

ITS specification
Motorway emergency
telephones
(ITS-09-01)

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Document management plan

1) Purpose

The purpose of this document is to specify the supply and installation of a Motorway Emergency Telephone.

2) Document information

Document name	<i>ITS specification: Motorway emergency telephones</i>	
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3) Key words

ITS Motorway Emergency Telephone.

Record of amendments

Amendment number	Section amended	Description of change	Updated by	Effective date
Draft R0	All	ITS Draft Specifications Issue	TLH	20/9/2010
Draft R1	Appendices 4.3 & 4.6	Inclusion of EMT Installation Process, TOC reference and numbering	JF	26/01/2010
Final R2	4.3 & 4.5 & 4.6	Updated following consultation comments	PTA	10/01/2012
Final R3	All	Provisional	BW & JS	14/2/2012

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1.0 Purpose of document

The purpose of this document is to outline minimum requirements a contractor would need to meet in the supply, testing, installation and commissioning of a Motorway Emergency Telephone.

2.0 Emergency roadside telephone

2.1 General

Motorway Emergency Telephones (MET) shall be installed on the motorway and some arterial roads and shall be installed in pairs so that a driver needing to use a telephone does not have to cross the median.

They will provide access to emergency services when required and should be used in emergencies only

Note that preference is given to utilisation of the same or similar equipment for MET as that which is already in use on the motorway network. Consideration will be given to other forms of equipment, if able to meet the operational requirements detailed herein and if benefits can be demonstrated.

Refer to Controlling Authorities for software compatibility, e.g., all MET installed within Auckland are to be compatible with Wayphone tester software.

3.0 Site layout

3.1 Phone spacing

The following details the minimum requirements for the spacing of MET on the motorway network.

- Maximum Distance between phones shall be 1200 metres;
- Minimum Distance between phones: 700 metres (unless junction or other special circumstance such as the positioning of emergency lay-bys dictates a lesser offset);
- Phones must be placed at both sides of the motorway to create pairs of phones over the length of the motorway corridor (Reference 4);
- Phones must be placed at junctions allowing access to phones without requiring crossing of live motorway ramps (Reference 1); and
- Where an additional phone is placed to provide phone coverage between off and on ramps an additional phone must be installed on the opposite carriageway (References 2 and 3).

3.2 Phone access

- Phone sites must allow easy access to members of the public both on foot and by wheelchair from the motorway;
- The MET microphone shall be mounted 1400mm above ground level. The MET shall be designed for operation by people ranging in height from 1450 to 2000mm;
- They shall be orientated to ensure that the user is able to clearly see oncoming vehicles;
- A solid, level, slip resistant pathway must be provided to allow unobstructed access to the phone (see reference 5; standard detail);
- To allow for wheelchair access the pathway must be the minimum of 1200mm wide and incline shall be less than 1:12 (see reference 5; standard detail);
- Where barrier protection is available the phone should be located at the trailing end of the barrier to provide the user with protection from traffic, the phone should be sited to allow the user to face the oncoming traffic;
- Where the barrier is extended disallowing a phone to be placed at the trailing end, the phone should be located close to the barrier, but not within 500mm of any part of the barrier structure, to allow the user to access the phone from the hard shoulder. An MET can be placed immediately behind a concrete "Jersey" barrier;
- Phone sites should not be placed at the leading edge of crash barriers unless a more suitable position is not available. A phone should not be placed within 15m of the start of a deformable barrier;
- Phones must not be placed where there is no hard shoulder provided or the hard shoulder width is less than 2.5m from the edge line unless there is a hard standing area or a wide grass verge, in which case the phone shall be located an equivalent distance from the running lane than if a hard shoulder was present;
- If a suitable hard shoulder is not available an alternative location should be found within the parameters for site distance or additional CCTV coverage and signs should be considered to advise the road user that they should remain with their vehicle; and

- Phones should not be placed within 50 metres of the hard shoulder narrowing to less than 2.5m width or ending, to allow vehicles that have pulled over at the phone to accelerate safely or be safely towed from the hard shoulder by a recovery vehicle without reversing.

4.0 Phone hardware standard

The following items are the minimum requirements for the provision of Motorway Emergency Telephones.

4.1 Phone operation requirements

- A single button to operate the phone will be provided;
- Clearly visible instructions written in New Zealand English shall be provided on the front panel of the enclosure;
- The phone microphone will be 1400mm from ground level;
- A single operation button to activate the phone should be at 1200mm from ground level; and
- The facility for an operator to call back a nominated MET shall be provided. A call initiated by an operator shall result in a clearly audible ringing tone at the MET that alerts the motorist of an incoming call.

4.2 Audibility

- Handset phones are not acceptable;
- Noise cancellation will be provided to filter road noise;
- Speaker volume will be greater than 100db;
- The MET shall be designed to ensure that the user can both hear and be heard clearly, taking into account the level of background noise present in the motorway environment;
- Upon activation of the phone an audible tone will be activated to advise the user that the call is active. The ringing tone whilst the call is being connected shall be audible to the caller initiating the call;
- The phone must have a loud audible tone feature to allow the user to be notified if the phone is being called by the recovery or emergency services; and
- A selection of audible tone outputs is to be supplied and the tone is to be selectable by the client

4.3 Communications

Phones must allow communications via the minimum of one of the following mediums:

- GSM;
- VoIP (SIP, H323);
- GPRS; and
- 802.11g.

The MET are to be integrated into the existing motorway telephone answering facility provided at the Traffic Operations Centre (TOC).

In Auckland, the AMA will provide the SIM card, username, MET password and ID number for the MET and provide set up and testing documentation to allow integration into the phone answering system.

4.4 Power

Under normal conditions, MET shall be operated by 240v AC 50Hz mains power, streetlight power recharging a battery, or solar power recharging a battery. Consideration will be given to other power sources if able to meet the operational requirements detailed herein and if benefits can be demonstrated by the supplier. The supplier shall include this information in the supply or the conceptual design report.

MET shall be capable of operating for at least three consecutive days on battery power only, with the depth of discharge not to exceed 80%. During this period it will be assumed that two, four-minute calls are made each day, plus a maintenance call every 12 hours.

In the event of an extended mains failure resulting in the loss of battery power the MET shall transmit an emergency status alarm to inform of the imminent failure.

If solar panels are to be utilised the panel will be raised to a minimum height of 3.5 metres from ground level and the pole shall be constructed of galvanized mild, or stainless steel, aluminium shall NOT be used.

4.5 MET housing

The phone pole must provide a secure and element resistant housing for batteries, charger units, and other electronic components and must be resistant to common forms of vandalism.

The following requirements also apply:

- The enclosure should be highly visible but not distracting;
- Enclosures will be vandal resistant and surfaces will be resistant to common aerosol paints;
- Enclosures shall be designed in a way that will not allow the pooling of water;
- Enclosures housing the MET are to be stainless steel or aluminium coated royal blue to match the existing phones;
- The enclosures shall allow full access to components for inspection and servicing;
- Access shall be secured in a manner that is resistant to tampering and vandalism;
- Enclosures shall be designed so that they do not present a hazard to motorists should a vehicle collision occur;
- The external and internal surfaces of the phone housing shall be free of sharp edges; and
- If keys are to be used all keys are to be keyed to match existing MET's on the network.

4.6 Livery

All MET livery will be as below and guidelines for physical dimensions and colours can be found in the appendices.

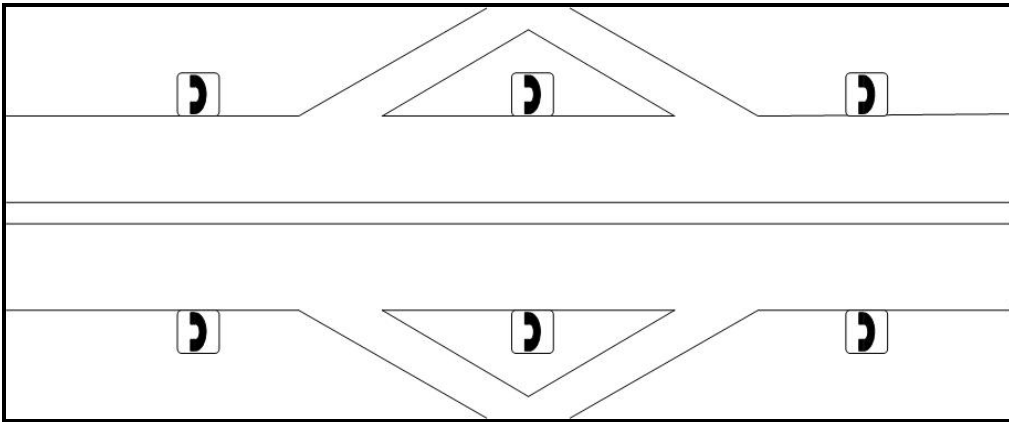
- No advertising will be allowed on the enclosures;
- Enclosure to be painted in royal blue;
- A double sided sign is to be attached to the solar pole of pedestal units. It is to have the same reflective sign as on column mounted units and it is to be mounted midway up the pole (2.5m above the ground);

- If a column mounted phone is mounted at an angle which reduces its conspicuousness from the road, a supplementary sign plate (275 x505mm) shall be attached to the column 2.5m above the ground with the same reflective panel as used on the side of the column-mounted MET housing;
- A red reflective telephone icon will be located on the side of the phone facing oncoming traffic;
- Site identification numbers will be displayed in white reflective stickers which will be sited on both sides of the phone;
- Site identification numbers will be displayed in black alpha numeric on the top right of phone face;
- Reflective white stickers depicting the word 'Emergency' will be displayed on the front and the side of the pole facing oncoming traffic; and
- The units are to be clearly numbered so that they may be identified easily from the motorway. The new numbering convention is four-digit, complimenting cabinet numbers with even numbers in the increasing direction and odd numbers in the decreasing direction.

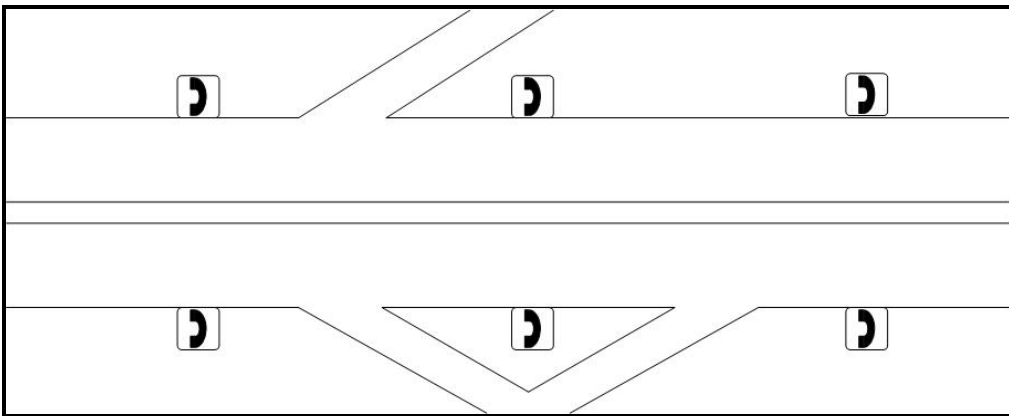
5.0 Appendices

5.1 Appendix 1 – MET siting requirements

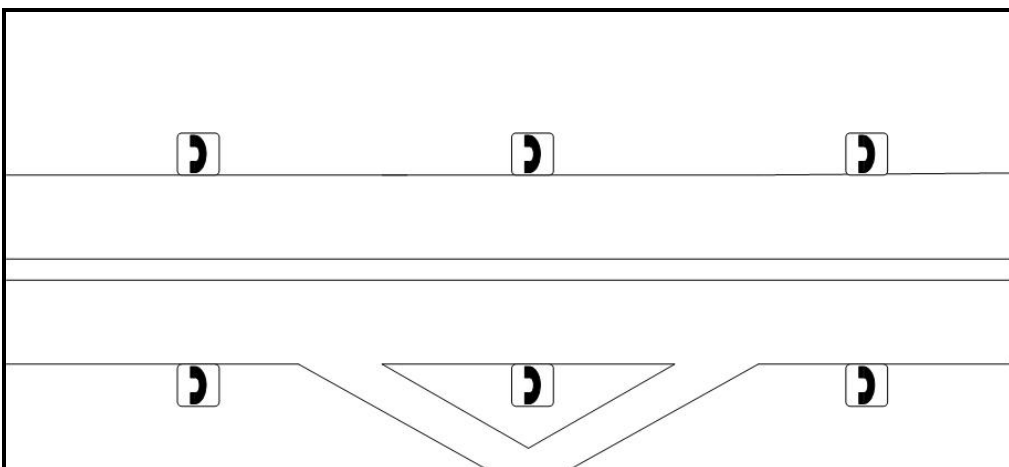
Reference 1



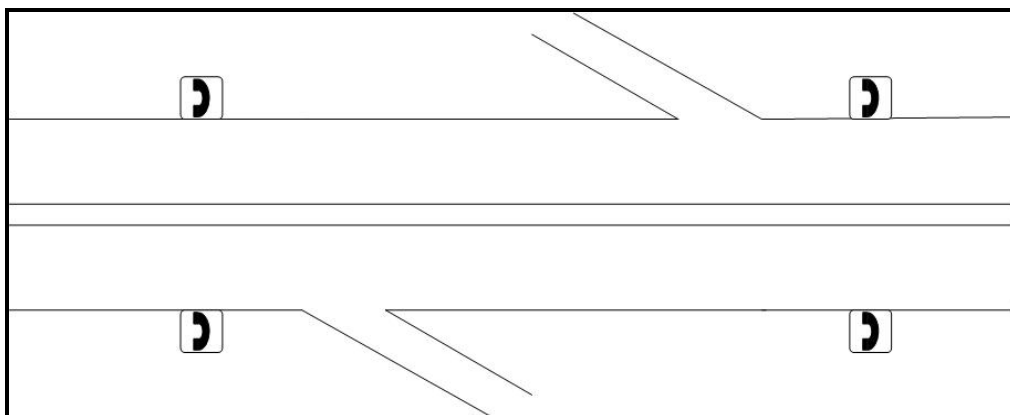
Reference 2



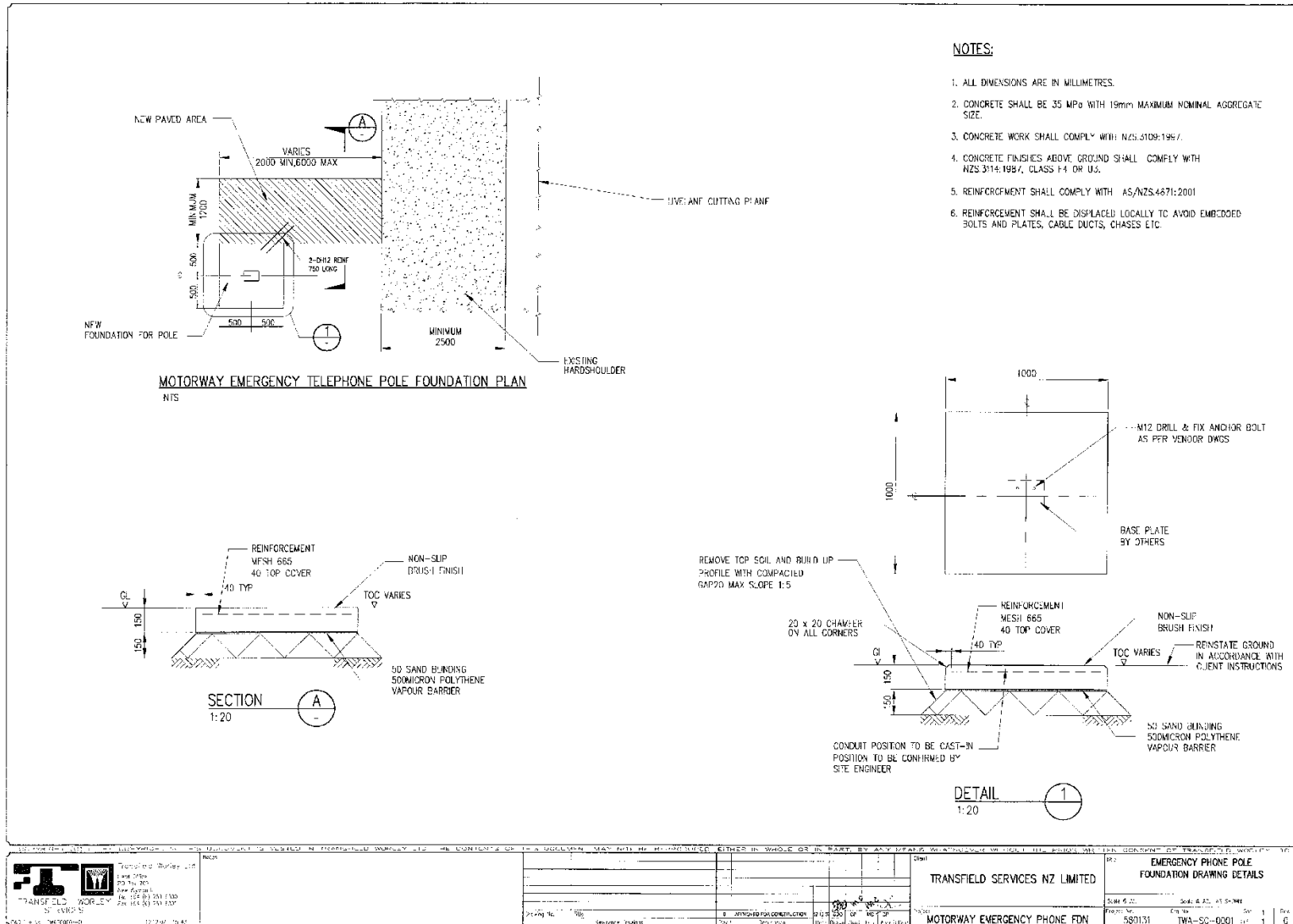
Reference 3



Reference 4



Reference 5: Standard detail for MET foundation



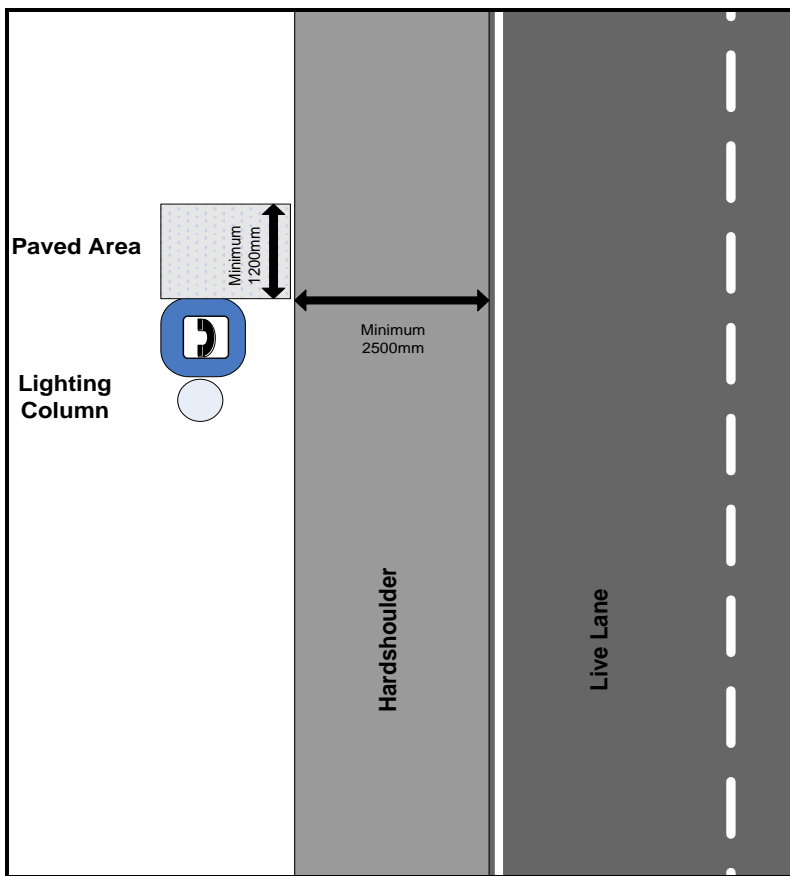
Reference 6: Examples of livery and foundation details for pedestal phones



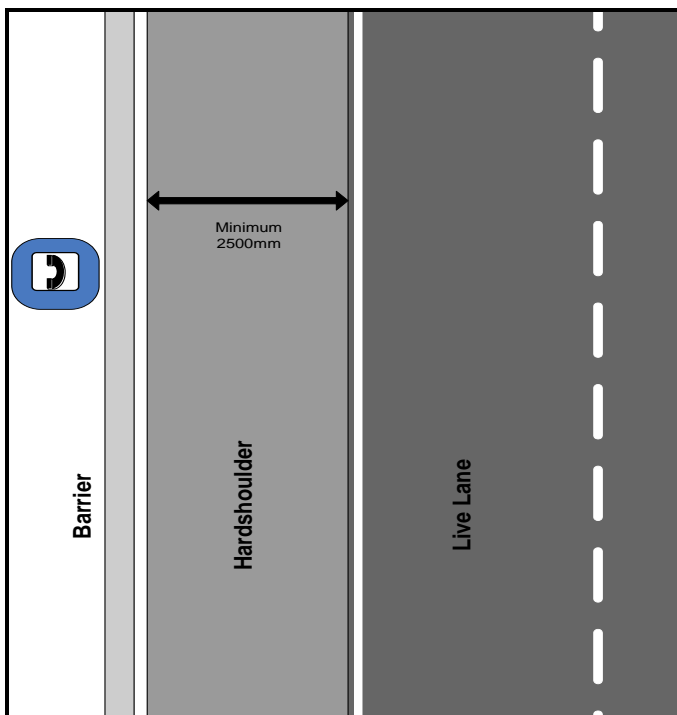
Reference 7: Example of a pole mounted phone



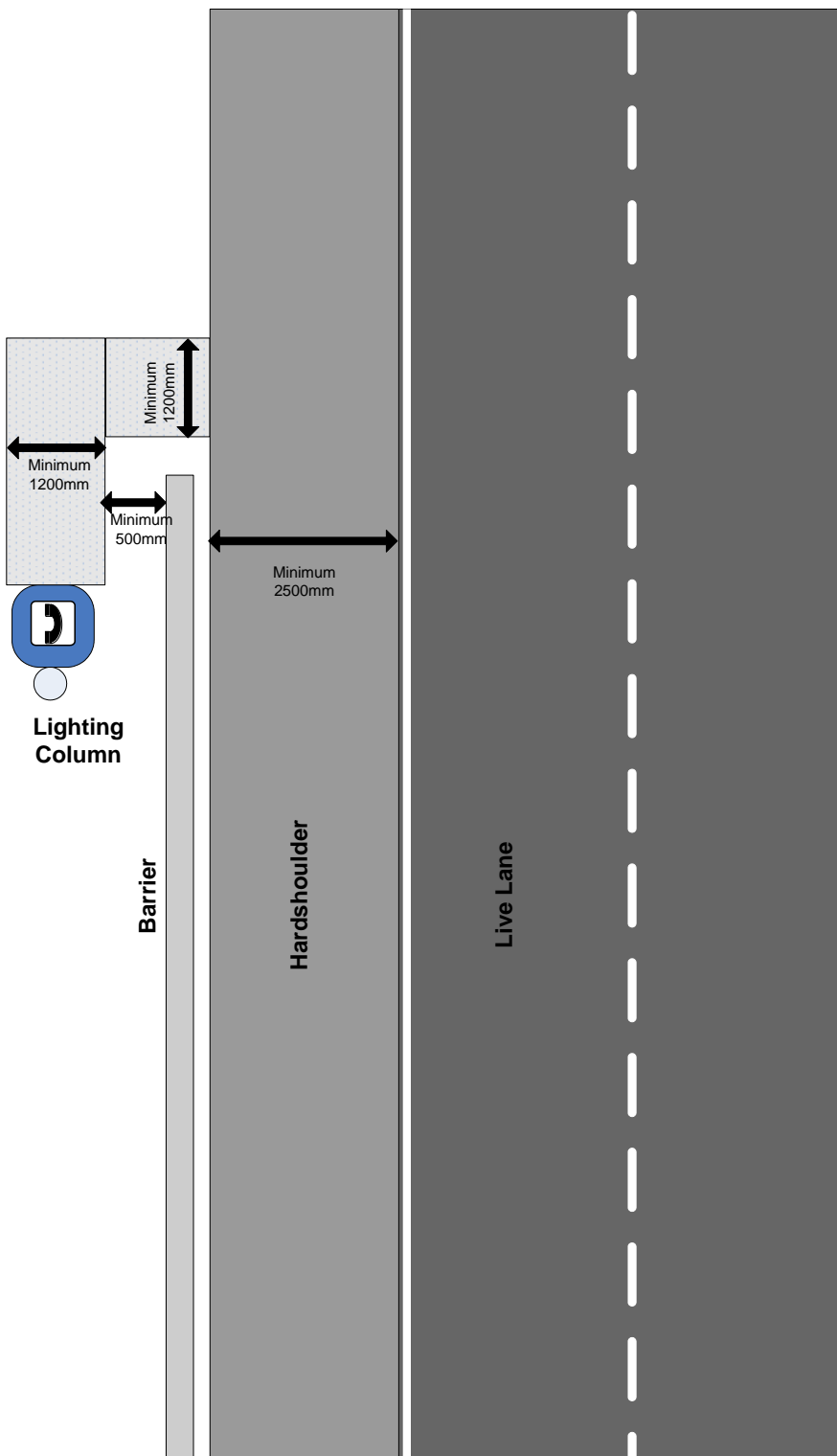
Reference 8



Reference 9



Reference 10



5.2 Appendix 2 – MET installation process

