

Supplementary Specification

MRC Supplementary Specification

8104 Bridge Slab Crossings

Revision 3.0

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8104.1 Introduction

This supplementary specification refers to the supply and installation of bridge slabs to gutter crossings where works require bridging of the kerb/gutter instead of an inverted crossing. It should also apply where Minor Works Approvals are required for access crossovers to properties as part of a Development Permit.

This specification does not apply to piped crossovers or box culvert crossovers,

8104.1.1 Definitions of Terms

This section describes any term which are specific to this specification or requires clarification due to an ambiguous understanding.

Term	Definition
Bridge Slab Crossing	Concrete access constructed over the kerb (bridging) rather than an invert access due to existing crossfalls or grades on road pavement.

8104.2 Referenced Documents

This supplementary specification shall be read in conjunction with the following:

- MRS01 *"Introduction to Specifications"*;
- MRTS01 *"Introduction to Technical Specifications"*;
- MRS 70 and MRTS70 *"Concrete"*
- MRS71 and MRTS71 *"Reinforcing Steel"*
- MRS04 and MRTS04 *"General Earthworks"*
- MRS05 and MRTS05 *"Unbound Pavements"*
- MRS30 and MRTS30 *"Asphalt Pavements"*
- MRC Supplementary Specification 8407 *"Bituminous Cold Mix"*
- Mackay Regional Council Policy COU024 – Driveways and property Accesses Crossing Road reserves
- Mackay Regional Council's Standard Drawing A4-00044; and
- the Project Drawings and Specifications

8104.3 Description of Work Items

Work items incorporated by this supplementary specification are identified in Section 8104.6 and 8104.7 with individual activities/tasks for measurement and payment sourced from the Bill of Quantities and listed in MRC Supplementary Specification Annexure 8104_1 Bridge Slab Crossings Section 1

8104.4 Quality Systems Requirements

The contractor shall prepare a quality plan reflective of the requirements of this Specification and comply with MRTS 50. The quality plan is to be submitted to the Superintendent for approval four (4) weeks



prior to site works commencing.

MILESTONE

8104.4.1 Std Test Methods (Testing Regime)

The following minimum testing regime applies to this specification:

Civil works activities associated with the installation of a Bridge Slab crossing shall be tested as per the relevant MRTS specifications MRTS04, MRTS05, MRTS30, and MRTS70 unless otherwise approved by the Superintendent.

8104.4.2 Hold Points, Witness Points and Milestones

Milestone

Milestone is a point within a project which marks the start or completion of an activity or compliance requirement. Generally associated with provision of records or data for verification with the projects contract and specification.

Hold Points

Hold points are noted on various Sections of this Specification.

“HOLD POINTS” are critical stages of the work, which require inspection by the Superintendent (or his nominated representative) and beyond which the Contractor will not be permitted to proceed without the written approval of the Superintendent.

A written “request for inspection” form shall be submitted to the Superintendent at least 48 hours prior to reaching the relevant “HOLD POINT”. One copy shall be submitted for each inspection. The signed copy will be handed back to the Contractor after the inspection to sanction work to proceed to the next stage or noting what work has to be done prior to re-inspection. This may involve inspection of the work by the Superintendent or approval of test results forwarded to the Superintendent by the Contractor.

Witness Points

Witness points are also important stages of work. However, these are not necessarily critical work stages as defined by the hold points. Witness points are where the Superintendent (or his/her nominated representative) may review, witness, and inspect the work. The activities, however, may continue to proceed. The following table represents the minimum inspection requirements for this specification.

Activity	Inspection Type	When	Reference
Construction Procedure and other preliminary documentation as required by Clause 8115.5	Milestone	4 weeks prior to works commencing	8401.5
Inspection of delivered items	Hold Point	At delivery time for each item.	8104.6.2
Prepour inspection of formwork and reinforcing for concrete bridge slabs	Hold Point	Prior to pouring concrete	8104.6.4
Curing of concrete slab to occur immediately after pouring	Witness Point	Immediately after setting after pouring for 7 days	8104.6.4
Stripping of formwork to slabs	Hold Point	No earlier than 72 hours after concrete pour finish, approval by Superintendent	8104.6.4
Loading and delivery of concrete bridge slabs	Hold Point	No earlier than 7 days after concrete pour	8104.6.4

Excavation of material (Unsuitable)	Hold Point	At time of prepour inspection for support	8401.6.5
Prepour inspection of formwork and reinforcing for concrete bridge slab supports	Hold Point	Prior to pouring concrete	8401.6.6
Curing of concrete supports to occur immediately after pouring	Witness Point	Immediately after pouring for 7 days	8104.6.6
Stripping of formwork to supports approval	Hold Point	No earlier than 72 hours after concrete pour finish, approval by Superintendent	8104.6.6
Placement and laying of slabs on supports	Hold Point	No earlier than 7 days after concrete pour of supports	8104.6.7
Construction of roadway approaches to crossing and along pavement	Witness Point	During reinstatement of pavement	8104.6.8
"As Constructed" documentation	Hold Point	4 weeks prior to "On Maintenance" being requested.	8104.7.1
"On Maintenance" works acceptance	Hold Point	At the completion of all works and site has been cleaned and returned to pre-construction state.	8104.7.2

8104.4.3 Construction Tolerances

Unless otherwise approved by the Superintendent the following construction tolerances shall apply as to this Specification;

The construction activity outcome shall not depart from the widths, lengths, heights, and shapes specified by the relevant specifications as applies to this specification;

- Concrete tolerances in accordance with MRTS70 Concrete.
- Earthworks tolerances in accordance with MRTS04 General Earthworks.
- Pavement tolerances in accordance with MRTS05 Unbound Pavement
- Asphalt tolerances in accordance with MRTS30 Asphalt Pavements
- MRC Std Drawing A4-00044

Tolerances specific to the project are detailed on the design drawings and are included in Clause 2 of MRC Supplementary Specification Annexure 8104_1 Bridge Slab Crossings.

8104.5 Preliminary

The Contractor is to submit the following documentation 4 weeks prior to commencing work or a prestart is conducted.:

- Works Procedure,
- Erosion and Sediment Plan (as required for site/s),
- Traffic Management Plan and TGS's,
- Workplace Health and Safety Plan including specific to the work and site/s,

- Quality Plan outlining requirements of 8901.4 as a minimum, compliant with MRTS 50,
- Minor Works Approval (as required).

Other requirements unique to the project will be listed in the MRC Supplementary Specification Annexure 8104_1 Bridge Slab Crossings

MILESTONE

8104.5.1 Materials

Supply of materials to site is the responsibility of the Contractor at their cost, where items are Principal supplied the nominated storage site shall be obtained from MRC Supplementary Specification Annexure 8104.1 Bridge Slab Crossings Section 3 and shall be the point of supply.

Concrete slabs shall be as specified on the project Drawings, in the absence of detail MRC Std Drawing A4-00044 shall apply. All concrete shall comply with the design drawings and MRTS70 with steel reinforcing complying with MRTS71.

All pavement materials shall be supplied, laid, and compacted in accordance with MRTS05, MRTS30 or MRC Supplementary Specification 8407.

8104.5.2 Contractor's Personnel

Personnel, sub-contractors and suppliers utilised in the construction and installation of bridged slab crossings shall be experience in the processes and activities required to carry out the works.

The Contractor shall provide documented evidence for the Superintendent's approval to demonstrate the experience, qualification, skills and training of proposed personnel, sub-contractors a minimum 4 weeks prior to works commencing.

MILESTONE

8104.5.3 Environmental Plan

The Contractors Environmental Plan shall be reflective of the requirements of MRTS51 and MRS51 and be submitted for approval by the Superintendent 4 weeks prior to site works commencing.

MILESTONE

8104.5.3.1 General

The Contractor shall remove all rubbish, debris, disused materials etc., from the Site. The Site shall be maintained in a clean state.

The Contractor shall be responsible for ensuring no debris is deposited on public or private rights of way because of the works outside of the immediate work area, including any deposits arising from the movement of plant and vehicles.

The Contractor shall keep pollution in the vicinity of the Works within reasonable minimum limits noting that this clause does not exempt the Contractor from complying with the limits controlled or required by legislation.

The Contractor shall collect, transport and dispose of waste at a registered waste facility.

8104.5.4 Permits for Work

The Contractor must ensure applicable permits for the various work activities are completed and approval issued by the statutory body for those works, all requirements for submission, completion, and obtaining permits shall be at the Contractors cost.

8104.5.5 General Workplace Health and Safety Requirements

As a condition of this document, it is required that the Contractor and its workers (including all sub-contractors etc., and their workers) engaged to perform a service or work on site must at all times ensure



(so far as reasonably practicable) the health and safety of all persons who are, or may be, affected by work under this Supplementary Specification or the services provided.

8104.5.5.1 Legislative Compliance

Without limiting the Contractor's other obligations, the Contractor must comply with all Acts, Regulations, Standards and Codes of Practice about work health and safety matters that are applicable to the scope of work undertaken or services being provided.

8104.5.5.2 Council Work Health Safety Contractor Requirements

As a minimum, the Contractor must ensure they and their workers (including all Contractor's sub-contractors etc.) comply with the following work health and safety requirements:

- Undertake Council Contractor and site inductions prior to commencing work.
- Ensure all workers are competent, and provide proof of competencies, licenses, and training on request.
- Have an approved safe system of work (including risk assessment) for the task and ensure the work is completed according to this safe system of work.
- Provide adequate supervision for all high-risk construction tasks.
- All incidents and near misses are to be reported to their Council representative within 60 minutes.
- Participate in Contractor pre-start meetings, safety interactions, site meetings and site inspections.
- Review information provided by Council such as site-specific hazards, risks and interaction issues and implement controls to, so far as reasonably practicable, eliminate, or if that is not possible, mitigate the risk.
- Supply safe plant and equipment with pre-start checks, maintenance/ service records and manufacturer's manual.
- For all hazardous chemicals, ensure current Safety Data Sheets (SDS) are available and that appropriate controls (including as required under SDS requirements) are implemented.
- Comply with Council Safety, Drug and Alcohol and Fitness for Work policies.
- Be familiar with applicable site emergency procedures, closest emergency assembly point and sign in and out of site registers where required.
- Compliance with any reasonable direction given by Council relating to work health and safety.

8204.5.5.3 Safe Systems of Work / Risk Assessment

The Contractor must prepare and submit a safe method of work (risk assessment) and relevant controls prior to commencement of work.

The completed risk assessment is to be provided to the Superintendent for review and approval prior to works commencing. Safe Work Method Statements (SWMS) are required for all high-risk construction activities (e.g. working on or adjacent to a road) and Job Safety Analysis (JSA) or similar risk assessments are required for other tasks. The risk assessment (whether SWMS, JSA or other) must be reviewed and signed by the workers prior to undertaking the work.

MILESTONE

The Contractor shall implement a Safety Management System (SMS) that includes sections addressing the project scope.

8104.5.6 Works Procedure

The Contractor shall prepare a works procedure for all activities required under this specification which also address WH&S specific requirements for the site, this shall include but not be limited to the



following;

- i. Site setup, including traffic management and public consultation,
- ii. Identification of underground utilities which impact the works and the proposed treatment to address the impacts,
- iii. Staging of works,
- iv. Traffic management and TGS's,
- v. Individual activity construction procedures, earthworks, drainage, bedding, concrete works, installation of precast slabs, testing and inspections as required,
- vi. Timeline of works,
- vii. Collection of "As Constructed" data.

The works procedure shall be submitted to the Superintendent for approval four (4) weeks prior to site works commencing.

MILESTONE

8104.6 Construction

This section lays out the works operations with more detail based on specific requirements of this supplementary specification. Some activities may appear to include items which are stated within other specifications, the purpose is to reinforce that requirement specific to this supplementary specification.

Specific construction requirements associated with these works is detailed in MRC Supplementary Specification Annexure 8104_1 Bridge Slab Crossings Section 5.

8104.6.1 Work Operations

Work operations incorporated in this item are those included in Clause 2.1.5 of MRS01 "Introduction to Standard Specifications" and the following work scope activities and associated sub activities;

8104.6.1.1 Work Scope

The scope of works (including all associated sub activities) covered under this specification is as follows:

- Procure, supply, and store all materials as required;
- Site Layout marked out and approval by Superintendent;
- As required, install and maintain ESC measures in accordance with approved Environmental Plan
- Carry out testing and inspections as required by the approved Quality Plan;
- Removal for re-use and/or demolition of existing culverts (as required);
- Earthworks (including stripping/clearing and grubbing), pavement works, and sealed surfacing works to site;
- Drainage works to the site as required;
- Setting up of reinforcing and formwork;
- Pouring, finishing, stripping of formwork, and curing of concrete;
- Cast, cure, strip, and install precast bridge slabs to drainage structure (as required);
- Install precast bridge slabs to drainage structure (where slabs are precast off site);
- Clean up of site;
- Collection of "As Constructed" data and submission for approval.

8104.6.2 Supplying All Materials

All materials, plant, and labour required to carry out the works under this Specification is to be supplied



by the Contractor.

In the case of the concrete slabs being manufactured elsewhere, the contractor is responsible for transport to site with all items required to be inspected at delivery to site prior to use. Any items which are damaged are not to be used and are to be returned to the supplier.

HOLD POINT

8104.6.3 Preparation of the Site Storage Area, Unloading and Storage at the Site:

Where site storage is required, the location shall be approved by the Superintendent, the contractor is responsible for all works required to ensure the storage area is suitable for the purpose of storage of the concrete slabs, this includes unloading and site safety. The storage site must not be in the verge area or the road pavement area unless approved as part of the Traffic Management Plan and the Superintendent.

8104.6.4 Preparation and Pouring of Crossing Slabs

Prior to approval for placing the concrete a prepour inspection of formwork and reinforcing is to be carried out for conformity to the design drawings and MRC Std Drawing A4-00044. The Superintendent shall give approval to proceed with the respective pours.

HOLD POINT

All insitu poured bridge slabs (including formwork and reinforcing) associated with the slab crossing shall comply with the design drawings and be carried out in accordance with MRTS70, MRTS71, with inspections, geotechnical testing and geometric requirements applying unless otherwise noted in MRC Supplementary Specification Annexure 8104.1 Bridge Slab Crossings Annexure.

Immediately after the initial set of the concrete, curing shall commence and continue for a minimum of seven days. Plastic sheeting shall not be used as part of the curing process.

WITNESS POINT

Formwork is not to be stripped for 72 hours with the slabs not to be moved for 7 days or as per design drawings and approved by the Superintendent.

HOLD POINT

8401.6.5 Carrying Out Excavations

Prior to excavations commencing the contractor shall ensure all services are located. Any excavation of material shall be to level and grade as per design drawings, with all works carried out in accordance with MRTS04.

Bottom of excavation is to be inspected for areas of unsuitable material at time of concrete prepour inspection.

HOLD POINT

If unsuitable material is identified this is to be removed and replaced with approved material as per the instructions of the Superintendent.

8401.6.5.1 Utilising or Disposing of Excavated Material

Excess excavated materials shall be disposed of by the contractor or utilised as per Superintendents instructions. Material stockpiled shall ensure that all Environmental ESC measures are in place and maintained.

8401.6.6 Insitu Poured Supports

All loose material is to be removed from footings and/or slab bed and pavement subgrade.

Prior to approval for placing the concrete a prepour inspection of formwork and reinforcing is to be



carried out for conformity to the design drawings and MRC Std Drawing A4-00044. The Superintendent shall give approval to proceed with the respective pours.

HOLD POINT

All concrete works (including formwork and reinforcing) associated with the slab crossing shall comply with the design drawings and be carried out in accordance with MRTS70, MRTS71, with inspections, geotechnical testing and geometric requirements applying unless otherwise noted in MRC 8104.1 Bridge Slab Crossings Annexure.

Immediately after the initial set of the concrete, curing shall commence and continue for a minimum of seven days. Plastic sheeting shall not be used as part of the curing process.

WITNESS POINT

Formwork is not to be stripped for 72 hours and loading not to occur for 7 days or as per design drawings and approved by the Superintendent.

HOLD POINT

8401.6.7 Installation of Precast Concrete Slab

On approval to proceed by the Superintendent the mortar bedding and laying of concrete slabs shall be carried out in accordance with the design drawings, and MRC Std Drawing A4-00044.

HOLD POINT

All slabs are to be lifted in place and laid such that there is no gap between the slabs, where the slabs do not abut tightly and firmly against each other the contractor shall take necessary steps to ensure the slabs abut without a gap.

8401.6.8 Construction of Roadway Approaches to Concrete Bridge Crossing

All works associated with transitioning and constructing the formation and pavement approaches to the bridged slab crossing and along the pavement formation shall be as detailed in the design drawings and shall be carried out in accordance with MRTS04, MRTS05, and MRTS30 or MRC Supplementary Specification 8407 unless otherwise directed by the Superintendent.

WITNESS POINT

8401.6.9 Clean Up, Backfilling, and Turfing;

The verge and road pavement area is to be returned to the preconstruction condition. The site is to be kept cleaned of all debris, excavated material, and construction materials, with all waste removed from site and disposed of as required by the Contractors approved Environmental Plan.

8104.7 Post Construction

Items which close out the project and readies the project for the "On Maintenance" inspection. All items below **MUST** be complied with prior to the Contractor requesting an "On Maintenance" inspection and/or as required during the Defects/Liability (On Maintenance) period.

8104.7.1 Collection and Submission of All As Constructed Data.

Contractor is to supply and submit "As Constructed" documentation as required by *MRC D20 - Drawings and Documentation* for approval by the Superintendent 4 weeks prior to requesting an "On Maintenance" inspection.

HOLD POINT

Format of submitted "As Constructed" documentation shall be compliant with MRC Supplementary Specification 8919.



8104.7.2 Inspection of Completed Concrete Slab Crossing

At the completion of all works the Contractor is to present the completed concrete slab crossover for inspection by the Superintendent, in particular line, level, grade of the sealed pavement formation for compliance to design drawings and/or issued minor works permit approval conditions (where required).

HOLD POINT

8104.8 Measurement and Payment

Provision for these works shall be included in the scheduled unit rate for the items show in Clause 8104.3 of this Supplementary Specification and Annexure. No separate payment will be made for the works specified within this Supplementary specification or it's annexure.

Version Control:

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