

Specification

Cefn Saeson PEDX Afan Valley Road, Cimla

THE WORKS

To supply and install new ELV controlled pedestrian controller and associated PCaTS crossing street equipment at:

Cefn Saeson School, Afan Valley Road, Cimla.

The signal company shall provide details of any long lead equipment, particularly LED signal and pedestrian heads and push button units. Unavailability of specified equipment (or installation of temporary substitute street equipment) may invalidate the tender submission.

Note: The signal company is required to provide a fully itemised bill of quantities for the signal works.

SIGNAL COMPANY REQUIREMENTS

EQUIPMENT

1. SIGNALS

Supply and installation of 48v (ELV) pedestrian PEDX crossing street equipment in accordance with drawing no. T900_100_001 and schedule below.

- 1.1 2 no. 4m signal poles galvanised painted grey including pole cap assemblies. Signal poles for use with NAL RS115 pole retention sockets (NAL sockets to be supplied and installed by the Civil Works Contractor).
- 1.2 Traffic signal and pedestrian heads as specified in aforementioned drawing.
- 1.3 PCaTS countdown timer indicators shall be supplied and installed on each pole.
- 1.4 Push button demand units incorporating tactile cones and beepers shall be installed on each signal pole.
- 1.6 All signal heads and pedestrian units are to be the latest ELV LED type.
- 1.7 Push button legends must be Welsh / English bilingual.
- 1.8 2 no. MVD's.
- 1.9 Supply and installation of a Photo Electric Cell on pole 2.
- 1.10 All necessary background boards, (boards shall be fit and forget 3m Diamond Grade retroreflective type) hoods, brackets and fixing kits for the above mentioned traffic signal heads.

NOTE: All signal poles shall be installed in RS115DF x 600 pole retention sockets.

1.11 Signal poles shall be numbered as per site drawing using UV stable labels.

2. CABLES AND WIRING

2.1 Supply and lay multicore cable in accordance with schedule below:

- 1 no. 20 core cable is to be laid from the controller to all signal poles.
- 1 no. 16 core cable is to be laid from the controller to all signal poles.

2.2 Supply and installation of mains cable from feeder pillar to controller position.

2.3 All multicore cables are to be clearly marked by the Contractor in the controller. The markers must be of a non-perishable material marked with a permanent marker.

2.4 Undertake all necessary wiring both in controller and on street. All multicore cable shall be installed as per standard detail T109_1003_ELV as far as reasonably practical.

2.5 Signal company to supply two copies of an as installed pole and controller wiring schematic. One copy is to be laminated and left in the controller at the SAT. Second copy shall be provided electronically to Telematics Engineer within 48 hours of SAT.

2.6 Supply and lay Cat5e cable from the controller to the wireless mesh node on pole 1.

3. CONTROLLER

The controllers shall be of microprocessor type and comply with DTLR specification TR2500A, and to include for all necessary detection.

3.1 New controller shall be 48v AC (ELV) & shall be UG405 compliant, to allow for IP communications, and be fully compatible with City & County of Swansea Peek UTC system on the integrity platform.

3.2 Installation of all associated communications equipment to allow for setup on Swansea Council's Dynniq UTC system via 4G communications.

3.3 System must be compatible with existing Swansea Council's 'Now Wireless MESH 4G' IP Mesh network.

3.4 Now Wireless IA-4G & VMaEA mesh node to be installed on pole 2.

3.5 4G sim card shall be supplied by Swansea Council.

3.6 Supply material for and undertake controller base sand and seal.

3.7 Controller case shall be supplied grey in colour.

- 3.8 Controller to be supplied with two additional 240v power sockets installed within controller swing frame, including an independent source of isolation.

4 DETECTION

- 4.1 Microwave Vehicle Detectors are to be installed on poles 1 & 2

5 COMMISSIONING AND TESTING REQUIREMENTS

- 5.1 The Contractor will provide a traffic signal Engineer and installer at commissioning to carry out reasonable tests with the designated Engineer to demonstrate the safe and satisfactory performance of the installation.
- 5.2 Provision of an Earth Impedance Test Certificate for each signal pole and controller.

SPECIFICATION

1. All equipment shall comply with BS505, BS EN12368:2000 and the Department for Transport TR2500, MCE, MCH and MCK specifications, requirements and recommendations for traffic signal control equipment. All equipment shall be supplied and installed to Department of Transport Specification LTN 1/98.
2. All equipment, including cable shall be supplied in a new and unused condition, except insofar as it has been tested during the course of manufacture.
3. Only equipment of the most recent type approved model currently in production shall be used.
4. All cables shall comply with the requirements of BS7671:2001
 - 4.1 Multicore cable shall be:
 - 1mm² PVC/SWA/PVC with copper conductors.
 - Separately coloured inner cores
 - Outer sheath must be coloured orange
5. Configuration of site Eprom to Department of Transport Specification TR2500A.
6. All new multi core and feeder cable must be one continuous length from the controller to each new loop, no joints will be permitted except at the termination of loop and feeder cables.
7. Prior to commissioning the following tests shall be carried out by the contractor in accordance with current IEE Regulations.
 - Insulation resistance test
 - Polarity check
 - Earth loop impedance test
 - Earth continuity test
 - RCD test.
- 8.1 All of the above testing and result should be recorded and reported to the Engineer
- 8.2 The following certificates shall be completed by the Signal Contractor and handed to the Engineer prior to commissioning.
 - The traffic signal installation electric test certificate as recommended by the DoT.
 - The certificate of detector performance, which shall be completed at the time of loop installation.
- 8.3 Testing shall be carried out in accordance with the Specification BS7671 (1992) and the 1200 Series of the DoT Specification for Highway Works (1991).

8. An allowance should be made for minor reconfiguration of Eprom(s) following Factory Acceptance Test for a period of one calendar year from issue of Site Take Over Certificate for that particular Eprom. The change will not be limited to timing alterations only.
9. Any compressed air supply is to be provided by the Contractor and allowance must be made for the supply of and payment to the relevant Water Company for water used.
10. All traffic heads are to be covered using purpose made bags following installation until flash test has been undertaken. Covers to be supplied by the contractor.
11. All multicore and feeder cables are to be clearly marked in the signal controller with plastic markers.
12. Traffic Management Safety Chapter 8 must be used for all works undertaken by the contractor at all sites.
13. Any existing equipment must not be disconnected from the electricity supply or dismantled until so directed in writing by the Telematics Engineer.
14. Once existing equipment has been disconnected all traffic signal heads still in position shall be covered using purpose made bags until the equipment has been removed from site. Covers shall be supplied by the signal contractor.