**VOLUME 4**

**METHOD OF MEASUREMENT**

**TRAFFIC SIGNALS and ancillary equipment maintenance term service contract**

**Commercial and Procurement Team**

Somerset County Council

County Hall

Taunton

TA1 4DY

commercialandprocurement@somerset.gov.uk

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**GENERAL PRINCIPALS**

**General**

1. This Method of Measurement is for use in conjunction with the Volume 5 Returnable Schedules Schedule 6 Price List. Its function is to provide a uniform method of measurement for the purpose of valuing the works executed.
2. Various sections will make reference to materials, equipment and goods. In the majority of instances, unless expressly stated otherwise, they have the same meaning.

**Measurement**

1. Works are measured using the item descriptions and units of measurement in the Price List.

**Itemisation**

1. Each item description in the Price List is drawn from the individual description associated with each operation code together with the preceding group heading and sub heading.

**Units**

1. The units are as defined within the Price List.

**Provisional Sums**

1. Where particular works cannot be pre-measured at design stage because their nature is uncertain or there are no suitable items in the Price List, a Provisional Sum is used. The amount of the Provisional Sum is a best estimate of the projected valuation.
2. After completion of the works for which a Provisional Sum has been allowed the works are valued at either measured rates contained in the Price List, Dayworks or at new rates (Star Rates) to be agreed with the Service Manager. The choice of method is at the discretion of the Service Manager.

**Percentages**

1. Where more than one item valued on the basis of a percentage is applicable to a basic item, the percentages for each is applied singularly and not cumulatively to the basic item.

**PREAMBLE TO THE METHOD OF MEASUREMENT**

1. **General Directions**

In this Price List the sub-headings and item descriptions identify the work covered by the respective items, but the exact nature and extent of the work to be performed is to be ascertained by reference to the Service Information and Conditions of Contract as the case may be, read in conjunction with this Volume 5 Returnable Schedules Schedule 6 Price list - (Payment Provisions). The rates entered in the Price List are deemed to be a fully inclusive value of the work covered by the several items and for the avoidance of doubt, including the following, unless expressly stated otherwise: -

Labour and costs in connection therewith;

The supply of materials, equipment, goods, storage and costs in connection therewith including delivery to site. Taking delivery of materials and goods supplied by the Service Manager and Others, unloading, storage, transportation, multiple handling and other costs in connection therewith;

Plant and costs in connection therewith;

Livery requirements; See Volume 2 Works information Appendix 25

Where the Contractor provides new Equipment (not already identified in Volume 2 Works Information Appendix 21), the Contractor provides sufficient and adequate training, software (including updates) and licensing to ensure a comprehensive understanding;

Fixing, erecting and installing or placing of materials and goods in position;

Temporary works which include for the avoidance of doubt, any supports required;

The effect on the phasing or timing of the works or any element of the works to the extent that such work is set forth or reasonably implied in the documents on which the contract is based;

General obligations, liabilities and risks involved in the execution of the works set forth or reasonably implied in the documents on which the contract is based;

Establishment charges, overheads and profit;

Waste;

Site security;

Working in accordance with the New Roads and Street Work Act 1991 and any other legislation relevant to the works;

The Contractor shall allow in their rates and prices for all traffic safety and management required to facilitate the works defined within this contract, which for the avoidance of doubt includes design. Non-Routine Services provide for certain elements of traffic management to be measured separately;

Surveillance and maintaining stocks;

Immediate reinstatement and replacement of defective or damaged items;

Establishment, maintenance and removal of traffic safety and management measures in connection with an official temporary traffic regulation order, including liaising with the Street Authority, paying the Street Authority’s costs in connection with checking signing schedules and associated advertising costs;

Operating, updating and entering information into the Fault Management System;

Temporary accommodation, mess and storage facilities required to provide the services and carry out the works in accordance with all relevant health and safety and environmental legislation. Non-Routine Services provide for certain elements of welfare to be measured separately;

Checking, inspecting, examining, measuring and verifying goods, materials and workmanship including supplying results reports and certificates;

The cost to the Contractor in incurring abortive visits which includes for the avoidance of doubt where the Contractor attends to a Fault and where no Fault is found;

The cost of disposal of all damaged, redundant, obsolete or failed materials removed from Traffic Signal and Ancillary Equipment or the Affected Property;

Informing the Service Manager of new and/or removed Equipment;

Provision of keys and other equipment to the Service Manager and staff for the purposes of supervising, providing access and auditing works;

Provision of hardware and software as detailed within the Service Information for the Contractor, Service Manager and staff;

Liaising and subsequent management with Others as and when instructed by the Service Manager;

Providing estimates and assisting in the compilation of new rates (Star Rates) as required;

Attends meetings as identified in Volume 2 Works information Appendix 03 – Partnering Information;

Providing all necessary information required by the Service Manager to enable them to comprehensively report on performance related statistics;

Leave the Affected Property after works have been undertaken, in a clean, tidy and safe condition and at all times undertake work safely;

Ensure that equipment and fixings are in a safe and satisfactory condition prior to commencing works;

Where works require excavation, rates shall be fully inclusive of excavation in any material manmade or otherwise and shall include, but not limited to, excavation in verge, asphalt, concrete, rock or brick, unless expressly stated otherwise within the method of measurement;

Excavation requiring the removal of paving blocks/slabs (Slab Surface) includes the removal and disposal of surplus materials. Where the slabs are to be re-used they are required to be cleaned, Stored and stacked for re-use, unless expressly stated otherwise within the method of measurement;

Where works require reinstatement, rates shall be fully inclusive of undertaking both temporary and permanent reinstatements in accordance with the HAUC specification for the reinstatement of openings in highways third edition 2010 as amended from time to time;

Replacing materials damaged by the Contractor whilst within the Contractors possession and/or whilst undertaking works for the Service Manager;

Transportation of materials set aside for re-use to the Contractors depot where appropriate, including transportation to store, unloading and stacking, multiple handling and labelling of stock;

Taking precautions to avoid damage to property, structures, sewers, drains and services;

Keeping excavation/s free from water;

Making good any damage to adjacent property caused by the works;

Completion of all acceptance / electrical tests which include but not limited to Factory Acceptance Tests, Pre-Site Acceptance Tests and Site Acceptance Tests.

##### Pricing of Items

* 1. Each individual item shall have a rate entered against it. All rates shall be expressed to two decimal places. This is contained within Volume 5 Returnable Schedules Schedule 6 – Price List

##### Task Orders

* 1. All Task Orders, where appropriate, will be itemised detailing the relevant section reference, quantities, rate and total projected value.
	2. For the avoidance of doubt the Service Manager is not obliged to issue Task Orders to the Contractor and the Contractor has no claim against the Service Manager or Employer in respect of any decision not to appoint the Contractor to perform any particular Task or Tasks generally or award to Others/third parties.

##### Working outside of Normal Working Hours

* 1. The Service Manager may request work under Section 2 to be carried out outside Normal Working Hours. In these circumstances the tendered rates will be enhanced by the appropriate percentage adjustment from the Price List.

##### Section 1 – Routine Services

* 1. Section 1 is subdivided into two headings: -
1. Routine Maintenance;
2. Fault Management System.
	1. Section 1 gives a breakdown of the quantity of Units to which the Routine Maintenance requirement will apply. The rates entered will be considered as the full inclusive rates for the complete service to be delivered for a Contract Year and, for the avoidance of doubt, shall include for the cost of all necessary labour, materials, goods, plant, traffic management and equipment.

##### Section 2 – Non Routine Services

* 1. Section 2 comprises items of work of a non-routine nature and for which the Contractor will require specific Task Orders from the Service Manager before proceeding with the work.
1. **Section 3 – Emergency Services**
	1. Section 3 contains items that are used to reimburse the Contractor for providing the Basic Facility to provide services and to respond to an emergency and fulfil the provisions of this contract.

##### Section 4 – Dayworks

* 1. Daywork rates shall be used for valuing Non Routine Services instructed by the Service Manager for which there are no items in Section 2 and no other method of valuing the works has been agreed.
1. **Section 5 – Other Provisions**
	1. Section 5 contains Other Provisions as follows: -
2. Adjustment Tables - Percentage discounts for extensions to the service period;
3. Performance Rewards – Lump sum Price payable to the Contractor at the end of each Contract Year for meeting targets.
4. **Privately and Publicly Owned Services**
	1. Task Orders raised will make every attempt to detail the whereabouts of existing services and mains but the Contractor shall not be relieved of their obligations indicated in the Conditions of Contract and the Service Information.
	2. The Contractor shall be deemed to have included in their rates and prices for taking measures for the support and full protection of pipes, cables and other apparatus during the progress of the works and for keeping the Service Manager informed of all arrangements their makes with the owners of privately owned services, Statutory Undertakers and Public Authorities as appropriate and for ensuring that no existing mains or services are interrupted without the written consent of the appropriate authority.
5. **Circumstances in which works are carried out.**
	1. The rates in the Price List shall apply to all works as instructed by the Service Manager. No adjustment shall be made for works carried out to any particular timescale or priority specified by the Service Manager or for works that may be performed in disadvantageous circumstances, as these must be regarded as being offset by other works that may be performed in advantageous circumstances.

**SECTION 1 ROUTINE SERVICES**

**ROUTINE MAINTENANCE**

**Measurement**

1. The measurement of Routine Maintenance shall be a monthly rate based on the number of Units installed on the highways of Somerset for which the Contractor is responsible at the commencement of each Contract Year as assessed and calculated by the Service Manager. The number of Units shall be reviewed on a quarterly basis.
2. The lump sum monthly rate tendered on this contract will be pro-rated each quarter depending on the number of Units installed on the highways of Somerset as assessed and calculated by the Service Manager.
3. Units are detailed within Volume 2 Works information Appendix 21 Traffic Signal and Ancillary Equipment – Unit Value.
4. Schedule of Private Communication Cables are detailed Volume 2 Works information Appendix 22. Traffic Signal and Ancillary Equipment not specified within Volume 2 Works information Appendix 21 will be allocated a Unit Value by the Service Manager. Unit Values detailed within Volume 2 Works information Appendix 21 will be used as a basis for assessment.

**Item Coverage**

1. The items for Routine Maintenance shall be in accordance with Volume 3 Service information SS02 Routine Services and include for:-
2. Office, depot, bonded store, plant, mechanised and non-mechanised equipment, tools and storage;
3. Collating and storage of the Service Managers system of records;
4. Providing fully compatible and complete equipment connected electronically to the Fault Management System for access of records and transfer of information in a style and extent agreed with the Service Manager;
5. Providing telephone, mobile phones and customer care facilities;
6. Providing suitable Equipment, Plant and Labour to enable the Service Manager to undertake ad hoc Tests and Inspections amounting to a total of 120hrs per Contract Year. To clarify, for the avoidance of doubt the 120hrs relate only to Tests and Inspections specifically instructed by the ServiceManager and where no Defects are identified; 120hrs excludes travelling to and from the site;
7. Providing full assistance with the presentation and publication of data and reports in accordance with this contract;
8. All tests required locating faults, the repair of faulty components, the removal and disposal of failed components, including dismantling and refitting/reassembling other components as necessary;
9. Supply of and full replacement of failed components to restore Traffic Signal and Ancillary Equipment back into operation following a Fault Report;
10. Any visits to installations reported to be faulty but found to be working normally on inspection;
11. Replacement of all lamps/lenses after failure with new unused lamps/lenses;
12. Notifying the Service Manager of any Damage Repairs not covered under Routine Maintenance and giving precise details of the damage;
13. Notification of power supply faults to DNO’s.
14. Inventory data verification and providing Service Manager with full updates at each visit;
15. Periodic Inspections, Cleaning & bulk lamp changes;
16. Provide keys and equipment for the use of the Service Manager;
17. All aspects of temporary traffic management (including design) and temporary welfare facilities. Refer also to item coverage for Traffic Safety and Control detailed within Section 2 – Non-Routine Services. For the avoidance of doubt items specifically detailed within Section 2 which refer to traffic management and welfare are **not** separately chargeable for Routine Services as rates and Prices for Routine Services are deemed to be all inclusive;
18. Maintenance of all Units including Private Communication Cables;
19. Compliance with undertaking works as detailed within applicable Service Instructions.

**FAULT MANAGEMENT SYSTEM**

**Measurement**

1. The measurement for the Fault Management System shall be a monthly rate.

**Item Coverage**

1. The item for the Fault Management System shall be in accordance with Volume 3 Service Information SS02 Routine Services and include for:-
2. Providing a fault reporting telephone line and electronic system which enables the Contractor, Service Manager and Others to log and track progress of faults logged;
3. All costs in connection with the supply, installation and subsequent maintenance of the Fault Management System, including but not limited to providing updates/enhancements as deemed necessary to ensure compliance with the terms of this contract and it’s Service Information;
4. Administration;
5. Testing;
6. Provision of reports;
7. Storage costs and data backup;
8. All other costs required to provide and maintain the Fault Management System.

**SECTION 2 NON ROUTINE SERVICES**

**Non-Standard Working Hours Instructed by the Service Manager**

**Measurement**

1. Where works are instructed by the Service Manager to be undertaken at restricted times and/or outside Normal Working Hours, a percentage addition may apply to the standard rates applicable to those items of work. For the avoidance of doubt, only one such percentage addition can apply to any standard rate.
2. The percentage addition does not apply to Volume 5 Returnable Schedule, Schedule 6 Section 4 Dayworks or to any other items in the Price List that specifically include rates for working outside Normal Working Hours.
3. The unit of measurement for non-standard working hours instructed by the Service Manager shall be %.

**Item Coverage**

1. The items for non-standard working hours instructed by the Service Manager shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. All additional costs;
3. Unproductive working time.

**Traffic Safety and Control**

 **Measurement**

1. Traffic Safety and Control (which includes all aspects of design) shall be measured once only for each site where works are to be carried out in connection with Non-Routine Services and only when Traffic Safety and Control is required to be implemented. Non-Routine Services are deemed to be fully inclusive of Traffic Safety and Control with the exception of those items which are identified in this section as being charged separately.
2. Items measured in respect of Traffic Safety and Control are for the most commonly occurring situations. Where these are not relevant to the actual site the cost of the amended item shall be calculated pro-rata to the rates contained in the Price List.
3. The units of measurement for Traffic Safety and Control shall be as detailed in the price list.

 **Item Coverage**

1. The items for Traffic Safety and Control shall be in accordance with Volume 3 Service Information SS01 Generic Clauses and shall include for:-
	* 1. Complying with Clause 117 – Traffic Safety and Management of the Specification for Highway Works within the Manual of Contract Documents published by the Highways England;
		2. Complying with the recommendations contained in Chapter 8 of the “Traffic Signs Manual” published by Department of Transport and any amendment thereto or where the circumstances of any particular case are not covered submitting proposals for dealing with such situations to the Service Manager;
		3. Complying with the requirements of Somerset County Council’s document entitled “Traffic Sensitive Routes in Somerset” current and complete with all revisions;
		4. Complying with particular requirements of the Contract;
		5. Initiating or continuing consultation with statutory, police or other authorities concerned, proposing or developing and submitting to the Service Manager, proposals based on such consultation showing a scheme of Traffic Safety and Control and management measures including details of safety zones and emergency routes and furnishing such details as necessitated by the works or as the Service Manager may require;
		6. Traffic Safety and Control personnel;
		7. Modification and resubmission of proposals and designs;
		8. Traffic signs, driver information signs, traffic signs provided by the Service Manager, road markings, lamps, barriers, traffic control signals including maintaining, cleaning, repositioning, covering, uncovering and removing;
		9. Complying with the requirements for labour and plant working on or adjacent to a highway and at entry and exit points to the Site including signing;
		10. Road lighting, modification and removal;
		11. Emergency telephones, modification and removal;
		12. Providing Notice to the Service Manager and Street Authority including Traffic Management Permitting Scheme;
		13. Collecting and returning traffic signs supplied by the Service Manager;
		14. Immediate reinstatement and replacement of defective or damaged items;
		15. Taking all necessary measures to minimise traffic congestion arising from the Works on all other roads and if necessary restricting the hours of working if, in the opinion of the Service Manager, any operation is causing unreasonable congestion.
		16. Supply and installation signal priority changed signs where necessary
		17. Or install only and/or remove signal priority changed signs
		18. Supply and Installation of temporary post foundation blocks, for the avoidance of doubt this includes the transportation and positioning of the block on site
		19. Installation and removal of temporary post foundation blocks supplied by the Service Manager, for the avoidance of doubt this includes the transportation and positioning of the block on site

**Welfare Facilities**

 **Measurement**

1. Welfare facilities shall be measured once only for each site where required and only in respect of works to be carried out in connection with Non-Routine Services. Welfare facilities shall comply with current HSE guidance and ‘industry best practice’ and shall be provided and maintained for the duration of each project.
2. The unit of measurement for erection and dismantling welfare facilities shall be number; the unit of measurement for maintaining shall be day.

 **Item Coverage**

1. The items for Welfare Facilities shall be in accordance with Volume 3 Service Information SS01 Generic Clauses and shall include for: -
	* + - 1. Erection and dismantling;
				2. Lifting;
				3. Servicing;
				4. Preparation of site;
				5. Foundations, bases and hardstandings;
				6. Water, sanitation, heating and lighting;
				7. Replacement of equipment, cleaning, disposal of waste;
				8. Reinstatement and making good;
				9. Disposal of material in licensed tips off site.

**Traffic Signal Controller and Pedestrian Controller (Remove and Install Only)**

 **Measurement**

1. Take Up or Down and Set Aside for Re-use or Remove to Store or Tip Off Site traffic signal controller and pedestrian controller shall be measured in the following categories: -
2. Take up or down and remove to tip off site;
3. Take up or down and set aside for re-use;
4. Take up or down and remove to Contractor’s store off site.

1. Each category shall be sub divided into traffic signal controller and pedestrian controller.
2. The items for take up or down and set aside for re-use or remove to store or tip off site shall be for the removal of the existing controller but exclude the removal of the foundation. Extra over items shall be measured for the removal of traffic signal controller foundation and pedestrian controller foundation.
3. The units of measurement for the take up or down and set aside for re-use or remove to store or tip off site traffic signal controller and pedestrian controller and extra over for removal of foundation for traffic signal controller and pedestrian controller shall be number.
4. Installation of traffic signal controllers and pedestrian controllers shall be measured in the following categories: -
5. Install new traffic signal controller or pedestrian controller;
6. Install traffic signal controller or pedestrian controller previously set aside for re-use;
7. Install traffic signal controller or pedestrian controller stored at Contractor’s store;
8. The items for installation of traffic signal controllers and pedestrian controllers shall be for installation on existing foundations. Extra over items shall be measured for the provision of new foundations for traffic signal controllers and pedestrian controllers.
9. Base sealing shall not be included in the installation items and is measured separately.
10. The units of measurement for install traffic signal controller and pedestrian controller and extra over for provide new foundation for traffic signal controller and pedestrian controller shall be number.
11. For the avoidance of doubt refer to the current issue of STAN 11/17 standard details drawing for cabinet foundation details.

 **Item Coverage**

1. The items for Take Up or Down and Set Aside for Re-use or Remove to Store or Tip Off Site traffic signal controller and pedestrian controller shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Cleaning, stacking, protecting and labelling;
4. Transport and handling;
5. Removing, disposing of and sealing of services and supplies;
6. Backfilling and compaction;
7. Imported filling and compaction;
8. Disposal of material in licensed tips off site;
9. Reinstatement and making good all work disturbed;
10. Storage facilities;
11. Replacing items damaged during the foregoing operations;
12. Credit value of materials;
13. Multiple handling of materials;
14. Treatment of hazardous materials;
15. Marking of spares, inventory;
16. Disconnection of cables.
17. The items for installation of traffic signal controller and pedestrian controller shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
18. Excavation in any material;
19. In-situ concrete, mixing, placing in or against any surface, compaction, unformed surface finishes, curing and protection, filling to overbreak and working space, admixtures and additives;
20. Formwork, permanent formwork, fabricating, assembling, cutting, fitting and fixing in position, striking, taking down and removing;
21. Backfilling with suitable material and compaction;
22. Imported filling and compaction;
23. Disposal of material in licensed tips off site;
24. Fixings and fittings, connections, controller frame (stool) filling with sand, mounting studs;
25. Flagstone paving;
26. Building in or forming cable Ducts;
27. Photographic evidence of removal and replacement of foundation;
28. Reinstatement and making good all work disturbed;
29. Records and documentation;
30. Labels, cleaning and marking;
31. Loading, transporting from store, unloading and positioning for re-erecting;
32. Replacing items damaged during the foregoing operations;
33. Modification and new materials;
34. Joint cutting;
35. Base seal or Controller mounting base with grommet base
36. Strip, secure, connect and label cables.

**Traffic Signal Controller and Pedestrian Controller (Supply Only)**

 **Measurement**

1. The measurement of traffic signal controller and pedestrian controller (supply only) shall be for the complete unit including all associated fixings.
2. The item description shall state the actual type of unit to be supplied.
3. Extra over items shall be measured for supply of vandal proof coating to traffic signal controllers and pedestrian controllers and full police facility/manual panel to pedestrian controllers.
4. The units of measurement for traffic signal controller and pedestrian controller (supply only), extra over for the supply of vandal proof coating to traffic signal controllers and pedestrian controllers and extra over for full police facility/manual panel to pedestrian controllers shall be number.

 **Item Coverage**

1. The items for traffic signal controller and pedestrian controller (supply only) shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Compatibility with Employer’s existing system;
6. Fixings, brackets, controller base, internal swing frame, lock, bolts, sensor, mounting rack, labels and ties, assembly of equipment, electrical items;
7. Police manual panel with door switch, auxiliary power supply;
8. Dimmable controller;
9. Full MOVA communications capability where integral;
10. Door stays and straps;
11. Maintenance socket;
12. Manuals;
13. Type approval;
14. Certificates, configuration data;
15. Supplying in any colour;
16. Input / output or lamp switch cards.

**Additional Equipment for Traffic Signal Controller (Supply and Install)**

 **Measurement**

1. The measurement of additional equipment for traffic signal controller (supply and install) shall be for the complete unit including all associated fixings and cables.
2. The item description shall state the actual type of unit to be supplied and installed and shall be measured in the following categories: -
3. Detector backplanes;
4. Transformers;
5. Lamp switch cards;
6. Input/output cards;
7. Lockable double pole isolator;
8. Secondary double pole isolator;
9. 2 Gang RCD protector power supply;
10. IP rated fuse box;
11. Castellation bars and CET glands;
12. EPROM / Controller Configuration File new;
13. EPROM / Controller Configuration File modify.
14. EPROM/ Controller Configuration File supplied by others
15. MOVA License/activation 1-2 streams and extra over for 3-4 streams
16. Traffic Count detector cards (refer to the Traffic Count department for current specification)
17. The unit of measurement for additional equipment for traffic signal controller (supply and install) shall be number.

 **Item Coverage**

1. The items for additional equipment for traffic signal controller (supply and install) shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Compatibility with Employer’s existing system;
6. Fixings and cables;
7. Disposal of waste in licensed tips off site.

**Additional Equipment: Pillars**

 **Measurement**

1. The measurement of additional equipment: pillars shall be for the supply and installation of the complete unit including foundation.
2. Supply and installation of additional equipment: pillars shall be measured in the following categories: -
3. Supply and install new pillar;
4. Replace existing pillar with new;
5. The unit of measurement for additional equipment: pillars shall be number.

 **Item Coverage**

1. The items for additional equipment: pillars shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Cleaning, stacking, protecting and labelling;
4. Transport and handling;
5. Disconnecting, removing, disposing of and sealing of services and supplies;
6. Backfilling with suitable material and compaction;
7. Imported filling and compaction;
8. Disposal of material in licensed tips off site;
9. Reinstatement and making good all work disturbed;
10. Storage facilities;
11. Replacing items damaged during the foregoing operations;
12. Credit value of materials;
13. Multiple handling of materials;
14. Treatment of hazardous materials;
15. Marking of spares;
16. Loading, transporting from store, unloading and positioning for
17. installation;
18. Modification and new materials;
19. In-situ concrete, mixing, placing in or against any surface, compaction, unformed surface finishes, curing and protection, filling to overbreak and working space, admixtures and additives;
20. Formwork, permanent formwork, fabricating, assembling, cutting, fitting and fixing in position, striking, taking down and removing;
21. Compatibility with Employer’s existing system;
22. Fixings, cables, mountings, warning labels, backboard, connections and building in ducts.

**Additional Equipment: Cabinets**

 **Measurement**

1. The measurement of additional equipment: cabinets shall be for the supply and installation of the complete unit including foundation.
2. Supply and installation of additional equipment: cabinets shall be measured in the following categories: -
3. Supply and install new cabinet;
4. Replace existing cabinet with new;
5. Relocate existing cabinet.
6. An extra over item shall be measured for vandal proof coating.
7. The item description shall state the size and type of unit to be installed.
8. The unit of measurement for additional equipment: cabinets and extra over for vandal proof coating shall be number.

 **Item Coverage**

1. The items for additional equipment: cabinets shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Cleaning, stacking, protecting and labelling;
4. Transport and handling;
5. Disconnecting, removing, disposing of and sealing of services and supplies;
6. Backfilling with suitable material and compaction;
7. Imported filling and compaction;
8. Disposal of material in licensed tips off site;
9. Reinstatement and making good all work disturbed;
10. Storage facilities;
11. Replacing items damaged during the foregoing operations;
12. Credit value of materials;
13. Multiple handling of materials;
14. Treatment of hazardous materials;
15. Marking of spares;
16. Loading, transporting from store, unloading and positioning for
17. installation;
18. Modification and new materials;
19. In-situ concrete, mixing, placing in or against any surface, compaction, unformed surface finishes, curing and protection, filling to overbreak and working space, admixtures and additives;
20. Formwork, permanent formwork, fabricating, assembling, cutting, fitting and fixing in position, striking, taking down and removing;
21. Compatibility with Employer’s existing system;
22. Fixings, cables, mountings, warning labels, cable labels, backboard, connections, building in ducts, door stay, lock and compression bolts, swing frame, mounting facilities and plates, castellation bars, glands, electrical supply items, transformers;
23. Supplying any colour, anti fly posting and graffiti system.

**Additional Equipment: Uninterrupted Power Supply**

 **Measurement**

1. The measurement of additional equipment: shall be for the supply and installation of the complete unit
2. Supply and installation of additional equipment: UPS shall be measured in the following categories: -
3. Supply and install into new cabinet;
4. Replace existing UPS in cabinet with new;
5. Replace battery with new

 **Item Coverage**

1. The items for additional equipment: cabinets shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Transport and handling;
3. Disconnecting, removing, disposing of and sealing of services and supplies;
4. Disposal of old unit in licensed tips off site;
5. Reinstatement and making good all work disturbed;
6. Storage facilities;
7. Replacing items damaged during the foregoing operations;
8. Credit value of materials;
9. Multiple handling of materials;
10. Treatment of hazardous materials;
11. Marking of spares;
12. Loading, transporting from store, unloading and positioning for
13. installation;
14. Modification and new materials;
15. Compatibility with Employer’s existing system;
16. Fixings, cables, mountings, warning labels, cable labels, backboard, connections, building in ducts, door stay, lock and compression bolts, swing frame, mounting facilities and plates, castellation bars, glands, electrical supply items, transformers;

**Transmission and Monitoring Equipment (Remove and Install Only)**

 **Measurement**

1. Take Up or Down and Set Aside for Re-use or Remove to Store or Tip Off Site transmission and monitoring equipment shall be measured in the following categories: -
2. Take up or down and remove to tip off site;
3. Take up or down and set aside for re-use;
4. Take up or down and remove to Contractor’s store off site.

1. Each category shall be further sub-divided into, UTMC/OTU without/with MOVA (licence included) or OMU without/with MOVA (licence included), CCTV equipment.
2. The units of measurement for the take up or down and set aside for re-use or remove to store or tip off site transmission and monitoring equipment shall be number.
3. Installation of transmission and monitoring equipment shall be measured in the following categories: -
4. Install new transmission and monitoring equipment;
5. Install transmission and monitoring equipment previously set aside;
6. Install transmission and monitoring equipment stored at Contractor’s store;
7. Install transmission and monitoring equipment stored at Service Manager’s store.
8. Each category shall be further sub-divided into, UTMC/OTU without/with MOVA (licence included) & , CCTV equipment.
9. The unit of measurement for install transmission and monitoring equipment shall be number.

 **Item Coverage**

1. The items for Take Up or Down and Set Aside for Re-use or Remove to Store or Tip Off Site transmission and monitoring equipment shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Cleaning, stacking, protecting and labelling;
3. Transport and handling;
4. Disconnecting, removing, disposing of and sealing of services and supplies;
5. Reinstatement and making good all work disturbed;
6. Disposal of material in licensed tips off site;
7. Storage facilities;
8. Replacing items damaged during the foregoing operations;
9. Credit value of materials;
10. Multiple handling of materials;
11. Treatment of hazardous materials;
12. Marking of spares;
13. Setting up units.
14. The items for installation of transmission and monitoring equipment shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
15. Fixings connection of signal cables and screws;
16. Records and documentation;
17. Reinstatement and making good all work disturbed;
18. Labels;
19. Loading, transporting from store, unloading and positioning for re-erecting;
20. Replacing items damaged during the foregoing operations;
21. Modification and new materials.

**Transmission and Monitoring Equipment (Supply Only)**

 **Measurement**

1. The measurement of transmission and monitoring equipment (supply only) shall be for the complete unit including all associated fixings.
2. The item description shall state the actual type of unit to be supplied.
3. The unit of measurement for transmission and monitoring equipment (supply only) shall be number.

 **Item Coverage**

1. The items for transmission and monitoring equipment (supply only) shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Compatibility with Employer’s existing system;
6. Fixings and connections;
7. Firmware;
8. Communications equipment;
9. Submission of details of alternative systems to Service Manager;
10. Training of Service Manager’s staff.

**Traffic Signal Pole Equipment (Remove Only)**

 **Measurement**

1. The measurement of Take Up or Down and Set Aside for Re-use or Remove to Store or Tip Off Site traffic signal pole equipment shall be measured in the following categories: -
2. Take up or down and remove to tip off site;
3. Take up or down and set aside for re-use;
4. Take up or down and remove to Contractor’s store off site.
5. The actual type of unit to be removed shall be described in the following categories: -
6. Signal head: one aspect;
7. Signal head: two aspect;
8. Signal head: three aspect;
9. Signal head: four aspect;
10. Signal head: five aspect
11. Push button unit;
12. On pole detector: including vehicle detector, on crossing detector, kerbside detector, CCTV camera, counting equipment or solar cell;
13. Nearside aspect, including Pedestrian, Toucan and Pegasus.
14. Taking down and disposing of brackets are included within the rate.

 **Item Coverage**

1. The items for take up or down and set aside for re-use or remove to store or tip off Site traffic signal pole equipment shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Cleaning, stacking, protecting and labelling;
3. Transport and handling;
4. Disconnecting, removing, disposing of and sealing of services and supplies back to connection point;
5. Disposal of material in licensed tips off site;
6. Reinstatement and making good all work disturbed, weatherproofing;
7. Storage facilities;
8. Replacing items damaged during the foregoing operations;
9. Credit value of materials;
10. Multiple handling of materials;
11. Treatment of hazardous materials;
12. Marking of spares;
13. Working at any height.

**Traffic Signal Pole Equipment (Install previously set aside or stored off site)**

 **Measurement**

1. The installation of traffic signal pole equipment previously set aside or stored off site shall be measured in the following categories: -
2. Install equipment previously set aside for re-use;
3. Install equipment from Contractor’s store off site;’
4. The actual type of unit to be removed shall be described in the following categories: -
5. Signal head: one aspect;
6. Signal head: two aspect;
7. Signal head: three aspect;
8. Signal head: four aspect;
9. Signal head: five aspect;
10. Push button unit;
11. On pole detector: including vehicle detector, on crossing detector, kerbside detector, CCTV camera, counting equipment or solar cell;
12. Nearside aspect, including Pedestrian, Toucan and Pegasus.
13. The units of measurement for installation of traffic signal pole equipment previously set aside or stored off site shall be number.

 **Item Coverage**

1. The items for installation of traffic signal pole equipment previously set aside or stored off site shall be in accordance Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Disposal of material in licensed tips off site;
3. Fixings and fittings;
4. Reinstatement and making good all work disturbed;
5. Loading, transporting from store, unloading and positioning for re-erecting;
6. Replacing items damaged during the foregoing operations;
7. Modification and new materials;
8. New cables, protective sheaths, drawing through, cable terminations and connection point;
9. Setting up, labelling and marking;
10. Working at any height.

**Traffic Signal Pole Equipment with Fitting Kit (Supply and Install)**

 **Measurement**

1. The supply and installation of traffic signal pole equipment with fitting kit shall be measured in the following categories: -
2. Standard LV types;
3. ELV types;
4. HI to LED types;
5. The item description shall state the actual type and size of traffic signal pole equipment with fitting kit to be supplied and installed.
6. The unit of measurement for supply and install traffic signal pole equipment with fitting kit shall be number.

 **Item Coverage**

1. The items for supply and installation of traffic signal pole equipment with fitting kit shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Reinstatement and making good all work disturbed;
6. Setting up, fixings, drilling holes, connection cables and connectors;
7. Microwave detectors and digital vision detectors;
8. Provision and installation of software for alternative systems;
9. Drawing through, configuring, labelling, records;
10. Disposal of material in licensed tips off site;
11. Working at any height;
12. Brackets for CCTV cameras.

**Replacement Brackets for Traffic Signal Pole Equipment (Supply and Install)**

 **Measurement**

1. For the avoidance of doubt this rate is for the replacement of existing brackets that failed or are failing only. The measurement of supply and install brackets for traffic signal pole shall be for the supply and installation of the unit.
2. The item description shall state the actual type and size of bracket to be installed.
3. The units of measurement for supply and install brackets for traffic signal poles shall be number.

 **Item Coverage**

1. The items for supply and install brackets for traffic signal poles shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Reinstatement and making good all work disturbed;
6. Fixings and caps;
7. Drilling holes;
8. Working at any height;
9. Cable stripping, securing, connection and labelling.

**Signal Heads Including Background Boards and Fitting Kit (Supply and Install)**

 **Measurement**

1. Supply and install signal heads including background boards and fitting kits shall be measured in the following categories: -
2. HI lamp types;
3. Central light source LED types;
4. LED replacement for HI lamps;
5. Additional items.
6. The item description shall state the actual type and size of signal head including background boards and fitting kits to be installed.
7. The units of measurement for supply and install signal heads including background boards and fitting kits shall be number.

 **Item Coverage**

1. The items for supply and install signal heads including backing boards and fitting kits shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Reinstatement and making good all work disturbed;
6. Retro-reflective edging material;
7. Regulatory box signs;
8. Fixings, hoods, visors, protective caps, connecting cable, cable connectors, protective sheath;
9. Drawing through, terminations, setting up;
10. Labelling;
11. Lamps;
12. Disposal of material in licensed tips off site;
13. Working at any height.

**Miscellaneous Detector Equipment (Supply and Install)**

 **Measurement**

1. The supply and installation of miscellaneous detector equipment shall be measured in the following categories: -
2. Normal types;
3. ELV types.

1. The item description shall state the actual type and size of miscellaneous detector equipment to be supplied and installed.
2. The unit of measurement for supply and install miscellaneous detector equipment shall be number.
3. For the avoidance of doubt brackets for detector equipment (including triangle brackets for kerbsides) are included within the rate.

 **Item Coverage**

1. The items for supply and installation of miscellaneous detector equipment shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Reinstatement and making good all work disturbed;
6. Setting up, fixings, connection cables and connectors;
7. Drawing through, terminations, configuring;
8. Detector devices;
9. Racks, backplanes and guides, wiring looms and termination blocks;
10. Labelling;
11. Disposal of material in licensed tips off site.

**Traffic Signal Pole (Remove and Dispose)**

 **Measurement**

1. Traffic signal pole (remove and dispose) shall be measured in the following categories: -
2. Cut off at ground level;
3. Cut off at ground level and remove foundation;
4. Remove pole from pole retention socket;
5. Remove pole from pole retention block
6. Remove wide based pole from pole retention socket or retention block. (This item shall only be measured in respect of poles over 4.6 metres);
7. Each category shall be sub-divided into up to and including 4.6 metres and over 4.6 metres.
8. Extra over items shall be measured for removing poles from retention sockets to Contractor’s store up to and including 4.6 metres and over 4.6 metres.
9. The units of measurement for traffic signal pole (remove and dispose) and extra over for removing to Contractor’s store shall be number.

 **Item Coverage**

1. The items for traffic signal pole (remove and dispose) shall be in accordance with the Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Backfilling and compaction;
4. Imported filling and compaction;
5. Cleaning, stacking, protecting and labelling;
6. Transport and handling;
7. Disconnecting, removing, disposing of and sealing of services and supplies;
8. Disposal of material in licensed tips off site;
9. Reinstatement and making good all work disturbed;
10. Storage facilities;
11. Replacing items damaged during the foregoing operations;
12. Credit value of materials;
13. Multiple handling of materials;
14. Treatment of hazardous materials;
15. Marking of spares;
16. Working at any height.

**Traffic Signal Pole; Drawing Refer to STAN 11/17 (Erect Only)**

 **Measurement**

1. The measurement of erection of traffic signal poles shall be for installation of poles into an existing Pole Retention Socket or Pole retention block (Measured Separately).
2. Erect only traffic signal poles shall be measured in the following categories: -
3. Up to and including 4.6 metres: straight or swan neck 114mm diameter;
4. Over 4.6 metres: straight 114mm diameter;
5. Over 4.6 metres straight 168mm diameter.
6. Over 4.6 meters straight 177mm diameter
7. The unit of measurement for traffic signal pole (erect only) shall be number.

 **Item Coverage**

1. The items for traffic signal pole (erect only) shall be in accordance with the Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Reinstatement and making good all work disturbed;
6. Installation in Pole Retention Socket or Pole Retention Block (measured separately);
7. Electrical connector, pole number label, stripping, crimping and securing of supply cable;
8. Removal of packaging, inspection, repairs, rejections;
9. Removal and storage of Pole Retention Socket cap;
10. Identification labels, doors and locks;
11. Disposal of material in licensed tips off site;
12. Working at any height.

**Traffic Signal Pole; Refer to STAN 11/17 (Supply Only)**

 **Measurement**

1. Traffic signal pole (supply only) shall be measured in the following categories: -
2. Straight;
3. Swan neck.
4. Folding Pole for BLE or CCTV – (contact TCU for current specification
5. Folding Poles for Signal equipment
6. Each category shall be sub-divided into 114mm diameter, 168mm and 177mm diameter.
7. The length of each pole shall be stated in the item description.
8. The unit of measurement for traffic signal pole (supply only) shall be number.

 **Item Coverage**

1. The items for traffic signal pole (supply only) shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Loading, transporting from store, unloading and positioning for installation;
3. Replacing items damaged during the foregoing operations;
4. Modification and new materials;
5. Pre-drilling, pole caps, welded top caps;
6. Supply of black.

**Signal Pole Retention Socket: Refer STAN 11/17 (Supply and Install)**

 **Measurement**

1. The measurement of the signal pole retention socket shall be the complete installation to accommodate burying all types of signal pole to a depth typically between 700mm and 1000mm. Ducting is not included and is measured separately.
2. The item description shall state the type of signal pole retention socket and the diameter and type of pole to be installed.
3. An extra over item shall be measured for the provision and installation of wedge plates to 114mm, 168mm and 177mm diameter poles.
4. The units of measurement for signal pole retention socket and extra over for provision and installation of wedge plates shall be number.

 **Item Coverage**

1. The items for signal pole retention socket shall be in accordance with the Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material, earthwork support;
3. Backfilling and compaction;
4. Imported granular stone and compaction;
5. Disposal of material in licensed tips off site;
6. Reinstatement and making good all work disturbed;
7. In-situ concrete;
8. Formwork;
9. Drainage tube, soakaway weep hole;
10. Protective cap.

**Controller Box Lock (Replace)**

 **Measurement**

1. The measurement of controller box lock (replace) shall be for the removal and replacement of the lock.
2. The item description shall state the type of lock to be replaced.
3. The unit of measurement for controller box lock (replace) shall be number.

 **Item Coverage**

1. The items for controller box lock (replace) shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Transport and handling;
3. Reinstatement and making good all work disturbed;
4. Disposal of material in licensed tips off site;
5. Credit value of materials;
6. Multiple handling of materials;
7. Keys.

**Non-Reflecting Road Studs**

 **Measurement**

1. The measurement of take up or down non-reflecting road studs and remove to tip off site shall be for the removal of the road stud and subsequent reinstatement of the carriageway.
2. The measurement of new non-reflecting road studs shall be the complete supply and installation.
3. The item description shall state the size, shape and material of the road stud.
4. The unit of measurement for take up or down non-reflecting road studs and remove to tip off site and for supply and install new non-reflecting road studs shall be number.

 **Item Coverage**

1. The items for take up or down non-reflecting road studs and remove to tip off site and for supply and install new non-reflecting road studs shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Transport and handling;
4. Reinstatement and making good surfaces and all work disturbed and filling voids with suitable material to match any type of carriageway;
5. Disposal of material in licensed tips off site;
6. Credit value of materials;
7. Multiple handling of materials;
8. Treatment of hazardous materials;
9. Preparation of any type of surface to receive new road studs;
10. Cutting or forming holes;
11. Adhesives and grout;
12. Marking out, drilling and adhesives.

**Tactile Paving (Red of Buff): to include Ladder and Corduroy paving Refer to STAN 11/17**

 **Measurement**

1. Tactile paving shall be measured in the following categories: -
2. Take up or down and remove to tip off site;
3. Lay new tactile paving;
4. Lift existing single slab and reseat in same location;
5. Maximum 150mm Thick sub-base below slabs.
6. The measurement of new tactile paving and sub-base layer shall be calculated using the dimensions of the top surface. The item shall include for construction where tactile paving and mortar bed previously removed, construction in existing asphalt footway and construction in unpaved verge or footway. Asphalt footway laid on site of tactile paving shall be measured separately.
7. The item description for new tactile paving shall state the various courses to be laid.
8. The units of measurement for take up or down and remove to tip off site, lay new tactile paving shall be number and maximum 150mm sub-base shall be square metre. The unit of measurement for lift existing single slab and reseat in same location shall be number.

 **Item Coverage**

1. The items for tactile paving shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Removal of all foundations and beds below paving slabs;
4. Transport and handling;
5. Disposal of material in licensed tips off site;
6. Credit value of materials;
7. Multiple handling of materials;
8. Treatment of hazardous materials;
9. Preparation of surfaces to receive new work including cleaning, excavation, planing, tack coat etc;
10. Joint filler and sealant;
11. Jointing to existing paving;
12. Laying to levels and falls;
13. Bedding, jointing and pointing;
14. Straight, circular and radial cutting and fitting;
15. Rough and fair cutting and fitting;
16. Reinstatement and making good surfaces and all work disturbed;
17. Supply of either red or buff coloured tactile paving slabs in dimple or cord pattern;
18. Sub-base and compaction.

**Access Chamber Frame and Cover: Refer to STAN 11/17**

 **Measurement**

1. Access chamber frames and covers shall be measured in the following categories: -
2. Replace cover;
3. Replace frame and re-use cover;
4. Reseat frame and re-use cover;
5. Replace frame and cover;
6. Each category shall be sub-divided into the following types of cover and frame: -
7. XSDB (Type 1/1A) 300 x 300mm;
8. SDB (Type 2/2A) 450 x 300mm;
9. MDB (Type 3/3A) 450 x 450mm;
10. LDB (Type 4/4A) 600 x 450mm;
11. XLDB (Type 5/5A) 600 x 600mm.
12. The items for replace frame and re-use cover shall be for the taking up and disposal of the frames, supply and fix new frame and replace existing cover in new frame.
13. The items for re-seat frame and re-use cover shall be for the removal of the existing frame and cover and subsequently re-seating the existing frame and replacing the existing cover.
14. The items for replace frame and cover shall be for taking up the existing frame and cover and disposing off site and for the supply and fixing of new frames and covers on existing chambers.
15. Extra over items shall be measured for the supply of heavy duty non-slip covers for each category of frame and cover and shall be measured only in respect of the supply of new covers.
16. The units of measurement for access chamber frames and covers and extra over for the supply of heavy duty non-slip covers shall be number.

 **Item Coverage**

1. The items for access chamber frames and covers shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Removal of bedding, grouting and fixings to frames;
3. Transport and handling;
4. Disposal of material in licensed tips off site;
5. Credit value of materials;
6. Multiple handling of materials;
7. Seating and bedding;
8. Cleaning;
9. Preparation of surfaces to receive new work;
10. Reinstatement and making good all work disturbed;
11. Loading, transporting from store, unloading and positioning for re-fixing;
12. Replacing items damaged during the foregoing operations;
13. Modification and new materials;
14. Fixings, marking and badging, locking facility and keyway closer caps.

**Access Chamber: Drawings Refer to STAN 11/17**

 **Measurement**

1. Access chambers shall be measured in the following categories: -
2. Modular twin wall, backfilled surround. Ducting top @450mm depth;
3. Modular twin wall, backfilled surround. Ducting top @ 750mm depth.
4. The category for ducting top @450mm depth shall be sub-divided into the following types of chamber: -
5. XSDB (Type 1) 300 x 300mm;
6. SDB (Type 2) 450 x 300mm;
7. MDB (Type 3) 450 x 450mm;
8. LDB (Type 4) 600 x 450mm;
9. XLDB (Type 5) 600 x 600mm.
10. The category for ducting top @750mm depth shall be sub-divided into the following types of chamber: -
11. XSDB (Type 1A) 300 x 300mm;
12. SDB (Type 2A) 450 x 300mm;
13. MDB (Type 3A) 450 x 450mm;
14. LDB (Type 4A) 600 x 450mm;
15. XLDB (Type 5A) 600 x 600mm.
16. The measurement of access chambers shall be for the complete construction including frames and covers
17. The units of measurement for access chambers shall be number.

 **Item Coverage**

1. The items for access chambers shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Locating existing ducts;
4. Breaking in to existing ducts;
5. Connecting and re-connecting existing ducts;
6. Cutting off or assembly of associated ducts;
7. Construction of bases, walls, roof and cover slabs and shafts, and surrounds;
8. Assembly of modular units;
9. Fittings and building in ducts;
10. Steps, safety chains, ladders, hand holds and the like;
11. Lifting keys;
12. Backfilling and compaction;
13. Imported granular fill and compaction;
14. Disposal of material in licensed tips off site;
15. Filling;
16. Reinstatement and making good all work disturbed;
17. Drainage tubes, holes and outlets;
18. Formers;
19. Marking ducts.

**Carriageway Loop Box: Drawing Refer to STAN 11/17**

 **Measurement**

1. Carriageway loop boxes shall be measured in the following categories: -
2. D400 type, supply and fit;
3. NAL hexagonal type or similar approved, supply and fit.
4. The measurement of carriageway loop box shall be for the complete installation and construction in existing carriageway.
5. All carriageway loop boxes to be supplied with compatible lockable lids
6. The unit of measurement for carriageway loop box shall be number.

 **Item Coverage**

1. The items for carriageway loop boxes shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. New ducts and building in;
4. Locating existing ducts or chambers;
5. Breaking in to existing ducts or chambers;
6. Connecting and re-connecting existing ducts;
7. In-situ concrete, mixing, placing in or against any surface, compaction, unformed surface finishes, curing and protection, filling to overbreak and working space, admixtures and additives;
8. Formwork, fabricating, assembling, cutting, fitting and fixing in position, striking, taking down and removing;
9. Backfilling and compaction;
10. Disposal of material in licensed tips off site;
11. Reinstatement and making good all work disturbed;
12. Draw ropes and removable stopper;
13. End cap or plug;
14. Drilling;
15. Loop box cover and frame.

### Lockable lids for existing carriageway loop boxes (supply and Install)

###  Measurement

1. Carriageway loop boxes shall be measured in the following categories:
	1. D400 type lockable lid, supply and install;
2. The measurement of carriageway loop box shall be for the installation on in existing carriageway.
3. All carriageway loop boxes to be supplied with compatible lockable lids

of lockable lid to an existing carriageway loop box

1. The unit of measurement for carriageway loop box lockable lid shall be number.

**Item Coverage**

1. The items for carriageway loop box lockable lid installation shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Removal of existing carriageway loop box lid to tip
3. Supply and installation of new lockable lid to existing carriageway loop box
4. Disposal of material in licensed tips off site;
5. Reinstatement and making good all work disturbed

**Ducting: Drawings Refer to STAN 11/17**

 **Measurement**

1. The measurement of ducting shall be the lengths of duct installed along the centre line of the trench. The measurement of ducts shall be for the complete construction irrespective of the number of ducts contained within any one trench.
2. The measurement of ducting shall be for individual lengths exceeding 10 metres. Items for ducting shall be categorised as 450mm or 750mm deep. The depth of the trench shall be the vertical measurement between the top of the duct, and the existing ground level.
3. The item description shall state the diameter and number ducts to be laid in the trench.
4. The measurement of ducting installed in the verge will be priced separately
5. Extra over items shall be measured for the following: -Concrete bed and concrete surround to duct. Refer to STAN 11/17 for depth
6. The unit of measurement for ducting and extra over items shall be linear metre.

 **Item Coverage**

1. The items for ducting shall be in accordance with the Preamble to Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material including tarmac, paving slabs and block paving;
3. Additional depth of excavation to maintain specified cover at obstructions;
4. Locating, working around and supporting pipes, cables, services, apparatus and the like;
5. Trimming, levelling and compacting bottom of trench;
6. Bedding, haunching and surrounding;
7. Backfilling and compaction;
8. Imported filling and compaction;
9. Disposal of material in licensed tips off site;
10. Marking and lettering;
11. Reinstatement and making good surfaces and all work disturbed to include tarmac, paving slabs and block paving;
12. Providing photographic evidence where depth of trench is greater than 750mm depth to top of duct;
13. Cutting, laying, jointing, bedding, duct joining sleeves, bends, connections;
14. Supports to vertical and horizontal ducts;
15. Fixing draw ropes, removable stoppers, marker blocks and posts;
16. Lubricants, packing, grouting and caulking;
17. Connections and building in ends;
18. Flushing, mandrelling.

**Duct and Cable Surveying**

 **Measurement**

1. The measurement for duct and cable survey will include the complete process as stated in Volume 3 Service Information SS03 Non-Routine Services.
2. Duct Survey shall be measured in the following categories: -
3. Traffic Signal Junction
4. Pedestrian Traffic Signal site
5. Cable Survey shall be measured in the following categories:-
6. Cable Survey per pole
7. Cable Survey full traffic signal site
8. When water jetting and vacuum equipment is required then this will be priced separately and charged as per day
9. An extra over will be charged for sites that exceed 30 poles and will be priced as number

 **Item Coverage**

1. The items for duct and cable survey shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services the Preamble to the Method of Measurement General Directions and shall include for:
2. All supervision, preparation, site work, travel, subsistence and analysis
3. All necessary traffic management to carry out the survey, including any noticing required.
4. Ducting and chambers to be cleared of silt and debris.
5. Any missing or deviations to supplied drawing to be recorded.
6. Size of chambers and ducts to be recorded
7. Number and colour of cables entering chamber to be recorded
8. Number and colour of cables in each duct to be recorded

**Slot Cutting for Detector Loop Cable**

 **Measurement**

1. The measurement of slot cutting for detector loop cable shall be the length required to be cut at any individual site. Slot cutting shall be measured in a minimum day rate up to and including 25 metres in lengths and a linear metre rate for slot cutting in excess of 25 metres for individual sites.
2. The item description shall state the type of pavement into which the slot is to be cut.
3. Extra over items shall be provided for cutting through high friction surfacing and extra wide and deep slots for containing 16 core armoured signal cable.
4. Cable for insertion into the slots is specifically excluded from this item and shall be measured separately.
5. The units of measurement for slot cutting for detector loop cable, extra over for cutting through high friction surfacing and extra over for extra wide and deep slots for containing 16 core armoured signal cable shall be linear metre.

 **Item Coverage**

1. The items for slot cutting for detector loop cable shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Marking out, cleaning, drying, cross cutting;
3. Subsequent backfilling after installation of cable, cleaning and removal of surplus filling material;
4. Cotton rag, sealing and blanking plates;
5. Disposal of material in licensed tips off site;
6. Protection of adjacent surfaces and equipment;
7. Reinstatement and making good surfaces and all work disturbed.

**Steel Pedestrian Guardrail: Drawing SD009**

 **Measurement**

1. Take up or down and set aside for re-use or remove to store or tip off site steel pedestrian guardrail shall be measured in the following categories: -
2. Take up or down guardrail and remove to tip off site;
3. Take up or down guardrail and set aside for re-use;
4. Take up or down guardrail and remove Contractor’s store off site;
5. Take up or down existing post and foundation and remove to tip off site, backfill void;
6. Remove existing foundation and replace with new (concrete).
7. The units of measurement for take up or down and set aside for re-use or remove to store or tip off site guardrail shall be linear metre. The units of measurement for take up or down existing post and foundation and remove to tip off site and backfill void and remove existing foundation and replace with new shall be number.
8. The alternate units of measurement for take up or down and set aside for re-use or remove to store or tip off site guardrail shall be linear metre. The units of measurement for take up or down existing guardrail set within existing NAL (or equivalent) sockets.
9. The units of measurement for removal of existing NAL (or equivalent) guardrail sockets shall be per item
10. The measurement of pedestrian guardrails shall be the developed length along the centre line and shall include all guardrails either straight or curved to any radius.
11. Installation of guardrails shall be measured in the following categories: -
12. Supply and fix new guardrail;
13. Take from store and install guardrail previously set aside for re-use;
14. Supply and fix support post only in concrete foundation.
15. Extra over items shall be measured for NAL (or equivalent) RS 50x50 retention socket and NAL (or equivalent) RS 60x60 retention socket. An item shall be measured for installation of street equipment into existing retention sockets.
16. The units of measurement for installation of guardrails shall be linear metre, the unit of measurement for supply and fix support post only in concrete foundation shall be number, the units of measurement for extra over for NAL (or equivalent) RS 50x50 retention socket and NAL (or equivalent) RS 60x60 retention socket shall be number. The unit of measurement for installation of street furniture into existing sockets shall be number.

 **Item Coverage**

1. The items for take up or down pedestrian guardrails and installation of steel pedestrian guardrails plus installation of NAL (or equivalent) guardrail sockets shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Transport and handling;
4. Multiple handling of materials;
5. Treatment of hazardous materials;
6. Dismantling and extracting posts and panels;
7. Cleaning, stacking and labelling;
8. Storage facilities;
9. Replacing items damaged during the foregoing operations;
10. Credit value of materials;
11. In-situ concrete, mixing, placing in or against any surface, compaction, unformed surface finishes, curing and protection, filling to overbreak and working space, admixtures and additives;
12. Formwork, fabricating, assembling, cutting, fitting and fixing in position, striking, taking down and removing;
13. Backfilling and compaction;
14. Imported filling and compaction;
15. Disposal of material in licensed tips off site;
16. Fixings and fittings;
17. Joining to existing fencing;
18. Protective system, masking and measures to protect adjacent untreated work including removal upon completion, preparation of surfaces, protection of uncoated surfaces;
19. Reinstatement and making good surfaces and all work disturbed;
20. Loading, transporting from store, unloading and positioning for re-erection;
21. Modifications and new materials;
22. Cutting guardrails, dressing cut ends and anti-corrosive treatment.
23. Fixing guardrail into existing or new NAL (or equivalent) socket

**Cables: (Remove and Dispose) Refer to STAN 11/17**

 **Measurement**

1. The measurement of the removal of buried cable shall be in respect of any type or size of cable.
2. The unit of measurement for the removal of buried cable shall be linear metre.

 **Item Coverage**

1. The items for removal of buried cable shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services the Preamble to the Method of Measurement General Directions and shall include for: -
2. Locating and marking buried cable runs;
3. Excavation in any material;
4. Disposal of surplus excavated material and cable in licensed tips off site;
5. Disconnection and sealing ends of cable;
6. Backfilling and compaction;
7. Reinstatement and making good surfaces and all work disturbed;
8. Removal of cables from any surface including carriageways;
9. Lifting and replacing access chamber access.

**Cables (Supply and Lay)Refer to STAN 11/17**

 **Measurement**

1. Cables (supply and lay) shall be measured in the following categories: -
2. Cables;
3. Reusable Jointing kits including bottle joints;
4. Connection boxes.
5. The measurement of cable shall be the summation of the individual lengths along the centre line of the route of the cable between the points of cable termination within each piece of equipment.
6. The cable type and size shall be stated in the item description. The reusable jointing kits shall be separately identified according to the type of cable with which they are to be used.
7. The measurement for coax/control cable for CCTV shall be for any lengths.
8. The units of measurement for cable shall be linear metre; the units of measurement for reusable jointing kits and connection boxes shall be number.

 **Item Coverage**

1. The items for supply and lay cable shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Unsealing, clearing and swabbing out ducts, drawing cables through, replacing draw ropes, plugging and sealing duct ends and marking;
3. Intermediate supports and fixing devices where cables leave trench prior entry into equipment;
4. Supports to vertical and horizontal cables;
5. Sealing to cable ends;
6. Cutting, tying together, sealing, coiling and strapping of unused cores;
7. Unscheduled joints;
8. Marker blocks, marker tape, identification tags, sleeves and the like;
9. Twisting and snaking;
10. Commissioning;
11. Reinstatement and making good all work disturbed;
12. Installation in duct, pole, cabinet or slot;
13. Terminations, tagging, labelling, stripping and connections, spare cores;
14. Spare cable, pull tight tags, colour coding, joint enclosures;
15. Tamping into slot;
16. Disposal of surplus material in licensed tips off site;
17. Stripping and connecting cables and re-assembly of reusable jointing kits;
18. Working at any height.

**Base Sealing: Refer to Stan 11/17**

**Measurement**

1. Base sealing shall be for Controller, Uninterrupted Power Supply (UPS) or MEC cabinet
2. Base sealing shall be measured once only for each pillar or cabinet and shall be for the complete operation.
3. The unit of measurement for base sealing shall be number.

 **Item Coverage**

1. The items for base sealing shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Plugging ducts;
3. Backfilling voids, compaction and levelling;
4. Clearing surplus backfill and debris;
5. Sealing compound;
6. Cleaning and removal of spillage;
7. Disposal of surplus material in licensed tips off site;
8. Reinstatement and making good all work disturbed;
9. Sand filling.

**Mounting base with grommet tray (Supply only): Refer to STAN 11/17**

**Measurement**

1. For the supply of a mounting base with grommet base shall be for a Controller, UPS and MEC cabinet.
2. The supply of a mounting grommet base shall be measured once for each cabinet and shall include all necessary equipment to install the unit
3. The unit of measurement for suppling a mounting base with grommet base shall be number.
4. When delivery to site is requested then the contractor can charge an extra over and the unit of measurement shall be number

**Mounting base with grommet tray (Supply and Install only): Refer to STAN 11/17**

**Measurement**

1. For the supply and installation of a mounting base with grommet base shall be for a Controller, UPS or MEC cabinet.
2. Supply and installation of a mounting base shall be measured once for each cabinet and shall be for the complete process
3. The unit of measurement for supply and installing a mounting base with grommet tray shall be number

**Item Coverage**

1. The items for mounting base with grommet tray shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Excavation in any material;
3. Locating existing ducts;
4. Breaking in to existing ducts;
5. Connecting and re-connecting existing ducts;
6. Cutting off or assembly of associated ducts;
7. Construction of bases, walls, roof and cover slabs and shafts, and surrounds;
8. Assembly of modular units;
9. Fittings and building in ducts;
10. Steps, safety chains, ladders, hand holds and the like;
11. Backfilling and compaction;
12. Imported granular fill and compaction;
13. Disposal of material in licensed tips off site;
14. Filling;
15. Reinstatement and making good all work disturbed;
16. Drainage tubes, holes and outlets;
17. Formers;
18. Marking ducts.
19. Attaching above ground section to underground section and ensure it is sealed correctly.

**Bagging / un-bagging**

 **Measurement**

1. The measurement of bagging/un-bagging shall be for the complete process carried out for third parties when instructed in writing by the Service Manager. The item shall specifically exclude undertaking remedial and repair works to damaged equipment caused by third parties, but shall include undertaking inspections, checking and recording any damage caused by third parties and notifying the Service Manager.
2. Bagging/un-bagging shall be measured in the following categories: -
3. Pedestrian Traffic Signal Site;
4. Traffic Junction Signal Site.
5. Extra Large Traffic Signal Site.
6. Bagging/un-bagging shall be measured once only to each site taking into account the details referred within this section.
7. Pedestrian Traffic Signal Site
8. Traffic Junction Signal
9. Extra Large Traffic Signal Site – allow for sites with 30 poles or over
10. The unit of measurement for Traffic Signal Pedestrian Sites and Traffic Junction Signal Sites shall be per site.
11. When requests are received out of normal working hours then the contractor may charge an extra over to cover the additional time to process the request.

 **Item Coverage**

1. The items for bagging/un-bagging shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for: -
2. Arrangements and notifications;
3. Switching lamps off;
4. Switching lamps on;
5. For the avoidance of doubt; percentage uplifts for Non Standard Working Hours shall only apply where specifically instructed by the Service Manager;
6. Travelling to and from site.

**Joint pits for electrical works**

 **Measurement**

1. The measurement for Joint pits shall be for the complete process as stated in Volume 3 Service Information SS03 Non-Routine Services
2. The unit of measurement shall be number based on a pit 1000mm x 1000mm depths up to and including 1000m
3. An extra over can be added for depth exceeding 1000mm per 300mm
4. An extra over can be added for digging in concrete and reinstating concrete

**Item Coverage**

1. The items for joint pits for electrical shall be in accordance with Volume 3 Service Information SS03 Non-Routine Services and shall include for:
2. Dig out pit for electrical disconnection and re-connection 1000mm x 1000mm
3. Reinstate pitfollowing electrical supply company attendance Includes all necessary traffic management excluding items detailed in Volume 5 Returnable Schedules Schedule 6 -Price List

**Vegetation Clearance**

**Measurement**

1. The measurement for vegetation clearance shall be for the complete process as stated in the Volume 3 Service Information SS03 Non-Routine Services
2. The unit of measurement shall be hourly
3. When an elevated platform is required then a separate rate will be applied

**Item Coverage**

1. The items for vegetation clearance shall be in accordance with the Volume 3 Service Information SS03 Non-Routine Services and shall include for:
2. Includes set up and removal of all necessary traffic management to carry out the work unless separately identified within Volume 5 Returnable Schedules Schedule 6 Price List
3. All necessary tools required to remove vegetation.
4. Removal and disposal of waste
5. The checking of affected equipment such as signal heads and above ground detection.

**SECTION 3 EMERGENCY SERVICES**

**BASIC FACILITY**

 **Measurement**

1. The measurement of Emergency Services shall be for each month.

**Item Coverage**

1. The items for Emergency Services shall be in accordance with Volume 3 Service Information SS04 Emergency Services and include for: -
2. Communication systems and staffing for receiving calls from any source both during and outside Normal Working Hours;
3. Transmitting requests for response;
4. The organisation of staff, plant and equipment response within prescribed times;
5. Cost of rotas, standby payments and the like;
6. All other fixed costs to provide the Emergency Services required by the Service Information.

**EMERGENCY ATTENDANCE**

**Measurement**

1. The measurement of emergency attendance shall be for the complete attendance during or outside Normal Working Hours.
2. Other attendance carried out within one mile of the location of the first attendance shall be deemed to be included in the rate and shall not qualify for additional measurement.

**Item Coverage**

1. The items for emergency attendance shall be in accordance with Volume 3 Service Information SS04 Emergency Services and include for: -
2. Checking, testing and locating faults;
3. Arranging for disconnection of supply;
4. Restoring (wherever practicable) or making safe damaged equipment;
5. Erect, maintain and subsequently remove suitable traffic safety measures;
6. Ensuring that traffic safety measures are in place and maintained until such time that the permanent repairs have been affected;
7. Disposing of all damaged/surplus materials to Contractor’s tip;
8. Disruption and/or delay to other services;
9. Reporting to the Service Manager;
10. Gathering evidence.

**SECTION 4 DAYWORKS**

**GENERAL**

1. Items in Volume 5 Returnable Schedules Schedule 6 Price List are used for valuing works for which there are no appropriate items in other Section of the Price List and no other method of valuing the works has been agreed.
2. The items are applicable to works of any type and any duration instructed by the Service Manager.
3. The value of works that have been valued on a daywork basis is only included in the amount to be paid to the Contractor where the following conditions are fulfilled: -
	1. the time spent on the works is both factually correct and, in the opinion of the Service Manager, represents effective and efficient working;
	2. detailed and accurate substantiating records are kept of all work undertaken, resources used and the start and finish times of all activities in accordance with Paragraph 17 of this section;
	3. invoice costs, where appropriate, are included only when the invoices are from companies supplying the goods or services who have been commissioned by the Contractor following a comprehensive procurement exercise that ensures quality of service, compliance with contract requirements and best value to the reasonable satisfaction of the Service Manager.
4. Where these conditions are not fulfilled the Service Manager may instruct the Contractor to revise his valuation of works to reflect the correct hours and/or efficient and effective working and/or commercially competitive costs for goods, materials or services.
5. Travel time from the Contractor’s offices/depots outside of the Somerset County boundary is deemed to be included within the rates and Prices within the price list. Only time spent actively engaged in the works within the boundary of Somerset will be acceptable. For the avoidance of doubt, travelling to and from site is not chargeable.

**LABOUR**

1. The items in the Price List for Labour apply to operatives employed directly by the Contractor and also his Subcontractors, including labour only Subcontractors.

1. Labour rates are deemed to include all costs of employing labour, including but not limited to, the provision of small non-mechanical tools, traffic safety and management equipment including signs, cones, pedestrian barriers and lamps, personal protective equipment, consumable materials, cable avoidance tests, establishment charges, overheads and profit.
2. The amount of time measurable for labour is the period during which operatives are actively engaged in the works being valued on a daywork basis. Time is charged in multiples of one quarter of an hour.
3. The items in the Price List for overtime working are only used where work is required and has been instructed by the Service Manager to be carried out outside Normal Working Hours. The item applicable is determined in accordance with the rules for payment of overtime as laid down by the Construction Industry Joint Council in the Working Rule Agreement for the Construction Industry or other appropriate wage fixing body.

**LABOUR (STAFF DESIGNATIONS)**

1. Staff Designations provided details the minimum qualifications, experience and skills required. Tendered rates are deemed to take into account these minimum requirements.
2. Staff that are supplied to the Contractor by an employment agency and employed in delivering the service are required to comply with the minimum requirements specified within the Staff Designations in the same manner as if they were direct employees of the Contractor.
3. Staff (Labour) costs are deemed to make allowance for all personal protective equipment required to undertake the works and are to include but not limited to all costs associated with equipment required to undertake their defined role, all consumables, stationery, expenses, communications systems, establishment charges, overheads and profit.

Staff Designation **LABOURER**

|  |  |  |
| --- | --- | --- |
|  | **Essential** | **Desirable** |
| **Qualifications** | Accredited to work on highways being fully conversant with applicable welfare and safety legislation and appropriate codes of practice. New Roads and Street works Act 1991 registered. | CSCS qualified |
| **Experience** | Minimum one year experience in the field. | Five years or above experience |
| **Practical skills / Aptitudes** | Fully skilled with ability to undertake numerous civil’s related tasks. |  |
| **Management / Supervision** | Ability to manage/supervise others as and when required in order to safely and productively undertakes works. |  |
| **Working with people** | Ability to work well within a team and able to work in isolation with minimal guidance and supervision. |  |
| **Communication skills** | Written and oral skills. |  |
| **Personal skills** | Self-motivated. Ability to progress multiple projects. Innovative and dynamic. |  |
| **Physical / Other** | Vehicle/lorry/Excavator driver. |  |

Staff Designation **CONFIGURATION ENGINEER**

|  |  |  |
| --- | --- | --- |
|  | **Essential** | **Desirable** |
| **Qualifications** | HNC/HND/BTEC or DegreeCertificated attendance at manufacturers training courses on specific controllers to be configured.Sector 8 certificated | Incorporated Engineer |
| **Experience** | Minimum 5 years’ experience in configuring traffic signal controllers.Detailed knowledge of controller ‘build’, specification and capabilities.Fully conversant with Traffic Control principles, MCE0141 / TR2210 / TOPAZ2500Maintained knowledge of industry Best Practice. |  |
| **Practical skills / Aptitudes** | Fully skilled with ability to achieve required result in configuring of complex projects.Working knowledge of current traffic control standards and principles. Fully competent in Boolean logic.Problem solver. | Fully skilled with ability to be innovative and progress innovative projects. Has acquired working knowledge and skill in ICT, including the management of hardware, software and systems. |
| **Management / Supervision** | Fully understanding and configuring the Customer’s specification. Fully skilled with ability to advise and discuss issues with Customer. | Fully skilled with ability to stimulate innovation, create continuous improvement, and enhance performance. |
| **Working with people** | Fully skilled with ability to focus on Customer’s vision and needs.Ability to generate confidence. |  |
| **Communication skills** | Excellent written and oral skills, communicates clearly and effectively.Ability to discuss traffic control matters comprehensively and constructively.  |  |
| **Personal skills** | Self-motivated. Ability to progress multiple projects. Innovative and dynamic.  |  |
| **Physical / Other** | Vehicle driver. |  |

Staff Designation **INSTALLATION ENGINEER/TECHNICIAN**

|  |  |  |
| --- | --- | --- |
|  | **Essential** | **Desirable** |
| **Qualifications** | Sector 8 certificatedONC/HNC/BTEC Electrical Engineering | Working towards becoming registered engineer |
| **Experience** | 4 years’ experience in Highways electrical apparatus installation. | Working towards becoming Maintenance / Commissioning Engineer. |
| **Practical skills / Aptitudes** | Working knowledge of current electrical standards. Ability to undertake complicated dextrous work in a neat and tidy manner.Particular awareness of safety. |  |
| **Management / Supervision** | Ability to manage and motivate non-skilled staff. Ability to advise and discuss issues with senior staff. |  |
| **Working with people** | Needs to be a ‘team player’.At times may have contact with members of public. |  |
| **Communication skills** | Needs to be able to read, produce and understand technical drawings, schematics and specifications |  |
| **Personal skills** | Self-motivated. Ability to decide and set priorities. |  |
| **Physical / Other** | Vehicle driver. |  |

Staff Designation **TECHNICAL SUPPORT ENGINEER**

|  |  |  |
| --- | --- | --- |
|  | **Essential** | **Desirable** |
| **Qualifications** | HNC/HND/BTEC or Degree | Specialist qualifications. |
| **Experience** | 10 years’ experience in Highways related technologies and systems, including management of operations, design of schemes and negotiations with other bodies.Maintained knowledge of industry Best Practice. |  |
| **Practical skills / Aptitudes** | Fully skilled with ability to achieve required result in 1) System management and control of complex networks 2) the setting up and operation of both proven historic/existing and ‘cutting-edge’ technologies. 3) diagnosing faults and rectifying problems and 4) seeking out and investigating technologies to improve efficiencies and/or drive down costs.Working knowledge of current highway standards. Fully skilled with commercial understanding and ability to consider budgets,  | Fully skilled with ability to be innovative and progress innovative projects. Has acquired working knowledge and skill in ICT, including the management of hardware, software and systems. |
| **Management / Supervision** | Fully skilled with ability to achieve required results in Service Management including fully understanding and agreeing the Employer’s objectives. Ability to motivate staff. Fully skilled with ability to advise and discuss issues with senior staff.Ability to specify and procure systems and technology. | Fully skilled with ability to stimulate innovation, create continuous improvement, and enhance performance. Fully skilled with ability to support staff. |
| **Working with people** | Fully skilled with ability to focus on Employer’s vision and needs and develop and improve partnerships with the Employer. Ability to be diplomatic and relate well to external parties and staff. Ability and will to exceed Employer’s needs. Ability to generate confidence and enthusiasm. |  |
| **Communication skills** | Excellent written and oral skills, communicates clearly and effectively with all parties. Ability to make formal and informal presentations. Ability to describe technologies and systems to others in basic terms effectively. |  |
| **Personal skills** | Self-motivated. Ability to decide and set priorities. Ability to progress multiple projects. Innovative, dynamic with strong leadership skills.Flexible attitude. |  |
| **Physical / Other** | Vehicle driver.Ability to be mobile attending locations as necessary, not only ‘on the end of a telephone’. |  |

Staff Designation **UTC SOFTWARE ENGINEER**

|  |  |  |
| --- | --- | --- |
|  | **Essential** | **Desirable** |
| **Qualifications** | Sector 8 certificatedHNC/HND/BTEC or Degree | Specialist qualifications. |
| **Experience** | Minimum 5 years’ experience in Urban Traffic Control (UTC) configuration and SCOOT validation.Experience of design and overall management of UTC schemes.  |  |
| **Practical skills / Aptitudes** | Ability to diagnose faults and implement methods to rectify them.Working knowledge of current highway standards. Has acquired working knowledge and skill in ICT, including the management of hardware, software, communications and IP systems. | . |
| **Management / Supervision** | Ability to understand and agree the Employer’s objectives. Ability to motivate staff. Fully skilled with ability to advise and discuss issues with senior staff. | . |
| **Working with people** | Fully skilled with ability to focus on Employer’s vision.Ability to generate confidence. |  |
| **Communication skills** | Good written and oral skills, communicates clearly and effectively. Ability to discuss systems and engineering matters comprehensively and constructively.Ability to describe technologies and systems to others in basic terms effectively. |  |
| **Personal skills** | Self-motivated. Good analytical capabilities. |  |
| **Physical / Other** | Vehicle driver. |  |

Staff Designation **UTMC HARDWARE & COMMUNICATIONS ENGINEER**

|  |  |  |
| --- | --- | --- |
|  | **Essential** | **Desirable** |
| **Qualifications** | ONC/HNC/BTEC/BSc computing/communications | Specialist qualifications. |
| **Experience** | Minimum 5 years communications background in IP.Excellent knowledge of ADSL/fibre optic/PSTN technologies/2.4Ghz wireless, Microsoft SQL server, Telnet, RS232/485, GPRS, IT network configuration and routing. | Working knowledge of ANPR, Windows server, Remote server Share point, Juniper, VPN, Linux, GPS and IC4 |
| **Practical skills / Aptitudes** | Excellent fault finding and ‘De-bugging’ skills.Has acquired working knowledge and skill in ICT, including the management of hardware, software and systems. |  |
| **Management / Supervision** | Ability to design and maintain communication systems. | . |
| **Working with people** | Ability to generate confidence. |  |
| **Communication skills** | Ability to present technical information to less technically minded persons.  |  |
| **Personal skills** | Self-motivated.Ability to decide and set priorities.  |  |
| **Physical / Other** | Vehicle driver. |  |

**PLANT**

1. The items in the Price List for plant apply to plant owned by the Contractor and plant hired in without an operator. Plant hired in with an operator is valued on the basis of invoice cost plus a percentage addition in accordance with paragraph 16 of this section.
2. Plant rates are deemed to include all operational costs including but not limited to transportation to and from site, travelling time, fuel, consumables, repairs, maintenance, traffic safety and management requirements, insurance, depreciation, establishment charges, overheads and profit.
3. The amount of time measurable for an item of plant is the period during which the plant is actively engaged on the works being valued on a daywork basis. The unit of measure is generally per day or half day

**PERCENTAGE ADDITION ON INVOICE COSTS**

1. The percentage addition is applied to net invoice costs (including any discounts) and is deemed to include for all establishment charges, overheads and profit.

**DAYWORK RECORDS**

1. Detailed daily records are kept of the resources employed on all works valued on a daywork basis. The records are maintained in a format to be agreed with the Service Manager and include: -
	1. full description of the works;
	2. applicable reference to Task Order or Service Instructions;
	3. names of operatives and time started and finished;
	4. plant used and time started and finished;
	5. materials used;
	6. Subcontractor charges;
	7. waste disposal quantities and charges.