



# **Construction Specification for Civil Works**

**C101 – Development  
Construction (General)**

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## GENERAL REQUIREMENTS

### C101.01 SCOPE

This specification is to be included for Developer Infrastructure Works within the Armidale Regional Council (ARC) local government area

### C101.02 DEFINITIONS

**Developer Infrastructure Works** - work includes subdivisions and any public infrastructure work associated with an approved Development in the ARC local government area requiring a construction certificate.

***The Works***

Referred to herewith in this Specification as “the Works”.

**Constructor** – Defined as the organisation responsible for construction of the Works and the Principal Contractor as defined in the *Work Health and Safety Act 2011*.

***Constructor***

**ARC Representative** - Nominated ARC officer(s) for the approved Development.

***ARC Representative***

**Developer’s Representative**– Defined as the person or organisation appointed by the Developer to administer the Constructor responsible for the delivery of the Works.

***Developer’s Representative***

### C101.03 REFERENCES

Documents referenced in this Specification are listed in full below whilst being cited in the text in the abbreviated form or code indicated.

***Documents Standards Test Methods***

Where not otherwise specified in the relevant ARC Construction Specifications or the approved design drawings, the Constructor shall use the latest versions of the Reference documentation, including amendments and supplements, listed in the ARC Construction Specifications at the time of the Works approval.

***Currency***

#### (a) **Armidale Regional Council (ARC) Construction Specifications**

C201 – Control of Traffic.

C211 – Control of Erosion and Sedimentation.

CQS – Quality System Requirements.

CQC – Quality Control Requirements.

***ARC Specifications***

#### (b) **Australian Standards**

References in this Specification or on the approved design drawings to Australian Standards are noted by their prefix AS or AS/NZS.

AS 1319 - Safety Signs for the Occupational Environment.

AS 1742 - Manual of Uniform Traffic Control Devices.

***Australian Standards***

#### (c) **Transport for NSW (TfNSW) Publications**

Traffic Control at Work Sites Technical Manual.

***TfNSW Publications***

#### (d) **Other Publications**

ARC Engineering Design Codes.

EPA’s Interim Construction Noise Guidelines.

British Standard BS6472- Evaluation of Human Exposure to Vibration in Buildings (1 HZ to 80 HZ)

***Other Publications***

#### (e) **Legislation**

Protection of the Environment Operations Act 1997 (POEO Act)

***Legislation***

**C101.04 PRE-REQUISITES PRIOR TO COMMENCING DEVELOPER INFRASTRUCTURE WORKS**

Prior to commencement of construction of the Works, a construction certificate shall be obtained from ARC.

The construction of the Works must be executed in accordance with the following documentation from ARC:

**Pre-requisites**

- (a) the Conditions of Development Consent;
- (b) the Construction Certificate;
- (c) the approved design drawings and attachments which accompanied the construction certificate application;
- (d) ARC Construction Specifications; and
- (e) ARC Standard Drawings.

The construction of the Works are not to commence until ARC’s Sustainability and Development Division has issued a signed notice to the effect that all conditions of the consent that are required to be satisfied prior to the Works commencing have been satisfied.

**Notice to commence construction**

The construction of the Works must not commence until the Developer has provided ARC’s Sustainability and Development Division written notice at least five (5) working days prior to commencement of any site work. The notice must also include:

**Commencement on Site**

- (a) name and address of the Developer;
- (b) name and address of the Developer’s nominated Constructor,
- (c) name and address of the Developer’s Representative;
- (b) description of the subdivision;
- (c) registered numbers and dates of issue of development consent and construction certificate;
- (d) the date on which the Works are intended to commence on site; and
- (e) copies of certificates of currency of public liability insurance (minimum \$20 million) required in accordance with C101.05.

**HOLD POINT**

The Developer’s Representative shall provide ARC’s Sustainability and Development Division with written notice at least five (5) working days prior to commencement of construction of the Works.

**PROCESS HELD:** Commencement of any site works.

**Hold Point**

Where the Works are located adjacent to public roads and prior to the commencement of the Works, the Constructor shall submit a Traffic Management Plan and associated Traffic Guidance Scheme(s) in accordance with the requirements of C201 – Control of Traffic to the Developer’s Representative for review and submission to the ARC Representative.

**Traffic Management**

**HOLD POINT**

Developer’s Representative shall provide the ARC Representative with a copy of the Constructor’s Traffic Management Plan and associated Traffic Guidance Scheme(s) for review and approval at least five (5) working days prior to commencement of construction of the Works.

**PROCESS HELD:** Commencement of any site works adjacent to public roads.

**Hold Point**

The Maintenance Bond requirements are detailed in the ARC Engineering Design Code.

**Maintenance Bond**

Prior to the commencement of the Works, the Developer's Representative shall provide evidence of their review and approval of the Constructor's site-specific Work Health and Safety Management Plan (WHSMP) and Safe Work Method Statements (SWMS) in accordance with *CQS-Quality System Requirements* and provide a copy of the documentation to the ARC Representative.

**WHS Management Plan**

**HOLD POINT**

The Developer's Representative shall provide the ARC Representative a copy of the Constructor's approved Work Health and Safety Management Plan (WHSMP) and Safe Work Method Statements (SWMS) at least five (5) working days prior to commencement of construction of the Works.

**PROCESS HELD:** Commencement of any site works.

**Hold Point**

Prior to the commencement of the Works, the Developer's Representative shall provide evidence of their review and approval of the Constructor's Quality Management Plan (QMP) and Inspections and Test Plans (ITPs) in accordance with *CQS-Quality System Requirements* and provide a copy of the documentation to the ARC Representative.

**Quality Management Plan & ITPs**

**HOLD POINT**

The Developer's Representative shall provide the ARC Representative a copy of the Constructor's Quality Management Plan (QMP) and Inspections and Test Plans (ITPs) for review and approval at least five (5) working days prior to commencement of construction of the Works.

**PROCESS HELD:** Commencement of any site works.

**Hold Point**

Prior to commencement of the Works, a sign detailing the Development Application number, subdivision name and contact phone numbers of the Developer, Developer's Representative and Constructor shall be erected and maintained in a prominent position on the Works site to the satisfaction of the ARC Representative. The sign is to remain in place until the Subdivision Certificate is issued.

**Signage**

**C101.05 OTHER REQUIREMENTS**

Any damage caused to public infrastructure (roads including pavement damage, landscaping, drains, water supply, sewerage, power, telecommunications etc) or private property, during construction of the Works shall be repaired as soon as practical by the Constructor to the satisfaction of the ARC Representative.

**Damage to public infrastructure**

Where the Works are located adjacent to public roads, parks or drainage reserves the Constructor shall provide and maintain all warning signs, lights, barriers and fences in accordance with *AS 1742* and the *TfNSW Traffic Control at Work Sites Technical Manual*.

The Constructor shall be insured against Public Risk Liability claims for a minimum of \$20 million and shall be responsible for any claims arising from the Works. The insurance to be provided shall be for a minimum \$20 million for any one occurrence and cover the period from the commencement of the Works until the completion of the Maintenance Bond Period.

**Public Liability Insurance**

The surrounding road network of the Works site is to be kept clean of any material carried onto the roadway by the Constructor's construction vehicles. For Developer Infrastructure Works, any work carried out by ARC to remove material from the roadway will be debited to the Developer and must be paid in full prior to the issue of the Subdivision Certificate.

No retaining walls or similar structures are to be constructed over ARC's infrastructure without prior written approval from ARC (i.e.: sewer mains, water mains, stormwater etc).

No retaining walls or similar structures are to be constructed over or within the vicinity of other public utility infrastructure without prior written approval from the relevant authority (i.e.: telecommunications, electricity, gas, etc).

#### **C101.06 STANDARDS AND TEST METHODS**

Unless otherwise specified, and where applicable, materials and workmanship shall be in accordance with the relevant standard of the Standards Association of Australia.

**Australian Standards**

A standard applicable to the Works shall be the edition last published fourteen (14) days prior to the commencement of the Works unless otherwise specified.

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

**Overseas Standards**

Copies of any standards quoted or referred to in the ARC Construction Specifications shall be kept on the site, if so specified.

**Copies to be kept on Site**

Where no suitable Australian Standards test methods are available, those relevant to TfNSW shall apply.

**Other Test Methods**

#### **C101.07 TESTING AND SURVEY**

All testing and survey as required by the ARC Construction Specifications shall be arranged and carried out by the Constructor and all test results and survey records made available to the ARC Representative. The cost of all such testing and survey shall be borne by the Constructor.

**Constructor's Cost**

The minimum frequency of testing and survey shall be in accordance with *CQC - Quality Control Requirements*.

**Minimum Frequency**

#### **C101.08 WORKING AREAS**

For Developer Infrastructure Works, ARC shall not be responsible for the safe-keeping of any of the Constructor's plant, equipment, tools, materials or other property. The Constructor may provide at their own expense, any security fencing considered necessary around any office, workshop or storage area, subject to the approval of the Developer's Representative.

**Security**

If existing fencing is cut or altered by the Constructor, or if there is no existing site fencing, the Constructor shall provide and maintain temporary fencing to the satisfaction of the ARC Representative during the Works to prevent unauthorised entry into the property, and shall reinstate the fencing and remove temporary fencing on completion of the Works.

**Temporary Fencing**

The Constructor shall erect appropriate regulatory, hazard, emergency information and fire signs, in accordance with *AS 1319*, at prominent locations around the working areas and temporary site facilities. Signs shall include, but not be limited to: mandatory signs for personal protection 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 ARC Representative prior to sign manufacture or purchase.

**Safety Signs**

#### **C101.09 SMOOTH JUNCTIONS**

The Works to be carried out adjacent to or adjoining existing work, shall make smooth junctions with the existing work.

**C101.10 SETTING OUT THE WORKS**

The Constructor shall provide Permanent Marks and establish bench marks related to the level datum as shown on the approved design drawings.

***Provision of Marks***

Before any of the given survey marks on the base lines or the various control lines are affected by the Works, the Constructor shall transfer such survey marks to side positions clear of operations and shall note, and inform the Developer's Representative and the ARC Representative in writing, of the extent of such movement.

***Transfer of Marks***

The Developer's Representative shall give the ARC Representative no less than two (2) working days' notice of the Constructor's 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 ARC Representative. 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 Constructor.

***Notice for Relocation***

***Constructor's Cost***

The Constructor 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***

All pegs and profiles placed by the Constructor shall be removed on completion of work unless otherwise directed by the Developer's Representative and/or ARC Representative.

***Removal***

**C101.11 WORK-AS-EXECUTED DRAWINGS**

The Developer shall supply the ARC Representative with fully marked-up and certified Work-as-Executed Drawings from the Constructor for the whole of the Works prior to issue of the Subdivision Certificate or acceptance of the Works by the ARC asset owner.

***Submission***

A Work-As-Executed Certification Report in accordance with **Annexure C101A** shall be completed by an appropriately qualified Engineer or Surveyor, commissioned by the Constructor, and submitted to the ARC Representative prior to the issue of the Subdivision Certificate or acceptance of the Works by the ARC asset owner.

All changes to the approved design drawings shall be shown in red on the Work-as-Executed Drawings including actual values of all levels and changes of alignment. Work-as-Executed Drawings shall be signed by the Constructor and certified by the Surveyor.

***Requirement***

**C101.12 QUALITY ASSURANCE DOCUMENTATION**

The Developer shall supply the ARC Representative with copies of all of the quality assurance documentation for the Works as per the requirements of the construction specifications including certification and compliance certificates, signed off hold and witness points and signed off non-conformance reports for the whole of the Works prior to issue of the Subdivision Certificate or acceptance of the Works by the ARC asset owner.

***Submission***

The submission provided to the ARC Representative shall be in a structure such that the quality assurance documentation as per the relevant construction specification is collated together.



## ENVIRONMENTAL REQUIREMENTS

### C101.13 PROTECTION OF THE ENVIRONMENT

The Works shall be carried out in such a manner as to avoid nuisance and/or damage to the environment. The Constructor shall comply with the requirements of the conditions of development consent imposed by ARC and all relevant local, NSW and Commonwealth legislation.

**Conformance to Acts**

The Constructor shall plan and carry out the Works to avoid erosion, contamination and sedimentation of the site and its surroundings in accordance with *C211 – Control of Erosion and Sedimentation*.

**Erosion Control**

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

**Herbicides and Toxic Chemicals**

No noise or smoke or other nuisance, which in the opinion of the ARC Representative is unnecessary or excessive shall be permitted by the Constructor whilst undertaking the Works.

**Noise, Smoke or Other Nuisances**

The Constructor shall ensure that fugitive dust from disturbed areas is minimised by a method identified in the Construction Environmental Management Plan (CEMP) to be developed in accordance with the requirements of *CQS-Quality System Requirements*.

**Dust Control**

### C101.14 DRAINAGE OF WORKS

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

**Stormwater Control**

The Constructor shall provide for the effectual diversion of surface water from the Works site and provide and ensure proper flushing for storm and subsoil water across and beyond the Works site at all times. The flow of stormwater and drainage along existing gutters and open channels shall not be interrupted.

**Stormwater Diversion**

The Constructor shall provide efficient pumping equipment on the Works site and shall keep trenches and excavations dewatered at all times during construction complying with the obligations outlined in the CEMP in relation to controlling erosion and sedimentation.

**Pumping**

All permanent retention basins, and temporary erosion and sedimentation control shall be completed prior to commencement of earthworks in accordance with the requirements of the CEMP.

### C101.15 BLASTING

Blasting is not permitted.

**No Blasting**

### C101.16 LIMITS ON NOISE

The Constructor must comply with noise-restriction regulations under the POEO Act. Guidance on acceptable levels of noise from construction activities is provided in the *EPA's Interim Construction Noise Guideline*.

**Noise Restriction Regulations**

For Developer Infrastructure Works, ARC can control noise through conditions determined by them as part of Development Consent. Operational hours of plant, including the entry and/or departure of heavy vehicles, shall be restricted from 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 ARC Representative.

**Working Hours**

At all times, the Constructor shall only use plant that have effective residential class silencers fitted to all engine exhaust, have engine covers fitted, and are maintained in good order. In addition, the following requirements shall be met:

**Silencers**

- |     |  |   |
|-----|--|---|
| (a) | The noise management level for construction activities during the standard working hours is background + 10 dB(A). Above this noise level the Constructor needs to implement all feasible and reasonable work practices, as defined in the EPA's Interim Construction Noise Guideline, to minimise noise impacts   | <b>Noise Levels</b>                               |
| (b) | For work required to be completed outside the standard working hours, the noise management level is background + 5 dB(A).  | <b>Noise Level outside standard working hours</b> |
| (c) | The highly noise-affected level of LAeq 75 dB(A) represents the point above which there may be strong community reaction to noise and indicates a need to consider other feasible and reasonable ways to reduce noise, such as restricting the times of very noisy work to provide respite to affected residences. | <b>Maximum Noise Levels</b>                       |

The Constructor will be responsible for any damage and compensation payments as a result of non-observance of the above requirements. No claim by the Constructor arising out of these requirements will be considered by ARC.	<b>Constructor's Responsibility</b>
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### **C101.17 LIMITS ON GROUND VIBRATION**

It is the intent of this ARC Construction 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.	<b>Levels</b>
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Vibration (RMS Z-Axis) generated by the Works shall not exceed:	<b>Limits</b>
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- |     |  |  |
|-----|--|--|
| (a) | Curve 4 - for the period of 1 month or less.   |  |
| (b) | 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.

Ground vibrations generated by the 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.	<b>Peak Particle Velocity</b>
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The Constructor shall be responsible for any damage and compensation payments as a result of non-observance of the above requirements. No claim by the Constructor will be considered by ARC.	<b>Constructor's Responsibility</b>
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**ANNEXURE C101A – WORKS-AS-EXECUTED CERTIFICATION REPORT**

**ARMIDALE REGIONAL COUNCIL  
WORK-AS-EXECUTED CERTIFICATION REPORT**

<b>Development Title:</b>	
<b>Development Application Number:</b>	
<b>Design Consultant's Drawing Number:</b>	
<b>Name of Consultant:</b>	
<b>Name of Developer:</b>	
<b>Address of Developer:</b>	

I certify that the Work-as-Executed Drawings represent the construction of the Works for which Quality Records, providing a valid record of construction have been submitted to Armidale Regional Council (ARC).

I certify that the Works have been constructed in accordance with the approved design drawings and specifications with the exception of departures indicated on the Work-As-Executed Drawings.

Each approved drawing has been reviewed and signed by the undersigned certifying that they contain all amendments reported by the ARC Representative and visible in the finished work and accurately reflect the Works-As-Executed.

<b>Contact Phone:</b>	
<b>Contact Postal Address:</b>	
<b>Consulting Engineer/Surveyor:</b>	
<b>Qualifications:</b>	
<b>Date:</b>	

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