WARATAH WYNYARD & CIRCULAR HEAD MUNICIPALITY

SUBMISSION OF DIGITAL AS CONSTRUCTED INFORMATION

Last Amended MAY 2013
## SUBMISSION OF DIGITAL AS CONSTRUCTED INFORMATION

### Revision Register

<table>
<thead>
<tr>
<th>Release</th>
<th>Reference Section</th>
<th>Description of Revision</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Initial release.</td>
<td>Jul 2011</td>
</tr>
</tbody>
</table>
# Table of Contents

1.0 INTRODUCTION .................................................................................................................. 5  
   1.1 Purpose of the Manual ........................................................................................................ 5  
      1.1.1 Responsibility of the Consultant .................................................................................... 5  
      1.1.2 Responsibility of the Council ......................................................................................... 5  
   1.2 Aim of the Manual .............................................................................................................. 5  
   1.3 Scope of the Manual ............................................................................................................ 5  
   1.4 Purpose of Maintaining Council’s GIS and AREG ............................................................. 6  
   1.5 General Requirements ....................................................................................................... 6  
      1.5.1 Council Contact ............................................................................................................. 6  
      1.5.2 Submission of “As Constructed” Data .......................................................................... 6  
      Table 1.5.2 Checklist for Submission of “As Constructed” Data .......................................... 7  
2.0 DATA FORMAT ..................................................................................................................... 8  
   2.1 Software ............................................................................................................................ 8  
   2.2 Digital Plan Information ..................................................................................................... 8  
      2.2.1 General ......................................................................................................................... 8  
      2.2.2 Plan Projection .............................................................................................................. 8  
      2.2.3 Plan Set-up ................................................................................................................... 8  
      2.2.4 Asset Numbering ......................................................................................................... 9  
      2.2.5 Responsibility of the Consultant .................................................................................... 9  
      2.2.6 Responsibility of Council ............................................................................................. 9  
   2.3 Attribute Data ................................................................................................................... 10  
      2.3.1 General ....................................................................................................................... 10  
      2.3.2 Asset Numbering ........................................................................................................ 10  
      2.3.3 Responsibility of the Consultant .................................................................................. 10  
      2.3.4 Responsibility of Council ............................................................................................ 10  
3.0 SURVEY REQUIREMENTS .................................................................................................. 11  
   3.1 General Requirements ....................................................................................................... 11  
   3.2 Required Datum / Projection ............................................................................................. 11  
   3.3 Acceptable Tolerances ...................................................................................................... 11  
4.0 ROADWORKS .................................................................................................................... 18  
   4.1 Plan Information ............................................................................................................... 18  
   4.2 Attribute Information ........................................................................................................ 18  
      4.2.1 General ....................................................................................................................... 18  
      4.2.2 Standard Forms .......................................................................................................... 18  
5.0 STORMWATER DRAINAGE .............................................................................................. 24  
   5.1 Plan Information ............................................................................................................... 24  
   5.2 Attribute Information ........................................................................................................ 24  
      5.2.1 General ....................................................................................................................... 24  
      5.2.2 Standard Forms .......................................................................................................... 24  
6.0 PARKS ................................................................................................................................. 33  
   6.1 Plan Information ............................................................................................................... 33  
   6.2 Attribute Information ........................................................................................................ 33  
      6.2.1 General ....................................................................................................................... 33  
      6.2.2 Standard Forms .......................................................................................................... 33  
7.0 MISCELLANEOUS .............................................................................................................. 39  
   7.1 Plan Information ............................................................................................................... 39
7.2 Attribute Information ..................................................................................................................39
  7.2.1 General ................................................................................................................................39
  7.2.2 Standard Forms ..................................................................................................................39
8.0 ZONE MAPS ................................................................................................................................42
9.0 WORKED EXAMPLES ..............................................................................................................50
  9.1 Roads ......................................................................................................................................51
  9.2 Stormwater Drainage .............................................................................................................56
  9.5 Miscellaneous ..........................................................................................................................61
1.0 INTRODUCTION

1.1 Purpose of the Manual
Waratah Wynyard and Circular Head Councils both maintain a comprehensive Geographic Information System (hereafter GIS) and Asset Register (hereafter AREG), which lists and contains valuable information on all Council owned infrastructure as well as storing a large amount of topographic and miscellaneous data.

This manual is for the use of Private Developers, the Representatives of Private Developers and Consultants (hereafter referred to as Consultants) who are required to submit “As Constructed” (hereafter referred to as ASCON) information to Council as part of Council’s development conditions and in accordance with the requirements of the Waratah Wynyard Council & Circular Head councils (hereafter referred to as Council) Planning Permits.

This manual has been written to assist Consultants in the preparation of the digital “As Constructed” information to be submitted to Council in lieu of traditional “As Constructed” paper plans. It sets out the format in which the digital files are required in order for Council to append the data to its existing GIS and AREG.

1.1.1 Responsibility of the Consultant
The consultant shall be responsible for:
- Supplying digital data in the format set out in this manual.
- Ensuring that the data supplied to Council is correct and accurate.

1.1.2 Responsibility of the Council
The Council shall be responsible for:
- Updating the Council GIS and AREG with the information supplied by the Consultant.

The Council shall not be responsible for
- Ensuring the correctness of the “As Constructed” data. Development works will not be accepted off maintenance until any incorrect data has been rectified. Any costs associated with third party claims against the Council for supply of incorrect data that has been certified by a consultant shall be recovered from that consultant. If data submitted by a consultant is found to be inconsistent with the accuracy of data specified in this manual, the Council may also recover costs associated with the rectification of the digital information.

1.2 Aim of the Manual
The aim of this manual is to assist consultants and to ensure that new data input into the Councils GIS & AREG is:
- Consistent
- Accurate
- Complete

1.3 Scope of the Manual
This manual is not intended to replace the Council’s, Planning conditions for Development Works, but is to be read in conjunction with them.

The following asset categories are considered in detail in Sections 4 to 9 of this manual.
- Roads
- Stormwater Drainage
- Parks
- Miscellaneous

1.4 Purpose of Maintaining Council’s GIS and AREG
The GIS and AREG represents a significant investment by the Council. The Council is committed to ensuring that the information is maintained to a high degree of completeness and accuracy.

The Geographic Information System is used by Council for:
- Asset Maintenance Management
- Risk Management
- Capital Works Planning
- Benchmarking (i.e. comparing how well Council’s assets perform against other local government’s assets)
- Comparison of like assets under different circumstances
- “As Constructed” records
- Services maps of the local authority area
- Asset Valuation
- Pavement Management Strategies
- Production of Council maps and street directories
- Hydraulic Modelling

In summary, the collection of asset data is extremely important to Council as it forms the basis for many important decision making processes and activities.

1.5 General Requirements
1.5.1 Council Contact
All enquiries relating to the format of the digital information should be directed to Council’s, GIS Officer.

The Consultant should contact the Council’s GIS Officer where specific information for a particular asset is not covered by this manual. If an asset is not listed but ultimately becomes the responsibility of Council, attribute details required will be supplied by the Council’s GIS Officer.

1.5.2 Submission of “As Constructed” Data
As Constructed information in digital format, is to be submitted to the Council’s Engineering Department before works will be accepted on maintenance. Table 1.5.2 Checklist for Submission of “As Constructed” Data is supplied to assist the consultant in compiling the required data for submission to Council.
Table 1.5.2 Checklist for Submission of “As Constructed” Data

<table>
<thead>
<tr>
<th>Description</th>
<th>Included</th>
<th>Not applicable</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>AutoCAD Version 14 or better DWG, DXF, MapInfo tab files or compatible containing the following asset types:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASCII File/s containing point objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital copies of the attribute data forms for the following asset types:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roads</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater drainage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.0 DATA FORMAT

2.1 Software
The software applications noted below are the software applications preferred by Council, however, digital files that can be read by the specified software packages are acceptable.

- AutoCAD
- MapInfo
- Microsoft Access or Compatible
- Microsoft Excel or Compatible

Examples using the specified software are included in Section 11 of this manual.

2.2 Digital Plan Information

2.2.1 General
Digital plan information is to be provided to Council in the following format:

- AutoCAD DXF or DWG file
- MapInfo TAB or MIF format
- ASCII text file (point data only)

AutoCAD drawings are to be organized into separate layers for each asset type for easy translation into Council’s GIS. The specifications for objects in AutoCAD drawing/DXF or MapInfo file formats are set out in Table 3.3 of this manual.

Data submitted in MapInfo format are to be in separate tables for each asset type and the data table is to contain the required relevant information as detailed for the associated individual Attribute Data Forms.

2.2.1.1 New/Modified Assets
Each new or modified object shown in the submitted drawing format should
- Be clearly identified with an asset Entry ID.
- Have a completed corresponding row in the attribute table.

2.2.1.2 Deleted Assets
Assets which have been demolished or removed during the construction of the new works shall be shown in the geographically correct location in the drawing files to enable Council to locate and delete these assets from the existing asset database. Attribute information is not necessary if the asset can be clearly identified on the plan and separated from similar objects located nearby.

2.2.2 Plan Projection
The submitted drawing format shall be set up using the coordinate system specified in Section 3.2 of this manual.

2.2.3 Plan Set-up
The scale factor used on all drawings shall be 1 unit = 1 meter.

NOTE: No movement, scaling, translation or rotation shall be applied to the objects in the drawing.

The recommended layer names and drawing specifications for each asset type are set out in Table 3.3 of this manual. Where the recommended layer names are not utilised it will be of significant assistance to Council staff if the layer names used are indicative of the information contained on the layer.
Only one submitted drawing format object shall be used to represent a single, specific asset. A consistent object type shall be used for each asset type. The object types for each asset are specified in Table 3.3 of this manual.

Text, where included in the CAD drawing, shall be separated into clearly identifiable layers.

It is preferred if the AutoCAD DWG or DXF files have the following general characteristics:

<table>
<thead>
<tr>
<th>AutoCAD Version</th>
<th>14 or later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension Planes</td>
<td>2</td>
</tr>
<tr>
<td>Drawing Units</td>
<td>Meters</td>
</tr>
<tr>
<td>Projection</td>
<td>MGA94</td>
</tr>
<tr>
<td>Drawing Precision</td>
<td>6 Decimal places</td>
</tr>
<tr>
<td>No. of Annotated Decimal Places</td>
<td>3</td>
</tr>
<tr>
<td>Text File Format</td>
<td>ASCII</td>
</tr>
<tr>
<td>Polylines</td>
<td>Continuous NOT curve fitted; NOT splined</td>
</tr>
<tr>
<td>Closed Polygons</td>
<td>Continuous NOT curve fitted; NOT splined</td>
</tr>
<tr>
<td>Points Scaling</td>
<td>Relative</td>
</tr>
</tbody>
</table>

2.2.4 Asset Numbering
An Entry ID shall be assigned to each asset by the consultant. The Entry ID shall be assigned as follows:
- Where point objects are included in the submitted drawing format the Entry ID shall be assigned to the point object as an attribute.
- Where point objects are provided in ASCII format, an Entry ID for each object is to be included in the ASCII file.
- For all other object types (lines, polylines, polygons etc.) the Entry ID is to be entered in the submitted drawing format as text, in a layer identified as text (e.g. StormwaterMainsText), adjacent to the asset.

2.2.5 Responsibility of the Consultant
The Consultant shall be responsible for
- The correctness and accuracy of the information contained in the drawing files.
- Ensuring that the drawing files are on the correct coordinate system and level datum and that the files are to true and correct scale and rotation.
- Ensuring that the assigned assets Entry ID’s are correct in both the drawing and attribute files.

2.2.6 Responsibility of Council
Council shall be responsible for
- Correctly inserting the plan information into Council's existing GIS and AREG.

The Council shall not be responsible for
- Scaling, rotating, translating or otherwise manipulating the data supplied by the consultant.
- Establishing the correct asset Entry ID’s.
2.3 Attribute Data

2.3.1 General
Sections 4 to 9 of this manual set out in detail the attribute information which is to be supplied to Council for each asset. Standard forms have been developed to assist the consultant in recording this information and the specific forms required are included in relevant sections of this manual. Each line of attribute information is to have a corresponding submitted drawing format object.

Example attribute data forms are included in Section 11 of this manual.

NOTE: PLEASE ENSURE THAT YOU ENABLE MACROS WITHIN EXCEL IN ORDER FOR THE DATA COLLECTION SPREADSHEET TO FUNCTION

2.3.2 Asset Numbering
The consultant shall establish a simple temporary asset numbering system which will allow the information in the attribute forms to be linked to the correct asset as follows:

- The Entry ID assigned to each row of the attribute data forms shall correspond to an Entry ID assigned to the specific asset and the number shown on digital plan of the geographic locations of assets.
- The Entry ID of each asset shall be recorded in the digital attribute form as described in Sections 4 to 9 of this manual.

2.3.3 Responsibility of the Consultant
The Consultant shall be responsible for

- The accuracy of the information contained in the digital attribute form.
- Ensuring that the Entry ID assigned to each asset by the Consultant correctly associates the attribute data with the correct asset.

2.3.4 Responsibility of Council
Council shall be responsible for

- Correctly associating the attribute information with the plan information in Council’s GIS and AREG based on the information and Entry ID’s supplied by the Consultant.
- Establishment of the final asset numbering system for all new assets.

The Council shall not be responsible for

- Establishing the correct Entry ID’s to each asset.
3.0 SURVEY REQUIREMENTS

3.1 General Requirements
Specific survey tolerances and requirements for the submission of as constructed information to council are set in this manual. This should not be confused with the construction tolerances and requirements specified in any relevant planning conditions or applicable IPWEA subdivision standards.

3.2 Required Datum / Projection
All the "As Constructed" data provided to Council by the Consultant is to be in MGA 94 (metres) projection with the vertical datum to be in AHD.

3.3 Acceptable Tolerances
Digital "As Constructed" data recorded and supplied to Council by the Consultant shall be in accordance with Table 3.3.
TABLE 3.3 – DRAWN OBJECT TOLERANCE & ATTRIBUTE REQUIREMENTS

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Asset Type</th>
<th>Displayed Location (Plan View)</th>
<th>Required Positional Accuracy (XY) (90% confidence limit) (± x mm)</th>
<th>Required Vertical Accuracy (Z) (90% confidence limit) (± x mm)</th>
<th>Object Type (Submitted drawing format Specification)</th>
<th>Attribute Data Form</th>
<th>Preferred Layer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
<td>Kerb/ Kerb and Channel</td>
<td>Lip of Kerb/Kerb and channel. Line work to be drawn in the direction of flow.</td>
<td>±80mm</td>
<td>±10mm</td>
<td>Continuous Polyline</td>
<td>RAD_KERB</td>
<td>ASCON_RD_KERB</td>
</tr>
</tbody>
</table>
|                | Spot levels      | • Spot levels on lip of kerb and channel  
• Finished surface level of seal at kerb lip only  
• Finished surface level of road crown  
• Finished surface level at edge of seal, (where no kerb and channel is present.) | ±80mm | ±10mm | Point (with the Entry ID & level as an attribute) | NA (To be supplied in a digital ASCII text file) | ASCON_SURPTS |
<p>|                | Edge of Shoulder | Edge of Shoulder Urban ±80mm Rural ±100mm | NA | Continuous Polyline | NA | ASCON_RD_SH |
|                | Edge of Seal     | Edge of Seal Urban ±80mm Rural ±100mm | NA | Continuous Polyline | NA | ASCON_RD_EB |</p>
<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Asset Type</th>
<th>Displayed Location (Plan View)</th>
<th>Required Positional Accuracy (XY) (90% confidence limit) (± x mm)</th>
<th>Required Vertical Accuracy (Z) (90% confidence limit) (± x mm)</th>
<th>Object Type (Submitted drawing format specification)</th>
<th>Attribute Data Form</th>
<th>Preferred Layer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads</td>
<td>Road Surfacing and Pavement</td>
<td>Centre of road (centre line is to be segmented showing consistent pavement / surfacing construction)</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>NA</td>
<td>Continuous Polyline (along centre line)</td>
<td>RAD_PAV</td>
<td>ASCON_RD_CL</td>
</tr>
<tr>
<td>Roads</td>
<td>Select Material / Subgrade Replacement</td>
<td>Centre of road at location of select material / subgrade replacement</td>
<td>NA</td>
<td>NA</td>
<td>Continuous Polyline (along centre line)</td>
<td>RAD_PAV</td>
<td>ASCON_RD_CL</td>
</tr>
<tr>
<td>Roads</td>
<td>Road signs</td>
<td>Centre of Sign</td>
<td>±100mm</td>
<td>NA</td>
<td>Point (with the Entry ID as an attribute)</td>
<td>RAD_SIGN</td>
<td>ASCON_RD_SIGN</td>
</tr>
<tr>
<td>Roads</td>
<td>Paved Footpaths including kerb ramps</td>
<td>Perimeter of footpath</td>
<td>±80mm</td>
<td>NA</td>
<td>Continuous Polyline (along centre line)</td>
<td>RAD_PATH</td>
<td>ASCON_RD_PATH</td>
</tr>
<tr>
<td>Roads</td>
<td>Footbridge</td>
<td>Perimeter of footbridge</td>
<td>±80mm</td>
<td>NA</td>
<td>Polygon (depicting extents)</td>
<td>RAD_PATH</td>
<td>ASCON_RD_BR</td>
</tr>
<tr>
<td>Asset Category</td>
<td>Asset Type</td>
<td>Displayed Location (Plan View)</td>
<td>Required Positional Accuracy (XY) (90% confidence limit) (± x mm)</td>
<td>* Required Vertical Accuracy (Z) (90% confidence limit) (± x mm)</td>
<td>Object Type (Submitted drawing format Specification)</td>
<td>Attribute Data Form</td>
<td>Preferred Layer Name</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Roads</td>
<td>Line Marking</td>
<td>Line of Line marking</td>
<td>Design</td>
<td>NA</td>
<td>Continuous Polyline</td>
<td>NA</td>
<td>ASCON_RD_PM</td>
</tr>
<tr>
<td>Roads</td>
<td>Line Marking – Pedestrian crossings / Medians / Chevrons</td>
<td>Perimeter of painted marking – Note a pedestrian crossing is to be enclosed with a polygon depicting the extent of the entire crossing. It is not to be represented by numerous polygons depicting the actual painted areas.</td>
<td>Design</td>
<td>NA</td>
<td>Polygon (depicting extents)</td>
<td>NA</td>
<td>ASCON_RD_PM</td>
</tr>
<tr>
<td>Roads</td>
<td>Table Drain</td>
<td>Invert of Table Drain. Line work to be drawn in the direction of flow.</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±20 mm</td>
<td>Continuous Polyline</td>
<td>NA</td>
<td>ASCON_SW_OPC</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Inlets and Outlets</td>
<td>Centre top of structure</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±10 mm</td>
<td>Point or Block #</td>
<td>DAD_STRUCT</td>
<td>ASCON_SW_EOL</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Inlet Pits &amp; Manholes</td>
<td>Centre of drop</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±10 mm</td>
<td>Point or Block #</td>
<td>DAD_STRUCT</td>
<td>ASCON_SW_MH</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Pipes</td>
<td>Centre line of each pipe. Line work to be drawn in the direction of flow.</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±10 mm</td>
<td>Continuous Polyline</td>
<td>DAD_PIPE</td>
<td>ASCON_SW_MAIN</td>
</tr>
<tr>
<td>Asset Category</td>
<td>Asset Type</td>
<td>Displayed Location (Plan View)</td>
<td>Required Positional Accuracy (XY) (90% confidence limit) (± x mm)</td>
<td>* Required Vertical Accuracy (Z) (90% confidence limit) (± x mm)</td>
<td>Object Type (Submitted drawing format Specification)</td>
<td>Attribute Data Form</td>
<td>Preferred Layer Name</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Roof Water Drainage Pits</td>
<td>Centre of pit to centre of pit</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±10 mm</td>
<td>Point or Block #</td>
<td>DAD_STRUCT</td>
<td>ASCON_SW_MAIN</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Open Channel</td>
<td>Top of bank and invert of drain. Line work to be drawn in the direction of flow.</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±20 mm</td>
<td>Continuous Polyline</td>
<td>DAD_OC</td>
<td>ASCON_SW_OPC</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Detention/ Retention Basins</td>
<td>Perimeter of water body (excluding islands)</td>
<td>Design</td>
<td>NA</td>
<td>Polygon (depicting perimeter)</td>
<td>DAD_DR</td>
<td>ASCON_SW_RET</td>
</tr>
<tr>
<td>Stormwater</td>
<td>Stormwater Quality Improvement Devices</td>
<td>Centre or perimeter of extents of device</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>±20 mm</td>
<td>Block or Polygon (depicting perimeter)</td>
<td>DAD_SQID</td>
<td>ASCON_SW_GPT</td>
</tr>
<tr>
<td>Parks</td>
<td>Fence</td>
<td>Centreline of fence</td>
<td>±80mm</td>
<td>NA</td>
<td>Polyline</td>
<td>PAD_FENCE</td>
<td>ASCON_PK_FENCE</td>
</tr>
<tr>
<td>Asset Category</td>
<td>Asset Type</td>
<td>Displayed Location (Plan View)</td>
<td>Required Positional Accuracy (XY) (90% confidence limit) (± x mm)</td>
<td>* Required Vertical Accuracy (Z) (90% confidence limit) (± x mm)</td>
<td>Object Type (Submitted drawing format Specification)</td>
<td>Attribute Data Form</td>
<td>Preferred Layer Name</td>
</tr>
<tr>
<td>----------------</td>
<td>------------</td>
<td>--------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>-------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Parks</td>
<td>Signs</td>
<td>Centre of Sign</td>
<td>±100 mm</td>
<td>NA</td>
<td>Point</td>
<td>PAD_FENCE</td>
<td>ASCON_PK_SIGN</td>
</tr>
<tr>
<td>Parks</td>
<td>Furniture</td>
<td>Centre of structure</td>
<td>±80 mm</td>
<td>NA</td>
<td>Point (depicting the centre of the object)</td>
<td>PAD_FURN</td>
<td>ASCON_PK_FURNITURE</td>
</tr>
<tr>
<td>Parks</td>
<td>BBQ’s</td>
<td>Centre of structure</td>
<td>±80 mm</td>
<td>NA</td>
<td>Point (depicting the centre of the object)</td>
<td>PAD_FURN</td>
<td>ASCON_PK_BBQ</td>
</tr>
<tr>
<td>Parks</td>
<td>Equipment</td>
<td>Centre of the equipment</td>
<td>±80 mm</td>
<td>NA</td>
<td>Point (depicting the centre of the object)</td>
<td>PAD_EQUIP</td>
<td>ASCON_PK_EQUIP</td>
</tr>
<tr>
<td>Parks</td>
<td>Structures</td>
<td>Extent of the building footprint.</td>
<td>±80 mm</td>
<td>±20 mm</td>
<td>Polygon (depicting the perimeter of the building footprint)</td>
<td>PAD_STRUCT</td>
<td>ASCON_PK_STRUCT</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Development Boundary</td>
<td>Extent of development / Stage boundary</td>
<td>NA</td>
<td>NA</td>
<td>Polygon (depicting perimeter of Cadastral boundary)</td>
<td>MAD_BDY</td>
<td>ASCON_CAD</td>
</tr>
</tbody>
</table>
### Displayed Location

#### Required Positional Accuracy (XY)

- **20m grid in cut or fill areas**
- **Changes of grade (includes open drains and road earthworks)**

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Asset Type</th>
<th>Displayed Location (Plan View)</th>
<th>Required Positional Accuracy (XY) (90% confidence limit) (± x mm)</th>
<th>* Required Vertical Accuracy (Z) (90% confidence limit) (± x mm)</th>
<th>Object Type (Submitted drawing format specification)</th>
<th>Attribute Data Form</th>
<th>Preferred Layer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>Spot Heights</td>
<td>20m grid in cut or fill areas, Changes of grade (includes open drains and road earthworks)</td>
<td>±80mm</td>
<td>±10 mm</td>
<td>Point with the level as an attribute OR The point objects alternatively can be supplied as an ASCII file containing X, Y, and Z coordinates and object Layer name</td>
<td>NA</td>
<td>ASCON_SUR_PTS</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>Retaining Walls</td>
<td>Centre, top of wall</td>
<td>Urban ±80mm Rural ±100mm</td>
<td>NA</td>
<td>Polyline</td>
<td>MAD_RETWALL</td>
<td>ASCON_RETWALL</td>
</tr>
</tbody>
</table>

* Note: Accuracies stated are relative and related to SPM’s/PSM’s used for the survey control.

# Note: Where objects are provided as Blocks in AutoCAD the “Insertion Point” for the block MUST be the objects attribute data collection point; i.e.: for a manhole the insertion point would be the centre of the manhole lid.

Zone Note: Refer to Figure 1 for locations of Zones
4.0 ROADWORKS

4.1 Plan Information
Digital plan information, in the format specified in Section 2.2 of this manual, is to be provided for all the road assets listed in Table 3.3.

4.2 Attribute Information

4.2.1 General
Attribute information is to be supplied for all new Road assets which ultimately become the property and responsibility of Council, in the format specified in section 2.3. These assets and the relevant form number for recording attribute data are listed in Table 3.3.

Attribute information is also to be supplied for all assets which have been modified during the construction of new assets. This includes:
- Assets which have been added (includes moving an asset's location)
- The characteristics (i.e. attributes) of assets that have been modified.

The attribute data forms have been designed to record both new assets and modified assets.

An example project has been completed using the standard attribute data forms listed below and is included in Section 11 of this manual.

4.2.2 Standard Forms
The forms and an explanation of each of the entry columns for each of the forms are included in the following sections.

4.2.2.1 Roads Attribute Data Form – Kerb / Kerb & Channel
Form No. RAD_KERB

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

A single kerb/kerb & channel entity, in this instance, is classified as a length of K/K & C that has the same continuous attributes regardless of any pits, kerb inlets, and driveways/crossovers that are contained in that section.

4.2.2.1.1 Entry ID.
Entry ID's are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

4.2.2.1.2 Profile Type - Kerb/Kerb & Channel
Select from the various Kerb and Channel profile types as listed below;
- B1 - Barrier Kerb & Channel – 600mm
- B2 - Barrier Kerb & Channel – 450mm
- B3 - Barrier Kerb – 150mm
- C1 – Vee Channel – 900mm
• F1 – Flush Kerb – 150mm
• M1 – Mountable Kerb & Channel – 600mm
• M3 – Mountable Kerb – 305mm
• SM1 – Semi-Mountable Kerb – 600mm

4.2.2.1.3 Median/Traffic Island
Select ‘YES’ if the kerb is part of a Median/Traffic Island, otherwise select ‘NO’.

4.2.2.1.4 Infill Type
Select the Median Infill type from the following types:
• Garden – Planted
• Garden – Grass
• Pavers
• Concrete – Plain
• Concrete – Stamped/Stencilled

4.2.2.1.5 SW Pits
Select the number of stormwater pits/inlets contained in the applicable section of kerb.

4.2.2.1.6 Crossovers
Select the number of driveways/crossovers contained in the applicable section of kerb.

4.2.2.1.7 Length
Enter the length of this Kerb or Kerb and Channel section. The length is the length of the single CAD object to which the attribute data is to be linked, including pits and crossovers.

4.2.2.1.8 Installation Date
Enter the date on which the asset was constructed. The format of the date shall be DD/MM/YYYY where, 5 March 2006 shall be represented by ‘05/03/2006’.

4.2.2.1.9 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

4.2.2.1.10 Asset Status
This refers to the status of the asset after construction
• New
• Modified
• Removed

| 4.2.2.2 Roads Attribute Data Forms – Pavement / Surfacing |
| Form No. RAD_PAV |

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.
A single pavement or surfacing entity, in this instance, is classified as a length of pavement or surfacing that has the same continuous attributes regardless of any other asset objects that are contained within that section.

4.2.2.2.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

4.2.2.2 Surface Type
Select the type of surfacing from those provided in the drop down which may be:
- Asphalt – 40mm
- Bitumen – 2 Coat – 14/7mm
- Bitumen – Chip – 7mm
- Bitumen – Chip – 10mm
- Bitumen – Chip – 14mm
- Bitumen – Slurry – 10mm
- Bitumen – Slurry – Reinforced Geotextile
- Concrete – Reinforced - 150mm

4.2.2.3 Spray Rate
Enter the pavement spray rate as litres per square metre where applicable i.e. for 2 Coat Bitumen.

4.2.2.4 Reinforcement
Enter the type of reinforcement used in concrete surfacing. E.g. F72 mesh. Where there is no reinforcement, this column is to be left blank.

4.2.2.5 Base Depth
Enter the depth of the base course pavement material.

4.2.2.6 Base Type
Enter the type of the base course pavement material, (As per Main Roads Standard Specification.)

4.2.2.7 Sub-Base Depth
Enter the depth of the sub-base course pavement material.

4.2.2.8 Sub-Base Type
Enter the type of the sub-base course pavement material, (As per Main Roads Standard Specification.)

4.2.2.9 Subgrade CBR – Soaked CBR
Enter the CBR test results, based on a 4-day soaked CBR test, of the in-situ sub-grade material upon which the pavement design was based.

4.2.2.10 Pavement CBR – Soaked CBR
Enter the CBR test results, based on a 4-day soaked CBR test, of the in-situ pavement material upon which the design was based.
4.2.2.11 Seal Width
Enter the width of the road seal from lip of K&C to lip of K&C or the seal width where no Kerb and Channel exists.

4.2.2.12 Length
Enter the length of this section of road based on the length of continuous pavement and surfacing material. Where there is a change in either the surfacing type or the pavement composition a new length and details are to be entered on a new line of the spreadsheet (corresponding to a new CAD object).

4.2.2.13 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where 5 March 1999 shall be represented by ‘05/03/1999’

4.2.2.14 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

4.2.2.15 Asset Status
This refers to the status of the asset after construction
- New
- Modified
- Removed

### 4.2.3 Roads Attribute Data Forms – Pathways

<table>
<thead>
<tr>
<th>Form No. RAD_PATH</th>
</tr>
</thead>
</table>

Attributes described below are to be assigned to a single CAD entity as described in Table 3.3.

A single pathway entity, in this instance, is classified as a length of pathway that has the same continuous attributes regardless of any driveways or other asset objects that are contained within that section.

4.2.3.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

4.2.3.2 Material Type
The various types of material are listed below
- Asphalt – 30mm
- Boards – Recycled Plastic
- Boards - Timber
- Concrete - Paved
- Concrete – Pebble Render – 75mm
- Concrete - Pebble Render – 100mm
- Concrete – Pebble Render – 125mm
- Concrete – Plain – 75mm
- Concrete – Plain – 100mm
- Concrete – Plain – 125mm
- Concrete – Stamped/Stencilled – 75mm
- Concrete – Stamped/Stencilled – 100mm
- Concrete – Stamped/Stencilled – 125mm
- Concrete – Step Stones
- Gravel – 100mm

4.2.2.3.3 Width
Enter the width of the pathway

4.2.2.3.4 Length
Enter the length of the pathway

4.2.2.3.5 Crossovers
Select the number of crossovers/driveways in this section of pathway.

4.2.2.3.6 Installation Date
Enter the date that the asset was constructed. The format of the date shall be
DD/MM/YYYY where 5 March 1999 shall be represented by ‘05/03/1999’

4.2.2.3.7 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to
this asset.

4.2.2.3.8 Asset Status
This refers to the status of the asset after construction
- New
- Modified
- Removed

4.2.2.4 Roads Attribute Data Forms – Signs
Form No. RAD_SIGNS

Attributes described below are to be assigned to a single CAD entity as described
in Table 3.3.

A sign entity, in this instance, is classified as an individual sign regardless of the
number of supports it has. Multiple signs on the same supports must be entered
separately.

4.2.2.4.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique
alphabet numeric value. Each asset shall have an Entry ID assigned to it whether the
asset is a new asset or an existing asset which has been modified.

4.2.2.4.2 MUTCD Code
Enter the numbering system for the sign specified by the Queensland Department
4.2.2.4.3 Common Name.
Enter the common name of the sign e.g.
- Stop
- Warning
- No through Road
- Speed

4.2.2.4.4 No of Supports
Enter the number of support posts the sign is attached to.

4.2.2.4.5 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where 5 March 1999 shall be represented by '05/03/1999'

4.2.2.4.6 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

4.2.2.4.7 Asset Status
This refers to the status of the asset after construction
- New
- Modified
- Removed
5.0 STORMWATER DRAINAGE

5.1 Plan Information
Digital plan information, in the formats specified in Section 2.2 of this manual, is to be provided for all the stormwater drainage assets listed in Table 3.3.

5.2 Attribute Information

5.2.1 General
Attribute information is to be supplied for all new Stormwater Drainage assets which ultimately become the property and responsibility of Council, in the format specified in section 2.3. These assets and the relevant form number for recording attribute data are listed in Table 3.3.

Attribute information is also to be supplied for all assets which have been modified during the construction of new assets. This includes:
- Assets which have been added (includes moving an asset's location)
- The characteristics (i.e. attributes) of an asset have been modified.

The attribute data forms have been designed to record both new assets and modified assets.

An example project has been completed using the standard attribute data forms and is included in Section 11 of this manual.

5.2.2 Standard Forms
The forms and an explanation of each of the entry columns for each of the forms are included in the following sections.

5.2.2.1 Drainage Attribute Data Form - Inlet Pits / Manholes, - Inter-allotment
Inlet Pits Form No. DAD_STRUCT

Attributes described below are to be assigned to a single entity as described in Table 3.3.

Attribute data for pits or manholes; whether inter-allotment, subsoil or a stormwater main entity, is to be entered into this attribute sheet. A pit or manhole in this instance, is classified as a structure or object that allows surface water runoff to enter into an underground storm water network, or allows maintenance access into the underground storm water network.

5.2.2.1.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

5.2.2.1.2 Structure Type
The various asset types are listed below, to be recorded on the Attribute Data Forms:
- Single Grated Pit - SGP
5.2.2.1.3 Drainage Type
Select the drainage type for this inlet/outlet
- Culvert Cell
- Subsoil
- Inter Allotment
- Reticulation Main

5.2.2.1.4 Structure Location
Simple codes are to be entered to describe the asset location as listed below:
- Beach (Seaside of foreshore property boundary)
- Open Channel (Inlets / Outlets connection to an open channel or drain)
- Verge (Between back of kerb and property boundary)
- Carriageway (Within the road carriageway)
- Private Property (Within real property i.e. private property, Easement, Council Reserve or Crown land)
- Saltwater Waterway (Estuary)
- Freshwater Waterway (Non-estuarine river or stream)

5.2.2.1.5 Structure Width/Dia
This column describes the gross, overall, internal width dimension (for rectangular inlet pits) or the diameter (for circular inlet pits), whichever is applicable. The dimension is to be recorded in millimetres. If the shape of an inlet pit is not circular or rectangular or is unusual, details of the pit are to be provided in the remarks field.

5.2.2.1.6 Structure Breadth
This column describes the gross, overall, internal height dimension for rectangular inlet pits. The dimension is to be recorded in millimetres. For circular inlet pits, a value of zero must be entered. If the shape of an inlet pit is not circular or rectangular or is unusual, details of the pit are to be provided in the remarks field.

5.2.2.1.7 Structure Material
The material from which the surround has been made. Relevant material types are as follows:
- PC (Precast) Concrete
- CIS (Cast in Situ) Concrete
- PVC
- PP (Polypropylene)
5.2.2.1.8 Cover Material
Relevant Cover Materials are:
- Aluminium
- Cast Iron
- Concrete
- Concrete (Gattic)
- Fibreglass
- Polypropylene
- PVC
- Steel Bright
- Steel Galvanized

5.2.2.1.9 Pollutant Trap
Is an approved Pollutant trapping device installed Yes/No.

5.2.2.1.10 Erosion Control Type
- Stone pitched
- Cast InSitu Concrete
- Pre-Cast Concrete
- Mattress Gabion
- Cube Gabion

5.2.2.1.11 Surface Level
Record a level on the top centre of the lid or top of the inlet pit.

5.2.2.1.12 Invert Level
Record the invert level (i.e. lowest point) of the inlet pit.

5.2.2.1.13 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Spirit Level Survey.

5.2.2.1.14 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where: March 1999 shall be represented by ‘05/03/1999’

5.2.2.1.15 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

5.2.2.1.16 Assets Status
This refers to the status of the asset after construction
- New
- Modified
- Removed
Attributes described below are to be assigned to a single CAD entity as described in Table 3.3.

Attribute data for drainage pipes; whether inter-allotment, subsoil or a stormwater main entity, is to be entered into this attribute sheet. A single pipe entity, in this instance, is classified as a length of pipe that has the same continuous attributes between inlet, outlet and/or pits.

Multiple barrel pipes shall be treated as multiple entries i.e. each barrel shall have a CAD object, an Entry ID and a line of attribute information.

5.2.2.2.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

5.2.2.2.2 Dimension 1
This column describes the nominal leg dimension for RCBC’s or nominal diameter (for RCP’s), whichever is applicable and it is to be recorded in millimetres (mm). *(NOTE: For RCBC’s, this field must represent the LEG dimension of the RCBC)*. If the shape of a pipe is not circular or rectangular or is unusual, details of the pipe are to be provided in the remarks field.

5.2.2.2.3 Dimension 2
This column describes the nominal span dimension for RCBC’s and it is to be recorded in millimetres (mm). For circular pipes, a value of zero must be entered. *(NOTE: For RCBC’s, this field must represent the SPAN dimension of the RCBC)*. If the shape of a pipe is not circular or rectangular or is unusual, details of the pipe are to be provided in the remarks field.

5.2.2.2.4 Material
The material from which the pipe is constructed. Relevant material types are as follows:
- RCP – Reinforced Concrete
- FRC
- PVC
- RCBC
- PP Ribbed
- PVC Draincoil
- HDPE Draincoil

5.2.2.2.4 Drainage Type
Select the drainage type for this pipe section
- Culvert Cell
- Sub-soil
- Inter-Allotment
- Reticulation Main

5.2.2.5 Length
This column represents the *slope length* of the pipe from end to end. That is, chamber dimensions shall not be included and the pipe length shall be an actual length accounting for the slope of the pipe (i.e. NOT a plan length). The length shall be recorded in meters (m).

5.2.2.6 Class
Select the pipe class.

5.2.2.7 Upstream Surface Level (USSL)
Record the surface level of the upstream connected structure, in metres to 3 decimal places.

5.2.2.8 Upstream Invert Level (USIL)
Record the pipe invert level at its upstream end in metres to 3 decimal places.

5.2.2.9 Downstream Surface Level (DSSL)
Record the surface level of the downstream connected structure, in metres to 3 decimal places.

5.2.2.10 Downstream Invert Level (DSIL)
Record the pipe invert level at its downstream end in metres to 3 decimal places.

5.2.2.11 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Total Station

5.2.2.12 Installation Date
Enter the date that the asset was constructed. The format of the date shall be YYYY/MM/DD where: 5 March 1999 shall be represented by ‘1999/03/05’

5.2.2.13 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

5.2.2.14 Assets Status
This refers to the status of the asset after construction
- New
- Modified
- Removed
Attributes described below are to be assigned to a single CAD entity as described in Table 3.3.

An open channel, in this instance, is classified as a length of open storm water drainage channel that has the same continuous attributes from start to end.

### 5.2.2.3.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

### 5.2.2.3.2 Type
The various asset types are listed below. Asset types other than those listed in the drop down are to be noted in the remarks column.
- Concrete lined
- Vegetated
- Vegetated concrete invert
- Vegetated rock invert
- Overland flow path
- Rock lined

### 5.2.2.3.3 Length
Represents the slope length of the channel from end to end. The length shall be recorded in meters.

### 5.2.2.3.4 Bottom Width
The width of the channel in meters at its base taken at a typical cross-section.

### 5.2.2.3.5 Top Width
The width of the channel in meters at its top taken at a typical cross-section.

### 5.2.2.3.6 Bankfull Depth
The distance in meters from the invert to the top of bank taken at a typical cross section.

### 5.2.2.3.7 Upstream Invert (USIL)
Record the channel invert at the upstream end.

### 5.2.2.3.8 Downstream Invert (DSIL)
Record the channel invert at the downstream end.

### 5.2.2.3.9 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Spirit Level Survey.

### 5.2.2.3.9 Installation Date
The date on which the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’
5.2.2.3.10 Layer name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

5.2.2.3.11 Assets Status
- New
- Modified
- Removed

5.2.2.4 Drainage Attribute Data Form - Detention / Retention Basins Form
Form No. DAD_DR

Attributes described below are to be assigned to a single CAD entity as described in Table 3.3.

A Detention / Retention basin, in this instance, is classified as an area designed to temporarily store storm water runoff.

5.2.2.4.1 Entry ID.
Enter ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

5.2.2.4.2 Basin Type
The various asset types to be recorded on the Attribute data forms are listed below.
- Retardation Basin – Dry
- Retardation Basin – Wet

5.2.2.4.3 Invert Level
The invert level at the deepest point in the basin, recorded in meters AHD.

5.2.2.4.4 Temporary Storage Capacity
Enter the amount of temporary storage available in the basin in cubic metres, discounting any storage used for permanent water storage.

5.2.2.4.5 Underground Storage
Record if underground storage has been used.

5.2.2.4.6 Weir
Record if there is a weir on the basin.

5.2.2.4.7 Weir Height
Record the level of the top of the weir in meters AHD

5.2.2.4.8 Weir Material
The material from which the weir is constructed. Relevant material types are as follows:
• Concrete
• Roadway
• Turf

5.2.2.4.9 Weir Length
Enter the length in meters of the weir at its recorded weir height.

5.2.2.4.10 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Spirit Level Survey

5.2.2.4.11 Installation Date
The date on which the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

5.2.2.4.12 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

5.2.2.4.13 Assets Added / Modified / Removed
This refers to the status of the asset after construction
• New
• Modified
• Removed

5.2.2.5 Drainage Attribute Data Form - Stormwater Quality Improvement Devices (SQID) Form No. DAD_SQID

A Stormwater quality improvement device, in this instance, is classified as an area or device that is designed to trap rubbish and debris at the outlet of a stormwater drainage system.

5.2.2.5.1 Entry ID.
Enter ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

5.2.2.5.2 Type
The SQID type is to be recorded on the Attribute Data form and the type to be selected from the supplied list. Types are listed below.
• Primary
• Secondary

5.2.2.5.3 Manufacturer
The manufacturer’s name of the device.

5.2.2.5.4 Model
The manufacturer’s specific model of the device.
5.2.2.5 Location
Simple codes are to be entered to describe the asset location as listed below:

- **Beach** (Seaside of foreshore property boundary)
- **Open Channel** (Inlets / Outlets connection to an open channel or drain)
- **Verge** (Between back of kerb and property boundary)
- **Carriageway** (Within the road carriageway)
- **Private Property** (Within real property i.e. private property, Easement, Council Reserve or Crown land)
- **Saltwater Waterway** (Estuary)
- **Freshwater Waterway** (Non-estuarine river or stream)

5.2.2.5.6 Surface Level
Record a level on the centre of the top of the cover lid in metres AHD.

5.2.2.5.7 Invert Level
Invert level of the outlet pipe in AHD.

5.2.2.5.8 Invert Level Sump
Invert level at the lowest point of the device in metres AHD.

5.2.2.5.9 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Spirit Level Survey

5.2.2.5.10 Installation Date
The date on which the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

5.2.2.5.11 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

5.2.2.5.12 Assets Added / Modified / Removed
This refers to the status of the asset after construction

- New
- Modified
- Removed
6.0 PARKS
6.1 Plan Information
Digital plan information, in the formats specified in Section 2.2 of this manual, is to be provided for all the park assets listed in Table 3.3

6.2 Attribute Information
6.2.1 General
Attribute information is to be supplied for all new park assets which ultimately become the property and responsibility of Council, in the formats specified in section 2.3 of this manual. These assets and the relevant form number for recording attribute data are listed in Table 3.3.

Attribute information is also to be supplied for all assets which have been modified during the construction of new assets. This includes:

- Assets which have been added (includes moving an asset’s location)
- The characteristics (i.e. attributes) of an asset have been modified.

The Attribute Data Forms have been designed to record both new assets and modified assets.

An example project has been completed using the standard attribute data forms listed below and is included in Section 11 of this manual.

6.2.2 Standard Forms
The forms and an explanation of each of the entry columns for each of the forms are included in the following sections.

<table>
<thead>
<tr>
<th>6.2.2.1 Park Attribute Data Form – Fencing &amp; Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form No. PAD_FENCE</td>
</tr>
</tbody>
</table>

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

Attribute data for park fencing and signs is to be entered into this attribute sheet. A sign entity, in this instance, is classified as an individual sign regardless of the number of supports it has. Multiple signs on the same supports must be entered separately. A fence entity, in this instance, is any form of constructed separating barrier.

6.2.2.1.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

6.2.2.1.2 Fence Type
The Fence type is to be recorded on the Attribute Data form and the type to be selected from the supplied list. Types are listed below.

- Post & Rail
- Post & Wire
6.2.2.1.3 Post Material
Select the fence post material from the supplied list. Types are listed below.
- Timber
- Metal
- Clay Brick
- Concrete Case
- Concrete block

6.2.2.1.4 Panel Material
Select the fence post material from the supplied list. Types are listed below.
- Timber Paling
- Timber Sheeting
- Metal Sheeting
- Metal Weld Mesh
- Metal Chain mesh
- Metal Wire Strand
- Clay Brick
- Concrete Block
- Fibre Cement Sheeting
- No Panels

6.2.2.1.5 Length
The Length of the fence structure in m.

6.2.2.1.6 Height
The Height of the fence structure in m.

6.2.2.1.7 Boundary Fence
Is the fence structure a boundary fence.

6.2.2.1.8 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

6.2.2.1.9 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

6.2.2.1.10 Assets Added / Modified
This refers to the status of the asset after construction
- New
- Modified
- Removed
### 6.2.2.2 Park Attribute Data Form – Structures
Form No. PAD_STRUCT

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

Attribute data for park buildings and structures is to be entered into this attribute sheet. A building or structure entity, in this instance, is classified as any building or structure within a park area that doesn’t come into any other listed park asset type.

#### 6.2.2.2.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

#### 6.2.2.2.2 Structure Type
Select the structure type. For structure types not listed, select “Other (See Remarks)” option and enter a structure type in the Layer Name / Remarks column. Types include the following:
- Shelter
- Amenities Block
- Storage Shed
- Other (See Remarks)

#### 6.2.2.2.3 Flooring Material
Select the floor cladding material. For flooring materials not listed, select “Other (See Remarks)” option and enter a flooring material in the Layer Name / Remarks column. Floor types include:
- Timber
- Bare Earth
- Natural Stone
- Concrete Paved
- Concrete Reinforced
- Other (See Remarks)

#### 6.2.2.2.4 Wall Material
Select the wall material. For wall cladding materials not listed, select “Other (See Remarks)” option and enter a wall cladding material in the Layer Name / Remarks column. Wall cladding types include:
- No Walls
- Timber
- Clay Brick
- Natural Stone
- Concrete Cast
- Concrete Block
- Metal sheet Coloured
- Metal Sheet Galv/Zinc
- Fibre Cement Sheeting
- Other (See Remarks)
6.2.2.5 Roof Material
Select the roof cladding material. For roof cladding materials not listed, select “Other (See Remarks)” option and enter a roof cladding material in the Layer Name / Remarks column. Roof Cladding materials include:
- Timber
- Shade Cloth
- Tile Clay/Concrete
- Metal Sheet Coloured
- Metal Sheet Galv/Zinc
- Fibre Cement Sheeting
- Suspended Concrete
- Other (See Remarks)

6.2.2.6 Structure Length
Overall length of the structure

6.2.2.7 Structure Width
Overall width of the structure

6.2.2.8 Structure Floor RL
Enter the level of the floor in metres AHD to 3 decimal places.

6.2.2.9 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Spirit Level Survey.

6.2.2.8 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

6.2.2.9 Layer Name / Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

6.2.2.10 Assets Added / Modified
This refers to the status of the asset after construction
- New
- Modified
- Removed

6.2.3 Park Attribute Data Form – Furniture
Form No. PAD_FURN

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

Attribute data for park furniture is to be entered into this attribute sheet. A furniture entity, in this instance, is any park entity that does not meet the definition as a structure, fence, BBQ, or equipment type.
6.2.2.3.1 Entry ID.
Entry ID's are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

6.2.2.3.2 Furniture Type
Select the furniture type which describes this asset. For furniture types not listed, select “Other (See Remarks)” option and enter a furniture type that best describes this asset in the Layer Name / Remarks column. The furniture types include:
- BBQ – Gas
- BBQ – Wood
- BBQ – Electric
- Table
- Bench
- Table With benches

6.2.2.3.3 Construction Material
Select the material that this furniture is constructed from. For construction material types not listed, select “Other (See Remarks)” option and enter a material in the Layer Name / Remarks column. The furniture construction material types include:
- Timber
- Metal Galv/Zinc
- Stainless Steel
- Clay Brick
- Natural Stone
- Concrete Cast
- Concrete Block
- Other (See Remarks)

6.2.2.3.4 Equipment Manufacturer
Enter the manufacturer of this asset.

6.2.2.3.5 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

6.2.2.3.6 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

6.2.2.3.7 Assets Added / Modified
This refers to the status of the asset after construction
- New
- Modified
- Removed
### 6.2.2.5 Park Attribute Data Form – Equipment

Form No. PAD_EQUIP

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

Attribute data for park equipment is to be entered into this attribute sheet. An equipment entity, in this instance, is classified as any item which can be used for play or exercise within a park area, that doesn't come into any other listed park asset type.

**6.2.2.5.1 Entry ID.**
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

**6.2.2.5.2 Equipment Type**
Select the equipment type that best suits this park equipment asset. For equipment types not listed, select Other option and enter a type in the Layer Name / Remarks column.

**6.2.2.5.3 Description**
Enter a description for this equipment which details what this equipment is, does or is used for.

**6.2.2.5.4 Model Information**
Enter any model information including numbers and names.

**6.2.2.5.5 Manufacturer**
Enter the Manufacturer name and details of this equipment.

**6.2.2.5.6 Installation Date**
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

**6.2.2.5.7 Layer Name/Remarks**
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

**6.2.2.5.8 Assets Added / Modified**
This refers to the status of the asset after construction
- New
- Modified
- Removed
7.0 MISCELLANEOUS
7.1 Plan Information
Digital plan information, in the formats specified in Section 2.2 of this manual, is to be provided for all the miscellaneous assets listed in Table 3.3

7.2 Attribute Information
7.2.1 General
Attribute information is to be supplied for all new miscellaneous assets which ultimately become the property and responsibility of Council, in the formats specified in Section 2.3 of this manual. These assets and the relevant form number for recording attribute data are listed in Table 3.3.

Attribute information is also to be supplied for all assets which have been modified during the construction of new assets. This includes:
- Assets which have been added (includes moving an asset’s location)
- The characteristics (i.e. attributes) of an asset have been modified.

The Attribute Data Forms have been designed to record both new assets and modified assets.

An example project has been completed using the standard attribute data forms listed below and is included in Section 11 of this manual.

7.2.2 Standard Forms
The forms and an explanation of each of the entry columns for each of the forms are included in the following sections.

7.2.2.1 Miscellaneous Attribute Data Form – Retaining Walls
Form No. MAD_RETWALL
Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

Attribute data for retaining walls are to be entered into this attribute sheet. A retaining wall, in this instance, is classified as a wall of any sort or size that has been constructed to retain, hold back or support earthworks.

7.2.2.1.1 Entry ID.
Entry ID’s are to be assigned by the consultant and shall consist of a unique alphanumeric value. Each asset shall have an Entry ID assigned to it whether the asset is a new asset or an existing asset which has been modified.

7.2.2.1.2 Setback
Select the batter setback as specified in degrees from the vertical.

7.2.2.1.3 Maximum Wall Height
Enter the RL on the highest point on the wall in metres AHD to 3 decimal places.
7.2.2.1.4 Construction Type

7.2.2.1.5 Construction Type
Select the wall construction type from those provided in the drop down list. If the construction type is not listed, enter the type in the Layer Name/Remarks field.

7.2.2.1.6 Manufacturer
Enter the manufacturer details for the wall construction materials

7.2.2.1.7 Construction Materials
Select the material that the wall is constructed from.

7.2.2.1.8 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

7.2.2.1.9 Height Determined
How the Z Coordinate (level) was determined. E.g. RTK GPS, Spirit Level Survey

7.2.2.1.10 Installation Date
Enter the date that the asset was constructed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by ‘05/03/1999’

7.2.2.1.11 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

7.2.2.1.12 Assets Added / Modified
This refers to the status of the asset after construction
- New
- Modified
- Removed

7.2.2.1 Miscellaneous Attribute Data Form – Development Boundary
Form No. MAD_DEVBDY

Attributes described below are to be assigned to a single drawing entity as described in Table 3.3.

Attribute data for property boundaries are to be entered into this attribute sheet. A retaining wall, in this instance, is classified as a wall of any sort or size that has been constructed to retain, hold back or support earthworks.

7.2.2.1.1 Development Name
Enter the name and stage number of this development.

7.2.2.1.2 Developer
Enter the name and details of the consultant responsible for the construction of this development.
7.2.2.1.3 Installation Date
Enter the date that this subdivision was completed. The format of the date shall be DD/MM/YYYY where: 5 March 1999 shall be represented by '05/03/1999'.

7.2.2.1.4 Layer Name/Remarks
Enter the name used for this AutoCAD layer and any other remarks relevant to this asset.

7.2.2.1.5 Data Source
Enter the name and details of the consultant providing the As Constructed data for this development.
8.0 ZONE MAPS
The maps contained on the following pages depict the Zones for the purpose of the positional accuracy requirements as specified in this document, only.

NOTE: Circular head council designated URBAN maps will be updated in the next version of this manual. Until then the following areas should be treated as URBAN for the purposes of ASCON submission

- Smithton
- Stanley
- Arthur River
- Forest
- Scotchtown
- Irishtown
- Mengha
FIGURE 1a - Somerset Urban Classified Area (ASCON Submissions)
9.0 WORKED EXAMPLES

NOTE: The data contained on the following pages are examples only and are not to be regarded as true or actual.
9.1 Roads
The following is an example of a marked up plan showing asset numbering and a hardcopy print of Roads Attribute Data Forms follow.
## ROADS ATTRIBUTE DATA FORM - KERB / KERB & CHANNEL

NOTE: If assets are supplied in AutoCAD format, the information in the table below must be completed. If assets are supplied in ASCII file format, the following information must be supplied in the file along with object X and Y (& Z where required) Coordinates.

<table>
<thead>
<tr>
<th>Entry ID</th>
<th>Profile Type</th>
<th>Median / Traffic Island</th>
<th>Infill Type</th>
<th>SW Pits</th>
<th>Crossovers</th>
<th>Length</th>
<th>Installation Date</th>
<th>Layername / Remarks</th>
<th>Asset Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>KERB_001</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>4</td>
<td>150</td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
</tr>
<tr>
<td>KERB_002</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>6</td>
<td>25</td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
</tr>
<tr>
<td>KERB_003</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>18</td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>KERB_004</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td></td>
<td>10</td>
<td>10/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
<td></td>
</tr>
<tr>
<td>KERB_005</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
</tr>
<tr>
<td>KERB_006</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>5</td>
<td></td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
</tr>
<tr>
<td>KERB_007</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>6</td>
<td>18</td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
</tr>
<tr>
<td>KERB_008</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td></td>
<td>11</td>
<td>35</td>
<td>1/07/2011</td>
<td>AC_KERB</td>
<td>New</td>
</tr>
<tr>
<td>KERB_009</td>
<td>M1 - Mountable Kerb &amp; Channel - 600mm</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AC_KERB</td>
<td>New</td>
</tr>
</tbody>
</table>
### ROADS ATTACHMENT DATA FORM - PAVEMENT / SURFACING

NOTE: If entries are supplied in AutoCAD format, the information in the table below must be completed. If entries are supplied in ASCII format, the following information must be supplied in the mandatory fields. All and 1100 if required. Codex

<table>
<thead>
<tr>
<th>Entry ID</th>
<th>Surface Type</th>
<th>Spans (m)</th>
<th>Bitumen Type</th>
<th>Bitumen Thickness (mm)</th>
<th>Subgrade Type</th>
<th>Subbase Type</th>
<th>Formal Type</th>
<th>Base Course</th>
<th>Bitumen Type</th>
<th>Bitumen Thickness (mm)</th>
<th>Core Width (mm)</th>
<th>Length (m)</th>
<th>Subbase Type</th>
<th>Road Name</th>
<th>Layer Type / Bedrock</th>
<th>Access Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01-045</td>
<td>Asphalt - Black</td>
<td>800</td>
<td>T/PA-20</td>
<td>60</td>
<td>T/PA-20</td>
<td>20</td>
<td>B</td>
<td>6</td>
<td>16</td>
<td>810</td>
<td>WY57</td>
<td>Section</td>
<td>AC-200</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P01-046</td>
<td>Asphalt - Black</td>
<td>900</td>
<td>T/PA-22</td>
<td>60</td>
<td>T/PA-22</td>
<td>20</td>
<td>B</td>
<td>6</td>
<td>20</td>
<td>8150</td>
<td>WY57</td>
<td>Section</td>
<td>AC-200</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P01-047</td>
<td>Asphalt - Black</td>
<td>500</td>
<td>T/PA-24</td>
<td>60</td>
<td>T/PA-24</td>
<td>20</td>
<td>B</td>
<td>6</td>
<td>20</td>
<td>8155</td>
<td>WY57</td>
<td>Section</td>
<td>RUBBER</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Page 53 of 63
### Roads Attribute Data Form - Pathways

NOTE: If assets are supplied in AutoCAD format, the information in the table below must be completed. If assets are supplied in ASCII file format, the following information must be supplied in the file along with object X and Y (& Z where required) Coordinates.

<table>
<thead>
<tr>
<th>Entry ID</th>
<th>Material Type</th>
<th>Width</th>
<th>Length</th>
<th>Crossovers</th>
<th>Installation Date</th>
<th>Layer Name / Remarks</th>
<th>Asset Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATH_001</td>
<td>Asphalt - 30mm</td>
<td>1.5</td>
<td>100</td>
<td>10</td>
<td>1/07/2011</td>
<td>AC_PATH</td>
<td>New</td>
</tr>
<tr>
<td>PATH_002</td>
<td>Asphalt - 30mm</td>
<td>1.5</td>
<td>200</td>
<td>15</td>
<td>1/07/2011</td>
<td>AC_PATH</td>
<td>New</td>
</tr>
</tbody>
</table>
ROADS ATTRIBUTE DATA FORM - SIGNS

NOTE: If assets are supplied as blocks, the information in the table below must be completed. If assets are supplied in ASCII file format, the following information must be supplied in the file, X and Y Coordinates, followed by the information required in the fields below.

<table>
<thead>
<tr>
<th>Entry ID</th>
<th>MUTCD Code</th>
<th>Common Name</th>
<th>No. of Supports</th>
<th>Installation Date</th>
<th>Layer Name / Remarks</th>
<th>Asset Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN_001</td>
<td>05-1</td>
<td>Street Name</td>
<td>1</td>
<td>1/07/2011</td>
<td>AC_SIGN</td>
<td>New</td>
</tr>
<tr>
<td>SIGN_002</td>
<td>05-1</td>
<td>Street Name</td>
<td>1</td>
<td>1/07/2011</td>
<td>AC_SIGN</td>
<td>New</td>
</tr>
</tbody>
</table>
9.2 Stormwater Drainage
The following is an example of a marked up plan showing asset numbering and a hardcopy print of Stormwater Drainage Attribute Data Forms follow.
### DRAINAGE ATTRIBUTE DATA FORM - STRUCTURES (INLET PITS/MAINHOLE S)

**NOTE:** All fields are supplied in AutoCAD format, the information in the table below must be completed. All areas are supplied in ASCII format, the following information must be supplied in the file along with object ID and (V, 2) curved weightedclosed:

<table>
<thead>
<tr>
<th>Carry ID</th>
<th>Structure Type</th>
<th>Structure Length</th>
<th>Structure Width</th>
<th>Structure Height</th>
<th>Structure Material</th>
<th>Cover Material</th>
<th>Platform Type</th>
<th>Totalateau Type</th>
<th>Fracture Control</th>
<th>Fracture Control As Stated</th>
<th>Surface Level</th>
<th>Inside Level</th>
<th>Height Difference</th>
<th>Geometry</th>
<th>Locate Plane Remarks</th>
<th>Site Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
<tr>
<td>378614-47</td>
<td>Round Chamber</td>
<td>Inner Diameter: 900mm</td>
<td>Depth: 1200mm</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Concrete</td>
<td>Duct</td>
<td>Full Angle</td>
<td>No</td>
<td>No</td>
<td>0.400</td>
<td>1.900</td>
<td>0.699</td>
<td>Ductile Iron</td>
<td>140900</td>
<td>B, L, T, T'SHAPED</td>
</tr>
</tbody>
</table>

---

**Page 57 of 63**
## DRAINAGE ATTRIBUTE DATA - PIPES

NOTE: If assets are supplied in AutoCAD format, the information in the table below must be completed. If assets are supplied in ASCII format, the following information must be supplied in the file along with object X and Y (Z, if required) Coordinates.

<table>
<thead>
<tr>
<th>Entry ID</th>
<th>Dimension 1</th>
<th>Dimension 2</th>
<th>Material</th>
<th>Drainage Pipe</th>
<th>Length</th>
<th>Class</th>
<th>U/REL</th>
<th>U/R/L</th>
<th>D/O/REL</th>
<th>D/O/LE</th>
<th>Height Determined</th>
<th>Installation Date</th>
<th>Layer Name / FormatX</th>
<th>Asset Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIPE-001</td>
<td>785</td>
<td>1550</td>
<td>PVC</td>
<td>PVC</td>
<td>17.36</td>
<td>SN8</td>
<td>15.07</td>
<td>15.01</td>
<td>15.00</td>
<td>15.07</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-003</td>
<td>755</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>21.65</td>
<td>SN8</td>
<td>16.05</td>
<td>16.09</td>
<td>16.05</td>
<td>16.05</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-001</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>9.94</td>
<td>SN8</td>
<td>11.24</td>
<td>11.24</td>
<td>11.24</td>
<td>11.24</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-004</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>13.85</td>
<td>SN8</td>
<td>15.11</td>
<td>15.14</td>
<td>15.14</td>
<td>15.14</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-005</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>6.71</td>
<td>SN8</td>
<td>8.02</td>
<td>8.06</td>
<td>8.06</td>
<td>8.06</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-006</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>12.77</td>
<td>SN8</td>
<td>14.01</td>
<td>14.05</td>
<td>14.05</td>
<td>14.05</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-007</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>16.48</td>
<td>SN8</td>
<td>17.78</td>
<td>17.82</td>
<td>17.82</td>
<td>17.82</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-008</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>19.00</td>
<td>SN8</td>
<td>20.30</td>
<td>20.34</td>
<td>20.34</td>
<td>20.34</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-009</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>20.16</td>
<td>SN8</td>
<td>21.46</td>
<td>21.46</td>
<td>21.46</td>
<td>21.46</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-010</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>23.28</td>
<td>SN8</td>
<td>24.58</td>
<td>24.58</td>
<td>24.58</td>
<td>24.58</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
<tr>
<td>PIPE-012</td>
<td>500</td>
<td>1500</td>
<td>PVC</td>
<td>PVC</td>
<td>24.12</td>
<td>SN8</td>
<td>25.42</td>
<td>25.42</td>
<td>25.42</td>
<td>25.42</td>
<td>PVC</td>
<td>Y</td>
<td>Y</td>
<td>AC</td>
</tr>
</tbody>
</table>
9.5 Miscellaneous
The following is an example of a marked up plan showing asset numbering and a hardcopy print of Miscellaneous Attribute Data Forms follow.
**MISCELLANEOUS ATTRIBUTE DATA FORM - DEVELOPMENT BOUNDARY**

NOTE: If assets are supplied in AutoCAD format, the information in the table below must be completed. If assets are supplied in ASCII file format, the following information must be supplied in the file along with object X and Y (and Z where required) Coord.

<table>
<thead>
<tr>
<th>Development Name</th>
<th>Development Stage</th>
<th>Developer</th>
<th>Installation Date</th>
<th>Layer Name / Remarks</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>York Street</td>
<td>1</td>
<td>Housing Tasmania</td>
<td>1/07/2011</td>
<td>AC_DEVDDY</td>
<td>Housing Tasmania</td>
</tr>
</tbody>
</table>