



GUIDELINE FOR MANAGEMENT OF THE ROAD RESERVE

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GUIDELINE FOR JACKING, DRILLING AND OPEN TRENCH INSTALLATION

1 PURPOSE OF GUIDELINE

This guideline shall be read in conjunction with all other applications for installation of underground services.

Note the following:

- a. All of the other guidelines concerning installation or relocation of underground services refer to this guideline.
- b. This guideline shall be acknowledged and taken into account in preparation of applications for the relevant installation or relocation of underground services.
- c. The responsibility rests with the applicant to provide all necessary plans, reports and information regarding his recommended method for jacking, drilling and open trenching.
- d. The application shall conform to the standards adopted by Roads Directorate.

2 PROCEDURE

- a. As mentioned in all application guidelines it is a specific requirement that the applicant (consulting engineer) shall discuss the relevant pending application with Roads Directorate verbally and/or in writing.
- b. It is also a requirement that the applicant recommends a suitable method for the installation of the underground service, considering Roads Directorate's specific guidelines for the method of installation for specific road classes and traffic volumes.
- c. The application for the installation of the service shall be evaluated by the Planning and Design Sections of Roads Directorate, including the applicant's recommended method of installation of the underground services. Approvals are issued in the form of a wayleave agreement to install the services, and the wayleave will specifically mention the method(s) of installation.
- d. The applicant may be requested to supply additional information.
- e. The applicant can only proceed with installation after formal approval.

3 GUIDELINES FOR THE DESIGNER OF JACKING, DRILLING AND OPEN TRENCHES

3.1 Jacking and Drilling

- a. Jacking and drilling methods, including horizontal directional drilling, shall be used when crossing A and B major roads, as well as any other roads with more than 1000 vehicles per day, unless a geological or geotechnical investigation by suitably qualified professionals has shown the specific area to be unsuitable for such methods. A report of the specific investigation shall be submitted to motivate the trenching alternative.
- b. The jacking and drilling shall cause no disturbance to the pavement or shoulders and have the minimum cover as stated in the Location Guidelines of Roads Directorate.
- c. All drilled and jacked works crossing Roads Directorate roads shall be carried out by certified quality assured (ISO 9001) or industry accredited specialist contractors with experience in similar works (diameter, length, ground conditions).
- d. No pits or excavations, measured to the face of the excavation, shall be closer than 10 m to the edge of the road surfacing. For roads constructed on fill, the face of the excavation shall be no closer than 2 m to the toe of the embankment, or 10 m from the edge of the surfacing, whichever is the greatest.
- e. The absolute minimum distance between the face of an excavation and the edge of the surfacing is 4.5 m or 2 m from the toe of an embankment, whichever is the greater. Proper motivation is required for positioning of the excavations closer than the distances given in d above.
- f. No pits shall be constructed in the median of a dual carriageway road without approval from Roads Directorate.
- g. Upon completion of the work, all pits and excavations shall be backfilled with suitable material compacted to at least the same density as the undisturbed adjoining material. It is the responsibility of the holder of the wayleave to prevent any subsidence in the soil due to inadequate compaction, and / or consolidation of the backfill material and reinstate settled areas.
- h. All electrical, telecommunication and pipe lined services shall be placed in service ducts. The distance between the top of the duct and the lowest point on the cross-section of the road reserve shall not be less than 1.5 m.
- i. The sleeve / culvert shall be placed over the full width of the existing road reserve. If a future road is planned or declared at the position of the crossing, the service shall be placed across the full width of the future road reserve.



- j. Service markers shall be erected on both sides of the road crossing. For services installed parallel to the road reserve, the markers shall be positioned at a minimum spacing of 10 m on the centre line of the service. The markers shall protrude at least 1 metre above the ground surface and be clearly visible.
- k. The diameter of the drilled hole shall not exceed the diameter of the pipe or service by more than 50 mm. If the diameter of the drilled hole exceeds 200 mm, the cavity between the pipe or service and the hole shall be filled or pressure grouted with flowable material.
- I. Uncased drilled holes exceeding 150 mm diameter will not be permitted.
- m. Voids around the jacked / drilled culvert are to be filled with cement grout pumped through holes made in the wall of the culvert. Such holes shall be filled and sealed with non-shrink cementitious grout.
- n. All joints between culvert sections shall be caulked with non-shrink cementitious mortar to ensure water tightness. The surface shall be finished off flush with the exposed wall face.
- o. The duct or culvert shall be installed within 100 mm horizontally and 50 mm vertically of the design position, in accordance with the setting out details submitted for approval.
- p. The slope of the duct or culvert base shall not differ from that indicated on the submitted drawings.
- q. The maximum misalignment of successive pipe / culvert sections shall not exceed 100 mm. Adjustment to line or level shall be gradual. The deformation of the sleeve / culvert, as specified by the manufacturers, shall not be exceeded.
- r. After completion of the works the cross-section of the road profile shall be surveyed. There shall be no change from the original road levels due to subsidence on the position of the jacking.
- s. All excavations shall be fully fenced off and the necessary safety precautions implemented and maintained throughout the work.
- t. Excavation at the advancing face may not be by water jetting and permission shall be obtained from Roads Directorate if blasting is required.

3.2 Open Trenching

- a. The open trench method may be used when crossing B minor, C and D roads with less than 1000 vehicles per day.
- b. Trenching is also generally considered as the installation method that will be employed for installations within areas of the road reserve that are not developed for traffic.

- c. Any damage caused to existing services and road infrastructure as a result of trenching works shall be repaired by the Wayleave Holder and its contractor, at no cost to Roads Directorate. Such damage shall be reported to the relevant service owner, and the repair works shall be arranged with the relevant service owner. The Supervising Engineer of Roads Directorate shall be informed of the damage and repair arrangements.
- d. Any damage caused to road infrastructure as a result of trenching works shall be repaired by the Wayleave Holder and its contractor, at no cost to Roads Directorate. The Supervising Engineer of Roads Directorate shall be informed of the damage and repair arrangements. This includes damage to subsoil drainage.
- e. Trenches shall not be left open overnight. They shall be backfilled, covered with a steel plate or be protected by a barrier perimeter. Details of the proposed barrier shall be provided with the Wayleave application.
- f. When a road is crossed with a trench, the service shall be bedded in accordance with the required standards of the service provider, and backfilled to the specified level where after subsequent pavement construction by Roads Directorate or its contractors can continue without risk of damage to the service.
- g. Use of suitable marker tape is preferred and shall be provided to Roads Directorate.
- h. Where a trench installation through a road pavement was made, it may be required that the Wayleave Holder do temporary backfilling to road level to allow traffic to use the road. Arrangements in this regard shall be made between the Wayleave Holder and the Supervising Engineer. Temporary backfilling to road level may consist of temporary reinstatement with a suitable material that is compacted to adequate density to ensure that it will carry the traffic for a period of at least fourteen (14) days without deforming or potholing. The temporary reinstatement shall also be maintained by the Wayleave Holder in a serviceable condition over the 14 days, as needed.

3.3 Micro Trenching (Narrow Trenching)

- a. Micro trenching, also known as slot-cut or mechanical in-road trenching, may be used when installing fibre optic cables across or in the road direction.
- b. All micro trenching shall be carried out by certified quality assured (ISO 9001) or industry accredited specialist contractors with experience in similar works (width, length, pavement conditions).
- c. The approach to laying of cables under / over / around other services shall be described in detail.
- d. Laying of micro ducts shall be described and specified in detail.
- e. Use of marker tape at appropriate depth is preferred.
- f. Backfilling and sealing shall be specified in detail.



- g. Any damage caused to existing services and road infrastructure as a result of micro trenching works shall be repaired by the Wayleave Holder and its contractor, at no cost to Roads Directorate. Such damage shall be reported to the relevant service owner, and the repair works shall be arranged with the relevant service owner. The Supervising Engineer of Roads Directorate shall be informed immediately of the damage and repair arrangements.
- h. Any damage caused to road infrastructure as a result of micro trenching works shall be repaired by the Wayleave Holder and its contractor, at no cost to Roads Directorate. The Supervising Engineer of Roads Directorate shall be informed immediately of the damage and repair arrangements. This includes damage to subsoil drainage.

NOTE: Roads Directorate reserves the right to alter, delete or add to the contents of this guideline without prior warning or notification.



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