Work-as-Executed drawings.

Each approved drawing has been reviewed and signed by me certifying that they contain all amendments reported by the Superintendent and visible in the finished works and accurately reflect the Works-as-Executed.

Contact Phone: _____

_____ Consulting Engineer/Surveyor Date

Contact Postal Address: _____

_____ Qualifications
