8106 Remove and Relay Access Culverts

REVISION 13/06/2024

8106.1 Introduction

This supplementary requirement relates to works detailed in relation to the remove and relay access culverts including backfilling, earthworks, pavement, surface sealing treatment works, and road furniture as detailed on the project drawings. This Supplementary Specification also covers only where a rural invert access may replace an existing culvert access.

8106.1.1 Definition of Terms

Term	Definition
Access	For the purposes of this specification means any property access which requires a culvert crossing of the verge area (rural or urban), or a rural invert access where the shallow table drain depth dictates this treatment.

8106.2 Referenced Documents

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

- MRS01 *"Introduction to Specifications"*;
- MRTS01 *"Introduction to Technical Specifications"*;
- MRS03 and MRTS03 *" Drainage, Retaining Structures and Embankment Slope Protections"*;
- MRS04 and MRTS04 *"General Earthworks"*
- MRS05 and MRTS05 *"Unbound Pavement"*
- MRS11,12,20,21,22 & MRTS11,12,20,21,22 as applicable for seal treatment
- MRS30 & MRTS30 *"Asphalt Pavements"*
- MRS70 and MRTS70 *"Concrete"*
- MRS71 and MRTS71 *"Reinforcing Steel"*
- TMR Standard Drawing *"SD 1807 Property Access"*
- TMR Standard Drawing *"SD 1359 Culverts – Installation, Bedding, and Filling/Backfilling Against/Over Culverts"*
- Mackay Regional Council's Standard Drawing A3-08323 *"Typical Minor Access Details For Council Rural Roads";*
- The Project Drawings

8106.3 Description of Work Items

Work items incorporated by this supplementary specification are identified in Section 8106.6 and 8106.7 with individual activities/tasks for measurement and payment sourced from the Bill of Quantities and listed in MRC Supplementary Specification Annexure 8106_1 Section 1

8106.4 Quality Systems Requirements

8106.4.1 Std Test Methods (Testing Regime)

The following minimum testing regime applies to this specification:

Unless otherwise stated the manufacturer certification of any new culverts and components shall form the basis of the requirements.

Civil works activities associated with the property access shall be tested as per MRTS03, MRTS04, MRTS30, MRTS70 unless otherwise approved by the Superintendent.

8106.4.2 Hold Points, Witness Points and Milestones

The following table represents the minimum inspection requirements for this specification;

Activity	**Inspection Type**	**When**
Construction Procedure and other required documents as per 8106.5	Milestone	4 Weeks prior to works commencing
Seal Design	Milestone	14 days prior to request for pavement proof roll
Inspection of delivered items and/or salvaged items for reuse	Hold Point	At delivery time for each item and at time of removal and storing.
Final location of property access works extents	Hold Point	During site survey layout.
Unsuitable material at excavated floor	Hold Point	Prior to trimming for subgrade approval
Floor/base for Culverts compaction and inspection	Hold Point	Prior to approval to proceed with bedding of culverts
Prepour Inspection of formwork and reinforcing where concrete pour required	Hold Point	Prior to concrete pour approval to proceed
Finish of concrete slab access	Witness Point	Prior to concrete hardening
Curing of concrete to occur immediately after pouring	Witness Point	Immediately after pouring for 7 days
Stripping of formwork approval	Hold Point	No earlier than 72 hours after concrete pour finish, approval by Superintendent
Joints installed as per design drawings and sealed	Witness Point	After formwork is removed

Subgrade proof roll – shoulders and access turn out	Hold Point	After submission and acceptance of QA test results and survey results.
Pavement proof roll – all layers, shoulder and access turnout	Hold Point	After submission and acceptance of QA test results and survey results for each layer.
Pavement (and access invert) inspection prior to sealing works or primer seal	Hold Point	24 hours prior to seal works taking place and day of seal after brooming
Asphalt/seal works approval to proceed	Hold Point	After required time has lapsed as per the seal design and the primer seal used
Installation of road furniture and line marking	Witness Point	Prior to road being reopened and side track being taken up
All disturbed areas cleaned, tidied, and returned to its natural state	Witness Point	At completion of works prior to Works as execute inspection.
As Constructed documentation submitted and accepted	Hold Point	4 weeks prior to Works as Executed inspection request
Erosion and sediment control measures in place	Hold Point	At completion at Works as Executed Inspection

8106.4.3 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;.

- Backfilling operations and earthworks tolerances in accordance with MRTS04 General Earthworks.
- Bedding, laying, and backfill to culvert tolerances in accordance with MRTS03
- Pavement laying and compacting in accordance with MRTS05
- Seal treatment in accordance with relevant TMR Specification for the proposed seal type.

Tolerances specific to the project are detailed on the design drawings and are included in Clause 2 of MRC Supplementary Specification Annexure 8106_1 Remove and Relay Access Culverts

8106.5 Preliminary

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

- Construction procedure covering all facets of works activities
- Erosion and Sediment Plan (as required for site/s)
- Traffic Management Plan and TGS's
- Seal Design 14 days prior to request for pavement proof roll

Other preliminary requirements unique to the project will be listed in the MRC Supplementary Specification Annexure 8106_1 Remove and Relay Access Culverts

MILESTONE

8106.5.1 Materials

Supply of all 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 8106_1 Remove and Relay Access Culverts Section 3 and shall be the point of supply.

Unless instructed otherwise by the Superintendent all existing pipes and fittings not noted on the design drawings for salvaging are to be taken up and disposed of, MRC Supplementary Specification Annexure 8106_1 Remove and Relay Access Culverts Section 4 will detail the items to be salvaged and the nominated storage site. This will also include any reuse of existing items. Disposal of existing culverts and components, and other associated materials and works shall be included in the scheduled unit rate covered by this supplementary specification and it's annexure.

Culverts and components shall be inspected at delivery and immediately prior to installation. Any culvert or component that is damaged is not to be installed and shall be removed from the work site at no cost to the Principal.

HOLD POINT

Embedment and backfill (trench fill) material shall conform to the requirements of MRTS04 for the activity being carried out with material within the top 300mm of the finished earthworks level being treated as subgrade material.

Pavement materials shall comply with MRTS05 with seal treatment materials (aggregate, bitumen, asphalt) complying with the relevant TMR specification for that seal treatment.

Concrete and Grout shall comply with MRTS70.

8106.6 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.

Alterations to the property access shall be carried out in the locations and in accordance with the details shown on the Project Drawings and respective specifications for that activity.

8106.6.1 Work Operations

Work operations incorporated in this item will include:

a) Work operations listed in Clause 2.1.5 of MRS01 "*Introduction to Specifications*";

b) Supply of all materials;

All materials, plant, and labour required to carry out the works under this Specification is to be supplied by the Contractor, where the culverts and headwalls is Principal supplied the designated storage site will be the point of supply for the purposes of this Specification.

Where new culverts and headwalls are required as indicated on the design drawings or as directed by the Superintendent all items shall 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

c) Site layout with Superintendent

The final location of the property access is to be marked out on site and shall be inspected and approved by an MRC representative prior to excavation commencing, including condition of existing culverts and headwalls.

HOLD POINT

d) Excavate existing infrastructure and take up and store for reuse

The contractor shall carry out all works required to excavate, take up and store for reuse the existing culverts and headwalls as detailed in the design drawings or identified by the Superintendent and inspected for reuse.

HOLD POINT

Where instructed otherwise by the Superintendent the contractor shall carry out all works required to excavate, take up, and dispose of existing culverts and headwalls identified as not suitable for reuse.

e) Earthworks to formation

Carry out earthworks as required to excavate or fill the formation to the design drawing levels, width, and crossfall levels. All works are to be carried out in accordance with MRTS04.

Road pavement or shoulder to be excavated to design drawing levels and grades unless otherwise approved by Superintendent due to site constraints and pavement drainage requirements.

Where existing sealed pavement is required to be saw cut this shall be carried out in accordance with MRC Supplementary Specification 8900 – Saw cutting existing surface.

Subgrade is to be inspected for areas of unsuitable material

HOLD POINT

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

All loose material is to be removed from excavations, bed/subgrade preparation is to be carried out as per MRTS04 and is to be presented for inspection and proof roll for the Superintendent with inspections, geotechnical testing and geometric requirements applying unless stated otherwise in MRC Supplementary Specification Annexure 8106_1 Remove and Relay Access Culverts.

HOLD POINT

Where indicated on the design drawings select fill is to be supplied, delivered, laid and compacted to the levels, width, and crossfalls as detailed. Unless otherwise specified the minimum thickness shall be 150mm of unbound pavement Type 3.5 in accordance with MRTS05 and be compacted to 100%SDD.

f) Excavate and compact floor for culverts

Excavation for the culverts and headwalls shall be carried out in accordance with the design drawings to the requirements of MRTS03 and MRTS04, with inspections, geotechnical testing and geometric requirements applying unless stated otherwise in MRC Supplementary Specification Annexure 8106_1 Remove and Relay Access Culverts

Excavation of material to level and grade as per design drawings, vertical tolerances shall not exceed +5mm/-10mm. Horizontal tolerance shall be +/-100mm's

Prior to bed preparation commencing all loose material is to be removed from excavations. Bed/subgrade preparation is to be carried out as per MRTS04 and is to be presented for inspection by the Superintendent.

HOLD POINT

g) 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.

h) Bottom of Excavations (including pavement/shoulder embankment subgrade)

All loose material is to be removed from excavated floor and pavement subgrade.

Subgrade preparation is to be carried out as per MRTS04 and is to be presented for inspection and proof roll for the Superintendent with inspections, geotechnical testing and geometric requirements applying unless stated otherwise in MRC Supplementary Specification Annexure 8106_1 Remove and Relay Access Culverts.

HOLD POINT

Where the design drawings indicate an invert concrete slab access is required works are to comply with MRC Std Drawing A3-08323 and to be constructed on ground surfaces or foundation bedding a Polythene Sheeting is to be laid in accordance with MRTS70.

i) **Installation of Drainage Culverts or invert access**

Where drainage culverts are required as set out in the design plans, the bedding, laying, and backfilling of culverts and headwalls shall be carried out in accordance with MRTS03, with inspections, geotechnical testing and geometric requirements applying unless otherwise stated in MRC 8106_1 Remove and Relay Access Culverts Annexure.

HOLD POINT

Where an invert access is required as set out in the design plans the works shall be carried out in accordance with the relevant MRTS specification with inspections, geotechnical testing and geometric requirements applying unless otherwise stated in MRC 8106.1 Remove and Relay Access Culverts Annexure. These being MRTS70 and MRTS71 for concrete works, and MRTS11,12,20,21,22 as applicable for approved seal treatment.

HOLD POINT

j) Pavement works (as required)

Supply, laying, compaction, and trimming of unbound pavement shall be carried out as per MRTS05 and design drawings.

At the time of the proof roll the pavement is to be presented for inspection by the Superintendent. Crossfall and pavement drainage are to be inspected to ensure no ponding of water will occur against the bus stop slab.

HOLD POINT

Finished pavement surface shall be trimmed and finished to +/- 5mm's.

Seal design is to be submitted to MRC 14 days prior to pavement proof roll being requested.

HOLD POINT

Seal works are to be carried out as per the relevant MRT Specification and design drawings unless otherwise directed by the Superintendent, inspection of surface by the Superintendent prior to seal works commencing.

HOLD POINT

Where asphalt is the approved surface treatment The Superintendent shall give the approval to proceed after the required time has lapsed after primer seal (HOLD POINT), with the asphalt to be laid and compacted to the requirements of MRTS30

WITNESS POINT

Line marking and signage shall be carried out in accordance with MRTS14 and the design drawings unless otherwise directed by Superintendent.

WITNESS POINT

k) **Clean up, backfilling, and turfing;**

Any disturbed areas are to be backfilled, turfed, and made good. The site is to be cleaned of all debris, excavated material, and construction materials

8106.7 Post construction

a) **Collection and submission of all As Constructed data including QA data requirements.**

Contractor is to supply and submit Works as Executed documentation as required by *MRC D20 - Drawings and Documentation* for approval by the Superintendent 4 weeks prior to requesting a practical completion inspection.

HOLD POINT

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

b) Erosion and sediment control plan

ESC measures are to be kept in place and maintained until the Superintendent approves of the removal of such measures.

HOLD POINT

8106.8 Measurement and Payment

Provision for these works shall be included in the scheduled unit rate for the items show in Clause 8106.3 of this Supplementary Specification and Annexure. No separate payment will be made for the works operations specified within this Supplementary specification or it's annexure.

Version Control:

Version	Description	Reviewed / Endorsed	Date
1.0	Original issue MRC Supplementary Specification 8105		23.11.2012
2.0	New Specification (previous 8105)	C. Sultana	13.06.2024