

PART M61
MAINTENANCE DRAINAGE

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1. GENERAL

- .1 This Part specifies the requirements for the maintenance of drainage elements. For the purpose of this Part grids shall also be treated as drainage elements.
- .2 The following documents are referenced in this Part:
 - (a) Part M06 Maintenance Inspection and Reporting
 - (b) DPTI Operational Instruction 20.1 Care Control & Management of Roads (Highways) by the Commissioner of Highways

2. QUALITY REQUIREMENTS

- .1 The Contractor shall prepare and implement a Quality Plan that includes detailed procedures for documentation and/or instructions as follows:
 - (c) work plan for undertaking work in a watercourse and high risk Phytophthora areas; and
 - (d) procedure for verifying compliance to 'protect action' requirements where drainage elements occur in Roadside Significant Sites.
- .2 If not part of the Post Tender Submission, the procedures shall be submitted at least 28 days prior to the commencement of site work.

3. RESPONSE TIMES

- .1 Rectification of misaligned, broken or collapsed pit covers / lids / grids units shall be undertaken in conjunction with Part M06, Clause 3.2 "Loop Inspections".
- .2 All other drainage activities reaching intervention level shall be rectified within 30 days for urban areas and 60 days for rural areas, from the time of inspection or notification.
- .3 Where it is not possible to rectify within the specified response time, the Contractor shall implement an appropriate hazard warning within the time specified until the repair can be completed.
- .4 Rectification of any specific maintenance defects (DR) shall be undertaken within the timeframes agreed to between the Superintendent and the Contractor.

4. ADDITIONAL REQUIREMENTS

- .1 The Contractor shall maintain drainage elements to the extent detailed in DPTI Operational Instruction 20.1 Care Control & Management of Roads (Highways) by the Commissioner of Highways.
- .2 Other than clearing culverts, pits and drains, any work within a watercourse shall constitute a **HOLD POINT** (refer Clause 5 "Hold Points").

5. HOLD POINTS

- .1 The following is a summary of Hold Points, vide Part 140 "Quality System Requirements", referenced in this Part:

CLAUSE REF.	HOLD POINT	RESPONSE TIME
4.2	Work within a water course	14 days

6. ATTACHMENT M61A CLEAR DRAINAGE ELEMENTS (DC / DR)

.1 **Application** This standard applies to drainage elements draining the road network

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance:</p> <p>Misaligned, collapsed or broken pit covers / lids, blocked grid units.</p> <p>Bridge expansion joints and scupper / drainage points blocked</p> <p>Grids ineffective.</p> <p>Vegetation growth affecting elements.</p> <p>Specific Maintenance:</p> <p>Loss of capacity or blocked drainage elements.</p> <p>Broken, damaged, cracked or spalled drainage elements including grid units (excluding covers and lids), sunken junction boxes and subsidence under drainage units.</p>	<p>Material within 200 mm of any steel component of grids units shall be cleared.</p> <p>Vegetation growth exceeding 450 mm high within 500 mm of structural elements.</p> <p>Pit lid condition presents safety hazard.</p> <p>MDR Recording:</p> <p>Defects shall be recorded on the MDR as DC.</p> <p>Specific Maintenance shall be recorded on the MDR as DR</p>	<p>Side Entry Pits and connecting Drains:</p> <p>Defects that restrict the capacity of the drainage element more than 80% or causing flooding to the roadway or private property.</p> <p>Grids: Material within 150 mm of the top of a grid.</p> <p>Bridges: Bridge expansion joints and drainage points blocked.</p> <p>Pits & Grids: Hazardous misalignment of any pit cover or grid unit or pit lids missing.</p>	<p>Alignment: Any misaligned pit covers / lids or grid units are seated correctly.</p> <p>Culverts and Pits and connecting Drains: operating at 100% of the design capacity.</p> <p>Grids: Grid pits clear of all debris.</p> <p>Bridges: Expansion joints cleaned.</p> <p>Environmental: No vegetation impeding waterway.</p> <p>No vegetation > 150 mm high within 500 mm of a structural drainage element.</p> <p>Ensure prevention of sedimentation of waterways when undertaking work.</p> <p>Remove seedling trees with potential to damage drainage infrastructure.</p>

7. ATTACHMENT M61B CLEAR OPEN AND LINED DRAINS (DD / DO)

.1 **Application:** This standard applies to open and lined drainage elements

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: Restrictions to the free flow of drainage away from the carriageway.</p> <p>Restrictions include: obstructions (solid debris), vegetation, siltation, scour, ponding of water and windrow material as a result of any grading.</p> <p>Downstream siltation and erosion.</p> <p>Specific Maintenance: Damaged, stepped, or cracked concrete lined drains.</p>	<p>Defects that restrict the flow capacity of the drainage element by more than 50% of the design capacity.</p> <p>Vegetation greater than 450 mm high.</p> <p>MDR Recording: Defects shall be recorded on the MDR as DD.</p> <p>Specific Maintenance shall be recorded on the MDR as DO.</p>	<p>Defects that: Cause flooding to the roadway or private property.</p> <p>Divert water flow from its normal course.</p>	<p>Alignment: Direction and width of the drainage element shall be as designed.</p> <p>Capacity: All open and lined drainage elements operate at 100% of the design capacity.</p> <p>Open and Lined drains: Free flowing along its length without ponding, overflow or vegetation growth</p> <p>Spacing: Turn out / cut off drains shall be appropriate to the grade (the maximum spacing shall be 100 m). Drainage shall be directed along contours.</p> <p>Environmental: No vegetation > 150 mm high.</p> <p>Work shall not cause downstream scouring or sedimentation</p>

8. ATTACHMENT M61C CLEAR SUBSOIL DRAINS (DS)

.1 **Application:** This standard applies to blocked subsoil drains

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: Siltation at sub-soil drain outlets.</p> <p>Blocked weep holes in drainage structures.</p> <p>Specific Maintenance: Nil.</p>	<p>Over-wet or distressed areas attributable to blocked subsoil drains visible.</p> <p>MDR Recording: Defects shall be recorded on the MDR as DS.</p>	<p>Not applicable.</p>	<p>Capacity: Sub soil drains shall be free flowing for a distance of 2 metres from the outlet point.</p> <p>Environmental: No Vegetation > 150 mm high within 500 mm of the inlet/outlet.</p> <p>Work shall not cause downstream scouring or sedimentation</p>

9. ATTACHMENT M61D SCOUR REPAIR (SS)

- .1 **Application:** This standard applies to scour occurring within the shoulders and drainage elements as a result of a storm or flood event.

Defects	Intervention Level	Compulsory Intervention Level	Performance Requirement
<p>Routine Maintenance: Nil.</p> <p>Specific Maintenance: Scour or siltation of: batters, drains, embankments, levee banks, shoulders, or against structures draining the road.</p>	<p>Defects within the road shoulder: exceeding 1m in length and average depth exceeding 150 mm.</p> <p>Defects not in the road shoulder: greater than 1m in length and mean depth of ≥ 300 mm.</p> <p>MDR Recording: Specific Maintenance shall be recorded on the MDR as SS.</p>	Not applicable.	<p>Profile: to "match in" with the adjacent profile.</p> <p>Hydraulic efficiency: match the upstream condition.</p> <p>Stability: Embankments stabilised.</p> <p>Backfill: in shoulders shall conform to SG / SR.</p>