Muswellbrook Shire Council

DEVELOPMENT DESIGN SPECIFICATION

AUS-SPEC (Cot 09)

0160 Quality (Design)

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
0	Customisation for Muswellbrook Council Local Government Area	all	AMOP		24/10/2011

Table of Contents

0160 QUALITY (DESIGN)

1 SCOPE AND GENERAL

1.1 SCOPE

This worksection sets out the process for quality assurance of Designs required by Council for engineering works. The requirements are applicable to all design work whether undertaken by Designers within Council, a Consultant or a Sub-consultant.

The worksection refers to Engineering Design processes. Concept Design of developments requirements are generally covered in Council's Subdivision Code and are a prerequisite to the quality requirements for Engineering Design provided in this Specification.

The worksection refers also to engineering design processes for developments within the administration of Muswellbrook Shire Council.

1.2 OBJECTIVE

This worksection's objective is to set standards and document requirements for the execution and recording of design processes to ensure that the Council works infrastructure is designed to be fit for service and of a standard reasonably maintainable by Council as a community asset.

It is also an objective that these qualities be readily demonstrated by clear records of key design processes and that data relevant to the upkeep of the assets is available to Council's management.

1.3 CROSS REFERENCES

Associated Worksections

Associated worksections: Conform to the following:

- *0021 Site regrading*
- *0041 Geometric road layout*
- *0042 Pavements*
- *0043 Subsurface drainage (Design)*
- *0044 Pathways and cycleways*
- *0061 Bridges and other structures*
- *0074 Stormwater drainage (Design)*
- *0075 Control of erosion and stormwater management*
- *1102 Control of erosion and sedimentation*

1.4 REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

Standards

AS 1170-Various	Structural design actions
AS 1684-Various	Residential timber-framed construction
AS 1742	Manual of uniform traffic control devices
AS 1742.2-2009	Manual of uniform traffic control devices—Traffic control devices for general use
AS 1743 – 2001	Road Signs –
AS 3600-2001	Concrete structures
AS 4100-1998	Steel structures
AS 5100-Various	Bridge design
AS 1100	- Technical Drawings

Other publications

Engineers Australia

Australian Rainfall and Runoff (AR&R)

WSAA

WSA 02: 2002	Sewerage Code of Australia WSA 02.
WSA 03: 2004	Water Reticulation Code of Australia WSA 03.

1.5 BIBLIOGRAPHY

Workgroups

00 *Planning and Design* workgroup

11 *Construction – Roadways* workgroup

Standards

AS/NZS ISO 9000	Quality management systems—Fundamentals and vocabulary
AS/NZS ISO 9001	Quality management systems—Requirements
AS/NZS ISO 10013	Guidelines for quality management system documentation
AS/NZS ISO 19011	Guidelines for quality and/or environments management systems auditing
SAA HB 90.3	The Construction Industry—Guide to ISO 9001:2000

Council's Codes and Policies

Section 90 (EP&A ACT)

Local Government Act (1993)

Local Government Act (1919) Subdivisions Pt XII

Technical Publications used as Engineering Standards (AR&R)

NSW Department of Public Works and Services guidelines for water reticulation and sewerage systems.

1.6 CERTIFICATION

Certification report

The Designer to present all engineering drawings to Council for acceptance. Each set of drawings is to be accompanied by a Certification Report signed by the Designer. The Certification Report shall comprise the certificate and checklists set out in Annexure A.

Certification of preliminary drawings

Certification Reports must be submitted with preliminary drawings and must be resubmitted with updates when final drawings are submitted.

A certification report is not required when submitting sketch plans or concept plans.

Design non-conformance

The Certification Report shall indicate on checklists any aspects of design which do not meet requirements or tolerances set out in this worksection and other applicable Council design and construction specifications.

Design Exemption

No design exemption is allowed without proper consultation and approval from Council at any matter of the design. All design exemptions to be recorded clearly in the design documentation.

1.7 DRAFTING REQUIREMENTS

General

Design drawings to be definitive and clearly set out so as to present the design concepts in such a way that the project can be understood, specified for construction and satisfactorily built.

Standard sheet and plan numbers

All design drawings shall be prepared on a Council approved standard sheet and shall be clearly numbered with separate sheets numbered as part of a set.

Logical order

The information shown on the drawings shall be logically collected on discrete sheets.

- Drawings should not be overcrowded with information and should not rely on colour printing or colour wash to impart information. Drawings should be on A3 or A1 size sheets and be suitable for black and white copying and photo reduction to A3 paper size without loss of clarity.
- Annexure B provides guidelines for grouping information in design drawings.

Text
Minimum text height shall be 2mm for contents and generally any text size below that size is not recommended in drawings. The text fond shall be “simplex” for all contents and sub titles.

1.8 DESIGNER’S QUALIFICATIONS

Civil works
Professional Engineer who is listed on the National Professional Engineers Register (NPER) in the relevant discipline at the relevant time by Council and eligible to become a corporate member of the Institution of Engineers, Australia. A Registered Surveyor, deemed to be suitably experienced by Council, shall be accepted as qualified to prepare layout plans for roadworks, drainage works, water supply, sewerage works (excluding pumping stations), canal works (excluding flood control structures and bridges).

Structures
An engineer qualified as above shall be accepted as qualified to prepare plans for bridges, retaining walls, miscellaneous structures, buildings, pumping stations and flood control structures. Structural design documents and drawings to be certified by the CPEng.

Designer shall be covered by required Professional Indemnity Insurance; and where applicable, a Member of a Scheme established under Professional Standards Legislation in the relevant jurisdiction;

1.9 RECORDS

General
The Designer shall retain appropriate design records in a format such that they can be understood readily with no prior knowledge of the particular design.

In the case of a Consultant or Sub-consultant preparing the design, copies of records shall be made available to Council on request and without charge.

Design file
A design file shall be maintained which contains records of calculations, approvals, assumptions made, justification records, correspondences, design standards and decisions, geotechnical data and other design data that could be relevant in reviewing aspects of the design or planning future maintenance responsibilities.

Calculation record retention
Calculations that can readily be re-done need not be kept once the construction maintenance period of the project has expired.

Hydrologic and hydraulic design
Particular requirements apply to hydrological and hydraulic design data (refer to 0074 *Stormwater drainage (Design)*.

Road Design Work
A design documentation shall be submitted to Council along with set of design drawings.

1.10 AUDIT

General
Council shall have the right of audit of all processes and documents related to the project design at any stage in the project process. The Designer shall provide Council all reasonable assistance in inspecting records of designs submitted to Council for acceptance.

Notice of access
In order to provide for such audit, access to the premises of the Designer will be provided to Council on a 24 hour notice basis.

2 ANNEXURE A—CERTIFICATION REPORT

Muswellbrook Shire Council

2.1 DESIGN CERTIFICATE

Project Title: _____

Drawing No's: _____

Name of Designer: _____

I certify that the subject drawings represent a design for which the attached design checklists provide a valid record.

I certify that this Design will not significantly impact on the environmental factors of the area as interpreted under Part V of the Environmental Planning and Assessment Act.

I certify that this Design has been carried out in accordance with current standards of good industry practice and in accordance with Council's Design Specifications and specific instructions received with the exception of departures cited in the attached design checklists for Council's advice.

I certify that all structural elements of the Design have been designed by an Engineer deemed to be suitably experienced in the relevant field by Council and eligible for Chartered Professional Membership of the Institution of Engineers, Australia.

Details of Professional Indemnity Insurance:……..

Contact Phone: _____ _____ _____

Design Engineer/Surveyor Date

Contact Postal Address:

_____ _____

Qualifications

_____

DESIGN CHECKLIST 1

BASE PLOT OF EXISTING FEATURES

Reference: ……

Drawings ……

		Check completed by (initials)	Date	Not applicable (tick)
1.1	Initial plot verified by site inspection for existing drainage.	…….	...../...../.....	☐
1.2	Initial plot verified by site inspection for existing property descriptions, boundaries and accesses.	…….	...../...../.....	☐
1.3	Initial plot of contours verified as representative of site terrain.	…….	...../...../.....	☐
1.4	Trees and significant environmental features affected by the works are clearly indicated and annotated.	…….	...../...../.....	☐
1.5	Features significant to heritage considerations within the works boundaries are clearly indicated and annotated.	…….	...../...../.....	☐
1.6	Existing public and private property likely to be affected by these Designs are clearly indicated and annotated.	…….	...../...../.....	☐
1.7	Survey and bench-marks clearly indicated and annotated.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

Design Engineer/Surveyor

Date

2.2 DESIGN CHECKLIST 2

ROAD DESIGN

Reference: Design Specifications 0041 *Geometric road layout*, 0044 *Pathways and cycleways* , 0061 *Bridges and other structures*.

Design Speed ……km/h (Design speed shall be 10km/h higher than proposed operating speed)

Design Vehicle ……

Design life time of pavement …… years.

HORIZONTAL ROAD ALIGNMENT

Drawings: General layouts, typical road cross sections, plan and longitudinal sections, intersection layouts

		Check completed by (initials)	Date	Not applicable (tick)
2.1	Alignment compatible with design speed. The design speed is ……..km/h.	…….	...../...../.....	☐
2.2	Alignment is adequate in relation to clearance of roadside hazards.	…….	...../...../.....	☐
2.3	Driver and pedestrian sight distance is adequate.	…….	...../...../.....	☐
2.4	Conflict with existing services is minimised.	…….	...../...../.....	☐
2.5	Road widths and lanes meet Councils requirements and design traffic requirements.	…….	...../...../.....	☐
2.6	Alignment of bridges suits road alignment.	…….	...../...../.....	☐
2.7	Pedestrian, bicycle and parking requirements are met.	…….	...../...../.....	☐
2.8	Provision for large vehicles such as buses, garbage trucks and emergency vehicles is adequate.	…….	...../...../.....	☐
2.9	Intersection layouts meet turning requirements of design traffic including emergency vehicles.	…….	...../...../.....	☐
2.10	Pavement width tapers and merges are adequate.	…….	...../...../.....	☐
2.11	Pedestrians and prams are catered for.	…….	...../...../.....	☐
2.12	Conflict with existing public utility services has been identified and resolved.	…….	...../...../.....	☐
2.13	Horizontal road alignment setout data is clearly defined and tabulated.	…….	...../...../.....	☐
2.14	Horizontal sight distance meet the requirements as per Aus-Spec. The check list is in the attachment of design file.	…….	...../...../.....	☐
2.15	Curve super elevation meet the requirements and drawings gives adequate information to set out.	…….	...../...../.....	☐
2.16	Various design parameters has been selected with the consideration of accumulated effect on safety issues. For example in a particular location on the designed road, it is not reaccommodated to select			

minimum vertical of various parameters; min vertical curve, min sight distance; absolute min side friction, steep down grade and adverse super elevation.	…….	..../...../.....	☐
Curve widening meet the requirements and Aus-spec standards.			

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

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Design Engineer/Surveyor Date

2.3 DESIGN CHECKLIST 3

VERTICAL ROAD ALIGNMENT

Reference: Design Specifications 0041 *Geometric road layout*, 0044 *Pathways and cycleways* , 0061 *Bridges and other structures*.

Drawings: Plan and longitudinal sections, road cross sections.

		Check completed by (initials)	**Date**	**Not applicable (tick)**
3.1	Grades meet maximum and minimum requirements.	…….	...../...../.....	☐
3.2	Vertical clearances to bridges and services meet standards.	…….	...../...../.....	☐
3.3	Vertical sight distance is adequate for drivers and pedestrians and all sight distance reports are in the attachment of design report.	…….	...../...../.....	☐
3.4	Cover to drainage structures or services is adequate.	…….	...../...../.....	☐
3.5	Vertical alignment is adequate for disposal of surface drainage from properties and from road.	…….	...../...../.....	☐
3.6	Grades are satisfactory for 1:100 year flood levels.	…….	...../...../.....	☐
3.7	Vertical alignment is compatible with property access.	…….	...../...../.....	☐
3.8	The gradient on an intersecting road is not significantly greater than the cross slope of the through pavement and no greater than 3% at give way and stop signs.	…….	...../...../.....	☐
3.9	Sight distance is acceptable for all accesses to roundabouts.	…….	...../...../.....	☐
3.10	Alignment coordination with horizontal alignment is in accordance with the AUSTROADS design guides as referenced in the AUS-SPEC specifications.	…….	...../...../.....	☐
3.11	Conflict with existing public utility services has been identified and resolved.	…….	...../...../.....	☐
3.12	Vertical road alignment setout data is clearly defined on the longitudinal sections.	…….	...../...../.....	☐
3.13	Vertical curves radius meet Aus-Spec, minimum radius of crest vertical curves and sag vertical curves requirements is satisfied.	…….	..../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

Design Engineer/Surveyor	Date

2.4 DESIGN CHECKLIST 4

ROAD CROSS SECTIONS

Reference: Design Specifications 0041 *Geometric road layout*, 0044 *Pathways and cycleways*, 0061 *Bridges and other structures*,

Drawings: Typical Road Cross Sections, Road Cross Sections and Longitudinal Sections.

		Check completed by (initials)	**Date**	**Not applicable (tick)**
4.1	Typical cross sections have complete dimensions.	…….	...../...../.....	☐
4.2	Typical cross sections have kerb & gutter, road safety barrier and surface drainage indicated.	…….	...../...../.....	☐
4.3	Batter slopes are indicated and batter treatment is indicated where appropriate.	…….	...../...../.....	☐
4.4	Pavement description and surface treatment is indicated.	…….	...../...../.....	☐
4.5	Property boundaries, service allocations and location of known existing underground services and pathway treatments are indicated.	…….	...../...../.....	☐
4.6	Sufficient cross sections are shown to define all variations and width transitions.	…….	...../...../.....	☐
4.7	Cross sections are of sufficient width to fully assess impact of road level on adjoining property.	…….	...../...../.....	☐
4.8	Stability of embankment slopes, batters and retaining walls has been verified as satisfactory.	…….	...../...../.....	☐
4.9	Cross section reference level conforms with vertical road alignment.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

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Design Engineer/Surveyor Date

2.5 DESIGN CHECKLIST 5

ROAD AND INTERALLOTMENT DRAINAGE

Reference: Design Specifications 0021 *Site regarding*, 0043 *Subsurface drainage (Design),* 0074 *Stormwater drainage (Design).*

Drawings: Drainage Plan and Schedule of Drainage Elements, Drainage Profiles and Drainage Structure Details

		Check completed by (initials)	Date	Not applicable (tick)
5.1	Drawings indicate existing surface drainage.	…….	...../...../.....	☐
5.2	Hydrological data is the most current available.	…….	...../...../.....	☐
5.3	Hydrologic and hydraulic design calculations are complete and fully recorded and available for audit.	…….	...../...../.....	☐
5.4	Underground drainage and structures do not conflict with services.	…….	...../...../.....	☐
5.5	The designed drainage lines are compatible with existing incoming lines and outgoing lines.	…….	...../...../.....	☐
5.6	The length of line, type of pipe, size, class and bedding requirements are indicated for each drainage line on the schedule of drainage elements.	…….	...../...../.....	☐
5.7	Height of fill over drainage lines is within allowable limits.	…….	...../...../.....	☐
5.8	Drainage is provided for local depressions, e.g., median areas or areas adjacent to fills.	…….	...../...../.....	☐
5.9	The effect of headwater and back-up water on private property has been assessed.	…….	...../...../.....	☐
5.10	Subsurface drainage has been provided when required and clearly located by line and level, with details provided.	…….	...../...../.....	☐
5.11	The need for batter drains has been considered for fills and cuttings.	…….	...../...../.....	☐
5.12	The height and energy level of downstream drainage has been considered.	…….	...../...../.....	☐
5.13	Drainage structures and flowpaths are located so as to ensure safe vehicular and pedestrian transit.	…….	...../...../.....	☐
5.14	Drainage structure number, setout, type and pipe details indicated on the drainage plans and schedule of drainage elements.	…….	...../...../.....	☐
5.15	Emergency flowpaths are located so as to minimise impact on private property.	…….	...../...../.....	☐

ROAD AND INTERALLOTMENT DRAINAGE

Reference: Design Specifications 0021 *Site regarding*, 0043 *Subsurface drainage (Design),* 0074 *Stormwater drainage (Design).*

Drawings: Drainage Plan and Schedule of Drainage Elements, Drainage Profiles and Drainage Structure Details.

		Check completed by (initials)	**Date**	**Not applicable (tick)**
5.16	Road drainage has been provided in accordance with Council's Handbook for Drainage Design Criteria.	…….	...../...../.....	☐
5.17	Interallotment drains have been designed in accordance with Council's Specification and/or Australian Rainfall and Runoff (AR&R).	…….	...../...../.....	☐
5.18	Appropriate land stabilisation and velocity controls have been implemented to pipe systems, open channels and embankments.	…….	...../...../.....	☐
5.19	For allotments affected by flood controls, the floor height controls are to be compatible with road and drainage levels.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

Design Engineer/Surveyor _____ Date _____

2.6 DESIGN CHECKLIST 6

SIGNS AND MARKINGS

Reference: Council's Signposting and Pavement Marking Policies.

Drawings: Pavement marking and signposting.

		Check completed by (initials)	Date	Not applicable (tick)
6.1	Sign types, sizes, locations and support structure details are shown on the drawings in accordance with AS 1742 (All parts).	…….	...../...../.....	☐
6.2	Pavement linemarking and pavement marking type and setout is indicated on the drawings to meet the requirements of AS 1742.2.	…….	...../...../.....	☐
6.3	Signs and linemarking have been designed in accordance with AS 1743-2001 and enough information given in the drawings.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

Design Engineer/Surveyor Date

2.7 DESIGN CHECKLIST 7

PAVEMENT DESIGN

Reference: Design Specification 0042 *Pavement.*

Drawings: Typical road cross sections, road cross sections.

		Check completed by (initials)	Date	Not applicable (tick)
7.1	The pavement design and surface treatment is shown clearly on the typical road cross sections and any variations are indicated on appropriate cross sections.	…….	...../...../.....	☐
7.2	The pavement design complies with Council's Aus –Spec Pavement Design Specification.	…….	...../...../.....	
7.3	Geotechnical Investigation complies with Aus-Spec Pavement Design Specification.			☐
7.4	Geotechnical data is assessed as adequate and is held on the design file.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

Design Engineer/Surveyor _____ Date _____

2.8 DESIGN CHECKLIST 8

BRIDGE/MAJOR CULVERT DESIGN

Reference: Design Specification 0061 *Bridges and other structures.*

Drawings: Structure details.

		Check completed by (initials)	Date	Not applicable (tick)
8.1	Bridge design is performed by an engineer deemed to be suitability experienced in the field and design data held on the design file	…….	...../...../.....	☐
8.2	Geotechnical data is assessed as adequate and is held on the design file.	…….	...../...../.....	☐
8.3	The type and functional dimensions of the bridges meet AS 5100, AS 4100, AS 3600, AS 1684, AS/NZS 1170.	…….	...../...../.....	☐
8.4	The type and class of all materials are indicated on the drawings.	…….	...../...../.....	☐
8.5	Records of all significant design calculations are available for audit.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

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Design Engineer/Surveyor Date

2.9 DESIGN CHECKLIST 9

EROSION/AND SEDIMENTATION CONTROL PLANS

Reference: Design Specifications 0075 *Control of erosion and stormwater management,* 1102 *Control of erosion and sedimentation.*

Drawings: Erosion and Sedimentation Control Concept Plans.

		Check completed by (initials)	**Date**	**Not applicable (tick)**
9.1	Both short term and long term erosion control concept plans have been prepared using the guidelines within Council's Design Specification 0075 *Control of erosion and stormwater management* during construction and 1102 *Control of erosion and sedimentation*.	…….	...../...../.....	☐
9.2	Erosion and sedimentation control has been designed in accordance with any conditions of development consent.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE ROAD AUTHORITY REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

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Design Engineer/Surveyor Date

2.10 DESIGN CHECKLIST 10

WATER RETICULATION

Reference: Design worksection 0071 *Water supply – reticulation and pump stations (Design).*

		Check completed by (initials)	Date	Not applicable (tick)
10.1	Hydraulic design is performed by an engineer deemed to be suitability experienced in the field and hydraulic models and design data held on the design file	…….	...../...../.....	☐
10.2	The survey has been performed by a practicing registered Surveyor.	…….	...../...../.....	☐
10.3	Geotechnical data is assessed as adequate and is held on the design file.	…….	...../...../.....	☐
10.4	The type and functional dimensions of the reticulation meet the States Department of Public Works and Services guidelines, the appropriate Australian Standards and is compatible with the Water Reticulation Code of Australia WSA 03.	…….	...../...../.....	☐
10.5	The type and class of all materials, fittings, joints, and special requirements for crossings and protection are indicated on the drawings.	…….	...../...../.....	☐
10.6	Records of all significant design calculations are available for audit.	…….	...../...../.....	☐
10.7	The design meets the requirements of all Statutory Authorities.	…….	...../...../.....	☐
10.8	The design complies with any conditions of development consent.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

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Design Engineer/Surveyor Date

2.11 DESIGN CHECKLIST 11

SEWERAGE SYSTEM

Reference: Design Specifications 0076 *Sewerage systems – reticulation and pump stations (Design).*

		Check completed by (initials)	**Date**	**Not applicable (tick)**
11.1	Sewerage design is performed by an engineer deemed to be suitability experienced in the field and hydraulic models and design data held on the design file	…….	...../...../.....	☐
11.2	The survey has been performed by a practicing registered Surveyor.	…….	...../...../.....	☐
11.3	Geotechnical data is assessed as adequate and is held on the design file.	…….	...../...../.....	☐
11.4	The type and functional dimensions of the reticulation meet NSW Department of Public Works and Services guidelines, the appropriate Australian Standards and is compatible with the Sewerage Code of Australia WSA 02	…….	...../...../.....	☐
11.5	The type and class of all materials, fittings, joints, and special requirements for crossings and protection are indicated on the drawings.	…….	...../...../.....	☐
11.6	Records of all significant design calculations are available for audit.	…….	...../...../.....	☐
11.7	The design meets the requirements of all Statutory Authorities.	…….	...../...../.....	☐
11.8	The design complies with any conditions of development consent.	…….	...../...../.....	☐

DEPARTURES FROM COUNCIL OR STATE REQUIREMENTS OR SPECIAL FEATURES TO BE NOTED:

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Design Engineer/Surveyor Date

3 ANNEXURE B—EXAMPLE COMPILATION OF DRAWINGS

An example of the sequence of drawing sheets acceptable to Council in the compilation of a full set of Roadworks Drawings is set out as follows.

Sheet No	Topic
1.	Development consent number (if applicable), project title, locality sketch and index of sheets and list of associated standard drawings
2.	General layout plan with contour details and a clear indication of the extent of work.
3.	Typical road cross sections showing road widths, pavement (design) configuration, batter slopes, kerb and gutter types.
4.	Plan and longitudinal section of each road showing setout data, road safety barrier locations, guide posts and services.
5.	Drainage Plan and schedule of drainage elements (pipe lines and structures).
6.	Drainage profiles.
7.	Drainage structure details.
8.	Road cross sections.
9.	Intersection layout details.
10.	Pavement marking and signposting.
11.	Erosion and sedimentation control concept plans (short term and long term treatment).
12.	Structure details—bridges, retaining walls, etc.

1. Any one set of Roadworks Plans may require more than 1 sheet for each of the topics listed and may also require supplementary sheets for site specific details.

2. Scales are required to be nominated on all drawings and north points shown on all plan views.