



# QA SPECIFICATION G1

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## JOB SPECIFIC REQUIREMENTS

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RNIC-QA-G1

VERSION FOR: HW9 Colly Creek Bridge Replacement DATE: Issue 1 - January 2007
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# **RTA QA SPECIFICATION G1**

## **JOB SPECIFIC REQUIREMENTS**

### **1 GENERAL**

#### **1.1 GENERAL**

The works in this Contract comprise all activities associated with of the replacement of the existing Colly Creek bridge on the New England Highway 85.1 km north of Muswellbrook.

The works involve the replacement of the existing Colly Creek bridge, demolition of the existing bridge, the construction of the pavements and adjustments to approximately 90m of the existing New England Highway on the bridge approaches.

#### **1.2 EXISTING BRIDGE**

Colly Creek bridge is a two lane two span concrete structure erected in the early 1960's. The bridge deck is 8.53m wide between kerbs and has an overall length of 15.24m long overall. Span lengths are 7.2m skewed at 10 degrees.

Abutments are reinforced concrete (RC) wall type with integral wingwalls and are founded on spread footings. The central pier is cast in situ RC with two pier stems connected by a crossbeam. The pier legs are also founded on spread footings. The deck is cast in situ RC and is approximately 6m above the current creek bed.

#### **1.3 DESCRIPTION OF WORKS**

You must carry out all activities, including temporary works, necessary to construct the new bridge and road approaches within the Limit of Work, including, but not necessarily limited to:

- OHS & R Management;
- Site establishment and setting out the work;
- Demolition and disposal of existing bridge materials;
- Environmental management, including erosion and sedimentation control;
- Environmental protection measures during construction;
- Earthworks including clearing and grubbing, removal and stockpiling of topsoil, excavation of cuttings, construction of embankments using on site material where suitable and imported fill material and construction of Selected Material Zone using imported material(s);
- Construction and removal of sidetrack and detour, including pipe culvert in Colly Creek clean rockfill within creek and temporary rock mattress protection of embankment batters;
- Control of traffic, including maintenance of pavement on sidetrack during construction;
- Demolition of existing bridge and construction of replacement bridge over Colly Creek;
- Provision of rock mattress scour protection on creek banks, including relocation of temporary rock mattresses from sidetrack batters;

- Widening existing pavement and some asphalt heavy patching on immediate approaches to new bridge;
- Bituminous sealing;
- Signposting and pavement marking, including temporary arrangements during construction;
- Revegetation of exposed new works and of areas disturbed by construction activities;
- Installation of safety barriers;
- Other miscellaneous works, including the adjustment of existing roadside furnishings such as linemarking, sign posting, and raised pavement markers on the existing New England Highway for connection to the new works when completed;
- Switching of traffic onto completed works;
- Demobilisation, clean up, restoration and revegetation of decommissioned sidetrack and site generally;
- Preparation of “Works as Executed” Drawings.

The work is located in a rural area on the New England Highway and emphasis must be placed on traffic management of vehicular activity and the co-ordination of the work under the Contract.

#### **1.4 REPLACEMENT BRIDGE**

The new bridge is located on essentially the same straight horizontal and vertical alignment as the existing bridge. The new bridge will have a carriageway width of 9.4m (2 x 3.5m lanes + 2 x 1.2m shoulders) between reinforced concrete safety shape traffic barriers.

The new bridge will be a 21.3m single span bridge with a 10<sup>0</sup> skew. The superstructure consists of five precast Super-T bridge girders composite with a reinforced concrete deck slab. Approach slabs 3m long are provided at both abutments.

The 1500mm deep Super-T girders for the deck span will be supported on reinforced concrete spill through abutments which are in turn supported on 900mm diameter bored piles.

A sprayed bituminous waterproof membrane is provided on the concrete deck.

#### **1.5 DEMOLITION OF THE EXISTING BRIDGE**

The existing reinforced concrete bridge must be demolished in accordance with RTA B341 after opening the sidetrack to traffic and before commencing construction of the new bridge.

You must take appropriate measures to ensure the safety and stability of any temporary works erected for demolition or to maintain the integrity of the sidetrack.

## 1.6 PAVEMENTS

Pavement details are shown in the Drawings.

The pavement widening on the highway comprises a 150mm thick unbound sub-base course overlaid with a 150mm unbound base course.

The pavement for the sidetrack also comprises a 150mm thick unbound sub-base course overlaid with a 150mm base course which may be either unbound using base quality material (RTA R71) or modified using sub-base quality material (RTA RN72). Provisional pay items are included for the modified base course. The Principal will direct immediately after award of Contract which alternative is to be adopted. If the modified base course is selected, the quantity of the unbound base layer will be reduced to only cover the pavement widening on the highway.

## 1.7 PREQUALIFICATION AND REGISTRATION REQUIREMENTS

### Bridge Construction

The Contractor must be prequalified with the Principal at **Bridgeworks Class B2** or higher.

### Pretensioned Precast Concrete Super-T Girders

The pretensioned concrete Super-T girders must be manufactured by a contractor who is prequalified with the Principal at **Class CC** or higher.

### Bridge Formwork

If bridge formwork is subcontracted, engage a subcontractor who is prequalified with the Principal for bridgeworks or who is registered with the Principal in **Category F: Formwork**.

### Roadworks and Drainage

Earthworks, pavement construction and drainage components of the work must be undertaken by a contractor who is prequalified with the Principal at **Roadworks Class R1** or higher, or alternatively by subcontractors who are registered with the Principal in **Category E: Earthworks and Category D: Drainage Works** respectively.

## 2 POSSESSION OF SITE

The time for giving you possession of the site is two (2) weeks from the date of Acceptance of Tender, unless otherwise agreed with the Principal, to allow you to submit the following documentation:

- Contract Program
- first stage of PROJECT QUALITY PLAN, including Earthworks Plan
- first stage of ENVIRONMENTAL MANAGEMENT PLAN
- Project OHS&R Management Plan
- Traffic Management Plan

Notwithstanding the granting of possession of site, you must not commence any road or bridge construction until the Principal has accepted the above documentation.

### **3 WORKING DAYS AND HOURS OF WORK**

In accordance with General Conditions of Contract (Clause 26 and *Contract Information* Item 39), the working days and hours of work are between 7am to 6pm Monday to Friday inclusive but excluding proclaimed public holidays and the Contractor's rostered days off.

Any application to work between 8:00am and 1:00pm on Saturdays must be submitted to the Principal not later than 12:00pm on the Thursday immediately prior to the Saturday you propose to work and must include the details of what work activities you are proposing to carry out. Approval is at the sole discretion of the Principal (refer to Clause 26 of the Conditions of Contract).

You must comply with RTA G36 Clause 4.7 with regard to any proposal to extend the working hours or working days designated in *Contract Information* Item 39 (except for Saturday work between 8.00am - 1.00pm).

You will not be entitled to any extension of time or to any associated delay costs (General Conditions of Contract Clauses 54 and 55) for delays to approved work outside the working days and hours of work designated in *Contract Information* Item 39.

### **4 CONTRACTOR'S WORKING AREAS, SITE FACILITIES, COMPOUNDS AND STORAGE AREAS**

The requirements of this clause are in addition to the requirements of RTA G2 Clause 15 and RTA G36 Clause 6.4.

Working areas are available to you within the road reserve. A possible suitable location is the existing RTA stockpile site on the western side of the highway, immediately north of the bridge. RTA will continue to occupy part of this area to stockpile sealing aggregate and you will be required to maintain access to RTA stockpiles.

The use of other areas of the road reserve outside the limits of work under this Contract, are subject to the prior approval from the Principal.

You may make private arrangements to obtain or lease another suitable area on a property adjacent to the works at your own cost, if required.

You must locate working areas, site facilities, compound and storage areas to minimise impacts on watercourses as well as dust and noise impacts on residents of neighbouring properties.

You are responsible for all costs associated with constructing, maintaining and removing site facilities and compounds. Such may include, but are not limited to:

- Provision of safe entry to and egress from the highway,
- Provision of access roads and hardstand areas,
- Environmental protection measures,
- Items required as part of the local Council's consent to the compound/stockpile site,
- Fencing and other security items

You must install the necessary environmental protection controls to your compounds and site facilities areas prior to using these for any other activity under the Contract.



For the duration of the Contract, you must take full responsibility for the drainage, maintenance, safety and security of your working and storage areas.

Access points to your site accommodation and site must be stabilised using suitable recycled or other materials to minimise the spread of mud onto the roadway and to suppress dust generation. You are responsible for maintenance of these accesses and the compound site during the contract and removal and restoration of the area once the contract is completed.

Prior to any work commencing on site, submit to the Principal your proposals for working and storage areas, including all compounds and other site facilities, including:

- Sketches identifying the position and arrangement of the areas;
- Details of sheds, equipment, materials and other items to be located in those areas;
- Details of parking arrangements for construction equipment, Contractor's employees and site visitors;
- Details of proposed environmental controls for drainage, pollutants, noise, lighting and other relevant factors;
- Details of proposed access arrangements from the highway, noting any restricted or changed traffic movements that may be required;
- Details of security arrangements.

### **HOLD POINT**

Process Held:	Establishment of Contractor's Working and Storage Areas, including compounds and site facilities
Submission Details:	As per Clause 4.
Release of Hold Point:	The Principal will consider the submitted documents for compliance with Clause 4, prior to authorising the release of the Hold Point.

## **5 ACCESS TO THE SITE**

Access to the site is from the New England Highway.

You are responsible for provision of the safe movement of all traffic into and out of the working area in accordance with RTA G10. Your Traffic Management Plan must take into account the special requirements to provide for access and egress of any large and/or slow moving vehicles to and from the New England Highway.

## **6 CONCURRENT WORKS**

The only programmed concurrent works will be maintenance of the existing highway beyond the limits of this project excluding pavement affected by your work.

You must cooperate and coordinate with the execution of these works in accordance with the Conditions of Contract.

## 7 PUBLIC UTILITIES

The requirements of this clause are in addition to the requirements of RTA G2 Clause 14.

The approximate locations of existing utility services are shown on the Drawings.

You must confirm with the relevant service authorities the location of all such services that may be affected by the work under the Contract.

You must notify the appropriate utility authorities when work is to commence in the vicinity of any of their respective utility services.

You must, during the progress of any work at the site, take all precautions necessary to avoid damage to any such services. In the event that you cause damage to a utility service, you must arrange for repairs to be effected as soon as practicable.

You must bear the full cost of such repairs, including the cost of any additional reinstatement necessary and any charges or penalties imposed by the effected utility authority associated with the damaged service.

Contact details for various public utilities Authorities, which may be used when working adjacent to utilities are listed in Annexure G1/2.

## 8 CONTROL OF TRAFFIC

In providing a safe work site, you must take into consideration the number of heavy vehicles that use the highway. You must determine and implement suitable traffic control arrangements in accordance with Specification G10, including compliance with the following criteria:

- restriction to one lane of traffic is permitted during construction of tie-ins for the sidetrack, heavy patching of the existing highway pavement (as shown on the Drawings), unloading and erection of bridge girders and erection of safety fencing, subject to good visibility. Traffic must not be stopped for more than 10 minutes in any direction.
- apart from these activities, two-way traffic flow along the New England Highway must be provided at all times. Day/night single lane traffic operation is not permitted.
- lane widths are to be in accordance with RTA G10 Clause 3.1.
- surface drainage must be adequately catered for at all times.
- appropriate delineation, advance warning signs, speed zoning and guardfence must be provided at all times. Lighting must be provided if night vision is poor.
- Where construction staging requires the travel lanes to deviate, diverge or shift laterally, use temporary traffic flaps ("Klemfix" or approved equivalent) to separate opposing lanes of traffic, in accordance with AS1742.3 Clause 3.9.5.
- you must make available personnel and equipment for after-hours maintenance/emergency callouts 7 days per week while construction is in progress.
- access to local roads must be maintained at all times.

You must provide access to affected properties at all times outside approved working hours, except by prior agreement with landholders. Any access restrictions during working hours

shall be planned to minimise inconvenience to landholders. Landholders shall be given at least 48 hours notice of such access restrictions.

Maintain school bus stopping facilities during construction. Provide safe access for school children to school bus stopping facilities.

Where actual traffic speeds through or around the site are likely to exceed 60 km/hr, you must install approved safety barriers to separate work areas from passing traffic.

Your Traffic Management Plan (RTA G10 Clause 1.3) must incorporate your construction staging arrangements for all relevant site activities and include details of how accesses will be maintained to adjacent properties. You must review your Traffic Management Plan regularly and upgrade it to address any problems experienced with traffic management or access to properties.

Do not switch traffic onto the completed bridge until concrete on the deck and approach slabs has achieved its 28-day compressive strength.

## 9 ESTIMATED EARTHWORKS QUANTITIES

Estimated earthworks quantities (m<sup>3</sup>) are:

Location	Sidetrack	Widening of highway on immediate bridge approaches
Solid Excavation Volume	940	160 (excluding excavation for bridge abutments and approach slabs)
Solid Fill Volume (excluding rock fill)	100	-
Rock Fill Volume	760	-
Capping Layer	100	-
Select backfill behind abutment walls	-	20
Solid SMZ Volume (including blinding layer)	440	80

These quantities have been calculated by MX double end area method based on the following:

- natural surface determined by MX survey for design purposes
- estimated volumes indicate solid volume of excavation and compacted fill with no bulking or shrinkage factors applied.
- estimated excavation volumes are based on the depth to the underside of the selected material zone after removal of topsoil.
- estimated volumes for general fill are calculated to the underside of the selected material zone and allow for replacing topsoil.
- estimated earthworks quantities do not allow for replacement of unsuitable material, if encountered.

Earthworks quantities for the highway widening assume that the existing pavement is excavated as earthworks material over the full length of each section of road down to the underside of the selected material zone.

Surplus excavated material not required for placement in embankments must be initially placed into temporary stockpiles adjacent to the site then used to restore the natural surface on the decommissioned sidetrack (under Pay Item R44P8).

## **10 COMMUNITY LIAISON**

You are responsible for advising the local community of construction activities that could directly affect the community (refer RTA G36 Clause 4.8). Prior to releasing such advice, you must give the Principal at least two weeks notice of the advice. Nominate a contact person and their telephone number for community enquiries about operational matters relating to construction activities. All other enquiries from the public must be referred to the Principal.

## **11 STOCKPILE SITES**

The road reserve on the western side of the highway is located about 30 metres west of the existing boundary fence between Colly Creek and the end of the existing RTA stockpile site. This area is available for use as a temporary stockpile site, providing the adjoining private land is secured with stockproof fencing. You must liaise with the Principal to establish acceptable stockpiling arrangements and environmental controls for stockpile sites, before commencing stripping of topsoil or excavation of the existing pavement.

## **12 DISPOSAL OF EXCESS MATERIALS**

You are responsible for arranging suitable locations to dispose of surplus material excavated from cuttings, existing road surfacing material, topsoil, materials from removal of the sidetrack, concrete rubble and other materials from bridge demolition. Disposal must be to approved landfill areas acceptable to the local Council. Advise the Principal of the location of disposal sites before using them. All fees and other costs associated (including validation, if required) with the disposal of excess materials must be borne by you.

## **13 BORROW AREAS AND QUARRIES**

Any imported material must be supplied from legally operating quarries.

You must take responsibility for obtaining any permits required for entry on land and for the payment of any royalty for materials imported to the site from borrow areas or quarries. You must also comply with any requirements of the Environmental Planning and Assessment Act, the local Council, landowners and the NSW Departments of Planning and/or Natural Resources, as appropriate. Any costs involved in opening up, maintaining or restoring borrow areas or quarries are to be borne by you.

Provide the Principal with details of the proposed locations, quantities and types of material, before delivering imported material to the site. Also, supply certified evidence of environmental approvals to the Principal, on request.

## **14 CONTRACTOR'S SITE REPRESENTATIVE**

You must provide a suitably qualified Project Manager on the site at all times during which any activities relating to the execution of the work under the Contract are taking place.

## **15 CO-ORDINATION AND REVIEW**

The Principal will convene regular project co-ordination meetings to review progress and consider any issues relating to this project. You must be represented at these meetings by at least your Project Manager and construction supervisor.

You must prepare and distribute one week prior to each project co-ordination meeting, a report on the following:

- progress in relation to construction programme, achieving milestones and date for completion,
- quality status, conformance results, nonconformance and corrective action close-outs,
- effectiveness of environmental control measures,
- effectiveness of safety control measures,
- progress payment claims, work completed but not claimed, plus cash flow forecast for next 2 months,
- any variations or extension of time claims (current and proposed),
- traffic control and construction staging,
- community issues,
- potential delays and construction problems.

Project co-ordination meetings will normally be held monthly, mid week and mid month. The Principal will issue minutes of each meeting within one week after the meeting.

## **16 CASH FORECASTING**

With each monthly payment claim submitted, include a monthly cash flow for the remaining duration of the Work. No additional payment will be made for providing this additional information.

## **17 DISCUSSIONS WITH THE MEDIA**

Discussions with any media representative about the project or the Principal by your staff or your subcontractors are not permitted without the prior written approval of the Principal.

## 18 CONCRETING SUPERVISOR

Nominate a suitably experienced member of your site management team to be Concreting Supervisors for this project. The Concreting Supervisor must take responsibility for all issues associated with placing concrete for each concrete pour associated with bridge construction to ensure that all requirements RTA B80 Clauses 4 and 7 are met such as delivery of concrete, concrete consistency, compaction of concrete, finishing, curing, etc. The Concrete Supervisor must be present for the full duration of each concrete pour and ensure that placement is carried out in accordance with RTA B80 Clause 7.4.2, that compaction of the concrete is carried out in a regular and systematic manner to achieve thorough concrete compaction in accordance with RTA B80 Clause 7.4.3, then certify that each concrete pour has fully complied with the Specification requirements.

The Concreting Supervisor must be experienced in all aspects of bridge construction with a minimum of 15 years demonstrated experience.

### HOLD POINT

Process Held:	Bridge substructure and superstructure concreting work.
Submission Details:	Proposed Concreting Supervisor's qualifications and experience.
Release of Hold Point:	The Principal will advise on whether the proposed Concreting Supervisor is acceptable, prior to authorising the release of the Hold Point.

## 19 SCHEDULE OF DRAWINGS

The Drawings which form part of this Contract are:-

1. **Bridgeworks Drawings**  
Registered No 0009 260 BC 2004 comprising 14 sheets
2. **Roadworks Drawings**  
Registered No 0009 260 RC 2004 comprising 26 sheets
3. **Supplementary Drawings**

## 20 AMENDMENTS TO MODEL SPECIFICATIONS

The RTA QA Model Specifications that have been amended for this project are listed in Annexure G1/3.

**ANNEXURE G1/1 - SCHEDULE OF HOLD POINTS**

<b>Clause</b>	<b>Description</b>
4	Submission of proposals for Contractor's working and storage areas

## ANNEXURE G1/2 - CONTACT NAMES FOR UTILITY AND OTHER AUTHORITIES

<b>1. Utility</b>	
Country Energy	Barry Mc Namara Country Energy Savage Street Quirindi Ph: (02) 6746 1400 Mob 0429 681 628
Telstra	Chris Johnson Network Integrity Services 8 Macintosh Street Tamworth Mob 0417 200 843
<b>2. Councils</b>	
Liverpool Plains Shire Council	The General Manager 60 Station St QUIRINDI NSW 2343 Ph: 6746 1755 Fax: 6746 3255
<b>3. Others</b>	
Environment Protection Authority	Regional Manager Environmental Protection Authority Department of Environment and Conservation PO Box 494, Armidale NSW 2350 Ph: 6773 7000 Fax: 6772 2336
Department of Natural Resources	Regional Manager Tamworth (Regional Office) 55-157 Marius Street PO Box 550 Tamworth NSW 2340 Ph: 67645900 Fax: 67645982
Department of Primary Industries (Fisheries)	Regional Manager PO Box 3047 Tamworth NSW 2340 Ph: 67654591 Fax: 67621993
RTA Aboriginal Liaison Officer	Mary-Lou Buck 55 Elbow St Kempsey West 2440 Ph: 6562 1495 Fax: 6562 4443 Mob 0412 235 988 email <a href="mailto:Mary-Lou_Buck@rta.nsw.gov.au">Mary-Lou_Buck@rta.nsw.gov.au</a>
Nungaroo LALC	The Chairperson Nungaroo Local Aboriginal Land Council PO Box 28 QUIRINDI NSW 2343 Ph: 6746 2356



## ANNEXURE G1/3 - AMENDMENTS TO MODEL SPECIFICATION

The following QA model specifications have been amended for this project:

The following Q11 model specifications have been amended for this project.										
G2 Clause:	21	38.2	43	Annex G2/B						
G4 Clause:	1.1	2	5	6	8	Annex G4/A		Annex G4/B		
G10 Clause:	1.2.1	1.3	1.4	1.8	2.6	Annex G10/B				
G22 Clause	Annex G22/A									
G36 Clause	4.4	4.5	4.6	4.7	4.8	4.10	4.13	4.14.1	6.1	6.3
	6.4	6.5.1	6.6	6.7	6.8	6.9	6.10	6.11.2	6.12.1	
	6.13	6.14	6.16	6.17	Annex G36/A, B, C					
G38 Clause	2	3	4.2	6	Annex G38/A, B, M					
G40 Clause	1.2.1	2.2	2.4	2.5	4	5	Annex G40/B			
G71 Clause	2.3.1	Annex G71/A								
Q6 Clause	Annex Q/A									
B30 Clause:	Annex B30/B									
B59 Clause:	5.3									
B80 Clause:	7.4.1	7.12.1	Annex B80/D		Annex B80/F					
B241 Clause:	Annex B241/1									
B246 Clause:	Annex B246/1									
B315 Clause:	1.2.1	Annex B315/C								
B341 Clause:	1.1	1.2.3	1.2.4	2.1	2.5	3	4	Annex B341/A, B, C, D		
B344 Clause:	1.1	1.3	Annex B344/B		Annex B344/E					
B345 Clause:	5	10								
R11 Clause:	2.6.2	Annex R11/B								
R44 Clause:	1.7	2.3	2.7.1	2.8.3	3.5	5.1.2	5.4.3	7.2.1	7.2.2	7.4
	Annex R44/A, B									
R63 Clause:	Annex R63/1			Annex R63/4						
R71 Clause:	1.2	2	3.1	3.5.2	3.7					
R106 Clause:	Annex R106/M									
R107 Clause:	Annex R107/B									
R111 Clause:	8	Annex R111/B								
R132 Clause:	4.5	5	Annex R132/1			Annex R132/6				
R141 Clause:	9	Annex R141/A								
R143 Clause:	7	Annex R143/1								
R178 Clause:	2.4	3.5	8	Annex R178/B						