4.3.2.2 Linear Drainage Systems

* Clearing, rodding, jetting and proving Linear Drainage Channels (slot drains)

|  |  |
| --- | --- |
|  | * Comply with specifications for the drainage asset as set out in relevant parts of MCHW [Ref 26.N]. * Minimise pollution risk in accordance with GS 801 [Ref 2.N] and LA 113 [Ref 32.N]. * Contractor to control drainage waste arisings such that they comply with legislation at the point of disposal. * Provide drainage and service ducts cyclic and repair maintenance delivery of activity data in accordance with the requirements of the ADMM [Ref 1.N]. * In delivering a drainage and service ducts cyclic or repair maintenance activity, report problems or potential problems of the asset type and of other asset * types to the client for consideration. * Make recommendations to the client to optimise the delivery of the drainage and service ducts cyclic and repair maintenance activities to minimise non-value adding elements.   (GM 701 – PG76) |

# maintenance requirements

* Cleaning of linear drainage systems shall include piped drains, culverts (less than 900mm in diameter), combined drainage and kerb systems, linear drainage channel systems, slot drains, kerb or channel outlet pipes and piped grips, and shall, when required, be carried out in accordance with Clauses 520, 521 and the following:
  + Additional cleaning may be carried out by drawing through a mandrel with a diameter 20mm less than the nominal diameter of the pipe or nominal minimum area of the "waterway area" of the block.
  + Where necessary a root cutter attachment shall be used with the high-pressure water jet where root infestation is apparent.
  + Any damage to drainage systems or components shall be repaired or made safe immediately if it is considered to be a danger to the public after an instruction from the *Service Manager*.
  + Any suction system used shall comply with Clause 576.
  + Where trash screens have been fitted across the ends of culverts, these will be cleared in accordance with the frequency stated in GM701-ADAMR, and the arisings disposed off site.

(M&RC-SPEC PG22)

* Low pressure / high volume combined kerb and drainage system jetting and proving to be completed every 2 years.

(GM 701 – PG73)

# UNIT / MEASUREMENT / ITEMISATION

* The units of measurement shall be:

(iii) Clearing, sweeping, rodding, low pressure/high volume jetting and proving combined kerb and drainage systems, linear drainage channels, combined channel and pipe systems….linear metre.

* Separate items shall be provided for emptying, clearing, cleaning, low pressure/high volume jetting and proving, weed and vegetation clearance, rubbish / debris / litter / obstruction clearance, silt removal, edge scraping, cutting back, weed spraying, re-cutting, de-silting, cycling, high pressure rotating jetting and powerful suctioning of gullies, gully covers, combined kerb and drainage systems, linear drainage systems, combined channel and pipe systems, catch pits, ditches, outfalls, interceptors, manholes, culverts, filter drains, balancing/attenuation ponds, ancillary items, swales, basins, grassed surface water channels, reservoir pavements and wetlands for drainage purposes in accordance with Chapter II paragraphs 3 and 4 and the following:

Group Feature

I 1 Sub-Asset Type.

II 1 Item.

(MOM Schd. B Issue 7 PG18/19)

# additional information

* The measurement of clearing, sweeping, rodding, low pressure/high volume jetting and proving combined kerb and drainage systems, linear drainage channels, combined channel and pipe systems and clear ditches by removing all material that could impair operation

(overgrown vegetation, silt, debris/rubbish, or eroded banks where present impede flow and impair operation) shall be the individual lengths measured along the centre lines between any of the following:

(a) the internal faces of catch pits, manholes, interceptors;

(b) the external faces of headwalls;

(c) the intersections of the centre lines at pipe junctions;

(d) the centre of gully gratings (or where no grating is provided, the centre of the gully);

(e) the position of terminations shown in the Contract.

The measurement of cleaning, rodding, jetting and proving linear drainage systems, combined drainage and kerb systems and combined channel and pipe systems shall be deemed to include associated manholes, chambers, sumps and the like.

* Location and details of existing drainage system is included in Network Information.
* Existing drainage systems shall be cleaned in accordance with MCHW Volume 1 Series 500 clauses 520 and 521, Series 6100 and Schedule 7 Part 1.
* An alternative method to cleaning by jetting should be used for porous concrete or perforated pipes to avoid a risk to the structural integrity of the porous pipes and the risk that exfiltration will enter the unbound pavement layers and wash out fine material in both instances.
* Where jetting is used, work shall be carried out in accordance with MCHW Volume 1 Series 500 Clause 521.
* Jet heads with nozzles set at approximately 20o to the pipe surface have a low jet angle and are unlikely to cause damage to the pipeline. Fan jets have low jet angles and are widely dissipated and hence unlikely to cause damage to the pipeline.
* The use of a high-pressure lance may be used externally to clear gratings or slots of linear drainage systems.
* The pipeline should be deemed to be clean when the silt content of the cross- sectional area of the pipe is between 0 and 10% for pipes 600 mm diameter or less and between 0 and 5% for pipes over 600 mm diameter.
* Suitable measures such as stanks, or stoppers shall be positioned downstream of the drainage system to be cleaned to minimise the risk of sediment causing contamination of watercourses or soakaways.
* To achieve the performance requirements of the drainage systems the cleaning of open surface water drainage channels, grips, balancing ponds, headwalls, ditches, outfalls and the like shall include the clearance and removal of any full or partial blockages resulting from siltation, erosion, detritus, refuse, rubble and vegetation growth including root systems.
* All arisings from the cleaning process shall be disposed of in an environmentally sensitive manner in accordance with current legislation.

**520 (02/20) The Cleaning of Existing Drainage Systems**

1 (02/20) Where stated in contract specific Appendix 5/1, the Contractor shall clean existing drainage systems in accordance with this Clause.

2 (02/20) The Contractor shall take measures when clearing blocked drains to ensure that adjacent water courses or groundwater via soakaways, will not be contaminated. Contamination includes mud or soil being washed or flushed into streams as well as other more obvious contaminants including diesel fuel, oil and chemicals.

3 (02/20) Initial attempts to clear blocked drains prior to jetting, shall be undertaken by hand rodding and any debris and silt removed by the operation shall be removed off site. The Contractor shall report any localised blockages that cannot be cleared by rodding to the Overseeing Organisation.

4 (02/20) Where jetting is required in contract specific Appendix 5/1 the procedures stated in Clause 521 shall be followed.

**(02/20) Cleaning of Gullies, Catchpits, Soakaways and Oil Separators**

5 (02/20) At each chamber all mud and vegetation in the vicinity of the chamber likely to impede the flow of water shall be removed. After lifting the cover or grating the chamber shall be cleansed of all water, detritus, debris and silt, refilled with clean water to the outlet level, and all covers and gratings replaced and evenly bedded.

6 (02/20) Cleaning of chambers shall be by mechanical means. The vehicle used to clean existing chambers shall be equipped with a 125mm dia gulley arm with boom jets, an exhauster with a minimum output of 5.95cum/min and minimum 5455 litres capacity. Sediment, detritus and liquor from the chamber shall not be permitted to discharge into the outlet. This may be achieved either by plugging the outlet during cleaning, or by simultaneous jetting and abstraction of liquor from the chamber using a tanker fitted with low-pressure high-volume water jets around the boom.

7 (02/20) Gullies and chambers not cleaned for whatever reason, blocked connections and broken or cracked covers, gratings or frames shall be marked to aid subsequent identification.

8 (02/20) Oil separators shall be refilled with uncontaminated water following the cleaning operation.

9 (02/20) The Contractor shall dispose of all surplus water, debris, and arisings from the works off site at a licensed