

11 TELECOMMUNICATIONS UTILITIES

11.1 Introduction

The purpose of the telecommunications section of the Engineering Standards and Policies is to ensure that all telecommunications cabling is designed and installed to meet Council and network utility operator expectations.

The standards ensure that community expectations for telephone, broadband or other communications are met in a safe and efficient way, and that access to all underground services is achieved with a minimum of disruption.

11.2 Objectives

The objectives of the telecommunications utilities standards are as follows:

- a) All new telecommunications cabling meets the needs of people and communities for telecommunications;
- b) All new telecommunications cabling is located within public land, and/or is legally and physically protected where it is located on private property;
- c) Access to underground cabling is ensured for ease of repairs and maintenance, with a minimum of disturbance;
- d) The location of all telecommunication services is clearly marked.

11.3 Key References

All telecommunications infrastructure shall be consistent with the standards set out in Table 11-1.

Table 11-1: External Standards and References for Electrical Utilities

Standard/Reference	Description
New Zealand Electricity Code of Practice	Current and voltage ratings
AS/NZS3000	Electrical installations (Australian/New Zealand wiring rules)
Line Operator	Design and Construct and Distribution Codes
New Zealand Electricity Act	Design of reticulation
New Zealand Telecommunications Act 2001	
New Zealand Utilities Access Act 2011	

11.4 Design

A tentative layout of any subdivision should be lodged with the network line operator. This would allow the network line operator to provide for additional stages and minimise the possibility of having to re-excavate the subdivision at a later stage to install additional services.

Approval must be obtained from Council to install services in the road reserve prior to any work commencing on site. A fully detailed design plan must be submitted to Council for checking along with a CAR (Corridor Access Request) application and approval purposes.

Council will only give approval for services to be installed in road reserve where the service will be owned, maintained, and remain the responsibility of a “network utility operator”.

The engineering plans are accompanied by the subdivision reticulation agreement and the required design and supervision fees.

The network design shall provide for a minimum of 10 Mbps transfer speeds with provision for this to be increased to 100Mbps without necessitating major road reserve disturbance.

Service pillars shall be set back close to section boundaries and are to be clear of designated vehicular access and pedestrian ways by a minimum of one (1) metre. The minimum spacing of any service box from any boundary line or survey peg shall be 150mm so as to enable future fencing construction.

Cabinets shall be located in the berm, clear of designated vehicular access ways by a minimum of one (1) metre and close to section frontages (but no closer than 300mm) or, in a recess into a lot or a public reserve, secured either by easement or preferably designated as ‘Road Reserve’.

All new residential, commercial and industrial subdivisions shall be reticulated with underground cabling running along each side of the road reserve. The Council may allow dispensation for a single sided reticulation in exceptional circumstances (eg where allotment frontages are greater than 30m in length).

11.5 Cable Locations

- a) The location of the duct pipes, pits and manholes shall be shown on the design plan, with all variations authorised by the network operator’s representative.
- b) A shared services trench is likely to be the most economic option. Separation between the services in subdivisions is required. These will be detailed in the laying specification. However, safe working distances are required for all services within minimum separations for power cables.
- c) Table 11-2 shows the minimum clearances from utility cables. TDC Drawings 1100 and 1101 show the general layout of services.

Table 11-2: Minimum Separations for Power and Telecommunication Cables

Voltage and cable type	At Crossings		On Parallel Runs	
	With protection	Without protection	With protection	Without protection
LV, mv neutral screened, or armoured	50mm	150mm	50mm No limit to length	150mm No limit to length
LV, mv neutral unscreened, or unarmoured	50mm	450mm	450mm No limit to length	450mm No limit to length
HV, ehv single and multicore	150mm	450mm	450mm 2.4km limit to length	450mm 2.4km limit to length
LV = Low voltage, up to 250 volts HV = High voltage, from 650 volts to 6600 volts Note: LV power cable is defined in the current electricity regulations as “any voltage exceeding 50 volts AC or 120 volts ripple free DC but not exceeding 1000 volts AC or 1500volts DC. HV power cable is defined in the current electricity regulations as “any voltage exceeding 1000 volts AC or 1500 volts DC				

- d) Protection shall take the form of either:
- i. 50mm thick non metallic reinforced concrete slabs (usually 150mm wide and 500mm long); or
 - ii. 100mm x 50mm ground retention treated timber with a minimum specification of the New Zealand Timber Preservation Authority classification h4 group b; or
 - iii. 5mm polymeric cable cover.
- e) The depth and offset of trenches will be specified on the laying plan provided by the network line operator. It is essential that these be maintained. Minimum cover shall generally be 450mm in footways and 600mm in roadways. Covers less than those specified shall be approved by the Engineering Manager.
- f) All services crossing the proposed duct pipe route shall be exposed and the necessary clearances maintained to enable the network line operator’s ducts to be installed either above or below these other services. The network line operator’s ducts shall be laid above power cables.
- g) All joints in duct pipe shall be water tight and may be glue jointed with solvent cement or rubber ring seal, depending on the ducting supplied.
- h) The base of the trench shall be level with large objects removed. The duct pipe shall be bedded in suitable fine soil or pea metal if required by the network operator. The suitability of the bedding material will be assessed by the telecommunications representative.
- i) Warning tape shall be installed in the services trench above the cable or ducts.

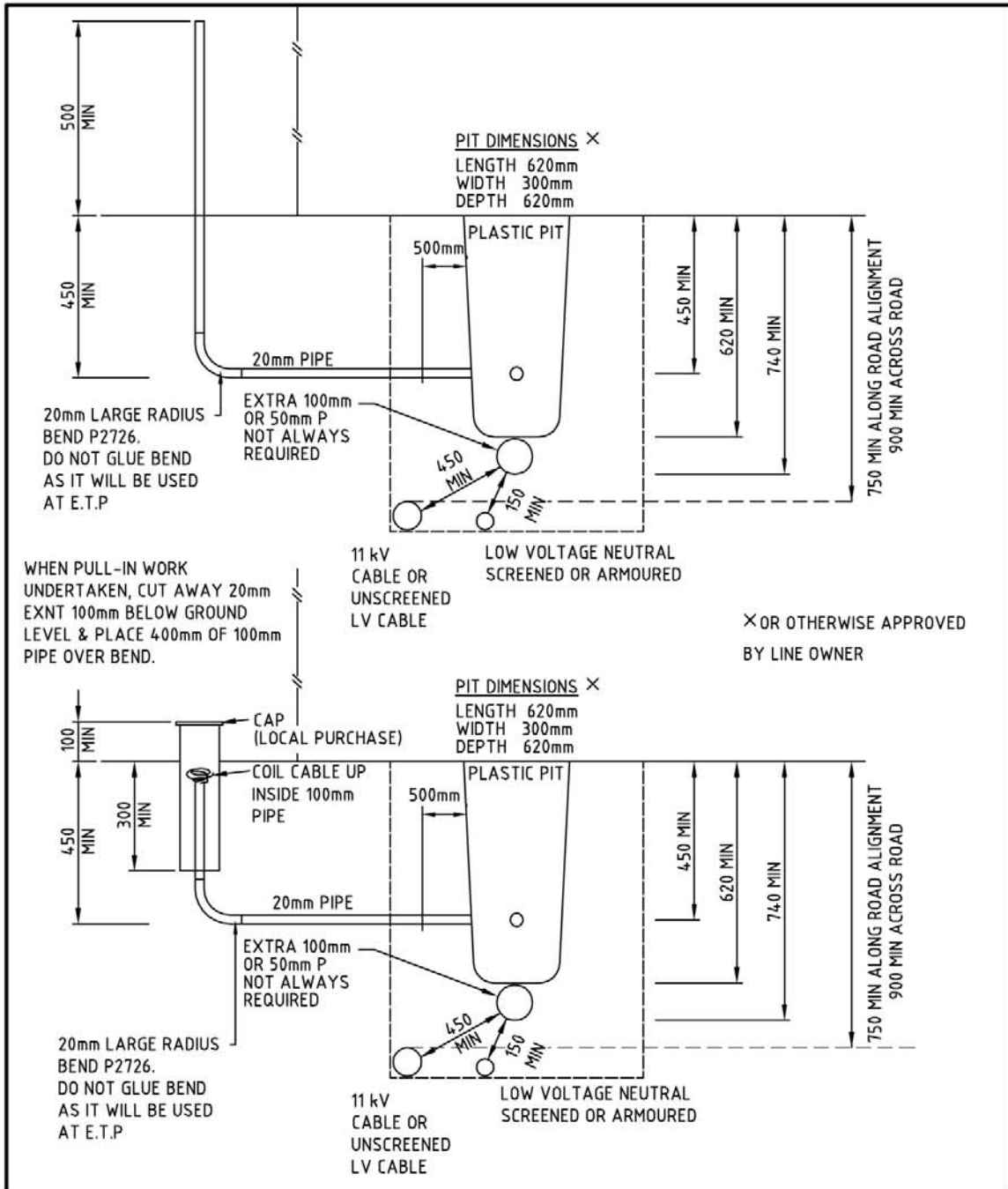
11.6 Installation of Distribution Pits

- a) The pits and lids are designed to withstand light vehicular loading only. Therefore installation shall take place only in the footpath or in grassed areas within the defined kerb line. On mountable kerbs they shall be located in grass areas and behind the footpath.
- b) The grass berm or footpath shall be excavated to a sufficient depth to ensure that the pit lid will be level with the finished level of the surface. Once the pit has been installed the lid shall be fitted before backfilling and carefully compacting around the sides of the pit. Details will be supplied in the laying specification.

11.7 Records

- a) The network line operator shall keep and maintain as-built records of their reticulation within the road reserve and on private property where the reticulation will be owned by the network utility operator.
- b) The network line operator shall ensure that they receive and maintain as-built records of the telecommunications reticulation (works) and ensure that such records are made available upon request and as required, mark out cable routes on site for TDC or contractors carrying out works.
- c) Provision of as-built drawings for planned works shall be free of charge to TDC and made available with 24-hours prior notice during normal working hours and for emergency call outs with no prior notice at any time.


Drawing 1100 Telephone communication service pit depths & clearances



TELEPHONE COMMUNICATION SERVICE PIT DEPTHS & CLEARANCES



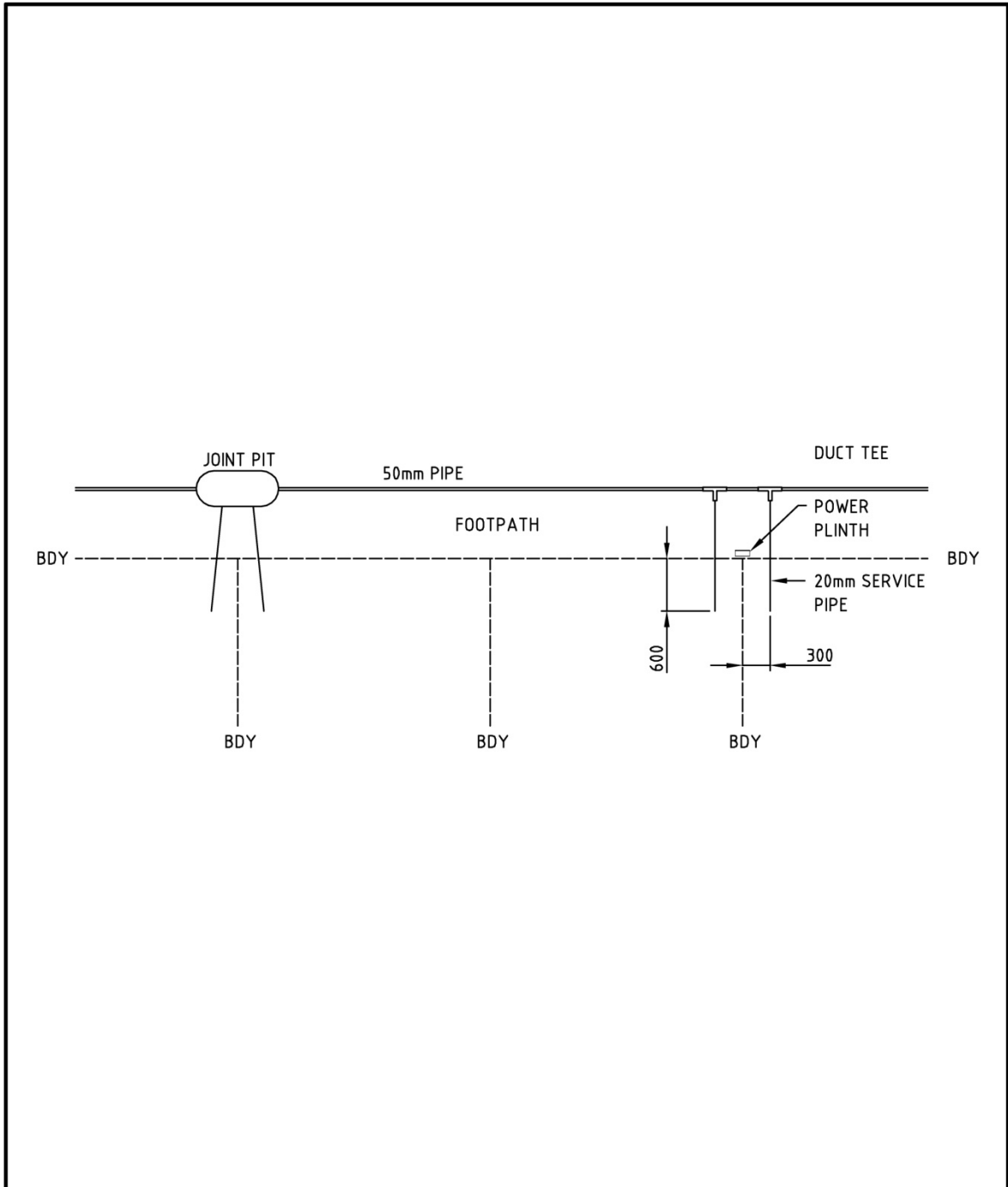
ASSET MANAGEMENT ENGINEERING


APPROVED

 ENGINEERING MANAGER

NOVEMBER 2013
 DATE

DRAWING No.
1100

Drawing 1101 Telephone communication reticulation layout



	<p>TELEPHONE COMMUNICATION RETICULATION LAYOUT</p>	
	<p>ASSET MANAGEMENT ENGINEERING</p> <p>APPROVED <i>[Signature]</i> ENGINEERING MANAGER</p>	<p>NOVEMBER 2013 DATE</p>
		<p>DRAWING No. 1101</p>