



AUSTRALIAN RAIL TRACK CORPORATION LTD

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## Engineering Practices Manual Civil Engineering

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# Care and Protection of Underground Pipes and Cables

## RAP 5181

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### 1. Purpose

This document provides guidelines for the location, care and protection of underground services during excavation.

It amplifies the requirements for field staff, whether maintenance or project, to properly identify, mark and protect any safety hazards exposed as part of maintenance or construction works.

### 2. Reason and nature of change

Document reissued as ARTC Engineering Practice.

### 3. References

ARTC Standard EGS 00 Management System for Pipe, Electrical and Telephone Crossings under and over Railway Property.

### 4. General

Before commencing any excavation work, including tunnelling or boring, it is the duty of the Delivery Manager or nominated representative to make the necessary enquiries, by contacting the various authorities, both inside and outside ARTC, to ascertain the exact location of any underground pipes or cables laid within the proposed work area. A record should be made of the enquiries and replies.

In particular, approval must be obtained from the local Signalling representative that the area to be excavated is free of cables.

The responsibility for observing these instructions rests with the Delivery Manager or

nominated representative for the work or Area, and applies equally to maintenance and project staff.

## **5. Working in the Vicinity of Underground Cables and Pipes**

### **5.1 Use of Off-Track Plant**

The greatest source of damage to underground cables and pipes is the use of earthmoving plant such as excavators, backhoes, gradalls, bulldozers, and similar equipment, or where excavation by blasting is to be carried out.

Before commencing any of this type of work, the Delivery Manager or nominated representative must check for any underground facilities.

When it is known that any underground facility exists, the Delivery Manager or nominated representative must arrange for the facility to be located by trial excavations, particularly signals & communications cables. The Delivery Manager or nominated representative must ensure that every operator is aware of the location of underground facilities by explaining the location and marking its position on the surface.

It will be necessary for the Delivery Manager or nominated representative to be present on the day the machinery approaches the indicated position of the cable or pipe.

### **5.2 Fencing Renewals**

Standard fencing requires the use of old rail and/or steel picket posts. The Delivery Manager or nominated representative must check to ensure that no cable exists in the vicinity, and advise workers or contractors accordingly.

## **6. Planning of Work**

It is essential that there be a detailed investigation in every case, of earthmoving, trenching and excavation work, even though the project would appear to be of a minor nature.

The cost of repairing damage is frequently extremely high and in addition the loss of the facility can result in excessive delays to traffic and loss of good will.

As stated in ARTC Standard EMP 01, this requirement applies equally to private parties and contractors who are to be supervised by ARTC staff.

## **7. Exposed Safety Hazards**

In the event that hazards such as electrical cables, (other than overhead lines) or gas or fuel pipelines have been identified as existing in a construction site the site supervisor is responsible for ensuring that the following actions are carried out:

- all staff working on the site must be made aware of the hazard,
- immediate arrangements must be made to relocate the hazard, if practical.

If relocation is not practical, or cannot be carried out immediately:

- mark the hazard prominently with appropriate hazard identification tape,
- isolate the hazard, if practical by secure barriers.

If the hazard will remain exposed for more than one (1) week:

- inspect the hazard, weekly, to ensure that all protection arrangements remain in place and effective
- mark up any working drawings to show the nature and extent of the hazard and the arrangements for management of the hazard.

**Note:**

The Electrical Safety Instructions specify precautions to be taken when excavating in the vicinity of electrical cables.

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