8349 Playground Drainage

Revision 13/03/2024

8349.1 Introduction

This supplementary specification relates specifically to the supply and installation of drainage to playground ~~or other park~~ areas.

Subsoil drainage and general drainage within other park areas is to be carried out in accordance with MRTS03 and/or project drawing requirements.

8349.1.1 Definition of Terms

The terms used in this Technical Specification shall be as defined in Clause 2 of MRTS01 *Introduction to Technical Specifications*. Additional terms used in this Technical Specification are defined in the Table below.

Sub Soil Drain	Type "C" as per MRC Std Plan A3-00867, 100mm diameter perforated drainage pipe with textile sleeve surround
Certified Soft-Fall Sand	Clean washed sand, externally tested and certified against AS4422 for falls in playground applications.

8349.2 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 Protective Treatments"*;
- MRS04 and MRTS04 *"Earthworks General"*
- MRS70 and MRTS70 *"Concrete"*
- Australian Standard AS 4685 "*Playground Equipment and Surfacing";*
- Australian Standard AS 4422 "*Playground Surfacing – Specifications, requirements & test methods";*
- Mackay Regional Council's Standard Drawing A3-9703 & A3-9704; and
- the project Drawings

8349.3 Description of Work

Work items incorporated by this supplementary specification are identified in Section 8349.6 and 8349.7 with individual activities/tasks for measurement and payment sourced from the Bill of Quantities and listed in MRC Supplementary Specification Annexure 8349_1 Playground Drainage Section 1

8349.4 Quality System Requirements

8349.4.1 Std test Methods (Testing Regime)

Testing of Certified Soft Fall Sand shall be carried out as required and specified in AS4422. All other embedment material to pipes and subsoil pipes outside of playground areas shall be tested to comply with MRTS03

8349.4.2 Hold Points, Witness Points and Milestones

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

Activity	Inspection Type	When
Construction Procedure	Milestone	4 Weeks prior to works commencing
Mark out of Playground Drainage	Hold Point	Prior to Works Commencing
Excavated floor of trench	Witness Point	Prior to bedding being installed
Bedding in place	Witness point	Prior to pipes being laid
Laying of drainage pipes, fittings, and clean outs	Hold point	Prior to backfilling
Connection to stormwater outlet or structure	Hold Point	Prior to works commencing to break in or connect to existing infrastructure, or discharging within parkland
Compaction of embedment and backfill	Witness Point	During process of backfilling
Reinstatement of all surfaces	Hold Point	When works are completed
Practical Completion (Coincide with other project activities practical completion)	Hold point	After submission of As Cons and QA data has been reviewed and approved

8349.4.3 Construction Tolerances

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

- Drainage tolerances in accordance with MRTS03 Drainage, Retaining Structure, and Protective Treatments
- Earthworks tolerances in accordance with MRTS04 Earthworks General
- Concrete tolerances in accordance with MRTS70 Concrete

Tolerances specific to the project are detailed on the design drawings and are included in Clause 2 of MRC Supplementary Specification Annexure 8349_1.

8349.5 Preliminary

The Contractor is to submit the following documentation 4 weeks prior to a request for a prestart meeting **(MILESTONE):**

- Construction procedure
- Workplace Health & Safety Plan

Other requirements unique to the project will be listed in the MRC Supplementary Specification Annexure 8349_1 **(MILESTONE)**

8349.5.1 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 8349_1 Playground Drainage Annexure Section 3 and shall be the point of supply.

Unless instructed otherwise by the Superintendent existing components to be salvaged and the nominated storage site will be detailed in MRC Supplementary Specification 8349_1 Section 4. This will also include any reuse of existing items.

All civil items and materials shall be supplied in accordance with their relevant MRTS Specification, MRC Specifications 8111 and 8112 as relates to this specification.

8349.6 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.

8349.6.1 Work Operations

Work operations incorporated in this item will include:

a) Work operations included in Clause 2.1.5 of MRS01 "Introduction to Standard Specifications";

b) Supplying all materials;

All materials required to carry out the works under this Specification is to be supplied by the Contractor.

Storage of materials is the responsibility of the contractor with all drainage pipes and associated fittings stored away from direct sunlight, heat sources, off the ground, and such to prevent damage and soiling.

Within the bounds of the playground area, the backfill material shall consist of certified soft-fall sand in accordance with AS4685 & AS4422. Test and certification to be supplied to Superintendent 5 days before delivery to site.

Trenches backfill outside of the extents of the playground area/s shall be excavated spoil won from site.

Any grassed areas that were disturbed to install playground drainage shall have the trench surface reinstated with 150mm depth topsoil & turf – refer MRC Supplementary Specification 8300 for material specifications for topsoil & turf.

c) Carrying out excavations;

The final location of the playground drainage is to be marked out on site and shall be inspected and approved by an MRC representative before installation. **(HOLD POINT)**

Excavation of material to level and grade as per design plans, vertical tolerances shall ensure the grade is not < 0.5% and 50mm bedding of certified soft fall sand can be laid with the same grade tolerance. Width of trench as per MRC Std Plan A3-09703, 150mm max (25mm each side of sub soil pipe).

Trench excavation shall be inspected prior to laying bedding material, minimum grade is as per MRC Std Drawing A3-00867 Note 6 (1 in 200). Excavated trench is to be compacted and free of loose material. **(WITNESS POINT)**

d) Utilising or disposing of excavated material;

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

e) Installing drainage pipes;

Within the Playground Area a 50mm bed of certified soft fall sand shall be placed and inspected prior to laying drainage line, minimum grade is as per MRC Std Drawing A3-00867 Note 6 (1 in 200). **(WITNESS POINT)**

Trenches outside the Playground area shall utilise embedment sand complying with MRTS04 Cl 19.

Laid drainage, sub soil drainage, clean out points, and outlets shall be inspected prior to backfilling. Pipes are to be laid in the centre of trench with the grade being no less than 0.5%. Where this grade is not achieved those sections shall be taken up and works rectified to achieve the required grade. **(HOLD POINT)**

Clean out points shall be at the commencement of the pipe run installation and be no longer than 60m length. Clean outs should be positioned such to be outside the playground area and not be a trip or fall hazard. Location to be agreed with by the Superintendent.

Embedment material within the playground area shall be certified soft fall sand and cover the sub soil pipe/s by minimum 100mm within the trench.

f) Connecting drainage pipes to other drainage infrastructure or components;

Connections to stormwater infrastructure shall be approved and inspected by an MRC representative prior to backfilling. Where there is no nearby stormwater infrastructure an approved location to install a “frogflap” style outlet and concrete surround shall be obtained. **(HOLD POINT)**

g) Placing and compacting backfilling material; and

Backfill material is to be placed carefully so as not to dislodge the sub soil pipe from its alignment and grade, and in maximum 200mm layers.

Compaction is to be carried out to achieve mechanical interlock between particles, compacting method and equipment to be used shall be selected to ensure no damage occurs to the drainage pipe and subsoil pipe. **(WITNESS POINT)**

h) Reinstating disturbed surfaces, where applicable.

All surfaces shall be reinstated with topsoil and turf where parkland has been disturbed, all waste materials and excess soil disposed of as approved by an MRC representative. **(HOLD POINT)**

8349.7 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)**

Certification of works to AS1428.1 shall be submitted with the "Works as Executed" Plans and documentation.

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

8349.8 Measurement and Payment

Work Operations under this Specification shall be claimed under the items shown in Clause 8349.3 of this Supplementary Specification and Annexure as measured by the total number of square metres shown in the design drawings. No separate payment will be made for the works specified within this Supplementary specification or it's annexure.

Version Control:

Version	Description	Reviewed / Endorsed	Date
1.0	Original issue	MRC	16.10.2020
2.0	Review of Specification	C. Sultana	13.03.2024