RTA QA SPECIFICATION Q4M QUALITY MANAGEMENT SYSTEM (TYPE 4)

NOTICE

"This document is a copy of one of the Authority's QA Specifications.

The QA Specifications are policy documents within the meaning of the Freedom of Information Act 1989 (NSW)("FOI Act") and this document is accordingly made available to you pursuant to Section 15(1) of the FOI Act.

The QA Specifications were developed by the Authority for use with roadworks and bridgeworks contracts let by the Authority or local councils. The Authority only uses the QA Specifications in conjunction with its other standard form documents and under the supervision of professional civil engineers who are trained and experienced in roadworks and bridgeworks. The Authority does not use the QA Specifications for any other purpose and does not consider them suitable for use for any other purpose.

Consistent with the FOI Act, the purposes for which this document has been made available for inspection or purchase by you are:

- to satisfy the Authority's obligation under Section 15(1) of the FOI Act to make its policy documents available for inspection and purchase by members of the public
- to ensure that you, as a member of the public who may be affected by the operation of this document, have access to the document

The price which you have paid for this document only covers the Authority's costs of printing and handling the document.

If you use this document for any purpose which is not consistent with the above (including, without limitation, for carrying out any construction, engineering, maintenance or other work), you do so at your own risk.

This document is current as at the date of this notice. However, you should be aware that the Authority regularly reviews and updates its QA Specifications. You will not be notified of any update.

Your comments and suggestions to improve any of the RTA QA specifications may be sent to: Infrastructure Contracts Branch, RTA, PO Box K198, Haymarket, NSW 1238 (Fax 02-9218 6980).

No advisory or support services will be provided by the Authority.

Electronic copies of only Annexure A of specifications in MS Word format may be provided to organisations carrying out privately funded work that will be handed over to RTA.

Electronic copies of specifications are not to be supplied in MS Word format outside the RTA unless loaned, by the appropriate RTA Project Manager, to professional services contractors or Councils for preparing tender documents for RTA funded projects. In which cases, the contractors and Councils are required to return them to the RTA Project Manager.

Electronic copies of specifications may be provided to other State Road or NSW Government Authorities by Infrastructure Contracts Branch for use on Government funded projects only

RTA does not permit the possession or use of electronic copies of specifications or guides to specifications by non-RTA organisations or persons other than as stated above.

RTA QA SPECIFICATION Q4M QUALITY MANAGEMENT SYSTEM (TYPE 4)

REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 1/Rev 3 M		Version for Single Invitation Contracts based on RTA Q4 Ed 1 / Rev 3. Changes from base shown in bold italics (additional text) and strike out (deleted text).	GM, RNIC	31.05.02
Ed 2/Rev 0 M		Version for Single Invitation Contracts based on RTA Q4 Ed 2 / Rev 0. Changes from base shown in bold italics (additional text) and strike out (deleted text).	GM, RNIC	06.07.04
Ed 2/Rev 2	Foreword 1.4, 7.5.1, Q/K, Q/M E1.2, L3.2, Q/F(xii)	New clause after Table of Contents Text referring to survey transferred to RTA G71 Minor editorial changes.	GM, RNIC	09.02.05
Ed3/Rev 0 M	4.2.2, 4.2.5, 4.2.6, 6.3, 7.1, 7.2, 7.4.1, 7.5.1, 7.5.2, 7.5.3, 8.2.1, 8.2.2, 8.3, 8.5.3, Annexures D & L	Version for Road Maintenance Council Contracts (RMCC). Major revisions to reduce unnecessary text and to include contract administration experience from previous SIMC contracts.	John Statton (GM, IM)	14.08.08

RTA QA SPECIFICATION Q4M EDITION 3

NOTICE

RTA Q4M must be used with the Conditions of Contract for Road Maintenance Council Contracts (RMCC). RTA Q4M is based on RTA Q4.

RTA Q4M Edition 3 is drafted to be consistent with AS/NZS ISO 9001- 2000 and the recommendations contained in HB90.3-2000.

.

[THIS PAGE LEFT INTENTIONALLY BLANK]

QA SPECIFICATION Q4M

QUALITY MANAGEMENT SYSTEM (TYPE 4)

RNIC-QA-Q4M

.

[THIS PAGE LEFT INTENTIONALLY BLANK]

CONTENTS

FOREWORD

RTA COPYRIGHT AND USE OF THIS DOCUMENT

When this document forms part of a contract

This document should be read with all the documents forming the Contract.

When this document does not form part of a contract

This copy is not a controlled document. Observe the Notice that appears on the first page of the copy controlled by RTA. A full copy of the latest version of the document is available on the RTA Internet website: www.rta.nsw.gov.au/doingbusinesswithus/specifications

PROJECT SPECIFIC CHANGES

Project specific changes to the base document have been indicated in the following manner:

(a) Text which is additional to the base document and which is included in the Specification is shown in ***bold italics***.

(b) Text which has been deleted from the base document and which is not included in the Specification is shown struck out ~~Deleted Text~~.

RTA QA SPECIFICATION Q4M

QUALITY MANAGEMENT SYSTEM (TYPE 4)

1 GENERAL

1.1 SCOPE

The work to be executed under ***RTA Q4M*** consists of:

(a) Developing and implementing a partial corporate Quality Management System in accordance with ISO 9001;

(b) Developing and implementing a PROJECT QUALITY PLAN to cover all Work under the CONTRACT, whether permanent or temporary both on-site and off-site;

(c) Operating, maintaining and reviewing the PROJECT QUALITY PLAN and associated quality management system procedures; and

(d) Keeping Quality Records in accordance with Clause 4.2.4.

1.2 STRUCTURE OF THE SPECIFICATION

This Specification includes a series of annexures that detail additional requirements.

1.2.1 Details of Work

Details of work are shown in Annexure Q/A.

1.2.2 Measurement and Payment

The method of measurement and payment must comply with Annexure Q/B.

1.2.3 Schedules of HOLD POINTS and Identified Records

Annexure Q/C lists the **HOLD POINTS** that must be observed. Refer to Clause 1.4 for the definition of **HOLD POINT**.

The Quality Records for the Contract and referenced documents listed in Annexure Q/C must be created, when applicable, and located as specified in Annexure Q/C.

The records listed in Annexure Q/C are Identified Records for the purposes of Annexure Q/E.

1.2.4 Planning documents

The PROJECT QUALITY PLAN must include each of the documents and requirements listed in Annexure Q/D and must be implemented.

In all cases where Q4M refers to manufacturers' recommendations, these must be included in the PROJECT QUALITY PLAN.

1.2.5 Quality Records and Identified Records

Records for the Contract, including quality, environmental, OHS and other management records must comply with Annexure Q/E.

1.2.6 Referenced Documents

Unless otherwise specified the applicable issue of a referenced document, other than an RTA Specification, is the issue current at the date one week before the closing date for tenders, or where no issue is current at that date, the most recent issue.

The standards, Specifications, test methods, definitions and rules of interpretation used in this Specification are set out in the General Conditions for Road Maintenance Council Contracts (RMCC) and/or RTA M2.

~~Standards, specifications and test methods are referred to in abbreviated form (e.g. AS 2350). For convenience, the full titles are given in Annexure Q/M.~~

1.3 SYSTEM NOT BASED ON AS/NZS ISO 9001:2000

Where the Quality Management System documents are arranged differently to the format of ISO 9001:2000, include in the PROJECT QUALITY PLAN, a matrix of how the Quality Management System addresses all the requirements of RTA Q4M and the specified clauses of ISO 9001:2000.

Where other RTA Specifications reference AS/NZS ISO 9001:1994 or AS/NZS ISO 9002:1994, the equivalent clauses of ISO 9001:2000 apply.

1.4 TERMS AND DEFINITIONS

The definitions appearing in ISO 9000 and in ISO 9001 Clause 3 apply in the interpretation of the words and expressions appearing in the quality assurance provisions of the Contract (except where the context otherwise requires).

Additionally the following words and expressions appearing in the quality assurance provisions of the Contract have the meanings hereby assigned to them, except where the context otherwise requires:

"Hold Point": a point beyond which a work process must not proceed without the Principal's express written authorisation;

"inspection records": the evidence of conformity specified in ISO 9001 Clauses 7.l (d) and 8.2.4

"Inspection and test forms/ITP forms": the forms that accompany the Inspection and Test Plan (ITP) and that are used for recording inspection/test results (eg verification checklists). If the ITP contains the facility to record inspection/test results, the ITP will also be regarded as an "ITP form" (refer Clause 8.1.1).

"Project Testing": testing, including sampling, carried out on the site, at concrete and asphalt batch plants, on aggregates and materials used for pavements and structures at off site locations and any other testing specified in Annexure Q/A to be Project Testing.

"Witness Point": a point in a work process where you must give prior notice to the Principal and the option of attendance may be exercised by the Principal;

"Work Under the Contract": the work which you are or may be required to execute under the Contract and includes all variations, remedial work, Constructional Plant and Temporary Work, design and documentation ~~(RTA G2)~~.

2 (RESERVED)

3 (RESERVED)

4 QUALITY MANAGEMENT SYSTEM

4.1 GENERAL REQUIREMENTS

Apply the following quality assurance practices to the Work Under the Contract:

(a) ensure that purchased items conform to specification before incorporating them in ***any work***;

(b) plan and control work processes;

(c) plan and carry out inspection and testing (including identification and traceability) to verify that the work processes are effective and that all finished work complies with the Contract;

(d) careful selection of subcontractors and confirmation that their work complies with the Contract;

(e) where the Specifications require plans, procedures, methods and forms to be documented, use these documents in implementing the Quality Management System for the Contract;

(f) acknowledge and rectify any nonconforming work and improve work processes to prevent recurrence of nonconformities;

(g) keep orderly records to demonstrate that the ***Services*** comply with the Contract; and

(h) improve procedures and work practices when opportunities are identified to minimise errors, waste and product nonconformities.

4.2 DOCUMENTATION REQUIREMENTS

4.2.1 General

Develop, implement and maintain a partial corporate Quality Management System in accordance with ISO 9001 and Q4M.

Those requirements in RTA Q4M that are additional to the requirements of ISO 9001 may be addressed within the corporate Quality Management System or in supplementary quality management system documentation applied to the Contract. Where documentation of procedures is specified, it is acceptable to document the procedures either individually or combined with other procedures depending on how you choose to structure its quality management system.

4.2.2 Quality Management System Documents

4.2.2.1 QUALITY MANUAL

Quality Manual is not mandatory for this Contract.

4.2.2.2 Quality Management System Procedures

Document, maintain and implement procedures in accordance with ISO 9001 as part of the corporate Quality Management System or as a separate Quality Management System in order to plan and implement process controls and monitor their effectiveness (refer Q4M Clause 7.5.1)

4.2.2.3 PROJECT QUALITY PLAN

Prepare the PROJECT QUALITY PLAN to inform and direct your personnel about the specific quality practices, resources, sequence of activities, controls and checks that they have to implement during the ***Contract***. Include or reference in the PROJECT QUALITY PLAN the documents listed in Annexure Q/D plus any additional information nominated in the specifications for inclusion in the PROJECT QUALITY PLAN.

Associated technical documents that must be submitted with the PROJECT QUALITY PLAN include:

(a) A set of quality management system procedures including process control procedures (refer Clause 7.5.1) describing the steps and accountable personnel for the activities carried out under the ***Contract***.

(b) Any additional documents that form part of the Quality Management System applicable to this ***Contract*** that are not contained in the PROJECT QUALITY PLAN;

(c) Documentation required by the specifications or RTA Q4M Clause 7.5.1 to plan and implement controlled conditions; and

(d) Inspection and test plans and ITP forms that will be used by you to verify that the ***Services*** comply with the ***Contract*** (refer Clause 8.1.1).

You may elect to use the model Project Quality Plan included in the set of RTA model Management Plans for RMCC Contracts as listed under Annexure Q/D2. These documents were developed to promote consistency across all RMCC contracts. However, use of these documents is not mandatory.

4.2.2.4 Changes to the Project Quality Plan and Associated Documents

Immediately implement changes, where applicable, to the PROJECT QUALITY PLAN and corporate Quality Management System if the PROJECT QUALITY PLAN and associated quality management system documents:

(a) do not adequately address the Specification requirements; or

(b) are causing nonconformity; or

(c) have to be revised as a result of an audit; or

(d) no longer represent your current and/or appropriate practice.

Advise the Principal promptly of any revisions to the PROJECT QUALITY PLAN or the associated Quality Management System and submit amended documentation detailing the revisions within five ***Business*** days.

In the case of a change made necessary to meet the requirements of a particular Work Order, the Principal may allow the Contractor an extended period of time to make the appropriate changes and submit the supporting Quality System documents.

HOLD POINT	(Changes to the PROJECT QUALITY PLAN)
Process Held.	The work covered by the documents for which the changes to the quality plan is necessary.
Submission Details.	Submission of documents to the Principal covering requirements of the particular work order or associated activities
Release of Hold Point.	The Principal accepts the submitted documents and authorise the release of Hold Point.

4.2.2.5 Project Quality Plan for Small Jobs

Use the simple Form provided in Annexure Q/D4 for small jobs, which in Principal's opinion, has low impacts on quality of work or associated risks.

4.2.3 Control of Documents

Identify each part of the PROJECT QUALITY PLAN and associated quality management system documents with a unique issue number and issue date, and keep a list of who holds copies. When a document has to be changed, ensure that the issue number and issue date is upgraded and that it is re-issued to all listed holders, and that the superseded documents are recalled or endorsed as superseded.

4.2.4 Control of Records

The quality records must include all those shown in Annexure Q/E.

Use ISO 15489.1 and ISO 15489.2 for guidance in developing and implementing the records management system.

Prepare and submit a Records Management Plan (RMP) for the works under the Contract in accordance with Clauses E1 and E2 of Q4M. The RMP must cover the record keeping practices, resources and sequence of activities required to meet all the requirements of this Specification. The RMP must be consistent with the PROJECT QUALITY PLAN and include appropriate cross-referencing to the quality system and PROJECT QUALITY PLAN.

Use the RMP available under the RTA model Management Plans listed in Annexure Q/D2, if required.

Describe in the PROJECT QUALITY PLAN where the quality records shown in Annexure Q/E will be located and how they will be stored and maintained so they are readily retrievable, in facilities that provide a suitable environment to minimise deterioration or damage, and to prevent loss of the records.

Make the quality records available to the Principal at all reasonable times. Where requested by the Principal, permit the Principal to copy quality records.

Prior to Completion, provide the Principal with any commissioning records and operation and maintenance manuals relevant to the ***Services***.

Provide the Principal with copies of any quality records within fourteen days of a request by the Principal.

4.2.5 Submission of Documents to Principal

Submit documents in accordance with Annexure Q/A Table Q/A.1.

Within thirty-five days after the date of acceptance of tender, submit for consideration by the Principal, controlled copies of the ***following:***

(a) ***a*** complete PROJECT QUALITY PLAN with relevant associated quality management system documents. ***The plan must cover ALL activities relating to the Routine Services and Ordered Work (refer to Clause 4.2.2.3) OR***

(b) ***a*** first stage of the PROJECT QUALITY PLAN (where you proposes to comply with Clause 4.2.6). ***The first stage must cover ALL activities relating to the Routine Services. Activities relating to Ordered Work must be submitted in stages in accordance with Clause 4.2.6.***

Quality System documents submitted at the outset of the Contract must cover activities relating to the Routine Services. Changes and additional procedures required to accommodate other Services must be included in the prices payable for those Services and must be undertaken in accordance with Clause 4.2.2.4. The number of copies required is shown in Annexure Q/A Table Q/A.1.

HOLD POINT	***First Stage submission of PROJECT QUALITY PLAN***
Process Held.	***The work covered by Routine Services***
Submission Details.	***Submission of PROJECT QUALITY PLAN to the Principal covering Routine Services as required by Clause 4.2.5 & 4.2.6***
Release of Hold Point.	***The Principal accepts the submitted documents and authorise the release of Hold Point.***

Submit the RMP to the Principal within 35 days after the date of acceptance of tender or at least 10 ***Business*** Days prior to project commencement, whichever is the earlier.

Work involving design or requiring controlled conditions or inspection and testing must not commence until five ***Business*** Days after submission of the PROJECT QUALITY PLAN (first stage or complete) and associated quality management system documents**,** unless otherwise agreed by the Principal.

When requested by the Principal, for the purposes of quality audits, provide additional controlled copies of the Quality Manual, PROJECT QUALITY PLAN and associated quality management system documents. These documents will be returned to you when no longer required by the Principal.

4.2.6 Staged Submission of the Project Quality Plan

The PROJECT QUALITY PLAN for the Routine Services must not be submitted in stages, it must be submitted in accordance with Clause 4.2.5. Provided you have submitted ***all activities of the PROJECT QUALITY PLAN for the Routine Services***. The staged submission of the PROJECT QUALITY PLAN ***for Ordered Work*** is acceptable subject to the following conditions:

(a) A written proposal has been submitted to the Principal that includes the following details and documentation:

  (i) a detailed index describing the full content of each stage of the PROJECT QUALITY PLAN;

  (ii) the first stage submission of the PROJECT QUALITY PLAN. This stage must include the associated quality management system documents nominated in Annexure Q/D plus work process control documents and inspection/testing documents for those activities which are planned to commence in the first month or greater period of the submitted Construction Program. Work processes covered by the submitted documentation must not commence until five ***Business*** Days after submission of the first stage of the documentation unless otherwise agreed by the Principal. Other work activities involving design and/or requiring controlled conditions or inspection and testing must not commence; and

  (iii) a timetable for submission of each stage of the PROJECT QUALITY PLAN.

(b) (Deleted)

(c) Controlled copies of subsequent stages of the PROJECT QUALITY PLAN documentation must be submitted by the nominated dates and at least twenty ***Business*** Days prior to the scheduled start of any process covered in that documentation. Work processes covered

by the submitted documentation must not commence until ten ***Business*** Days after submission of the documentation unless otherwise agreed by the Principal.

(d) (Deleted)

HOLD POINT	***Submission of PROJECT QUALITY PLAN for subsequent stages***
Process Held.	***The work covered by Ordered Work***
Submission Details.	***Submission of PROJECT QUALITY PLAN to the Principal covering Ordered Work as required by Clause 4.2.5 & 4.2.6***
Release of Hold Point.	***The Principal accepts the submitted documents and authorise the release of Hold Point.***

5 MANAGEMENT RESPONSIBILITY

5.1 MANAGEMENT COMMITMENT

Your management shall have demonstrated commitment to provide quality services under the contract and be actively involved in developing the Quality Management System as specified in this document.

5.2 CUSTOMER FOCUS

Refer Clause 8.2.1.

5.3 QUALITY POLICY

Not mandatory.

5.4 PLANNING

Plan a corporate Quality Management System to the extent specified in this document.

5.5 RESPONSIBILITY, AUTHORITY AND COMMUNICATION

5.5.1 Responsibility and Authority

The PROJECT QUALITY PLAN must:

(a) list the main responsibilities and authorities of personnel primarily responsible for upholding the quality management system provisions of the Contract, including responsibilities for:

(i) persons who authorise quality management system procedures and those who carry out various steps of the activities described in such procedures;

(ii) receiving, in-process and final (or acceptance) inspection and testing (refer Clause 8.1);

(iii) identifying/recording quality problems;

(iv) initiating/recommending solutions through designated channels;

(v) controlling further processing/delivery/installation of nonconforming product until deficiencies or unsatisfactory conditions have been corrected; and

(vi) controlling monitoring and measurement devices.

(b) nominate the person responsible on site for main construction activities such as construction trials, placing concrete road base, concrete for reinforced structures, placing asphalt, bituminous spray sealing; and

(c) nominate the persons with the responsibility and authority for planning and implementing training and induction for the project, including establishing competence needed.

5.5.2 Management Representative

The PROJECT QUALITY PLAN must:

(a) nominate the Management Representative with corporate responsibility and authority for establishment, maintenance and improvement of the Quality management System ;

(b) nominate your Project Quality Representative, directly responsible to top management and who has the defined authority and responsibility for ensuring that the requirements of the PROJECT QUALITY PLAN and associated quality management system procedures are implemented and maintained on the project; and

(c) where the Project Quality Representative is not your designated corporate Management Representative indicate the relationship between them.

The Project Quality Representative must be available for contact by telephone at all times work is being carried out and be available to attend meetings on site within 24 hours of written or spoken notice by the Principal.

5.6 MANAGEMENT REVIEW

The management is to review the corporate Quality Management System to implement opportunities for improvement as required by Clause 4.2.2.4.

6 RESOURCE MANAGEMENT

6.1 PROVISION OF RESOURCES

The organization shall determine and provide the resources needed for effective operation of the Quality management system.

6.2 HUMAN RESOURCES

6.2.1 General

Personnel performing the work under the Contract shall be competent on the basis of appropriate education, training, skills and experience.

6.2.2 Competence, Awareness and Training

Document a Network specific induction and training plan and induction and training procedures to describe who is to be trained, when and how. This procedure must be guided by HB90.3 – 2000 and forms part of the PROJECT QUALITY PLAN.

Ensure that all on site personnel engaged on the project (including subcontractor's personnel working under your quality system) have undergone an appropriate induction programme which ensures they are aware of how the quality system is to be implemented on the project. Make, at the request of the Principal, the induction program available to the Principal's staff.

Personnel performing specific assigned tasks must be qualified on the basis of appropriate education, training and/or experience for that task. Maintain or have access to appropriate records that demonstrate the education and experience of all personnel.

6.3 INFRASTRUCTURE

You are to provide infrastructure such as buildings, work spaces, equipment (hardware, software) and supporting services (i.e. transport) for the Work Under the Contract.

6.4 WORK ENVIRONMENT

When planning work process controls in accordance with Clause 7.5.1, consider whether the work environment could adversely impact on the quality of constructed work and provide suitable remedies.

7 PRODUCT REALISATION

7.1 PLANNING OF PRODUCT REALISATION

You shall plan and develop a Quality Management System necessary for product realization. Such system shall comply with the general requirements of the Clause 4.1.

The quality system documents shall describe the method for preparing PROJECT QUALITY PLANS and associated quality procedures to meet project-specific requirements.

7.2 CUSTOMER-RELATED PROCESSES

The Quality Management System shall include a procedure to address Principal's requirements, Review of Principal's requirements and communications with Principal.

7.3 DESIGN AND DEVELOPMENT

Ensure that design is undertaken, reviewed, validated and authorised by suitably experienced and competent personnel in the following circumstances, as relevant:

(a) temporary structures and the checking of permanent structures for construction loadings;

(b) lifting devices for manufactured items;

(c) any alternative permanent structure or structural component proposed by you;

(d) concrete mixes for structures and pavements

(e) asphalt mixes for permanent works;

(f) traffic control, temporary roadways and detours; and

(f) permanent works where design is nominated in the Contract.

7.4 PURCHASING

7.4.1 Purchasing Process

Document a system procedure describing a method to systematically plan and implement surveillance and inspection of subcontractors' work

Document in the PROJECT QUALITY PLAN how the subcontract requirements identified in Annexure Q/F will be included in sub contracts whenever they apply.

Where a supplier or Contractor is to carry out work or provide Services that require process validation (refer Clause 7.5.2), evaluate the supplier or subcontractor on their capability to perform process validation. Document the method and results of this evaluation in the PROJECT QUALITY PLAN.

7.4.2 Purchasing Information

Address the requirements identified in Annexure Q/F in subcontracts whenever they apply.

The quality management system requirements detailed in this specification apply to all subcontracted products and Services procured as part of the Work Under the Contract. This includes work process control documents and inspection/testing documents required by Clauses 7.5.1 and 8.1.1. Include these documents in the PROJECT QUALITY PLAN. When planning surveillance of subcontractors, review the documents submitted by each subcontractor to ensure that all process control and inspection/testing requirements from the Specifications are adequately addressed.

Where any subcontractor is required to have RTA Prequalification or Registration, the subcontractor must use its quality management system that must conform to the quality management system requirements of the specified RTA Prequalification or Registration Category.

When a copy of a Subcontract is provided in accordance with the General Conditions of Contract, include associated reference data (except price) and the applicable subcontract

requirements listed in Annexure Q/F. When requested by the Principal, also submit the evaluation of the subcontractor's ability to meet subcontract requirements.

7.4.3 Verification of Purchased Product

Include in the PROJECT QUALITY PLAN the subcontractors' PROJECT QUALITY PLAN or process control documentation used to control processes and to verify purchased product.

Plan the extent of surveillance to be exercised for each subcontractor including management of information and records generated by subcontractors. When planning this surveillance, review the documents submitted by each subcontractor to ensure that all process control and inspection/testing requirements from the Specifications are adequately addressed. The surveillance process must include how nominated HOLD POINTS will be released and other activities to verify that the subcontractor's output complies with the Principal's quality requirements.

Include in the PROJECT QUALITY PLAN the methods of surveillance that will be implemented for subcontracted work .

7.4.4 Use of Purchased Products

Ensure that purchased products are compatible with the other products and works and are handled, stored, combined with other products, installed and used in accordance with the manufacturer's recommendations.

7.5 PRODUCTION AND SERVICE PROVISION

7.5.1 Control of Production and Service Provision

The quality management system procedures shall include process control procedures describing how to plan, document, implement and monitor the controlled conditions for each work process. . Refer to Annexure Q/D3 for more details regarding the activities covered under this contract. Consider the following (as appropriate) when planning work process controls:

(a) sequence of operations;

(b) types of equipment required, capability, maintenance, calibration;

(c) any special working environment aspects;

(d) competency and skills of personnel;

(e) work methods and materials to be used;

(f) product characteristics, tolerances and workmanship standards to be met;

(g) inspection, test and control points;

(h) how the process will be monitored to ensure its continuing suitability;

(i) records to be kept as evidence that the work process controls remain effective; and

(j) defining responsibility for implementing and monitoring work process controls and rectifying any deficiencies.

Include the work process control documents in the PROJECT QUALITY PLAN (refer Clause 4.2.2.3).

Treat and carry out construction survey as a separate application of work process control in accordance with RTA G71 – Construction Surveys.

7.5.2 Validation of Processes for Production and Service Provision

Identify in the PROJECT QUALITY PLAN any work processes (including subcontracted work) where the resulting output cannot be verified by subsequent monitoring and measurement. In such cases, control of work processes must be documented and implemented. Such documents shall define criteria for approval processes for equipment, qualification of personnel, use of specific methods and requirements for record keeping.

The nature of the work under the ***RMCC*** entails a hierarchy of verification processes ranging from, full inspection & test plans, simple forms for small jobs (refer Clause 4.2.2.5) to visual inspections.

7.5.3 Identification and Traceability

Document in the PROJECT QUALITY PLAN how identification and traceability will be dealt with, in order to identify the product status with respect to monitoring and measurement requirements.

Subdivide Work Under the Contract into lots or discrete work areas and control work in accordance with Annexure Q/L. Document in the PROJECT QUALITY PLAN the method(s) for subdividing the work into lots or discrete work areas and for allocating lot numbers (refer Annexure Q/L Clause L1) to uniquely identify each lot.

In cases where, location or geometric positioning is not appropriate for lot identification to assess quality performance, Work Order for individual tasks can be used as a lot identifier. (refer Annexure Q/L1.2)

The Principal has the right to reject a lot that is visually non-homogeneous and/or non-representative.

Identify all samples and test results with the field locations and lot number, as applicable, to which they relate.

Maintain a register that identifies every work lot established for the Contract.

Describe in the PROJECT QUALITY PLAN how traceability of the materials specified in Annexure Q/G will be maintained.

7.5.4 Customer Property

Take is responsibility for safekeeping any materials or equipment supplied by the Principal for work under the Contract.

7.5.5 Preservation of Product

Employ methods of transport, handling and storage on site to prevent damage, deterioration or inappropriate use of materials and products used in the ***Services***.

7.6 CONTROL OF MONITORING AND MEASURING DEVICES

Ensure that measuring and test equipment used to set out, construct or check the Work Under the Contract is maintained in calibration and good working order.

8 MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 GENERAL

In demonstrating conformity of the product to specified requirements, carry out inspection and testing:

(a) before supplied product is used in the ***Services*** (receiving inspection and testing);

(b) progressively during construction of the ***Services*** (in-process inspection and testing); and

(c) as a final check that all inspection and testing necessary to demonstrate conformity of the ***Services*** to specified requirements has been carried out (final or acceptance inspection and testing).

8.1.1 Inspection and Test Planning

Prepare template Inspection and Test Plans (ITPs) and ITP forms.

Document ITPs and ITP forms for all inspection and testing required by the Specifications. Include these documents in the PROJECT QUALITY PLAN (refer Clause 4.2.2.3).

The ITPs and/or ITP forms must indicate:

(a) who performs the receiving, in-process and final inspections or testing and at what stage of the work;

(b) how the inspection or test is to be carried out and recorded (e.g. as a documented testing procedure or by reference to a Standard test method);

(c) the acceptance criteria and frequency of inspection and testing. The detail for the acceptance criteria and frequency of inspection and testing and must replicate the nominated requirements of the Specifications. Reference to a specification clause alone is unacceptable;

(d) who reviews inspection/test results, evaluates whether work conforms, determines what to do next if work does not pass a required inspection or test and closes out work lots;

(e) when statistical analysis of test results is required (refer Clause 8.2.4);

(f) when nonconformity control is addressed (refer Clause 8.2.4.2) including closing out work lots (refer Clause 8.2.4.3);

(g) who performs final review of all inspection/test results to confirm that all inspections and tests have been carried out to completely verify conformity for each lot;

(h) the time limits for testing, time constraints for submission, and Hold and Witness Points that are nominated in the Specifications; and

(i) the requirements of Clause 7.5.3 for Identification and Traceability and the sampling methods as required by Annexure Q/L,

8.1.2 Frequency of Testing

The frequency of testing must be appropriate to verify conformity and must not be less than that stated in the Specifications. Nominate appropriate frequencies even where no minimum frequency of inspection or testing is stated in the relevant Specification.

Include in the management review of the PROJECT QUALITY PLAN a review of the appropriateness of the frequency of testing nominated in the Inspection and Test Plan(s). Take into account the frequency of nonconformity detected, including nonconformities remedied by simple reworking.

The Principal may conditionally agree to your proposal to reduce the specified minimum frequency of testing by up to 50% or as defined in the relevant Specification. The proposal must be supported by a statistical analysis verifying consistent process capability and product characteristics.

The specified minimum frequency of testing must be restored when nonconformity is detected and until the Principal agrees to a new proposal by you to reduce the specified minimum frequency. The Principal may vary or restore the specified minimum frequency of testing, either selectively or permanently, at any time.

8.1.3 Inspection and Test Status

Describe in the PROJECT QUALITY PLAN, the method to be used for identifying and controlling the inspection and test status of all product and Work Under the Contract, including product and work which is incorporated in the ***Services*** ~~Works~~ prior to being verified as conforming.

If inspection/test records (such as a lot register) do not clearly show the inspection and test status of each lot or work area, lots must be physical marked in the field to show whether they conform.

8.2 MONITORING AND MEASUREMENT

8.2.1 Customer Satisfaction

Describe in the PROJECT QUALITY PLAN, if specified in Annexure Q/A, the methods to be used to assess customer satisfaction during the project. Refer to Clause 8.5.2.

8.2.2 Internal Audit

The contract requires conducting internal audits at planned intervals to determine the compliance of the quality management system to the planned arrangements and to asses the effectiveness of its implementation and maintenance.

8.2.3 Monitoring and Measurement of Processes

Review each work process control and the associated documents and inspections and tests while that work process is in progress to monitor whether the planned controls are effective in achieving product conformity.

8.2.4 Monitoring and Measurement of Product

Implement the Inspection and Test Plans for the project, as established in Clause 8.1.1.

Where acceptance characteristics are described in the Specifications in terms of characteristic values, apply statistical techniques to analyse test results in accordance with Annexure Q/L Clause L3 (refer Clause 8.1.1(e)).

Document and maintain a method to confirm that all products or work lots requiring inspection and/or testing are so inspected and/or tested (refer Clause 7.5.3) at the required testing frequency. Include this method in the PROJECT QUALITY PLAN or ITP documentation.

Arrange sampling and testing to be performed in accordance with Annexure Q/L.

8.2.4.1 Hold Points

Describe in the PROJECT QUALITY PLAN the method of arranging for the release of HOLD POINTS by the Principal ***and you (on behalf of the Principal in accordance with the following paragraph)***.

Do not proceed beyond a HOLD POINT until the ***Principal*** has released that HOLD POINT. Make suitable arrangements to notify the ***Principal*** when a HOLD POINT will be reached. ***Where you have submitted a written request for a HOLD POINT release within the required notice period, but the notice has expired and advice of the HOLD POINT release/with-hold has not been received, you may release the Hold Point on behalf of the Principal after notifying the Principal to this effect.***

8.2.4.2 Inspection and Test Records

The inspection, test and verification records for each lot or work area (refer Clause 7.5.3) must:

(a) clearly show or reference the actual results obtained for any inspection and/or test and demonstrate conformity with the specified requirements;

(b) be progressively maintained as results are achieved; and

(c) indicate that control of nonconformity is addressed.

Make inspection, test and verification records available for evaluation by the Principal. Inspection and test records which are to be held on site, (refer Annexure Q/A), must be stored in a room reasonably accessible to the Principal with facilities for the inspection of the records. Access must not be limited by your other management activities.

8.2.4.3 Close-out of Work Lots and Release of Products

Work lots must not be closed out nor product released, dispatched, used or installed until you have fully verified their conformity and incorporated the required inspection and/or test results/reports, including the documentation referred to in Clause L2.2, into your records.

Work lots and products must not be covered up until their conformity has been fully verified, except as permitted below in this Clause.

The Principal recognises that some specified compliance testing might take over 48 hours to complete. In such circumstances, work lots/products may be covered up before lot close-out, subject to the following conditions:

(a) you document an effective traceability/closure method in the PROJECT QUALITY PLAN that nominates the person or position responsible and describes how work or product that may need to be covered up will be identified, traced, recorded and promptly verified and what action will be taken if full conformity is not achieved;

(b) you apply the traceability method on each occasion that a work lot or product is covered up under such circumstances;

(c) any specified verification survey has demonstrated conformity before covering up the work;

(d) you demonstrate on the basis of past work that it is highly unlikely that the work will fail to pass the specified compliance testing; and

(e) you apply the closure method and only close out the work lot after verifying that the work or product has passed the specified compliance testing.

Where product or work fails to pass any inspection and/or test, the work lot must not be closed out until the nonconformity has been rectified and closed out in accordance with Clause 8.3.

8.3 CONTROL OF NONCONFORMING PRODUCT

Prepare a standard form for use as a Nonconformity Report.

Describe in the PROJECT QUALITY PLAN how the additional requirements of Clause 8.3 will be implemented for the Contract.

Identify and control all products or Services that fail to pass any inspection or test in accordance with the defined acceptance criteria. Where conformity may be achieved by simple reworking or repair (that is, without reference to the Principal), record the required action in a format to suit your continual improvement procedures (refer Clause 8.5).

Where conformity cannot be achieved by simply reworking with the original process, notify the Principal of the nonconformity and record it on an appropriate register. Products that may be or are accepted with specified or predetermined deductions for nonconformities.

Submit a Nonconformity Report within 2 ***Business days*** of detection of the nonconformity indicating the proposed rectification method, the calculations of any specified deductions, and when the rectification is to be undertaken.

If surveillance or an audit by the Principal indicates a nonconforming product that has not been addressed by a Nonconformity Report, the Principal will issue a 'Nonconforming Product Notification'. This nonconforming product must be dealt with in the same manner as if you had identified it.

A nonconforming product must not be covered up nor be further built in unless a rectification method has been accepted by the Principal and implemented by you.

If the Principal or a Surveillance Officer finds any work in progress poses conditions adverse to quality, safety or environment, the Principal may decide to stop work until the situation is rectified.

HOLD POINT	(Where required by the Principal)
Process Held.	Covering up of rectified work.
Submission Details.	Notification and verification rectified work conforms to accepted rectification method and specifications.
Release of Hold Point.	The Principal will consider the submitted documents and may inspect the rectified work prior to authorising the release of the Hold Point.

8.4 ANALYSIS OF DATA

Not mandatory.

8.5 IMPROVEMENT

8.5.1 Continual Improvement

Implement continual improvement in accordance with Clause 4.2.2.4.

8.5.2 Corrective Action

Establish and maintain a Corrective Action Register to record a summary of corrective actions or list those records that demonstrate corrective actions.

If surveillance or an audit by the Principal indicates that the Quality Management System does not comply with the provisions of the Contract or that a condition adverse to quality exists, the Principal may issue a 'Corrective Action Request'.

Rectify any nonconformity or condition adverse to quality notified by the Principal. Take corrective/preventive action to prevent recurrence of the nonconformity or remove the condition adverse to quality and return the completed Corrective Action Request, all within seven days after the Corrective Action Request is given to you.

Address the Corrective Action Request in accordance with your arrangements for handling customer complaints. Your arrangements shall determine and implement effective measures to communicate with customers with respect to product information and other relevant enquiries.

HOLD POINT	(Where required by the Principal)
Process Held.	The Process referred to in the Corrective Action Request.
Submission Details.	Details of the corrective action.
Release of Hold Point.	The Principal will consider the submitted documents prior to authorising the release of the Hold Point.

Enter details of the developed corrective action onto the Nonconformity Report or Corrective Action records, as appropriate.

8.5.3 Preventive Action

The causes of potential nonconformities needs to be identified and eliminated in order to prevent their recurrence.

9 PRINCIPAL'S SURVEILLANCE AND AUDITS

9.1 GENERAL

All testing by the Principal associated with surveillance and audits will be conducted by a laboratory with NATA accreditation for the test methods specified. The results of such testing will be recorded on NATA endorsed test reports. If NATA has not accredited a laboratory for a test, the test must be carried out at a laboratory approved by the Principal.

9.2 QUALITY MANAGEMENT SYSTEM, PROCESS QUALITY AND PRODUCT QUALITY AUDITS AND SURVEILLANCE

Quality management system audits by the Principal may be conducted on a scheduled basis on all aspects of the Quality Management System and will be performed in accordance with recognised quality audit procedures.

The Principal will give you at least five days notice that a quality management system audit is to be conducted.

Surveillance, process quality audits and product quality audits by the Principal may be conducted at any time.

If surveillance or an audit indicates a significant nonconformity of a product or service, the Principal is entitled to conduct a quality management system audit at twenty four hours notice to you.

Make suitable facilities available at the site to accommodate an audit team of three persons. The cost of providing such facilities is to be borne by you.

9.3 VALIDATION OF PRINCIPAL'S DESIGN

Provide records, access to the ***Services*** and assistance for surveillance and audits conducted by the Principal to allow the Principal to carry out validation of Principal supplied designs.

The Principal will give you at least five days notice in writing of when an audit by the Principal for design validation will be carried out. The notice will nominate the design to be validated, the names of persons authorised to conduct the audit for design validation and the inspections and tests to be carried out by the auditors.

ANNEXURE Q/A – DETAILS OF WORK

A1 PROJECT SPECIFIC REQUIREMENTS

Clause	Description	Requirement
Annexure Q/C Clause C2	Site records more than 35 days old must be stored on site:	Yes/No

Project Testing also applies to the following tests: (Annexure Q/L Clause L2.2.1)	

A2 DOCUMENT SUBMISSION REQUIREMENTS

Documents and records must be submitted in accordance with this matrix. Refer to the Specifications for full details of submission requirements.

Table Q/A.1 - Document and Record Submission Matrix

Document	Number of copies to be submitted				
	Development Stage	Other Stages	During Contract		
	5 days prior to commencement date(#)	10 days prior to use	For review on request	end of Contract *Term*	During audits
PROJECT QUALITY PLAN	2				1
Quality Manual and/or applicable quality management system procedures	1*	1			1*
Process control procedures	2	2			1
Inspection and test plans and record forms	2	2			1
Quality records			1+	1+	1+
Index of quality records				1**	

Legend:

\# Also required within 35 days of acceptance of tender ***and as a precondition to commencement of the Contract Term***

\+ Copy must be provided for Principal's records as specified or as directed

* where these documents contain additional information that is relevant for work under the Contract but not already contained in the PROJECT QUALITY PLAN

** Prior to Completion (Clause. E1.4.1)

ANNEXURE Q/B – MEASUREMENT AND PAYMENT

The costs of testing by the Principal associated with audits or design validation will be borne by the Principal. The costs for all other activities associated with the planning, establishment, implementation and maintenance of the Quality Management System for this Contract including the costs of all investigation, testing, rectification and recording, as detailed in this Specification, must be included in the rates or prices generally in the Contract ***(except as stated in Clause 4.2.5)***.

ANNEXURE Q/C - SCHEDULE OF HOLD POINTS AND IDENTIFIED RECORDS

C1 SCHEDULE OF HOLD POINTS

Clause	Description
8.3	# Covering up of ***nonconforming*** work ***rectified by Contractor***
8.5.2	# The Process referred to in the Corrective Action Request
	Note # The imposition of a Hold Point is at the direction of the Principal.

C2 SCHEDULE OF QUALITY RECORDS AND IDENTIFIED RECORDS

The originals or copies of following Quality Records must be at the following locations, unless otherwise agreed by the Principal, until the end of Contract Term and completion of any outstanding Work Order at that time.

Records located with the Principal (indicated by "R" in the table) are Identified Records for the purposes of Annexure Q/E. The records more than 35 days old may be stored at a location off the Network, but must be available on site within 24 hours of notice given by the Principal.

Clause	System Requirement	Required Record or Reference	Location
4.2.2	Quality Management System documents	Project Quality Plan, Quality Manual and quality management system procedures when applicable	R
4.2.3	Control of documents	List of who holds issued documents Register of current document issue/revisions	P P
7.2.2	Review of requirement	Minutes of tender/Contract reviews	M
7.3	Design control	Design records	D & P
7.4	Purchasing	Evaluation of subcontractors and suppliers Surveillance, audit of subcontractors Subcontractor supplied documentation Certificate of testing by suppliers	P P P P
7.5.1	Control of production and service provision	Procedures describing how to control work processes Records demonstrating effectiveness of work process controls Records of process validation when applicable	P & R P P
7.5.3	Identification and traceability	Product batch/traceability records Lot Identification Register	P P
7.6	Control of monitoring and measuring devices	Calibration certificates	P
8.1.1	Inspection and test planning	Inspection and test plans	P & R
8.2.4.3	Inspection and test records	Records/checklists of inspection and testing Conformity reports for each completed lot	P P
8.3	Control of nonconforming product	Nonconformity reports Principal’s Nonconforming Product Notifications Nonconformity Register	R R P
8.5.2	Corrective action	Corrective action reports and Register Principal’s Corrective Action Requests	P R

Legend of Document Location: D = Office of designer; R = Principal; M = Office of Management Representative with executive responsibility; P = Principal place where the document is used.

ANNEXURE Q/D - PLANNING DOCUMENTS

D1 COVERAGE OF PROJECT QUALITY PLAN

The PROJECT QUALITY PLAN and its references must, as a minimum, include the following, when applicable.

Table Q/D.1 - PROJECT QUALITY PLAN

Clause	Required Planning Document or Reference
4.2.2.2	RTA specific procedures when they are not incorporated into the corporate system procedures
4.2.2.2	Description of applicable corporate quality management system procedures.
4.2.4	Description of how quality records will be stored and maintained
5.5.1	List of main responsibilities and authorities of personnel primarily responsible for quality assurance activities on this Contract
7.4.1	Describe how Annexure Q/F requirements will be included in subcontracts (when applicable)
7.4.1	Document method and results of subcontractor evaluation for work processes that require process validation (when applicable)
7.4.2	Subcontractor's Project Quality Plan or process control documentation for each subcontract
7.4.3	Method of surveillance for subcontracted work
7.5.1	Work process control documents
7.5.2	Identification of work processes where the resulting output cannot be verified by subsequent monitoring and measurement
7.5.3	Dealing with identification and traceability
7.5.3	Method of maintaining traceability for materials listed on Annexure Q/G
7.5.3	Methods for subdividing the work into lots and allocating lot numbers
8.1.1	Inspection and Test Plans, ITP Record Forms for all inspection and testing required by the Specifications
8.1.3	Method for identifying and controlling inspection and test status
8.2.4	Method for verifying that all inspection and/or testing is carried out at the required testing frequency
8.2.4.1	Method for release of Hold Points
8.2.4.3	Traceability/closure method for close-out of work lots

NOTE: Where the above documents are liable to change, they may be referenced in the PROJECT QUALITY PLAN and attached as an annexure to expedite their revision.

D2 RTA MODEL MANAGEMENT PLANS

RTA has a set of model management plans for RMCC Contracts as listed below. This includes a PROJECT QUALITY PLAN with the Contract Management Plan being the overarching document.

RTA encourages YOU to use these documents as it promotes consistency across all RMCC contracts. However, use of these documents is not mandatory.

1. Contract Management Plan
2. Quality Management Plan
3. OH&S Management Plan
4. Environmental Management Plan
5. Traffic Management Plan
6. Records Management Plan
7. Emergency Management Plan
8. Incident Management Plan
9. Risk Management Plan
10. Community Relations Management Plan
11. Communications Plan
12. Industrial Relations Management Plan
13. Financial & Accomplishment Reporting Management Plan;
14. Operating Asset Management Plan
15. Stockpile Management Plan
16. Vacant Property Management Plan
17. Landscape Management Plan
18. Compliance Monitoring Management Plan

D3 ACTIVITIES TO BE COVERED BY PROCESS CONTROL PROCEDURES

A list of typical activities to be covered under the process control procedures (refer Clause 7.5.1) is provided below. However, this is not a complete list. You should refer to 'Annexure A' of the Specification M1 (General Network Management Requirements) for the complete list of Maintenance Activities relevant to this Contract.

Process control procedures for ***Routine Services*** are mandatory while the other activities carried out under *Work Orders* could vary depending on the requirements of the particular road network. The final list should be agreed in consultation with the Principal.

Table Q/D.3 - LIST OF TYPICAL MAINTENANCE ACTIVITIES TO BE COVERED BY PROCESS CONTROL PROCEDURES

No	Activity	Required Y/N
1	Asset Inspections	
2	Routine Pavement Repairs (pot hole, edge repair, shape correction)	
3	Crack Sealing	
4	Unsealed Pavement (formation grading, resheeting etc)	
5	Heavy Patching	
7	Concrete Slab Repairs	
8	Bitumen Resurfacing	
9	Bitumen retexturing (High pressure water Blasting)	
10	Asphalt Resurfacing	
11	Pavement rebuilding	
12	Vegetation Control	
13	Incident Response	
14	Rest Areas	
15	Surface Drains	
16	Guide Posts	
17	Road Markings	
18	Signs Maintenance	
19	Slope and Retaining Walls maintenance	
20	Winter maintenance (snow clearing)	

D4 PROJECT QUALITY PLAN FOR SMALL JOBS

Preparation of comprehensive PROJECT QUALITY PLANS for some small jobs is time consuming. In such cases a simple Form (refer Clause 4.2.2.5) similar to the sample shown below is to be adopted. This is to be used as the PQP as well as the ITP and the verification record.

The type of small jobs, in this case, should be selected in consultation with the Principal depending on the value and risk aspects of the work involved.

Project Quality Plan for Small Jobs

Work Order		
Project Description		
Scope of Work (Brief outline of all work to be done)		
Applicable Management Plans (Tick as applicable)	Project Specific Plan – Maintenance North Site Specific Traffic Management Plan Site Specific VMP	Plans for Ordered Works Heavy Patching Slab Replacement Guardrail Bitumen resealing Asphalt resurfacing Drainage works Rehab Project Landscaping
Project Specific Plans or Procedures		
Project Specific Design Plans or Instructions		
Project Specific Risks and Issues (to be dealt with at initial tool box meeting)	OH&S and Traffic	Environmental
Materials and Services to be supplied (*Approval required)	Product/Service	Supplier
Responsibility for Project/Quality Management Plans	Council Contractor/Supplier	If Contractor/Supplier Council has reviewed Contractors Documents and they fulfil RMCC requirements. Signed……
Responsible Personnel	Project Supervisor …… Ph: ……	Site Rep. …… Ph: ……
Start Date	……	Completion Time: ……
Prepared By	…… Ph: ……	Date ……
Comments (if any)	(Comment on Quality aspects such as; Site induction/training, Measuring and testing, Survey control, Materials and Traceability)	

ANNEXURE Q/E – RECORD KEEPING AND IDENTIFIED RECORDS

Refer to Clauses 1.2.5 and 4.2.4.

E1 RECORD KEEPING

E1.1 General

The work to be executed under Clauses E1 and E2 consists of:

(a) Development and implementation of a RECORDS MANAGEMENT PLAN (RMP);

(b) Operation, maintenance and review of the RMP during the work under the Contract and thereafter as required by Q4M; and

(c) Secure storage of project records and delivery of Identified Records.

E1.2 Record Keeping Definitions

The definitions in ISO 15489.1 apply to Q4M. In addition the following definitions are applicable:

Project Record. Any record generated to document the execution of the project but does not include records which are commercial in confidence or relate to staff confidential matters.

Quality Record. A record used to demonstrate conformity to specified requirements and effective operation under the AS/NZS ISO 9000 series or required by Q4M.

Identified Record. Any project record that is named as an Identified Record in the Contract.

E1.3 Contractor's Records Management Plan (RMP)

E1.3.1 Scope of RMP

Include procedures for the following in the RMP:

(a) systematic control of the creation, registration, indexing, filing, maintenance, storage, movement, retrieval and disposal of project records related to the Contract;

(b) providing to the Principal the information required under the Contract;

(c) submission and delivery of Identified Records as specified;

(d) disaster management (recovery plan) in accordance with Clause E1.3.5; and

(e) providing a list of Identified Records relevant to the Contract which must be progressively handed over to the RTA.

Include an index of project records in the RMP that is consistent with the records management system. Keep the index up-to-date during the period of the Contract and provide the index to the Principal whenever the index is revised.

Include a list of Identified Records relevant to the Contract in the RMP.

E1.3.2 Record Keeping Policy

Establish a record keeping policy as part of the RMP. The record keeping policy must define the record keeping objectives of the project. Introduce the policy to all appropriate personnel working on the project including Subcontractors.

E1.3.3 Project Management

Nominate in the RMP a full time member of your site management team to be the authorised contact person for communications with the Principal on record keeping matters. Detail their responsibilities in the RMP.

E1.3.4 Monitoring and Compliance

If the period of the Contract exceeds six months, the RMP must establish the requirements for review of the RMP.

Undertake compliance audits of the RMP at intervals of not more than six months.

E1.3.5 Disaster Management Plan [1]

Develop a disaster management plan that provides a set of clear, comprehensive, written, step-by-step instructions to ensure the minimum of loss and disruption of services in the event of an emergency or disaster.

E1.4 Project Records: Basic Record Keeping Requirements

E1.4.1 General

Project records include but are not limited to the following:

(a) Quality Records as shown in Clause C2;

(b) Records of Environmental Activities in accordance with RTA G35 or G36, Clause 4.6;

(c) Records related to Occupational Health, Safety and Rehabilitation activities in accordance with RTA G21 or RTA G22;

(d) Construction Programs, as specified in the General Conditions;

(e) Identified Records that are a sub-set of the project records – see Clause E2.

Make all project records available to the Principal at all reasonable times.

By Completion, provide the up-to-date index of all project records to the Principal. Following the provision of that index, provide copies of any project records within fourteen days of a request by the Principal.

[1] Adapted from Appendix B of AS 4390.6 – 1996 (superseded)

E1.4.2 Form of Records

Keep records as paper files or in electronic form in accordance with Clause 9 of ISO 15489.1 and Clause 4 of ISO 15489.2 unless otherwise provided in the Contract or agreed with the Principal.

E1.4.3 Storage

Store and maintain project records or copies thereof such that they are readily retrievable, in facilities that provide a suitable environment to minimise deterioration or damage, and to prevent loss.

E1.4.4 Retention Period

Keep all project records for a minimum period of five years after Completion. This requirement continues to apply even though the records or copies of the records may have given to the Principal may have taken copies of the records.

E1.4.5 Disposal of Records

The records must be pulped, shredded or burned in industrial facilities when disposing of records after the expiration of the retention period. Dumping of project records is not permitted.

E1.5 Additional Record Keeping Information

The RTA Information and Records Management Manual is available on request for perusal at the office of the Principal.

E2 IDENTIFIED RECORDS

E2.1 General

Deliver Identified Records to the Principal in accordance with Clauses E1 and E2.

Each RTA Specification includes as an Annexure a list of Identified Records applicable to that Specification. Compile a list of all Identified Records for all RTA Specifications included in the Contract and include the list in the RMP.

E2.2 Form of Identified Records

Unless otherwise provided in the Contract or agreed with the Principal, all Identified Records must be delivered to the Principal in hard copy on paper size A3 or A4 in good quality file housing/covering except that work-as-executed drawings must be on paper size A2. The paper must be premium bond paper and the use of thermal paper is not acceptable.

With the agreement of the Principal, Identified Records may be provided in electronic form as specified by the Principal.

E2.3 Filing and Indexing

File Identified Records as required to be prepared by the relevant RTA Specification. They must be uniquely numbered and filed in chronological order under the heading of the relevant RTA Specification. Include an index for quick reference.

E2.4 Delivery

Deliver Identified Records to the Principal progressively during the course of the Contract at the times specified in the Contract or, if not so specified, at such times or within such periods as may be agreed with the Principal.

E2.5 Records to be Kept by the Contractor

Notwithstanding that project records and Identified Records have been delivered to the Principal or the Principal has taken copies of project records or Identified Records, retain the originals of those records or, where originals are not held by you, good quality copies of the records, for the period specified in Clause E1.4.4.

ANNEXURE Q/F – SUBCONTRACT REQUIREMENTS

Subcontracts provided to the Principal ***under this Specification*** (refer to Clause 7.4.2) must include the following, as applicable.

Subcontract Requirements
(i) quality management system requirements which must be addressed by the subcontractor's quality management system;
(ii) method to be used for identifying purchased products (where required by Specifications);
(iii) verification requirements to be carried out by the subcontractor;
(iv) points in the subcontractor's Inspection and Test Plan(s) where you will verify conformity to Contract requirements;
(v) Hold Points and Witness Points to be observed by the subcontractor;
(vi) requirements for Principal's approval of the disposition of nonconformities;
(vii) requirements for the submission, retention and disposal of documentation, quality records and Identified Records;
(viii) identification and traceability requirements for work lots and product, as specified in Clause 7.5.3;
(ix) any specific requirements with regard to process control activities;
(x) requirements for the submission of inspection and test plans, procedures and record forms as specified by the Contract;
(xi) requirements for calibration of subcontractor’s measuring and test equipment;
(xii) for subcontract surveying Services, requirements to comply with RTA G71;
(xiii) For subcontract sampling/testing Services, requirements to comply with Annexure Q/L.;
(xiv) right of the Principal to monitor, audit, inspect, test and sample subcontractor’s management systems and plans, products, designs and activities and to inspect and copy records and report on the subcontractor’s performance;
(xv) security of payment clauses of the General Conditions where the subcontract exceeds $25,000; and
(xvi) requirements for warranties in the name of the Principal.

ANNEXURE Q/G - PRODUCT TRACEABILITY

Refer to Clause 7.5.3 – Apply traceability to the following products:

Specification	Product	Requirement
	Concrete batches used in bridge components, cast-in-place box culverts and retaining walls.	The trace must start at the batch plant and finish at the location where the material is incorporated in the ***works undertaken by the Contractor as part of Ordered*** Works. Records must be kept of the batch quantities and time, testing details and location of placement.
	Concrete batches used in road pavement sub-base and base.	The trace must start at the batch plant and finish at the location where the material is incorporated in the ***works undertaken by the Contractor as part of Ordered*** Works. Records must be kept of the batch quantities and time, testing details and location of placement.
	Stabilised material used in road pavement.	The trace must start at the batch plant and finish at the location where the material is incorporated in the ***works undertaken by the Contractor as part of Ordered s*** Works. Records must be kept of the batch quantities and time, testing details and location of placement.
	Asphalt used in wearing courses, intermediate courses and drainage layers.	The trace must start at the batch plant and finish at the location where the material is incorporated in the ***works undertaken by the Contractor as part of Ordered*** Works. Records must be kept of the batch quantities and time, testing details and location of placement.
	Steel plate in bridge girders and bridge columns.	The trace must start at the steelworks and finish at the location of the plate in the girder or column. Records must be kept of the steel heat number, testing details and location of the plate in the girder or column.

ANNEXURES Q/H TO Q/J - (RESERVED)

ANNEXURE Q/K –SURVEY PROCEDURES

The requirements of Annexure Q/K are not applicable in any way to Routine Services.

Refer to Clause 7.5.1. Carry out construction survey in accordance with RTA G71.

ANNEXURE Q/L - TESTING PROCEDURES

This Annexure provides details on the content of sampling and testing procedures to be included in the PROJECT QUALITY PLAN, when applicable.

L1 IDENTIFICATION OF WORK LOTS

L1.1 Routine Services

For Routine Services, a lot consists, for each of the Contractor's crews, all Work Areas where a Routine Service was carried out during one day.

Each lot must be identified by the maintenance crew and date work undertaken as recorded on the Daily Work Record). Lots do not need to be separately numbered nor do they need to be recorded in a lot register.

L1.2 Ordered Work

For Ordered Work, unless otherwise specified by the Principal, the following lot identification requirement applies:

Refer to Clause 7.5.3.

L1.2.1 Lot identification for larger projects or *Work Orders*

Larger projects (i.e. resurfacing, reconstruction) where work is carried out over larger areas, geometric subdivision is carried out to assess quality performance.

Work Under the Contract must be subdivided into lots or discrete work areas. A lot must consist of a continuous portion of homogeneous and/or representative material or

end product produced under essentially constant conditions. Discrete portions of a lot that are visually non-homogeneous and/or non-representative must be excluded from the lot and must be either treated as separate lots or reworked to achieve conformity to the Specification.

The size of a lot must not exceed one day's output except that this period may be extended by agreement with the Principal where full conformity cannot be achieved in one day.

Describe in the PROJECT QUALITY PLAN how the lot is to be identified in the field.

Determine the bounds of each lot before sampling. Set the bounds of each lot so that each lot is represented by a single tested sample, except where statistical methods (which require several tested samples to represent a lot) are used. Each acceptance criterion may have different lot boundaries. Demonstrate the relationship of the boundaries of all adjacent lots to confirm that the lots represent the total work.

Give each lot a unique lot number. Use this lot number as an identifier on all quality records. The lot numbering system must be compatible with any ***Work Order*** numbering system ***adopted for the Contract*** . Record the lot number on an appropriate register that indicates the three-dimensional location of the lot. Include in the PROJECT QUALITY PLAN details of the lot numbering system and the place where the lot register is kept. Record chainages of start and finish, lateral location and layer location. When the lot number does not indicate the location of the lot, agree the method for identification of the lot with the Principal.

L1.2.2 Lot identification for smaller jobs or *Work Orders*

Relatively smaller jobs (i.e. guide post replacement) covered by a Work Order where geometric subdivision is not appropriate for lot identification for the purpose of assessing quality performance, the Work Order itself can be used as a lot identifier.

The type of Work Orders for this purpose should be selected in consultation with the Principal depending on the size and risk aspects of the work involved.

L2 TESTING SERVICES

L2.1 General

L2.1.1 National Association of Testing Authorities (NATA) Accreditation

Apply the requirements of Clause L2 to all laboratories verifying conformity of materials and work used for the Contract. Ensure all suppliers and subcontractors also use the same requirements.

If NATA has not accredited a laboratory for a test, the test must be carried out by a laboratory accredited for the test by an organisation mutually recognised by NATA and approved by the Principal

Where the Principal is satisfied that it is either impracticable or uneconomical to utilise NATA personnel or NATA accredited laboratories to undertake sampling

and testing you may propose alternatives. Details of any alternatives proposed must be included in the PROJECT QUALITY PLAN.

Ensure that any alternative personnel proposed are properly trained and have been accepted by the Principal as being competent to undertake the sampling and testing proposed.

Also ensure that any alternative laboratory proposed is properly equipped and maintained and has been accepted by the Principal as being adequate for the sampling and testing proposed.

L2.1.2 Laboratory Independence

You and the laboratories must ensure objectivity and impartiality in sampling, testing and reporting of results. The laboratories must act independently of you, any of your subcontractors and the Principal in conducting the sampling and testing. Refer AS ISO/IEC 17025 Clause 4.1.5(b).

L2.1.3 Sampling Personnel

Sampling, including selection of locations, must be conducted by personnel either accredited by NATA for that sampling procedure or who are from a NATA accredited laboratory or approved by the Principal and who have been assessed as proficient for that sampling procedure and must be supervised by an officer having NATA signatory approval for that process.

L2.1.4 Test Certificates

Test results for each lot must be reported in NATA endorsed documentation.

L2.2 Project Testing

L2.2.1 Project Laboratories

In addition to Clause L2.1, Clause L2.2 applies for all samples and tests carried out on the site, at concrete and asphalt batch plants, on aggregates and materials used for pavements and structures at off site locations and any other testing specified in Annexure Q/A to be Project Testing.

Engage one or more project testing laboratories that hold NATA accreditation at your own cost.

As a condition of appointment by you (refer Clause 7.4), laboratories, material suppliers or subcontractors who have NATA accreditation must provide to you and the Principal, on request, copies of NATA audits, relevant to the type of tests carried out for the Contract.

The same project testing laboratory responsible for testing the sample must undertake the sampling, unless otherwise approved by the Principal.

Should you propose sampling and/or testing by personnel other than from the laboratory, *OR* should a project testing laboratory need to subcontract testing then,

prior to sampling and testing commencing, submit a proposal for the Principal's approval showing the tests to be performed, by whom, their experience and the measures to ensure the integrity of the sampling and testing.

L2.2.2 Inspection and Test Plans

Provide the Project Testing laboratory with all information, including relevant parts of the Contract, specifications, Inspection and Test Plans, and ensure that laboratory performs sampling and testing in accordance with the Contract.

Project Testing laboratories that provide on-site testing services must independently review your Inspection and Test Plans (and/or subcontractors) to confirm that:

(a) all conformity tests are identified, and

(b) sampling and test methods, acceptance criteria and frequency of testing conform to the Contract and specifications.

Any discrepancies must be resolved between you and the Project Testing laboratory and amended Inspection and Test Plans issued, where appropriate. The Project Testing laboratory must supply to the Principal, for each staged submission of ITP's (submitted in accordance with Clause 4.2.5), prior to commencement of any sampling and testing, a written report describing the outcome of this review.

L2.2.3 Selection of Sampling Locations

Define lots and the Project Testing laboratory must select sampling locations in accordance with the Contract and specifications. Sampling must not be restricted to locations dimensioned or otherwise defined in the Drawings or Specification ***for setting out of any Services***, but must be undertaken in a random or unbiased manner at any location within the ***Work Site***.

L2.2.4 Test Certificates and Declarations

The test report for each lot (or sublot) must include the following details:

(a) identification of work and materials with the relevant lot number;

(b) where sampling is performed by personnel other than from the laboratory undertaking the testing,

(i) declaration from the sampler that the sampling was carried out in accordance with Annexure Q/L and the specified sampling methods. Detail all samples taken as part of the lot.

(ii) declaration (in a format acceptable to the Principal) by an officer having NATA signatory approval for the testing performed, that the test results, and statistical analysis where applicable, conform with the specified criteria. This declaration must reference your Inspection and Test Plan and the sampler's declaration.

(c) where sampling is performed by personnel from the laboratory undertaking the testing, declaration (in a format agreed by the Principal) by an officer having NATA signatory approval for the sampling and testing performed, that the sampling was carried out in accordance with Annexure Q/L and the specified sampling methods, test results, and statistical analysis (where applicable), conform with your Inspection and Test Plan. This declaration must reference and indicate the issue number or date of the Contactor's Inspection and Test Plan.

(d) Declaration that no samples have been abandoned or untested, or details of any samples that have been abandoned or untested for any reason.

L2.2.5 Availability of Sampling and Testing Records

Sampling and testing records shown in Annexure Q/F to be held on site must be stored in a room readily accessible to the Principal with facilities for inspection of the records. Access must not be limited by the Laboratory's other management activities.

The laboratory, on request, must independently provide to the Principal, concurrently with submission to you, the test certificates and declarations in Clause L2.1, including preliminary results forwarded to you.

The Principal must be given physical access to sites and personnel in conjunction with or through you. Nominate a member of the Project Testing laboratory team to be the authorised contact person for communications with the Principal in sampling and testing matters. This person must be fully conversant with the relevant parts of the specifications, specified test methods, the test carried out and testing records and must promptly provide, when requested, information on testing and access to, or copies of, testing records including worksheets to the Principal.

L2.3 Protection of Sampled Work

Samples removed from the Work under the Contract must be replaced, unless otherwise specified, with similar material placed and finished in accordance with the relevant specification requirements, within seven days of sampling and prior to the use, deterioration, contamination or covering up of the sampled work.

L3 STATISTICAL TECHNIQUES

Use statistical techniques in accordance with the following sub-Clauses where required in the Specifications. By agreement with the Principal, areas that are not generally rectangular may be notionally rearranged to suit the method of determining sampling locations in Clause L3.1.

L3.1 Sampling and Testing

The number of samples per lot (n) must be not less than:

Specified Relative Compaction (%)		Minimum Testing Frequency for Lot Area of:				
		> 5000 m²	1000-5000 m²	500-1000 m²	50-500 m²	≤ 50 m²
	≤ 90.0	1 per 3000 m²	1 per 2000 m² (min. 2)	1	1	1
> 90.0	≤ 95.0	1 per 2000 m²	1 per 1000 m² (min. 3)	1 per 250 m² (min. 3)	2	1
> 95.0	≤ 98.0	1 per 2000 m² (min. 6)	5	4	3	1
> 98.0	≤ 100.0	1 per 2000 m² (min. 6)	5	4	3	1
> 100.0		1 per 1000 m² (min. 10)	1 per 500 m² (min. 5)	4	3	1

NOTES:

1. Where the sampler/tester can assure that the work is homogeneous and has been carried out within the same day under homogeneous conditions, and:

   (a) where the minimum specified compaction is below 100.0%, work in separate areas, up to a total area of 1000 m^2, may be considered as one lot; or

   (b) where the minimum specified compaction is below 98.0%, layers may be covered before testing and may be considered as one lot, subject to the following:

Sum Total Area of layers:	< 100 m^2	101-500 m^2	501-1000 m^2
Maximum number of layers:	5	3	2
Maximum thickness of Lot:	600 mm	600 mm	600 mm
Minimum number of Tests:	1	2	3

   The tests must be evenly distributed throughout the layers and areas of the Lot.

2. Lots less than 2 m wide must not be longer than 150 m.
3. Except as stated in 1(b) above or specifically allowed by the relevant specification, the lot will only be one layer.

Sampling locations must be determined by the sampling personnel in a random or unbiased manner (refer Clause 8.2.4.1) as follows:

(a) Representing the lot as a rectangle, subdivide the lot lengthwise into equi-area sub-lots in accordance with the number of samples selected (n);

(b) Establish six equally spaced grid lines within the lot, as illustrated in Figure Q/L.1;

(c) Where the width of lot is between 0.5 m and 2.5 m, the number of grid lines may be reduced such that the distance between adjacent grid lines (equally spaced) does not exceed 400 mm;

(d) Where the lot is less than 500 mm wide, the offset locations must be randomly selected;

(e) Determine the order of sampling of the six lines by selecting a six digit number from Table Q/L.1. A starting point on the table (eg 1st number, block 6D (= 415236)) will be advised by the Principal prior to the commencement of testing. The numbers are to be

used sequentially down the Table until further notice from the Principal, starting at the point advised by the Principal, and selecting a new number for each lot tested;

(f) Where there are less than 6 grid lines in the Lot, delete from the random number selected from Table Q/L.1, the numerals that exceed the number of gridlines in the Lot (eg in the above example, where there are only 4 grid lines, the sequence is 4123);

(g) If for any reason the starting point has not been advised then it must be the first number in the block determined, by the following method, from the date on which sampling is first undertaken:

Select column:	A	B	C	D
For:	January	February	March	April
For:	May	June	July	August
For:	September	October	November	December

Day: select a row on the basis of: 1st, 11th, 21st, 31st = Row 1;
2nd, 12th, 22nd = Row 2; etc.

(h) For each block in Table Q/L.1, use the Fraction R at the right of the relevant random number. Length coordinate for sample location in sub-lot 1 = RL/n;

(i) Record the lot number on Table Q/L.1 to the right of the applicable random number and indicate the date of the sampling on the Table;

(j) For the sample location in the next sublot:

Add L/n to the previous length coordinate.

Go to the next line as indicated by the six-digit number

(eg if the number is 415236 the first line tested is 4, followed by 1, 5, 3, 2 and 6 and the sample locations are as shown in Figure Q/L.1);

(k) If the lot requires more than six sampling locations, repeat the sequence using the same Grid Line Sequence and Fraction R to provide as many additional locations as are required.

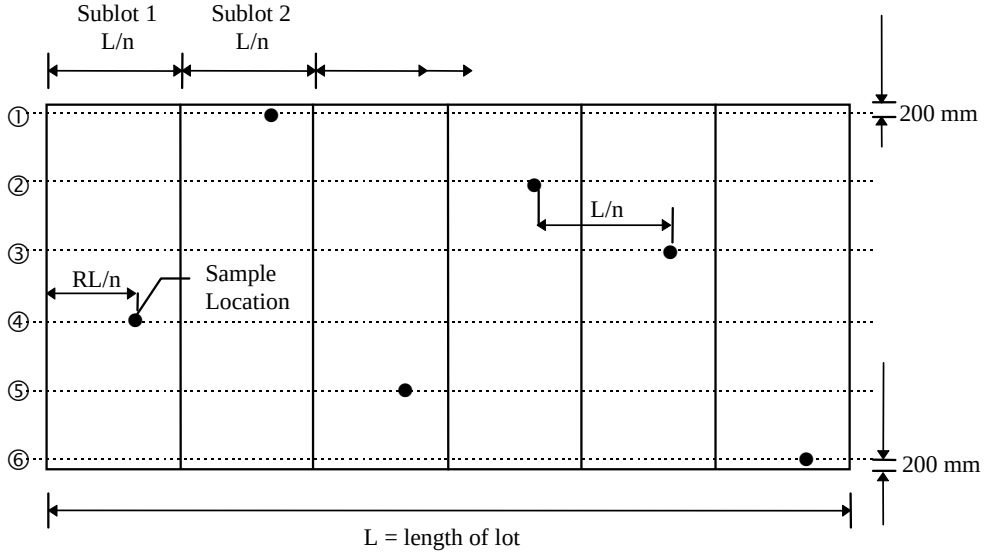

Figure Q/L.1 Sampling Locations for a Rectangular Lot

Table Q/L.1 — Random Grid Line Sequences (and Random Fraction R)

	A			B			C			D		
	Sequence	R	Lot No.	Sequence	R	Lot No.	Sequence	R	Lot No.	Sequence	R	Lot No.
1	531426	.91		245136	.01		532461	.25		425316	.17	
	634125	.15		641532	.46		431652	.95		613254	.38	
	165243	.96		265413	.29		124563	.76		352641	.32	
	452613	.61		236541	.49		324651	.84		546123	.30	
2	612345	.14		625413	.76		514236	.68		364251	.07	
	246135	.72		145632	.76		643215	.45		621534	.85	
	316245	.86		516342	.21		546312	.50		156243	.03	
	253416	.01		615243	.04		526413	.29		514326	.63	
3	342615	.95		162543	.70		263541	.69		145236	.63	
	352146	.85		624315	.43		435612	.01		412536	.97	
	245613	.38		526314	.02		356412	.23		614253	.01	
	451623	.08		631245	.13		163425	.07		652143	.11	
4	135624	.49		213465	.97		356142	.29		163254	.77	
	621354	.45		536214	.36		325461	.88		342165	.37	
	613425	.34		425136	.78		125463	.91		564231	.45	
	456321	.35		514623	.75		436251	.61		326451	.67	
5	245631	.44		214563	.43		124356	.45		325164	.83	
	516234	.52		425631	.23		536412	.64		246153	.08	
	462513	.83		645213	.86		653124	.32		516423	.94	
	532146	.83		531624	.19		453612	.93		125643	.54	
6	264531	.16		654132	.64		153462	.19		415236	.16	
	321456	.07		352416	.64		526431	.42		524163	.54	
	426135	.52		436125	.63		125436	.40		641352	.04	
	154632	.64		625341	.20		613452	.36		251436	.17	
7	512463	.13		362451	.16		125346	.12		136542	.09	
	264315	.85		251634	.99		431265	.10		132546	.18	
	453216	.15		136254	.72		425361	.79		145326	.74	
	532164	.12		523641	.85		614352	.02		245361	.76	
8	631524	.33		634521	.23		632154	.48		264351	.72	
	532614	.01		153264	.35		452316	.16		465312	.57	
	253641	.28		152634	.53		153642	.22		635412	.01	
	261453	.75		624135	.08		423561	.87		312645	.76	
9	235461	.68		532164	.63		652431	.90		516432	.88	
	654321	.19		415362	.05		613542	.64		461523	.31	
	614523	.13		316524	.48		463521	.66		236415	.92	
	361524	.51		432165	.54		621435	.39		346512	.43	
10	152643	.04		365142	.29		146253	.97		241365	.09	
	625314	.43		315624	.90		162354	.96		452631	.42	
	346251	.54		142356	.60		461352	.62		241356	.45	
	513246	.70		513624	.74		163542	.61		352614	.97	

L3.2 Method for Statistical Calculation for Conformity of Lots

When acceptance criteria specify a maximum and/or minimum characteristic value of attribute (Q), Q_U and/or Q_L must be used to determine Q.

The calculation of the characteristic value of attribute (Q) for the lot must be as follows:

(a) Sample Size = 1

$Q_U = Q_L = Test\ result$

(b) Sample Size = 2

$Q_U = highest\ test\ result$

$Q_L = lowest\ test\ result$

(c) Sample Size > 2

$$Q_U = \bar{x} + ks$$

$$Q_L = \bar{x} - ks$$

where $\bar{x}$ = arithmetic mean of attribute test results for all sub-lots

s = standard deviation of sub-lot attribute test results

$$= \sqrt{\frac{\sum_{i=1}^{n}\left(x_i - \bar{x}\right)^2}{n-1}}$$

k = acceptance constant from Table Q/L.2 (based on 10% producer's risk)

Table Q/L.2 - Acceptance Constant k

Sample Size	3	4	5	6	7	8	9	10 - 14	15 - 19	20 +
k	0.52	0.62	0.67	0.72	0.75	0.78	0.81	0.83	0.90	0.95

A lot achieves conformity if:

$Q_U \leq$ the specified upper limit for characteristic value of the attribute; and

$Q_L \geq$ the specified lower limit for characteristic value of the attribute.

If: Q_U is more than the specified upper limit for characteristic value; or

Q_L is less than the specified upper/lower limit for characteristic value,

and reworking is subsequently undertaken, the complete lot must be resampled and retested to verify conformity.

ANNEXURE Q/M - REFERENCED DOCUMENTS

Refer to Clause 1.2.6.

Australian Standards and Handbooks

AS 4390.6	AS 4390 – 1996, Records management Part 6: Storage (superseded)
ISO 9000	AS/NZS ISO 900:2000, Quality assurance and quality management systems - Fundamentals and vocabulary
ISO 9001	AS/NZS ISO 9001 - 2000, Quality management systems - Requirements
ISO 9004	AS/NZS ISO 9001 - 2000, Quality management systems – Guidelines for performance improvements
ISO 10012.1	AS/NZS ISO 10012.1, Quality assurance requirements for measuring equipment - Part 1 Metrological confirmation system for measuring equipment.
ISO 15489.1	AS ISO 15489.1 – 2002, Records Management Part 1: General
ISO 15489.2	AS ISO 15489.2 – 2002, Records Management Part 2: Guidelines
HB90.3	HB90.3 – 2000, The Constructions Industry Guide to ISO 9001:2000

RTA Specifications

RTA G71	Construction Surveys.