

**As Constructed Data Guidelines**

**Addendum v8**

**Presentation and requirements for  
As Constructed Submissions**

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1. Overview

1.1 Background

The Asset Designed and As Constructed (ADAC) application will provide Council with a purpose built package designed to collect infrastructure asset information to a standard and format compatible with S E Queensland and Australia wide Local Authority requirements.

Council has been working with IPWEAQ, Lions Systems, Gladstone and Bundaberg Regional Council in designing generic ADAC *“Guidelines for Creation and Submission of ADAC XML Files”* which can be used by any entity wishing to implement ADAC within their organisation.

ADAC has the ability to perform quality control checks to ensure the integrity and completeness of the input data while the XML file is faster to process and can be incorporated into our GIS and Asset Management Systems with minimal effort while eliminating much of the manual processing that currently occurs.

1.2 Purpose

This Addendum is to provide guidance for all entities submitting “as-cons” data as a requirement of a Development Application lodged with the Council after **01 January 2015.** It is to be used in conjunction with the ADAC document; *“Guidelines for Creation and Submission of ADAC XML Files”* and provides information which is specific to Rockhampton Regional Council.

1.3 Scope

The asset classes described in this Addendum and *“Guidelines for Creation and Submission of ADAC XML Files”* are;

* Cadastre
* Open Space
* Water
* Sewer
* Stormwater
* Surface
* Transport

For the Rockhampton Regional Council (RRC) area these are required to comply with Design & Construction Specifications and Standard Drawings which are detailed on the Capricorn Municipal Development Guidelines (CMDG) website: [www.cmdg.com.au/](http://www.cmdg.com.au/)

Additional Display or Survey Capture requirements and Rockhampton Regional Council requirements for the ADAC .xml file are contained in Table 4 and Table 5 of this document.

2. Survey Requirements

2.1 General Requirements

Council will conduct random site audits to confirm that submitted data conforms to requirements, including positional accuracies and tolerances, and the submission of all required objects and attributes.

2.2 Required Datum / Projection

The required datum for ‘As Constructed’ surveys is:

* Horizontal Control Surveys GDA94
* Vertical Control Surveys AHD71

2.3 Acceptable Tolerances

Specific survey tolerances and requirements for the submission of As Constructed information are set out in Table 3. This is not be confused with the construction tolerances and requirements specified in the Capricorn Municipal Development Guideline, (CMDG), Australia & New Zealand Standards (AS/NZ Standards) and any other relevant policies / standards listed in the Decision Notice.

3. Drawing Specifications

3.1 Drawing Structure Rules

* All New, Modified, Abandoned and Removed Assets are to be contained within the one CAD file for each Project.
* The Title Block Attribute Data is to appear only in the Layout Views and associated PDFs outlined in Table 1.
* AutoCAD acceptable versions and requirements are listed in Table 2.
* Each Asset type is to be mapped on their separate layers within their Asset Class outlined in Table 3. A 2013 AutoCAD Template has also been made available for use by external users.

3.2 Plan Projection & Scale

The submitted drawing format is to be set up using the Map Grid of Australia horizontal coordinate system MGA94 as follows:

* Datum: GDA94
* Projection: UTM zones (e.g. Zone 56) in Eastings and Northings (metres).

The scale factor used on all drawings shall be 1 unit = 1 metre.

Table 1: Title Block Requirements

|  |  |
| --- | --- |
| **Title Block Attributes for Layout Views** | **Compulsory** |
| The Project or Development Name. | Yes |
| Stage Number (if applicable) | Yes |
| Legal Property Description | Yes |
| The works approval ID for the development this information represents (D/A number) | Yes |
| Drawing Number | No |
| Date the drawing was revised | Yes |
| As Constructed' Stamp | Yes |
| Name of Principle Contractor | Yes |
| Horizontal & Vertical Datum used | Yes |
| Name & Signature of Registered Professional Engineer | Yes |
| RPEQ Number & Date | Yes |

Table 2: AutoCAD Requirements

|  |  |
| --- | --- |
| **General Information:** | **Requirements:** |
| AutoCAD Version | Version 2000 or later. |
| Title Block | Provide a title block on each of the layout pages: includes the contract number and revision number; an ‘As Constructed’ stamp including the name of the principal contractor & RPEQ number and date and the horizontal and vertical datum used. |
| Survey Station & Reference Points. | Provide the survey station and reference marks xyz values to assist positional accuracy verification. |
| Dimension Planes | 2 |
| Datum/Projection | The Map Grid Australia (MGA94) Cartesian coordinate system: |
| GDA94 |
| UTM Zones (generally Zone 56 within Council’s region) |
| Eastings and Northings |
| Drawing Units | Metres |
| Drawing Precision | 6 Decimal places |
| No. of Annotated Decimal Places | 3 |
| Text File Format | ASCII |
| Polyline map objects | For radial bends (e.g. roads and kerbs in cul-de-sacs) a pickup point is required at every expansion point. |
| Points Scaling | Relative |
| Civil 3D points | Convert to AutoCAD points |

Table 3: Drawn Object Tolerances & DWG Layer Names

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Asset** | **Asset** | **Displayed Location** | **Positional** | **\* Vertical** | **Object Type** | **DWG** |
| **Category** | **Type** | **(Plan View)** | **Accuracy (XY) (90% confidence limit) (± x mm)** | **Accuracy (Z) (90% confidence limit) (± x mm)** | **(Submitted drawing format specification)** | **Required Layer Name** |
| **Transport** | Kerb/ Kerb & Channel | Lip of Kerb/Kerb and channel; segments must apply to only 1 road; segmented showing consistent construction/attributes and ignoring kerb inlets & driveways. | ±50mm | ±10mm | Continuous Polyline | ROAD\_KERB |
| Concrete Invert | Invert of drain. Line work to be drawn in the direction of flow. | ±80mm | ±10mm | Continuous Polyline | ROAD\_KERB |
| Roads (sealed): Roads (unsealed): | Road Sealed - Segmented showing consistent pavement/ surface construction & attribute information incl. separate roundabouts. Road Unsealed - Provide the edge of shoulder/edge of carraigeway, segmented showing consistent pavement construction. | ±80mm | NA | Closed Polyline | ROAD\_EB\_PAVEMENT |
| Parking Areas | Segmented showing consistent pavement/ surface construction & attribute information | ±80mm | NA | Closed Polyline | ROAD\_EB\_PARKING |
| Medians | Edge of Median - not including kerb and channelling/margins/inverts. Where multiple infill types are used, a separate labelled polygon object is required for each infill type. | ±80mm | NA | Closed Polyline | ROAD\_MEDIAN |
| Cycle Lanes: (on road) | Centreline of designated on Road cycle lane. | ±80mm | NA | Continuous Polyline | ROAD\_CYCLE\_CL |
| Footpaths, Shared Paths, Kerb Ramps | Centreline of each Footpath/Kerb Ramp segment, snapped to adjacent centrelines. | ±80mm | NA | Continuous Polyline | ROAD\_PATH\_CL |
| Path Structures; Footbridge, Stairs | Centre point of structure | ±80mm | NA | Point | ROAD\_PATH\_STRUCT |
| Subsoil Cleanout Pits | Centre point or Cleanout | ±80mm | ±10 mm | Point or Block # | ROAD\_SS\_CLEANOUT |
| Subsoil Pipes | Centreline of each pipe drawn in the direction of flow | ±80mm | ±10 mm | Continuous Polyline | ROAD\_SS\_PIPE |
| Road Crash Barriers | Centreline of Crash Barrier | ±80mm | NA | Continuous Polyline | ROAD\_CRASH\_BARRIER |
| Conduit Crossings (water and recycled water) | Centreline of Conduit for water and recycled water (effluent). | ±80mm | ±20 mm | Continuous Polyline | ROAD\_COND |
| **Stormwater** | Inlets/Outlets | Centre top of structure | ±80mm | ±10 mm | Point or Block # | SWD\_EOL |
| Manholes | Centre of pit or access chamber | ±80mm | ±10 mm | Point or Block # | SWD\_MH |
| Stormwater Pipes | Centreline of **each** pipe. Line work to be drawn in the direction of flow. | ±80mm | ±10 mm | Continuous Polyline | SWD\_MAIN |
| Culvert Pipes | Centreline of **each** pipe. Line work to be drawn in the direction of flow. | ±80mm | ±10 mm | Continuous Polyline | SWD\_MAIN |
| Jump Ups (House Connections) | Centreline of pipe object with any stub or wye junction on the inter-allotment line when there is no pit/chamber | ±80mm | ±10 mm | Continuous Polyline | SWD\_JU |
| Open Channel/Table Drain | Line work defining the invert of channel and top of batters; for flat bottom channels, include the toes of the batters. Line work to be drawn in the direction of flow. Invert of Table Drain, line work to be drawn in the direction of flow. | ±80mm | NA | Continuous Polylines | SWD\_OPC |
| Drop Structures & Weirs | Centre top of structure. | ±80mm | ±20 mm | Point or Block # | SWD\_DROP |
| Fittings | Centre of fitting | ±80mm | ±10 mm | Point or Block # | SWD\_FITT |
| Detention/ Retention/ Sediment Basins & Wetlands | Perimeter of water body (excluding islands). | NA | NA | Closed Polyline (depicting perimeter) | SWD\_BAS |
| Stormwater Quality Improvement Devices (SQIDs) | Centre of device | ±80mm | ±20 mm | Point or Block # | SWD\_GPT |
| **Water** | Valves | Centre of valve | ±80mm | ±20 mm | Point or Block # | WAT\_VALVES |
| Bends & Joints | Centre of bend/joint | ±80mm | ±20 mm | Point or Block # | WAT\_FITTINGS |
| Hydrants | Centre of hydrant | ±80mm | ±20 mm | Point or Block # | WAT\_HYDRANT |
| Meters | Centre of meter | ±80mm | ±20 mm | Point or Block # | WAT\_METERS |
| Pipes - Main lines | Node (usually tee) to node (tee or end cap) disregarding FH etc as long as it is the same material/dia. Usually to a tee section or end cap. | ±80mm | NA | Continuous Polyline | WAT\_MAIN |
| Pipes - Service lines (House Connections) | *For single connections*- from tapping band on the reticulation line to meter connection only. | ±80mm | NA | Continuous Polyline | WAT\_HC |
| *For multiple connections*- from tapping band to tee section AND a single separate line from the tee section to the two meter connection points. |
| Pumping Stations | Centre of pump station. | ±80mm | ±20 mm | Point or Block # | WAT\_PS |
| Reservoirs | Centre of reservoir. | ±80mm | NA | Point or Block # | WAT\_RES |
| Maintenance Holes | Centre of Maintenance Hole. | ±80mm | ±20 mm | Point or Block # | WAT\_MH |
| Service Fitting (Tap, Drinking Fountain) | Centre of Fitting | ±80mm | NA | Point or Block # | WAT \_SERVICE\_FITT |
| Irrigation Fittings (Sprinkler Head) | Centre of Fitting | ±80mm | ±20 mm | Point or Block # | WAT\_IRRIGATION |
| **Sewer** | Manholes | Centre of Manhole/Access Chamber. | ±80mm | ±10 mm | Point or Block # | SEW\_MH |
| Valves | Centre of valve | ±80mm | ±20 mm | Point or Block # | SEW\_VALVES |
| Bends/Joints | Centre of bend/joint | ±80mm | ±20 mm | Point or Block # | SEW\_FITTINGS |
| Pipes - Mains | Centre of Access Chamber to centre of Access Chamber. Line work to be drawn in the direction of flow. | ±80mm | ±20 mm | Continuous Polyline | SEW\_MAIN |
| Pipes - Jump Ups (Property Service) | Centre of line from the Inspection Opening to Main line junction. Line work to be drawn in the direction of flow. | ±80mm | NA | Continuous Polyline | SEW\_JU |
| Pipes - Rising Mains | Centre of Access Chamber to centre of Access Chamber. Line drawn in the direction of flow. | ±80mm | ±20 mm | Continuous Polyline | SEW\_RMAIN |
| Pumping Stations | Centre of wet well. | ±80mm | ±10 mm | Point or Block # | SEW\_PS |
| **Effluent** | Joints | Centre of joint | ±80mm | ±20 mm | Point or Block # | EFF\_JOINT |
| Valves | Centre of valve | ±80mm | ±20 mm | Point or Block # | EFF\_VALVE |
| Meters | Centre of meter | ±80mm | ±20 mm | Point or Block # | EFF\_METER |
| Structures | Centre of Structure | ±80mm | NA | Point or Block # | EFF\_STRUCTURE |
| Pipes - Mains | Centre of Access Chamber to centre of Access Chamber. Line work to be drawn in the direction of flow. | ±80mm | ±20 mm | Continuous Polyline | EFF\_MAIN |
| Pipes - Rising Mains | Centre of Access Chamber to centre of Access Chamber. Line drawn in the direction of flow. | ±80mm | ±20 mm | Continuous Polyline | EFF\_RMAIN |
| **Parks** | Regional Parks | The boundary area for park with this stage of the development. | NA | NA | Closed Polyline (perimeter of the Park area). | PARK\_REGIONAL |
| Playground Locations | The boundary area for playground within the park area. | NA | NA | Closed Polyline (perimeter of the Playgound). | PARK\_PLAYGROUND |
| Play Equipment | Centre of object | ±100mm | NA | Point (centre of the object) | PARK\_EQUIP |
| BBQs | Centre of structure | ±100mm | NA | Point (centre of the object) | PARK\_BBQ |
| Furniture (Tables, Seats) | Centre of structure | ±100mm | NA | Point (centre of the object) | PARK\_FURN |
| Rubbish Bins | Centre of bin | ±100mm | NA | Point (centre of the object) | PARK\_BINS |
| Fittings (Bicycle & General) | Centre of fitting | ±100mm | NA | Point (centre of the object) | PARK\_FITT |
| Barrier Fence Continuous | Centreline of fence or row of bollards | ±80mm | NA | Continuous Polyline | PARK\_FENCE |
| Barrier Points | Centre of Bollard | ±80mm | NA | Point or Block # | PARK\_ BARRIERS |
| Retaining Walls | Line representing the ground surface level at the point of incline: from the start and end of the wall and any change in direction. | ±80mm | NA | Continuous Polyline | PARK\_RETWALL |
| Shelters | Centre of structure | ±100mm | NA | Point (centre of the object) | PARK\_STRUCT\_POINT |
| Buildings | Perimeter of building. | NA | NA | Closed Polyline (perimeter of the Building). | PARK\_STRUCT\_POLY |
| Signs | Centre of Sign - depicting a single support or the centre between multiple supports. (Also used for Street Signs) | ±100mm | NA | Point (centre of the object) | PARK\_SIGN |
| Electrical Fitting | Centre of pole footings. (also used for Street Lights) | ±80mm | NA | Point or Block # | PARK\_ELEC\_FITT |
| Boat Ramps | The boundary of the boat ramp. | NA | NA | Closed Polyline (perimeter of the boat ramp). | PARK\_BOAT |
| **Development** | Development Boundary | The extent of Development: to include all new, modified, removed & abandoned infrastructure. | NA | NA | Closed Polyline (based on the perimeter of the Cadastre) | DEV\_BDY |
| Stage Boundary | Define the Stage boundary | NA | NA | Closed Polyline (depicting extent) | STAGE\_BDY |
| **Cadastre** | Land Parcels | The lot boundaries associated with this stage of the development. | NA | NA | Closed Polyline (perimeter of the Cadastre/proposed cadastre). | CAD\_LAND\_PARCELS |
| Easements | The easements associated with this stage of the development. | NA | NA | Closed Polyline (perimeter of the Easement/proposed Easement). | CAD\_EASEMENTS |
| Connections | The connection between Survey Mark/s and Cadastre for this stage of the development | NA | NA | Continuous Polyline | CAD\_CONNECTIONS |
| **Survey** | Survey Marks | Survey point for existing & installed PSMs and Reference Stations (AHD71 & GDA94 UTM Zones). | ±80mm | ±10mm | Point or Block # & copy of new PSM Form 6s. | SURV\_MARKS |
| **Surface** | Spot Heights | As per Section 5.6 | ±80mm | ±20 mm | Point | SUR\_SPOT\_HEIGHTS |
| Contours | As per Section 5.6 | ±80mm | ±20 mm | Continuous Polyline | SUR\_CONTOURS |
| **Supplementary** | Various | Used for Removed, Modified or Abandoned Infrastructure (use appropriate \*SUPP\* layers for each asset type) Supplementary Layers can also be used for RRC Specific Information. | ±80mm | ±10 mm | Various | \*\_SUPP\_\* |
| **# 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 access chamber. All entities that comprise a block must be on the same layer as the AutoCAD insertion Layer.** | | | | | | |
|
| **\* Accuracies stated are relative and related to Permanent Survey Marks (PSMs) used for the survey control. Council now requests the map objects and coordinates of the control points and PSMs used during the survey to assist staff with the assessment of the positional accuracy.** | | | | | | |

4. Submission of As Constructed Information

**All As Constructed Submissions must contain;**

* A Registered Engineer’s Certificate & As Constructed Certification document for Operational Works (MCU and/or ROL), completed by a Registered Professional Engineer of Queensland identifying the Registered Surveyor and containing an ‘As Constructed’ stamp that also states the RPEQ number, name of the principal contractor and date. For other Council contract works, a signed BCA Form 16 is required.
* AutoCAD drawings of the As Constructed information to include all map objects as outlined in the Guidelines for Creation and Submission of ADAC XML Files, and meet the AutoCAD requirements outlined in Table 3.
* Electronic PDF versions of the above AutoCAD As Constructed layouts containing an ‘As Constructed stamp certified by a Registered Professional Engineer and stating their RPEQ number, name of the principal contractor and date.
* A valid ADAC version 4.0 xml file.
* Electronic PDFs of any newly installed PSMs associated with the Contract or Development.
* Submission information must be associated with only one Contract or Development Application.

Subject Heading for As Constructed Lodgement to include the following elements and be submitted to [General.Enquiries@rrc.qld.gov.au](mailto:General.Enquiries@rrc.qld.gov.au)

* Lodgement of As Constructed Data, Estate Name, Stage, OpWorks/DA no. & Version
* Lodgement of As Constructed Data, Stage Name, Contract Tender, BP no. & Version
* Lodgement of As Constructed Data Addendum, Estate Name, Stage, OpWorks/DA no. & Version

5. Additional information (when applicable):

5.1 Maintenance Agreements:

Copies of all Maintenance Agreements that were a requirement of any related Council approval process for infrastructure that is to be Council owned but maintained by another party OR that is owned by another party but Council maintained.

5.2 Buildings & Site Improvements

Generally for Council site-related building and maintenance works e.g. buildings, shade structures, play grounds, monuments, communications, and air conditioning units:

*Architectural****:*** Electronic copies of PDF and AutoCAD drawings for the built structures including: structural drawings, site layout, soil reports, footings, energy efficiency, building classification and compliance certificates, structural calculations, construction standards and specifications.

*Services*: Electronic copies of PDF and AutoCAD drawings for the built structure services including electrical, mechanical, hydraulic, plumbing, gas, drainage, water reticulation and fire; provided in layers that clearly identify the principal contractor; contract number, revision number of the document.

*Operation & Maintenance Manual (including asset/equipment register)*: Two hard copies, and one electronic copy for the installed assets, including the relevant warranty periods, models and serial numbers.

*Maintenance Planning & Consumables:* Electronic copy detailing painting, finishes, floor covering schedules (eg. product colour code/descriptions).

*Note*: The above information should cover details of all assets that were incorporated in the relevant building approval processes.

5.3 Reservoirs, Water and Sewage Treatment Plants, Sewage and Water Pump stations:

*Operation & Maintenance Manual (including asset/equipment registers)*: Two hard copies and one electronic copy for the installed assets.

*Services*: Electronic copies of PDF and AutoCAD drawings of all civil, mechanical/electrical works. The layers must clearly identify the principal contractor; contract number and revision number of the document.

*Note*: Either the technical drawings or the manuals should outline individual civil, mechanical or electrical component details including brands, model and serial numbers, where the information has not already been provided in the attribute details of ADAC xml file. Asset equipment registers must state the make, model and company purchased from.

5.4 Artificial Wetlands:

Electronic copies of PDF and AutoCAD design drawings of the artificial wetlands.

5.5 SQID (treatment plants and gross pollutant traps):

Electronic copies of PDF and AutoCAD design drawings of the SQIDs.

5.6 Earthworks:

For any developments that involved ground surface cutting and/or filling, the As Constructed submission must include the SPOT heights and any Digital Elevation Models and/or line work in digital AutoCAD format over the affected allotments.

Table 4: RRC Specific Display or Survey Capture Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **ADAC Class** | **ADAC Asset Type** | **RRC Equivalent** | **RRC Specific Capture Requirements** |
| **Open Space** | Barrier Continuous | Fence/Bollard Run | Not limited to Open Space Areas |
|  | Sign | Park/Road Signs | Can contain Road Signs |
|  | Electrical Fitting | Street Lights & Poles | Can contain Street Lights & Poles |
| **Storm**  **Water** | Pipes | Stormwater Pipes/Culvert Pipes | Multi-celled pipes must be captured individually |
| **Transport** | Pram Ramp | Pram Ramp/Kerb Ramp | Capture on Pathway as a linear feature |
|  | Road Edge | Kerb and Channel | Captured at Lip of Kerb |

Table 5: Display or Survey Capture Requirements

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ADAC Asset Element** | **ADAC Feature** | **ADAC Detail** | **ADAC Detail** | **Description** | **Enumeration/Detail** | **Description** |
| **Sewer** | Manholes | Manhole | Lining | RRC Specific | Fibreglass | Fibreglass Lined (base construction only) |
| Pipes Pressure | Pipe Pressure | Material | RRC Specific | MPVC | Modified Poly-Vinyl Chloride |
|  |  | Class | RRC Specific | PN16 | PN16 |
| Valves | Valve | Type | RRC Specific | Gate Valve | Gate Valve |
| Fittings | Fitting | Material | RRC Specific | DI | Ductile iron |
| Connection | Connection | Material Class | RRC Specific | SN6 | SN6 |
|  |  |  |  | SN8 | SN8 |
| Connection | Connection | Type | CMDG-S-030 | Type A | Type A |
|  |  |  |  | Type B | Type B |
|  |  |  |  | Type C | Type C |
|  |  |  |  | Type D | Type D |
|  |  |  |  | Type E | Type E |
|  |  |  |  | Type F | Type F |
|  |  |  |  | Type G | Type G |
| **Transport** | Pavement Areas | Pavement Structure | SubBase Layer | RRC Specific | GR24 | Gravel 2.4 |
| Parking Areas | Pavement Structure | SubBase Layer | RRC Specific | GR24 | Gravel 2.4 |
| Road Edges | Road Edge | Type | CMDG-R-060 | TYPE 1 | Barrier Kerb & Channel |
|  |  |  |  | TYPE 2 | Mountable Kerb & Channel |
|  |  |  |  | TYPE 3 | Barrier Kerb |
|  |  |  |  | TYPE 4 | Semi-Mountable Kerb (width 225mm) |
|  |  |  |  | TYPE 5 | Semi-Mountable Kerb (width 500mm) |
|  |  |  |  | TYPE 6 | Concrete Invert (width 600mm) |
|  |  |  |  | TYPE 7 | Concrete Invert (width 900mm) |
|  |  |  |  | TYPE 8 | Concrete Channel (width 900mm) |
|  |  |  |  | TYPE 9 | Rollover Kerb & Channel |
|  |  |  |  | TYPE 10 | Concrete Margin |
| Pathways | Pathway | Use | RRC Specific | Kerb Ramp | Kerb Ramp (Pram Ramp) |
| Sub Soil Drains | Sub Soil Drain | Type | RRC Specific | Slotted Pipe | Slotted Pipe |
|  |  |  |  | Slotted Pipe Socked | Slotted Pipe Socked |
|  |  |  |  | Strip Drain | Strip Drain |
|  |  |  |  | Draincoil | Draincoil |
| **Water Supply** | Pipes | Pipe | Use | RRC Specific | Commercial | Commercial Service |
|  |  | Material | RRC Specific | MPVC | Modified Poly Vinyl Chloride |
| Fittings | Fitting | Material | RRC Specific | Steel | Steel |
| **Storm Water** | Pits | Pit | Use | RRC Specific | Kerb Inlet | Kerb Inlet |
|  |  |  |  | Field Inlet | Field Inlet |
| Pits | Pit | Inlet Type | RRC Specific | Grated Field Inlet | Grated Field Inlet |
|  |  |  |  | Dome Grate | Dome Grate |
|  |  |  |  | Anti-Ponding | Anti-Ponding |
|  |  |  |  | Bicycle Friendly | Bicycle Friendly |
|  |  |  |  | Bro-Pit | Bro-Pit |
|  |  |  |  | Letterbox Gully Pit | Letterbox Gully Pit |
|  |  |  |  | CM L12 | CM L12 |
|  |  |  |  | CM M12 | CM M12 |
|  |  |  |  | CM R12 | CM R12 |
|  |  |  |  | CM L24R | CM L24R |
|  |  |  |  | CM M24R | CM M24R |
|  |  |  |  | CM R24R | CM R24R |
|  |  |  |  | CM L36R | CM L36R |
|  |  |  |  | CM M36R | CM M36R |
|  |  |  |  | CM R36R | CM R36R |