

Drainage Symbols

For NetMaps, LiteSpatial (desktop), LiteSpatial Android and myWorld

[NetMaps](#)

[LiteSpatial Android](#)

[LiteSpatial \(desktop\)](#)

[myWorld](#)

myWorld



[Drainage](#) – composite layer see NetMaps index for components with differences noted for this application where applicable.

LiteSpatial Android


























[Drainage](#) – composite layer see NetMaps index for components. All assets listed may not be available in all applications.

LiteSpatial (desktop)

[Drainage](#) – composite layer see NetMaps index for components. All assets listed may not be available in all applications.

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Manhole

An access point to Drainage pipes.

A standard access chamber is indicated by a filled circle and attached to an access chamber information box, which is round when indicating trafficable/heavy duty and square for medium duty.



- Access Chamber number
- Type and material
- Top (Reduced) Level
- F- from, the distance at right angles from a boundary.
- A- along, the distance along a boundary from an intersection of boundaries.

- Access Chambers located in open areas can be placed by coordinates. The abbreviations COORD is displayed.
- Any Access Chamber that has been scaled from a plan has an asterisk (*) in front of the distance and will be displayed in yellow.
- Any Access Chamber that is unsurveyed and has been plotted from design has APPROX displayed.

Types

- A- pipe size up to 900mm into MH
- B- pipe sizes from 1050mm to 1500mm into MH
- O- oversized
- S- special MHs with unusual size chamber

Construction Material

- WL- Well Liner
- PS- Pipe Segment
- BK- Brick
- RC- Reinforced Concrete
- MC- Mass Concrete



Bridge

A drain crossing, can be:

- OBR -Occupational crossing or footbridge
- RBR -Road Bridge



DZ014281 The type is displayed in the information triangle, along with structure identification number and material type, with the Functional Location number below.

Construction material:

- BK- Brick

Owner can be:

- E- western power

DR- Dumped Rock
 MC- Mass Concrete
 P- Polyvinyl Chloride
 RC- Reinforced Concrete
 S- Steel
 W- Wood

G- alinta gas
 L- local authority
 M- main roads department
 P- private
 R- westrail
 S- SECWA
 W- water corporation



Cathodic Protection

Cathodic Protection is for corrosion protection, by electrical charge, of steel pipes.

Owners of Groundbeds can be:	Features are:	
WANG	Cathodic Anode	A
BP Oil	Cathodic Interference Test Point	IP
Western Power	Cathodic Polarisation Probe	PP
Alinta Gas	Cathodic Test Point	TP
Telstra	Cathodic Transformer Rectifier	TR
Water Corporation		



Change Indicator

Displayed where there is a change in pipe type, size, grade, joint, bedding or open channel type.



Compensation Basin

Drainage storage basin.

Features can be:

TWL- Top Water Level
 LWL- Low Water Level
 TB- Top of Bank level
 TOE- Bottom of Bank level

Types are:

Dry basin
 Fenced, fully excavated, with low flow channel
 Fenced, fully excavated, without low flow channel
 Fenced, partially excavated, with comp basin
 Fenced, partially excavated, with open drain
 Flood plain
 Fully excavated, with low flow channel
 natural lake
 ornamental
 ornamental pond
 partially excavated, with low flow channel
 soakaway
 unfenced, fully excavated, with low flow channel
 unfenced, fully excavated, without low flow channel
 unfenced, partially excavated, with comp basin
 unfenced, partially excavated, with open drain



Culvert

A drain crossing which is a pipe or a series of pipes.

The type is displayed in the information triangle, along with structure identification number and material type.



Types are:

BPC-	bank access culvert
OBC-	occupational box culvert
OPC-	occupational culvert
RBC-	road box culvert
RPC-	road culvert
SYP-	syphon

Owner can be:

E-	western power
G-	alinta gas
L-	local authority
M-	main roads department
P-	private
R-	westrail
S-	SECWA
W-	water corporation

Materials can be:

A-	asbestos
BK-	brick
CI-	cast iron
CM-	concrete monier
CTL-	concrete tunnel
CV-	concrete voussoirs
ECC-	enclosed concrete channel
ECCB-	enclosed concrete channel bridge
FRC-	fibre reinforced concrete
GB-	glazed brick
GRP-	glass reinforced plastic
HCAL-	HEL-COR aluminium
HCMS-	HEL-COR galvanised mild steel
MC-	mass concrete
MF-	geofabrics megaflow
P-	polyvinyl chloride
POLY-	polyethelene
RC-	reinforced concrete
RCBC-	reinforced concrete box culvert
S-	steel
VC-	vitrified clay
W-	wood



Direction of Flow

Indicates direction of flow for gravity pipes and open channels.



Enlargement

Enlargements are shown when information cannot be represented clearly with standard mapping scales.



Drain Crossing

Where other services cross a Water Corporation drain.

Types are:

L.A.D.-	Local Arterial Drainage
GAS-	Gas Alinta
SEWER-	Sewer
TELECOM-	Telstra
WATER-	Water
WPOWER-	Western Power
WRAIL-	Westrail

M 65 Drain Fittings

Represented by a letter and identification number with a location indicator arrow

Types

E	Extraction Point
F	Continuously Logged Flow Station
G	Groundwater Monitoring Site
I	Industrial Waste Discharge
M	Maximum Height Indicator
Q	Water Quality-Sampling Site
R	Continuously Logged Rain Gauge



Gate



08002950

Indicates a Floodgate. And has the associated Information text box.



Gauging Station

Flow Control Types:

- Natural
- Other
- Open Channel Control
- Pipe Control
- Weir



Gravity Pipe

Information displayed on each pipe is type, upstream/downstream invert levels, length, nominal pipe size, pipe material, construction class, type of joint, grade, bedding and excavation detail are shown if available.

Pipe Types are:

- p- Branch or Main Drain
- SS- Subsoil Drain

Pipe material

A	Asbestos
BK	Brick
CI	Cast Iron
CM	Concrete Monier
CTL	Concrete tunnel
CV	Concrete Voussoirs
ECC	Enclosed Concrete Channel
ECCB	Enclosed Concrete Channel Bridge
FRC	Fibre Reinforced Concrete
HCAL	Hel-Cor Aluminium
HCMS	Hel-Cor Galvanised Mild Steel
MC	Mass Concrete

Type of joint

EFJ	External Flush Joint Mortar
IFJ	Internal Flush Joint Mortar
RR	Spigot and Faucet Rubber Ring
SF	Spigot and Faucet Mortar

Bedding

CF	Consolidated Fill
CR	Crushed Rock
PB	Pile and Bearer
PK	Pile and Keel
PW	Pads and Wedges
SB	Sand Bed

MF	Geofabrics-Megaflo		
P	Polyvinyl Chloride		
POLY	Polyethelene	<u>Excavation</u>	
RC	Reinforced Concrete	OC	Open Cut
RCBC	Reinforced Concrete Box Culvert	TL	Tunnel
S	Steel	TT	Timber Trench
VC	Vitrified Clay		

- Pipe materials of CV, GB, FRC, CM, RCBC, W, CTL, ECC, ECCB have a second diameter.
- Construction class of pipe reinforced concrete only A B H S T U X Y Z 2 3 4
- Grades up to 1:50 shown to the nearest 0.1m.
- Grades above 1:50 shown to the nearest whole number. If no grade available the -99.9 is displayed.



Inlet

Local Authority or Private connection. (Orange)
 Pipe sizes, type and invert level shown.
 Local Authority ID and number shown if available



Meter

Pitometers will show text with size



Notes



Observation Bore

There are Observation and Investigation Bores for monitoring purposes. They include a Sample Point

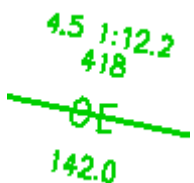


Open Channel

Information displayed for each inter-structure section is type of open channel, upstream/downstream invert levels, bottom width of channel, slide slope, grade and length.

Types:

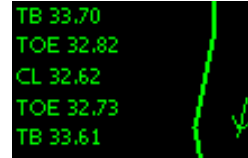
- | | |
|----|-------------------------------|
| OA | Landscaped |
| OE | Normal Open Earth |
| OF | Open channel with flood levee |
| OH | Half Pipe |
| OL | Lined Channel |
| OS | Swale-Shallow Depression |
| OW | Natural Water Course |



- **Bottom Width of Channel** – 4.5
- **Side Slope of Channel.** -99.9 is displayed if unknown - 1:12.2
- **Length of Channel** - usually shown directly under Open Channel type – 142.0
- **Grade** - 418

Cross Section Levels

TB- Top of Bank
TOE- Bottom of Bank
CL- Centreline
TL- Top of Lining



Overpass

Where two Drainage pipes cross, but do not join.

Pipe Section

Seen as a stipple background to a Pipe, or Open Channel or Rising Main, this is an internal reference link to Asset information.

Penstock

An inlet pipe

Type:

PS- Penstock
PSO- Penstock with pipe

Construction material:

CI Cast iron
PVC/SS Polyvinyl chloride & stainless steel
S Steel
SS Stainless steel

Rising Main

- The letter R is displayed on the pipe between the pump station and discharge access chamber.
- Nominal pipe size & Pipe material shown above the Rising Main symbol.
- Test Pressure, shown right of Nominal pipe size & pipe material. if not available then –99.9 is displayed.
- Length, is shown below the Rising Main symbol.
- Upstream Invert Level, is shown at discharge manhole, if available

Pipe materials:

A Asbestos
AC Asbestos Cement
DI Ductile Iron
FRC Fibre Reinforced Concrete
MSCL Mild Steel Cement Lined
P Polyvinyl Chloride
RC Reinforced Concrete
S Steel

Valves on drainage pressure mains

Control valves:

RV Reflux
SV Sluice Valve
BV Butterfly Valve

Non-Control valves:

DAV Double Air Valve
SAV Single Air Valve
SC Scour

Structure

Triangular information symbol attached to each structure type.

Information displayed if available includes:

- Construction Material
- Identification Number
- Top Level
- Ties as per access chamber



Types:

Chute



Junction-Intersection only



Control/Check



Outlet



Drop



Pit Access



End of Pipe-responsibility ends here



Protection



Flume



Shaft



Fuse



Spillway



Gully



Transition



Inlet



Vent



Inlet/Outlet



Weir



Construction Material

A	Asbestos	LS	Limestone	SC	Spray Concrete
BK	Brick	MC	Masonry Chute	SH	Stepped Chute
CB	Concrete Block	MT	Metal	SM	Stone Masonry
CC	Concrete Chute	RC	Reinforced Concrete	SPC	Small Pipe Culvert
CR	Concrete Revetment Mattress	SB	Sandbag	ST	Stone
E	Earth			TI	Timber



Pump Station

Pump station name, number and planset number is displayed.

JERSEY ST
PUMP STATION
A162



Pipe Protection

Pipe Protection can be Sleeve or Concrete Encasement on a pipe or Toe Protection on an open drain.

Indicated with a single line alongside the pipe on the away side from the cadastre, with both upstream distances measured from MH or Access Chamber, unless it starts or finishes at ends of drain in which case there is no distance shown.



Special Features

Two or more pipelines, large structures are shown in a manner compatible with the above standards.



Local Authority Structures & Manholes

Note: Local Authority and Private drainage is shown coloured orange.



Drainage Hotspot

Take care!! Coverage shows where the Water Corporation Assets are within 0.5m of Electrical or Gas underground assets.

Revisions	
10 Mar 2009	Reviewed
18 Mar 2009	Added Gauging Stations
07 Sep 2010	Reviewed and added LiteSpatial view.
18 Feb 2013	Reviewed
18 Dec 2013	Reviewed and reformatted
25 Aug 2015	Reviewed, updated and reformatted. Added other application indexes