



Construction Specification for Civil Works

C101 – Development Construction (General)

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ORIGIN OF DOCUMENT, COPYRIGHT

This document was originally based on AUS-SPEC - Development Construction Specification C101 – Development Construction (General). Substantial parts of the original AUS-SPEC document have been deleted and replaced in the production of this Tamworth Regional Council Specification for Civil Works. The parts of the AUS-SPEC document that remain are still subject to the original copyright.

This document has been developed for use with the construction of civil works within the Tamworth Regional Council local government area.

This is not a controlled document. A full copy of the latest version of this document can be found on the Tamworth Regional Council Internet website: http://www.tamworth.nsw.gov.au/construction_specifications

REVISIONS: 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 Tamworth Regional Council (TRC) local government area

C101.02 DEFINITIONS

Developer Infrastructure Works - work includes subdivisions and any public infrastructure work associated with an approved Development in the TRC 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

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

TRC 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 TRC 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 TRC Construction Specifications at the time of the Works approval.

Currency

(a) Tamworth Regional Council (TRC) Construction Specifications

C201 – Control of Traffic.

C211 – Control of Erosion and Sedimentation.

CQS – Quality System Requirements.

CQC – Quality Control Requirements.

(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.

(c) Roads and Maritime Services (RMS) Publications

Traffic Control at Work Sites Manual.

(d) Other

TRC Engineering Design Minimum Standards for Subdivisions and Developments.

EPA’s Interim Construction Noise Guidelines.

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

(e) Legislation

Protection of the Environment Operations Act 1997 (POEO Act)

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 TRC.

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

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) TRC Construction Specifications; and
- (e) TRC Standard Drawings.

The construction of the Works are not to commence until TRC's Strategy and Development Divisions within the Regional Services Directorate and/or Water Directorate 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 TRC's Strategy and Development Divisions within the Regional Services Directorate and/or Water Directorate 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 TRC's Strategy and Development Divisions within the Regional Services Directorate and/or Water Directorate with written notice at least five (5) working days prior to commencement of construction of the Works.

Hold Point

PROCESS HELD: Commencement of any site works.

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 Control Plan(s) in accordance with the requirements of C201 – Control of Traffic to the Developer's Representative for review and submission to the TRC Representative.

Traffic Management

HOLD POINT

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

Hold Point

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

The Maintenance Bond requirements are detailed in the TRC Engineering Design Minimum Standards for Subdivisions and Developments.

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 TRC Representative.

WHS Management Plan

HOLD POINT

The Developer's Representative shall provide the TRC 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.

Hold Point

PROCESS HELD: Commencement of any site works.

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 TRC Representative.

Quality Management Plan & ITPs

HOLD POINT

The Developer's Representative shall provide the TRC 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.

Hold Point

PROCESS HELD: Commencement of any site works.

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 TRC 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 TRC 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 RMS Traffic Control at Work Sites 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 TRC 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 TRC's infrastructure without prior written approval from TRC (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 TRC 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 TRC 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 RMS shall apply.

**Other Test
Methods**

C101.07 TESTING AND SURVEY

All testing and survey as required by the TRC Construction Specifications shall be arranged and carried out by the Constructor and all test results and survey records made available to the TRC 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, TRC 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 TRC 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 TRC 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 TRC Representative in writing, of the extent of such movement.

Transfer of Marks

The Developer's Representative shall give the TRC 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 TRC 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 TRC Representative.

Removal

C101.11 WORK-AS-EXECUTED DRAWINGS

The Developer shall supply the TRC 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 TRC 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 TRC Representative prior to the issue of the Subdivision Certificate or acceptance of the Works by the TRC 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 TRC 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 TRC asset owner.

Submission

The submission provided to the TRC 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 TRC 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 TRC Representative.

Herbicides and Toxic Chemicals

No noise or smoke or other nuisance, which in the opinion of the TRC 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, TRC 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 TRC 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

Noise Levels

(b) For work required to be completed outside the standard working hours, the noise management level is background + 5 dB(A).

**Noise Level
outside
standard
working hours**

(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.

**Maximum
Noise Levels**

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 TRC.

**Constructor's
Responsibility**

C101.17 LIMITS ON GROUND VIBRATION

It is the intent of this TRC 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.

Levels

Vibration (RMS Z-Axis) generated by the Works shall not exceed:

Limits

- (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.

**Peak Particle
Velocity**

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 TRC.

**Constructor's
Responsibility**

ANNEXURE C101A – WORKS-AS-EXECUTED CERTIFICATION REPORT

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

Development 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 the Works for which Quality Records, providing a valid record of construction have been submitted to Tamworth Regional Council (TRC).

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 TRC Representative and visible in the finished work and accurately reflect the Works-As-Executed.

Contact Phone: _____

Consulting Engineer/Surveyor Date

Contact Postal Address: _____

Qualifications

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