



# GROSS POLLUTANT TRAP 16D

MUNICIPAL  
INFRASTRUCTURE  
TECHNICAL  
SPECIFICATION  
**16 - STORMWATER**

Transport Canberra and  
City Services

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# 1 GROSS POLLUTANT TRAPS

## 1.1 General

General: This Specification comprises the supply and construction of Water Sensitive Urban Design (WSUD) Gross Pollutant Traps (GPT).

Requirement: Provide the following systems:

- > Proprietary GPT; or
- > Custom GPT.

Exclusions: This Specification does not include WSUD measures such as bioretention systems, ponds, wetlands etc. Specification for works such as Preliminaries, Traffic Management, Earthworks, Drainage Structures, Incidental Works, Landscaping, Concrete Works and Signage required to construct GPT's shall be included under the respective *MITS00, MITS 01, MITS 02, MITS 03, MITS 08, MITS 09, MITS 10* and *MITS 14*.

### 1.1.1 Responsibilities

#### 1.1.1.1 Objectives

Requirement: Provide Gross Pollutant Traps, as documented and as follows:

- > Free of pollutants
- > Stormwater diverted off line until construction works upstream are complete or as agreed with TCCS.
- > Constructed in accordance with the detailed design plans
- > In accordance with the construction tolerances specified.

### 1.1.2 Cross references

General: The following documents are related to this Specification:

#### 1.1.2.1 Legislation

Environmental Protection Act

Lakes Act

Water Resources Act

Waste Minimisation Act

Scaffolding and Lifts Act

Scaffolding and Lifts Regulation

Work Health and Safety Act

### **1.1.2.2 Specifications**

Requirement: Conform to the following:

MITS 00	Preliminaries
MITS 01	Traffic Management
MITS 02	Earthworks
MITS 03	Underground services
MITS 06	Concrete kerbs, footpaths and minor works
MITS 10	Concrete works
MITS 14	Road Signs
MITS 16B	Constructed Ponds
MITS 16C	Wetlands

### **1.1.2.3 Design Standards**

General: The following Design Standards are related to this Specification:

MIS 19	Gross Pollutant Traps
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Attachment B Design acceptance requirements  
Canberra Central Design Manual

### **1.1.2.4 TCCS Reference Documents**

General: The following TCCS reference documents are related to this Specification:

Reference document 4	Protection of public landscape assets
Reference document 7	Operational acceptance submissions
Reference document 8	Works as executed quality records
Reference document 9	Final acceptance submissions
Reference document 10	Landscape consolidation
Reference document 11	Drafting Standard for Civil and Landscape works

## 1.1.3 Referenced documents

### 1.1.3.1 Standards

General: The following documents are incorporated into this Specification by reference:

#### Australian standards

AS 1141	Methods for sampling and testing aggregates
AS 1141.11.1	Particle size distribution - Sieving method
AS 1141.22	Wet/dry strength variation
AS 1289	Methods of testing soils for engineering purposes.
AS 1289 2.1.1	Moisture Content Tests
AS 1289 3.1.1	Plastic Limit Tests
AS 1289 3.1.2	Atterberg Limit Tests
AS 1289 3.2.1	Liquid Limit Tests
AS 1289 3.3.1	Plasticity Index Tests
AS 1289 3.6.1	Particle Size Distribution Tests
AS 1289 3.8.1	Emerson Class Number
AS 1289.5.2.1	Maximum Modified Dry Density Test
AS 1289.5.4.1	Optimum Moisture Content
AS 1289.5.5.1	Soil compaction and density tests - Determination of the minimum and maximum dry density of a cohesionless material - Standard method
AS 1289 5.7.1	Optimum Moisture Content
AS 1289 6.7.3 pad liner	Permeability (remoulded) on undisturbed tube samples collected from the completed
AS 2758.5	Filter Material Test
AS 3706.2	Geotextile Grab Tensile Strength
AS 3706.3	Geotextile Trapezoidal Tear Strength
AS 3706.7	Geotextile EOS – Pore Size
AS 3706.9	Geotextile Flow Rate
AS 4133.4.1	Rock Point Load Strength

### 1.1.3.2 Other publications

IPWEA (NSW) Specification for the supply of recycled materials for pavements, earthworks and drainage (Greenspec)

USEPA Calcium Carbonate content

Proprietary products: To *TCCS Products previously considered for use list*

#### Austrroads

Austrroads 90	Geotextile G Rating
AGPT	Austrroads Guide to Pavement Technology
AGPT04J	Part 04J: Aggregate and source rock

## 1.1.4 Interpretation

### 1.1.4.1 Abbreviations

General: For the purposes of this Specification the following abbreviations apply:

<b>CCTV:</b>	Closed Circuit Television
<b>D:</b>	External diameter of the pipe.
<b>DN:</b>	Nominal Diameter of pipe.
<b>GPT:</b>	Gross Pollutant Trap.
<b>ITP:</b>	Inspection and Test plan.
<b>NATA:</b>	National Association of Testing Authorities.
<b>PAP:</b>	Principal Authorised Person (For use with GC-21 contracts).
<b>RMS:</b>	NSW Roads and Maritime Services.
<b>TCCS:</b>	Transport Canberra and City Services, ACT Government and its successors.
<b>WSUD:</b>	Water Sensitive Urban Design.

### 1.1.4.2 Definitions

General: For the purposes of this work section the definition given below applies:

**Authorised person:** PAP/Superintendent/Client of the works.

**Inadequate foundation material:** Material beneath or adjacent to the proposed drainage structures with insufficient strength to support the structure and loads on the structure, or material with characteristics that would adversely affect the performance or construction of the drainage structure.

**Select fill:** Backfill material with known properties and grading placed and compacted in layers.

**Water Sensitive Urban Design (WSUD):** Design principles aimed at improving the sustainable management of the urban water cycle.

## 1.1.5 Submissions

### 1.1.5.1 General

Conform to **Hold points and witness points**.

Drawings: Prepare drawings or other documentation to record extent and constitution of final works in accordance with Requirements for Works as Executed quality records, TCCS.

### 1.1.5.2 Execution details

Survey: Submit set-out survey for temporary and permanent drainage system.

Set-out of stormwater drainage system (Temporary and Permanent): Submit details of any proposed changes to the location, length, design levels, strength, conditions of installation or cover to suit construction procedures.

Temporary drainage during construction: Submit details of procedures/devices to maintain effective drainage of the works area and/or upstream diversions.

Soil type: Give notice if the soil type on site is not consistent with the soil type used for design.

### 1.1.5.3 Tests

A NATA registered laboratory and a geotechnical engineer or an agronomist experienced and qualified in the relevant testing required must be used to carry out all testing for and verification of all materials.

Provide the Authorised Person with copies of all test results, together with certification by the Testing Authority that all the stockpiled materials are in accordance with the Project Samples and the tolerances nominated in this Specification.

Carry out sampling and testing of the materials to confirm compliance with the material requirements tabulated within this specification.

### 1.1.6 Hold points and witness points

#### 1.1.6.1 Notice

General: Give notice so that the documented inspection and submissions may be made to the **Hold point table** and the **Witness point table**.

All hold/witness points related to supply and construction of the various components related to provisions of GPT's are included within the following sections:

- > MITS 01 Traffic Management
- > MITS 02 Earthworks
- > MITS 03 Underground Services: All pipes and standard manholes.
- > MITS 04 Flexible Pavement Construction
- > MITS 06 Minor Concrete Works, Kerbs and Footpaths.
- > MITS 08 Incidental Works: All stone, wire mattress and retaining wall infrastructure.
- > MITS 10 Major Concrete Works: All concrete and steel infrastructure.
- > MITS 14 Road Signs: Floodway and other signage

**Table 16D-1 Hold point table**

Item	Clause title	Requirement	Notice for inspection	Release by
<b>Materials</b>				
16D.1	Proprietary products	Submit certification / documentation from the manufacturer confirming that proprietary products are compliant with the specification.	7 days before ordering proprietary products.	Authorised Person
<b>Execution</b>				
16D.2	GPT installation	Approval of completed trenches and replacement of any deleterious material required prior to installation of GPT components	2 working days prior to installation of GPT.	Authorised Person
16D.3	Removal of Temporary Weirs and Diversions to bring GPT on line.	Approval of all stormwater and WSUD system components prior to bringing on line.	5 working days prior to removal of temporary weirs and stormwater diversions.	Authorised Person



**Table 16D-2 Witness point table**

Item	Clause title	Requirement	Notice for inspection
<b>Execution</b>			
<b>16D.1</b>	Temporary drainage during construction	Locate materials and equipment clear of water courses and provide temporary drainage to protect area of works.	7 days prior to commencement of GPT construction.
<b>16D.2</b>	Protection of GPT from Pollutant Ingress and Upstream Drainage Established	The Contractor shall notify the Authorised Person that protection measures to prevent pollutants entering GPT works (including upstream diversions) are constructed in accordance with the specification and ready for inspection and approval.	3 days prior to commencement of excavation for bioretention system.
<b>16D.3</b>	Establishment - Set out	Submit the proposed set-out for approval by the Authorised Person.	7 days before planned execution.
<b>16D.4</b>	Backfilling of GPT	Approval of installed GPT prior to backfilling over works.	2 working day prior to installation of overlay landscaping work.

## 1.2 Preconstruction planning

### 1.2.1 Protection to WSUD

Gross Pollutant Traps: Do not allow construction traffic access to areas of GPT or infiltration systems. Provide fences if required to protect GPT systems.

Temporary Protection: Install silt fences, filter rolls or other approved sediment and erosion protection measures to protect the GPT system during all construction works.

## 1.3 Materials

### 1.3.1 General

#### 1.3.1.1 Materials and components

All requirements related to material supply for other materials not described in this specification are included within the following sections:

- > MITS 00 Preliminaries
- > MITS 01 Traffic Management
- > MITS 02 Earthworks
- > MITS 03 Underground Services: All pipes and standard structures.
- > MITS 04 Flexible Pavement Construction
- > MITS 06 Minor Concrete Works, Kerbs and Footpaths.
- > MITS 08 Incidental Works: All stone, wire mattress and retaining wall materials.
- > MITS 10 Concrete Works: All concrete and steel materials.
- > MITS 14 Road Signs: Floodway and other signage

## 1.4 Execution

### 1.4.1 General

All works shall be constructed in accordance with the construction drawings and this specification.

Survey control: Provide for the following:

- > Mapping and pegging the drainage system.
- > Locating components.

Survey data: Provide data for the set-out of gradients, culverts and drains and construction to tolerances.

Driveways and manoeuvring areas: *MITS 01 Traffic management.*

Earthworks, driveways and manoeuvring areas: *MITS 02 Earthworks.*

Stormwater Pipes and culverts: To *MITS 03B Pipe Drainage.*

Precast Stormwater Structures: To *MITS 03C Precast box culverts.*

Other Drainage Structures: To *MITS 03D Drainage structures.*

Flexible Pavements: *MITS 04 Flexible pavement construction.*

Minor concrete works, kerbs and footpaths: *MITS 06 Concrete kerbs, footpaths and minor works.*

All stone, wire mattress and retaining wall materials: *MITS 08 Incidental works.*

All concrete and steel works: *MITS 10 Concrete works.*

Floodway and other signage: *MITS 14 Road signs.*

### 1.4.2 Subgrade Preparation to GPT Structures

Subgrade preparation for GPT components: To *MITS 03A Trenching for underground services* and as specified by the manufacturer.

### 1.4.3 Backfilling to GPT structures

Backfilling for GPT components: To *MITS 03D Drainage structures* and as specified by the manufacturer.

### 1.4.4 Batter Slopes

Requirement: The maximum grade for batter slopes adjacent a GPT is 1(V):6(H), refer to *MIS 08 Stormwater.*

## 1.5 Completion

### 1.5.1 Submissions

Work as Executed Records: To *MITS 00B Quality Requirements.*

## 2 MEASUREMENT AND PAYMENT

### 2.1 Measurement

#### 2.1.1.1 General

Payments made to the Bill of Quantities: To *MIT S 00A General requirements*, this Specification, the drawings and **Pay items**.

#### 2.1.1.2 Methodology

The following methodology will be applied for measurement and payment:

- > Allow for all work, materials, testing and quality assurance requirements in each Pay Item.
- > Excavation, bedding, support and backfill material for drainage structures: Conform to *MIT S 03A Trenching for underground services*, paid under this Specification.
- > Earthworks associated with the construction of swales, batters, bulk cutting or filling: To *MIT S 02 Earthworks*
- > Miscellaneous minor concrete work not included in the pay items in this Specification: To *MIT S 06 Concrete kerbs, footpaths and minor works*.
- > Subsoil drains: To *MIT S 03J Subsoil and foundation drainage*.
- > Excavation and replacement of Unsuitable Material in Trenches: *MIT S 02B Bulk Earthworks*.
- > Barrier fences for drainage structures: To *MIT S 08A Fences and Barriers*.
- > Removal of existing drainage structures: To *MIT S 03A Trenching for underground services*.
- > Hardstand pavement, driveways, kerbing for GPT's: To *MIT S 06A Concrete kerbs and open drains* and *MIT S 06B Concrete paths, driveways medians*.
- > All costs associated with removal of water from excavations shall be included within respective excavation rates for drainage structures.
- > No Additional payment will be made for excavation in rock, overbreak of trench due to ground conditions or over excavation of trenches.

#### 2.1.1.3 Deductions

In situ concrete strength: Deductions made as follows:

- > Scheduled rate of payment is reduced by 2% for each 1%, or fraction thereof, by which the strength of the specimen fails to reach the specified strength, up to a maximum deficiency of 10%.
- > If the deficiency in strength exceeds 10%, the concrete represented by the specimens may be rejected, in which case no payment will be made.

## 2.2 Pay items

**Table 16D-3 Pay items table**

Item No	Pay items	Unit of measurement	Schedule of rates scope
16D.1	Proprietary GPT (Insert Manufacturer Name and size)	Number	<p>All activities associated with the construction of nominated Proprietary GPT's including detailed excavation for the units in all types of material encountered including rock, shoring, dewatering, supply and placement of bedding and precast units including all fixtures and fittings.</p> <p>This pay item shall include liaison with the supplier, backfilling and compaction around the structure.</p> <p>A separate pay item shall be included in the Contract for each GPT.</p>
16.D.2	Custom GPT (Insert size)	Number	<p>All activities associated with the construction of nominated custom GPT's and associated footings including detailed excavation for the units in all types of material encountered including rock, shoring, dewatering, supply and placement of bedding, formwork and reinforced concrete including all fixtures and fittings.</p> <p>This pay item shall include weepholes, step irons, internal trash racks, covers and access hatches, as detailed.</p> <p>This pay item shall include backfilling and compaction around the structure.</p> <p>A separate pay item shall be included in the Contract for each GPT.</p>
16.D.3	Davit unit and surround	Number	<p>All activities associated with construction of a davit unit and mounting base for GPT's including excavation for the units in all types of material encountered including rock, supply and placement of bedding, concrete, reinforcement, formwork, and the davit unit, as detailed.</p> <p>This pay item shall include backfilling and compaction around the structure.</p>



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