SCHEDULE 13 – THE *CONTRACTOR'S* SCOPE IS THE RESPONSE FROM TENDERED QUALITY QUESTIONS

LCC Supply of Traffic Signals Services

Series 4000

22/04/2025

Lincolnshire
COUNTY COUNCIL
working for a better future

LINCOLNSHIRE COUNTY COUNCIL

PLACE DIRECTORATE

TRAFFIC SIGNALS TERM CONTRACT

TRAFFIC SIGNALS SPECIFICATION

SERIES 4000

APRIL 2026

TRAFFIC SIGNALS TERM CONTRACT SPECIFICATION

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4076	CABLE DESIGN, CABLE REFERENCING, AS BUILT DRAWINGS AND HAND OVER DOCUMENTATION
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CLAUSE 4010 NATIONAL STANDARDS

The Contractor shall comply with all common law, current UK/EU legislation, statutory instruments, bylaws, regulations and guidance which includes but is not restricted to the following:

DMRB	The DfT Design Manual for Roads and Bridges
TAL LTN	Relevant Traffic Advisory Leaflets Relevant Local Transport Notes
TD	Relevant Technical Directions
SI	Relevant Statutory Instruments
MCE0108	Siting of Inductive Loops for Vehicle Detecting at Permanent Road Traffic Signal Installations
MCH1540F	Specification for the Installation of Detector Loops on Motorways and All-Purpose Trunk Roads
TR2029D	Inductive Loop Cable for Vehicle Detection Systems
TR2031E	Armoured Feeder Cable for Inductive Loop Systems
TR2206A	Specification for Road Traffic Signals
TOPAS 2500B	Specification for Traffic Signal Controller
TOPAS 2505B	Specification for Above Ground Vehicle Detector Systems for use at Permanent Traffic Signal Installations
TOPAS 2506A	Specification for Above Ground On-Crossing Pedestrian Detection Systems
TOPAS 2507A	Specification for Kerbside Detection Systems for use with Nearside Signals and Demand Units
TOPAS 2508C	Specification for Tactile Equipment for use at Pedestrian Crossings
TOPAS 2509B	Specification for Audible Equipment for use at Pedestrian Crossings
TOPAS 2511A	Specification for Nearside Signals and Demand Units
TOPAS 2512B	Specification for Below Ground Vehicle Detection Equipment
TOPAS	The Contractor shall provide copies of certificate of TOPAS registration for relevant equipment. http://www.topasgroup.org.uk/
BS 7671:2018	18th Edition IEE Regulations: Requirements for Electrical Installations

BS EN 50556:2018	Road Traffic Signal Systems
BS EN 12352:2024	Traffic Control Equipment. Warning and Safety Light Devices
BS EN 12368:2024	Traffic Control Equipment. Signal Heads
BS EN 12675:2017	Traffic Signal Controllers. Functional Safety
BS EN 50293:2012	Electro Magnetic Compatibility
BS EN 61386-24:2021	Conduit Systems buried underground
TSRGD	Traffic Signs Regulations and General Directions 2016
BSI	British Standards requirements
Roads Liaison Group	Management of Electronic Traffic Equipment Code of Practice
Traffic Signs Manual	Chapters 6 & 8
	Safety at Street Works and Road Works Code of Practice
	New Roads and Street Works Act – 1991

CLAUSE 4012 **LINCOLNSHIRE COUNTY COUNCIL STANDARD DETAILS**

All of the Standard Detail drawings are included within the Data Room.

The Standard Detail drawings relevant to traffic signal works are:

SD/12/12	Traffic Signals Controller Root Installation
SD/12/14	Traffic Signal Pavement Box
SD/12/19	Detector Loop Collection Details
SD/12/20	Power Supply Pillar
SD/12/21	Straight and Stub Post Details for Traffic Signals
SD/12/22	Cranked Post Details for Traffic Signals
SD/12/22A	Traffic Signals Straight Signal Pole Detail
SD/12/22B	Traffic Signals Cranked Signal Pole Detail
SD/12/22C	Traffic Signals Stub Pole Details

CLAUSE 4014 CONTRACTOR'S DEPOT

Office and Depot space

LCC will offer bookable desk space and welfare facilities in Lincoln and other Highway Depots around the County for use by the Contractors as and when required.

LCC has made space at the Horncastle Highways Depot during the contract for the Contractor to supply and use a 40ft container for storage of equipment and materials. The Contractor shall maintain a sufficient supply of spare parts and materials to allow the satisfactory operation of this Contract including response to Emergency faults that require a 2 hour attendance time and for Emergency Works such as a pole knockdown.

The space can also be used for offices and a touchdown point for operatives should the Contractor wish to deliver the service this way.

Details of the layout can be found in Scope Clause S901

Horncastle depot has a bookable 12 person meeting room with toilet / kitchen facilities that is shared between LCC and the Highway Works Contractor on site and is available for the Contractor in agreement with all parties.

Lincolnshire County Council Maintenance Equipment Store

Lincolnshire County Council requires a safe, dry and secure undercover storage area within the Contractor's Lincolnshire storage area suitable for storing LCC owned equipment:

a. 1 No Spare, replacement controller for the Lincoln Tidal Flow System

b. Diversion route signs for the closure of Canwick Road

c. 3 no Spare, replacement above lane control signs

d 1 no spare, replacement VMS for advanced signing of the lane control system.

e LCC issued traffic signal spares and equipment to be used solely on this contract

NB further details for the Canwick Road Tidal Flow System are provided in Clause 4036

Controller Configuration Testing Facilities

The Contractor will supply and maintain controller emulation software to enable new controller configurations for controllers supplied and installed under this contract to be tested by LCC remotely at LCC'S Offices. Controller orders will be supplied with controller specification forms; the contractor will email electronic files for testing the controller configuration prior to the Factory Acceptance Test (FAT). Where a remote FAT has been undertaken, the Contractor will undertake hardware checks such as safety red lamp monitoring and green conflict checking of the actual controller to be issued for installation and provide documentation to show that this has been successfully carried out.

The Contractor shall provide and maintain, for the duration of the contract, FAT facilities within 75 miles of the centre of the city of Lincoln. These shall be of a sufficient standard to allow the 'factory' testing and commissioning of items of equipment to be supplied and installed under this contract. This includes new traffic signal controllers of the type to be supplied under this contract.

The Contractor shall provide and maintain test controllers of the types to be supplied in the contract within their testing facilities.

A Lincolnshire County Council Representative shall be present at the FAT for all new controllers tested at The Contractor's premises.

The Contractor shall, using the test controllers, carry out testing of new controller configurations/EPROMs for contractor's own equipment in accordance with the relevant response times stated in the contract.

LCC reserves the right to inspect the Contractors testing facilities within one month of the works commencement date giving 7 days' notice. This shall be repeated annually for the term of contract.

CLAUSE 4020 CONTRACT HOURS, FAULTS AND MAINTENANCE TASK ORDER RESPONSE REQUIREMENTS

Contract Hours:

The following are the normal contract hours:

a) Emergency Response:
24 hours per day every day

b) All other Tasks:
0730hrs to 1800hrs Monday to Friday (excluding public holidays)

Operational Hours for the Contractor's Administration:

As a minimum, the operational hours for the Contractor's Administration office to deal with instructions, queries, faults and task order requests shall be:

0730hrs to 17:30hrs Monday to Friday (excluding public holidays)

Fault Rectification:

Attend and complete a fault shall have the following meanings:

a) Attend - this requires the Contractor to inspect, report and repair within the time stated. A permanent repair shall be carried out on the initial visit wherever possible. The Contractor shall also, where a permanent repair cannot be affected at that time, carry out a temporary repair, to be agreed with Lincolnshire County Council, to give reasonable/acceptable operation until the permanent repair is carried out.

b) Complete - if a permanent repair cannot be carried out on the initial visit the fault shall be fully rectified within time stated for the category of work.

The Contractor shall respond to all instructions from Lincolnshire County Council and complete the required works in the required time scales.

Fault Response and Completion Requirements:

The following categories of responses required in the contract will have attend and complete times as follows:

Activity:	**Attend Within**	**Complete Within**
Emergency Fault	2 Actual Hours	24 Actual Hours
Non-Emergency Fault	12 Contract Hours	24 Contract Hours

An Emergency Fault shall be an "all signals out" fault or any other fault considered by Lincolnshire County Council to present an immediate danger to the public or cause undue disruption to the road network.

Non-emergency Faults shall be all other traffic signal faults.

The response times stated for faults above are measured from the time of the issue of instructions on the Fault Management System (FMS).

Maintenance Task Order:

Three types of Maintenance Task Order response times are used in the Contract as follows:

Order Type:	**Attend and complete Within:**
Replacement of damaged equipment following RTC	72 actual hours
Short Notice Tasks (NB no more than 50% of Maintenance Task Orders will be raised as short notice orders)	0 to 7 Actual Days
Planned task (Maintenance)	90 Actual Days

The period for replacement of damaged equipment following a RTC will commence from the time that the incident has been initially logged on the FMS.

Completion times for Standard ordered tasks will be agreed between LCC and the Contractor at the weekly liaison meeting, once they have been agreed and committed on to LCC's Confirm works ordering and asset management system. The order process (HAMS End to End Process) will be provided as an appendix to this document.

The scope for Short Notice Tasks will be discussed and verified with the Contractor prior to implementation, with the costs then agreed at the subsequent weekly liaison meeting.

The programme for Traffic Signal Capital Improvement works will be agreed between, the Traffic Signals Term Contractor and the Highway Works Term Contractor. The contractor will liaise directly with the Highway Works Term Contractor on all matters relating to site safety, resource planning and programme for the scheme.

CLAUSE 4022 CONTRACT IT AND COMMUNICATIONS

Mobile devices

The Contractor's installation, maintenance and supervisory staff shall each be issued with a suitable device to facilitate communication of instructions and information. Devices shall be capable of sending images from site to Lincolnshire County Council's Fault Management System and LCC's Asset Management System. All devices must be issued and operational from the commencement date of the contract.

The contractor must provide a list of all of the telephone numbers of the Contractor's installation, maintenance and supervisory staff to Lincolnshire County Council at the commencement date of the contract. The Contractor must keep this list up to date.

Task Orders

Ordered works in the contract shall be issued and managed using the LCC Brightly Confirm Asset Management system. Licenses will be provided as per Scope S712.

GPS and Communication System

For the safety of the Contractor's staff and the efficiency of the service the Contractor must implement and operate a GPS tracking system. This system as a minimum must enable the Contractor to track the position and use of the Contractor's vehicles at any time and to monitor the safety of their staff whilst working on the highway network and be visible, on request, for LCC Staff at any time via a cloud based system. This system must be integrated with LCC's Fault Management System to enable visibility of the location of Engineers within the county.

CLAUSE 4024 TERM CONTRACT FAULT MANAGEMENT SYSTEM

IMTRAC

Lincolnshire County Council operates the IMTRAC Fault Management System (FMS) and requires the Contractor to operate this system or any replacement system as specified by LCC. Lincolnshire County Council will provide a licence and access to this system.

The FMS is used to raise, manage and clear faults through two-way communication with the Contractor's Contract Administration. In addition, the system is used as a detailed asset management database to manage traffic signal installations and traffic signal components.

The Contractor is required to integrate the use of IMTRAC into day-to-day operations and management systems.

The following fault raised codes shall be used in the contract:

FAULT RAISE CODE	DESCRIPTION
AO	All off
COO	Controller - any fault
CAN	Fault cancelled
D01	Detection - any fault
LF	Lamp fault
MISC	Miscellaneous repair
OMU	OMU fault
OTU	OTU fault
RLF	Red lamp fault
RTA-E	Road traffic accident/serious vehicle damage
SCOO	SCOOT loop fault
STK	Signals stuck
VAN	Vandalism
VMS	VMS sign fault

The following fault clearance codes shall be used in the contract

FAULT CLEAR CODES	DESCRIPTION
AO	Signals All Out
BAG	Bagged over signals
BLE/TAC	Audible/Tactile
C0N	Controller fault
COMM	Line or Sim fault
ROOT	Router fault
CIV	Civils - repair/make safe
CABF	Cable Fault
CHA	Chargeable works
DET	Detection fault
DIM	Dimming Fault
LMP	Lamp Fault
LMP NFOS	Lamp fault logged no fault on street
LMR	Lamp - Monitor values relearnt
MS	Make safe
MSI	Mains Supply Issues
HOOA	Head out of align
NFS	No Fault Seen
OMU/O.T.U	OMU/O.T.U fault
RTC	RTC
SCLF	Scoot Loop fault
TFF	Tidal flow fault
VAN	Vandalism
VMS	Variable Sign fault
WWW	Wind Weather Water Damage
REAC	Reactive works
WOR	Works Order Required

CLAUSE 4026 REACTIVE MAINTENANCE SERVICE

The Contractor is required to provide a reactive maintenance service that includes the following:

- traffic signal fault rectification
- 365 days 24hr emergency faults and repairs service to respond within 2 actual hours
- minor repairs
- response to RTC damage to equipment
- First line maintenance of LCC's CCTV system

The Contractor shall attend and repair faults on all Lincolnshire County Council traffic signal assets as detailed in the Inventory of Traffic Signal Assets including (but not limited to):

- Traffic signal heads
- Traffic signal poles
- Inductive loops and detector units
- Nearside / Farside Pedestrian Indicators and Demand units
- Above ground detector units
- MOVA units
- All cables
- Feeder pillars and switch gear
- Controllers
- Outstation Transmission Units and routers (4/5G or ADSL)
- Wireless communications equipment
- Any other related traffic signal equipment

The Contractor shall repair Lincolnshire County Council underground traffic signal cable faults and:

- Provide specialist equipment and expertise to identify the nature and location of faults prior to any excavations on site
- Inform LCC of all cable faults found. No joints shall be permitted without prior instruction from LCC.

The Contractor is notified of faults to be attended to through the Contract Fault Management System.

The Contractor shall replace any faulty component to return the installation to full and fault free operation.

The Contractor shall set up Fault Clearance operations on the basis of first-time fix in order that contract fault attendance and clearance times are met and equipment downtime is kept to a minimum.

The Contractor shall immediately report Electricity Company supply faults to LCC

The Contractor shall accept all faults, 24 hours a day every day of the year via IMTRAC or LCC's "Out of Hours" service.

It is the Contractor's responsibility to attend and repair all fault reports in accordance with the timescales quoted in the contract.

The Contractor shall respond and replace or repair as necessary all parts and equipment in order to rectify the reported fault. This will cover all mechanical, optical, electrical and electronic equipment internal or external to the controller up to the power company supply cut out.

The equipment to be maintained is listed in Inventory of Traffic Signal Assets, and this list will be amended by additions/deletions during the Contract Period.

All equipment listed in Inventory of Traffic Signals Assets of the Contract shall be maintained as part of this contract (NB includes SCOOT detectors).

Where the reported fault cannot be detected the Traffic Signal Installation will be inspected to determine if any other faults exist and such faults will be rectified and reported to LCC

A fault will not be considered as rectified until the Traffic Signal Installation is fully operational, and this fact reported to LCC

In the case where a Fault cannot be detected but the same fault is reported within seven days or three times in four weeks and is still not rectified by the Contractor LCC will commission a special investigation of the Traffic Signal Installation. Should the investigation show that such a fault condition does exist all expenses will be met by the Contractor. If it is proved to the satisfaction of LCC that no faults exist then the Contractor will be reimbursed in accordance with the Price list If, as the result of tests carried out by the Contractor, it is found that the Fault lies within equipment for which he is not responsible the Contractor must co-operate fully with any other Maintenance Contractors LCC may employ to maintain its equipment, in carrying out the repair works and be reimbursed in accordance with the Price list .

A full and accurate record of all site attendances must be maintained including RAM data which is to be recorded on the RAM data card. These records will be held and updated dynamically through the Fault Management System.

Any routine/planned attendance requiring the signal lamps to be switched off must be notified to LCC beforehand and the Traffic Signal Installation appropriately signed by the Contractor, in accordance with Chapter 8 of the Traffic Signs Manual, and any other requirements of the contract.

Planned maintenance operations requiring the signals to be turned off will only be permitted if specific approval is provided by LCC and the works are accepted and registered on the County Council's Road Space Booking System.

If the Contractor is unable to restore an inoperative Traffic Signal Installation, then they must supply and erect 'Signals Not Working' signs and other traffic management measures to be agreed with LCC within 3 Hours of the original notification and be responsible for removal on restoration.

If any defect or imperfection occurs as a result of the provision of the Services carried out under the Contract whether above or below the surface, the Contractor must search for the cause thereof and when the cause thereof has been ascertained the Contractor must carry out all necessary repairs to the satisfaction of LCC, all at the Contractor's expense.

When attending an installation the Contractor shall, immediately after the fault has been rectified, report verbally to LCC giving the nature of the fault and the time rectified. The Contractor shall provide confirmation of action taken through the Fault Management System, within one hour of the fault clearance

During fault rectification operations the Contractor will re-enter all RAM data as defined in the site records if required and will leave the installation working in accordance with the site specification.

CLAUSE 4030 EMERGENCY RESPONSE

General

The Contractor shall provide emergency standby/call out facilities 24 hours a day every day. Lincolnshire County Council or, in appropriate circumstances the Police, will direct and instruct the Contractor to assist.

LCC may choose to use the Highway Works Term Contractor to co-ordinate response to some emergency situations. In this case, The Traffic Signal Term Contractor will receive instructions directly from the Highway Works Term Contractor for response to traffic signal emergency repairs.

When, in the opinion of LCC, agents, the Police or other official bodies, items of Signal Equipment have been rendered unsafe, by whatever means, the Contractor shall attend site to inspect, assess, make safe and where possible repair equipment in accordance with the Emergency call out periods specified in the Contract.

The Contractor shall arrange for suitably qualified members of staff to be on call 24 hours a day on every day to receive instructions from LCC to attend, if necessary, on site without delay or to arrange the appropriate emergency measures to be undertaken by staff.

The Contractor shall advise LCC of the names of personnel available for emergency call out. These personnel must be able to be contacted during all times whilst on call.
If during the course of their employment members of the Contractors staff observe any traffic signal installation that has been rendered unsafe, they must report it immediately to LCC.

If, in the opinion of LCC the Contractor at any one time fails to take appropriate action to deal with any matter which presents an immediate risk to the highway or the safety of the public or which causes an obstruction to traffic, LCC may arrange for the necessary action to be undertaken by another party and deduct from the amounts due to the Contractor under the Contract the amount of all additional costs and expenses incurred in so doing.

Emergency Faults

The Contractor shall inspect, assess and report to LCC within the time stated in the Conditions of Contract. The Contractor shall, where damage is of a minor nature, carry out a permanent repair at the time of the initial visit.

When attending an installation the Contractor shall, immediately after completion of the inspection, report verbally to LCC and record it on the fault management system before 10:00am the following day.stating:-

- the nature/assessment of damage including photographs
- the repair to be carried out
- If the permanent repair work is going to be completed on the initial visit or not
- an approximate time for completion of permanent repair, to be in accordance with the terms of this contract.

- the time arrived on site
- the time of completed inspection

Upon completion of the permanent fix, the contractor shall report back to LCC, including –

- Details of work carried out
- Completion time

If the incident is an RTC and the third-party vehicle is still at the site on the first visit, to help with future Insurance Claims, photos of the vehicle and number plate are required. These photos are to include close-up images of all damage and views which show the junction approaches. These must clearly identify the reported junction or on-street and the photos are to include all the metadata for time and location. The photos are to be included as part of the first visit report on the FMS as soon as possible, with all subsequent visits to be recorded in an equivalent manner.

Photographs

The Contractor shall provide photographic images of the incident, the damage and the repairs when attending to Emergency Call-Outs.

Depending on the nature of the works, the Contractor will be required to share photographic or video images of the incident to LCC'S fault management system.

LINCOLNSHIRE COUNTY COUNCIL - HIGHWAYS AND PLANNING DIRECTORATE

TRAFFIC SIGNAL INITIAL ASSESSMENT REPORT - EMERGENCY DEFECT

Completed by..... Date:-

Incident reported to Contractor by..... Tel No.....

Location of installation..... Time..... Date.....

.....

ACCIDENT DAMAGE / VANDALISM - Delete as appropriate

DATE/TIME OF INCIDENT (if known).....

PARISH/TOWN..... .....

NUMBER OF PHOTOGRAPHS TAKEN.....

Note 1: Separate returns are required for each emergency defect reported

Note 2: To be returned to the Overseeing Organisation within 2 hours of attending the incident

SCN.....
...

NATURE OF DAMAGE
REPAIRS CARRIED OUT (IF ANY)
OUTSTANDING WORK TO BE COMPLETED

Engineer attending ....Signature .....

Office use only

Estimated Repair Cost £.....

Rechargeable Cost Code [ ]

Order send ..... Works Complete .....

OFFENDER (if known)

Name ..... Tel No .....

Address .....

.....

.....

.....

Reg No .....

Vehicle Make/Model .....

Tel No .....

Company Name .....

Company Address .....

.....

.....

WITNESS (if applicable)

Name ..... Tel No .....

Address .....

.....

.....

.....

.....

POLICE (if attending incident)
Name ..... Number ..... Station .....

14.21.6 Fatal or Serious Incident Report

(i) The Contractor will attend site in accordance with the response times for attendance to Emergency Works.

(ii) The Contractor will inspect the installation and submit to the Overseeing Organisation a signed and dated engineer's report detailing the following:

(a) the date and time of the inspection

(b) a description of the installation, name and reference number

(c) current mode of operation and condition of the equipment

(d) any faults and defects and comments on their relevance to the operation of the installation

(e) all relevant timing parameters operating at the time of the incident

(f) any other relevant information.

CLAUSE 4032 TEMPORARY INSTALLATION SWITCH OFF/ON SERVICE

Activity by any organisation responsible for street works can result in the request to temporary switch on/off of permanent traffic signal installations.

The Contractor shall be responsible for a wholly owned system that manages switch on/off requests via a public facing platform that needs to link from an LCC website. The Contractor needs to ensure that the platform has a 99% "up time" availability and a fall-back position for manual bookings when the system isn't operational.

All requests taken within the external switch off/on service need to be mirrored and recorded in IMTRAC. The Activity Schedule breaks down the different rates which vary depending on the day of the week and the time of day.

Where the request is made directly by LCC the cost will be reclaimed by the Contractor in the normal monthly claim using the applicable rates. Not all switch on/off activity will be completed by the Contractor. LCC completes some switch on/off activity via the Highway Works contract for expediency.

For all switch off/on requests made on the public facing platform by traffic management companies or Statutory Undertakers, the Contractor should ensure the request has been approved by the Local Authority's Street Works & Permitting team and is in accordance with the LCC Permitting Scheme. The contract, organisation and payment (at the rate within the Activity Schedule) will then be between the Contractor and the third party, not the Local Authority, via the Contractor's payment platform. The Contractors' rates should allow for all costs incurred.

This activity shall include the following preliminary activities:

- Liaison with the LCC on date and time of the work
- Liaison with the supervisor of the street works to co-ordinate traffic management activities
- Testing and commissioning of the public facing platform during mobilisation
- Agreeing the full details of the work required with the works supervisor including the timing of the completion of the works and switch on of the installation.
- Managing communication with the street works supervisor to ensure prompt action if plans change

The switch off work requires the Contractor to:

- Confirm to the LCC'S Traffic Signals team that the signals are about to be turned off
- Safely switch off the permanent installation in accordance with the agreed temporary traffic management plan implemented by the street works promoter
- Securely cover <u>all</u> signal heads pedestrian push buttons and indicators with robust weatherproof totally opaque, orange-coloured bags.

The switch on work requires the Contractor to:

- Confirm to the Traffic Signals team that the signals are about to be turned on
- Safely switch on the permanent installation in accordance with the agreed temporary traffic management plan implemented by the street works promoter
- Safely uncover all signal heads, push button units and indicators.
- Check alignment of signal heads, indicators and detectors
- Check operation of all equipment and clear any controller faults arising from the switch off/on activity
- Confirm to the Traffic Signals team that the signals are operating as intended.

CLAUSE 4034 ANNUAL INSPECTION OF ASSETS

The Contractor is required to carry out annual maintenance on all traffic signal installations on an agreed programme of work.

Annual Inspection Of Equipment And Preventive Maintenance

Annual inspection of assets shall take place once a year and the Contractor shall provide a schedule of inspections to LCC at the commencement of the contract. This should take into account seasonal restrictions that may be in place, such as not working in coastal areas during the summer months where it is practicable.

The annual inspection visit shall be used to carry out a complete assessment of the Assets. The Contractor must make all practical attempts to ensure the Asset is operating to its intended purpose and will cover controllers, feeder pillars (or equivalent) and other equipment associated with the site.

The annual inspection of equipment shall include the completion of the forms Appendix 40/1 and 40/2. These proforma cover the parameters and equipment that shall be measured/inspected and shall be the basis of the inspection's results.

The Inventory of Traffic Signals Assets provides details of the equipment that shall be inspected, reported upon and any relevant preventative maintenance to be carried out

On completion of the inspection the Contractor shall leave the site equipment operating within the parameters that correspond with the Authorities documentation retained on site.

The annual inspection shall include the following work items:

a) Replacement /refitting of any missing or loose backing boards and hoods

b) Correcting the alignment and tightening the fixing bolts of signal heads, push buttons and pedestrian heads.

c) Checking and completion of RAM data held within IMTRAC

d) Checking current firmware of controller and relevant installation components and updating if required.

If, in the opinion of LCC, the annual inspection has not fully complied with the specification, then the Contractor shall revisit the site at their own expense to complete the exercise to the LCC's satisfaction.

If during inspection any items requiring urgent attention that can't be resolved as part of the inspection process should be reported to LCC immediately prior to leaving site.

The contractor will record and document the Annual Inspection on IMTRAC within two weeks of the inspection which will include details of all timings, condition of equipment on site and earthing test results. In all circumstances IMTRAC must be updated with the date of the annual inspection. The Contractors' planned Annual Inspection programme must also be entered on IMTRAC so that the date planned and carried out can be monitored and be used to measure KPIs.

The electronic fault log book held within IMTRAC must be used to record the visit, the identity of the Contractors' engineer, the serial number of any assemblies replaced, details of any outstanding action required, and the on-site and off-site times and dates of all visits.

When instructed by LCC, the Contractor shall make further reports with regard to the conditions of signal and associated equipment, specifically forewarning LCC of any potentially hazardous situation, or equipment that is faulty or liable to fail. This shall be paid for separately with items from the price list.

The Contractor shall note the restrictions on working hours in the Conditions of Contract.

Equipment Cleaning

Each traffic signal installation will be cleaned annually. The Contractor shall carry out cleaning of:-

Signal heads and box signs
Hoods
Backing boards
Lens surfaces
Posts
Push button units
Controller cases

The Contractor shall remove all posters, stickers, chewing gum, weeds and low-level foliage and all other detritus as part of the cleaning operation.

CLAUSE 4036 CANWICK ROAD LINCOLN TIDAL FLOW SYSTEM

The Contractor shall be responsible for the maintenance of all above lane control signs, Variable message signs, control and monitoring equipment and all relevant linking cables. The Contractor shall not be responsible for the overhead gantry structures. The programme of maintenance operations will be agreed with the Contractor annually.

Planned maintenance operations requiring the signs to be turned off, lane closures, traffic management and any other activity that will disrupt traffic flows will only permitted with the specific approval of LCC.

The Tidal Flow System is a critical part of the Lincoln highway network and any work that requires a reduction in capacity to vehicles will have a severe adverse effect on congestion. The Contractor, other than emergency works, will only be permitted to carry out planned work when traffic levels are at a minimum (i.e. overnight or early Sunday mornings).

The System is controlled on site by a Siemens Type 900 controller linked to Lincolnshire's Urban Traffic Control system.

Before attending on site to carry out any repair/maintenance work on the overhead gantry signs the Contractor must contact and obtain the approval of Lincolnshire County Council including the necessary Street Works Permit.

The Contractor will be required to report back to LCC as soon as any maintenance work on the Tidal Flow System has been completed and also where any repairs/renewals/maintenance required are outside the scope of this contract.

The height of high-level signals is between 6.0 metres and 8.0 metres and to carry out maintenance will require the use of a vehicle mounted mobile hydraulic platform.

LCC shall provide the necessary diversion signage for any planned full closure of the tidal flow system, such as the annual inspection.

CLAUSE 4038 PROGRAMMES AND PERMITS

The submission of the Contractor's programme is a critical activity to the successful delivery of the Traffic Signals service. The Contractor shall submit to LCC each week a programme of intent that shows all task orders issued to the contractor, their location, nature, agreed works period, resources and traffic control to be used. The programme will be in the form of a time related bar chart or such other format as agreed with LCC. The Contractor, in determining the programme, shall consider the response time applicable to each Task Order, restrictions on traffic management and other activities taking place on the network. Lincolnshire County Council operates a permit scheme for all notified works of significance to take place on the network and will control and co-ordinate activities on the highway network as appropriate.

The Contractors' programmes of intent shall be delivered to LCC not later than 1400 hours on the Friday preceding the week to which they relate or such earlier time as directed by LCC. Amendments to the programme for operational or weather reasons should be agreed with LCC on a daily basis as they arise.

The programmes of intent will also identify the Contractor's representative(s) available on a 24-hour contact basis.

In addition to the weekly programmes of intent, the Contractor shall inform LCC by 1200 hours or such earlier time as may be directed by LCC, of his proposed traffic management and work arrangements for the following day so that routine monitoring and testing of works may be arranged.

In addition to the Programmes of intent, the Contractor will be required to submit detailed programmes for individual task orders of a complex nature as directed by LCC.

Routine maintenance works are largely scheduled to take place at different times of the year and most of this work is instructed on the basis of a full cycle of work within an area of the County. In addition to these task orders being included on the weekly programme of intent, separate programmes for each order, both proposed and the dates actual works took place will also be required to enable the monitoring of quality to be carried out.

LCC may suspend works, vary the Contractor's programme, specify works outside normal working hours or impose other conditions in order to safeguard the highway user and other interested parties or to prevent abnormal traffic congestion.

The Contractor is required to comply with the requirements of the Traffic Management Act 2004 and the Lincolnshire Permit Scheme. The Contractor will provide programmes at weekly liaison meetings to assist with the planning and co-ordination of works taking place on the highway.

It is the Contractor's responsibility to apply for highway Permits from LCC for all work subject to LCC Permitting regulations. In addition, the Contractor shall ensure they have obtained any other relevant approvals, access to site locations and NRSWA drawings prior to commencement of works.

CLAUSE 4040 PHOTOGRAPHS

The Contractor is required to take photographs of all works where the replacement of defective items has taken place. These shall be shared with LCC prior to or along with any claims for payment. The Contractor should note that photographic evidence of repair work carried out, e.g. before and after images, is required before LCC will approve any claims for payment.

All images shall be in full colour and shall be uploaded to LCC'S fault management system in JPEG format showing the following information on or along with the image:

a) time
b) date
location and approach including road names and site reference number.
c) direction taken (i.e. N, N/E, W etc.)

The Contractor shall ensure that the camera's clock settings are accurate to within a minute of the Greenwich time signal.

The Contractor may be required to take photographs other than for the reasons stated above although still for the purposes of the contract. These shall be processed and transferred to LCC in accordance with the above sub-clauses.

CLAUSE 4042 SETTING OUT

When new or additional equipment is provided the precise positions of the equipment will be determined by LCC'S appointed Representative prior to any work commencing. Positions will, in general, be in the positions shown on the contract drawings but if it is necessary to adjust the position of the equipment, the equipment must be re-sited in a location designated by LCC'S Representative.

CLAUSE 4044 CONTROL OF NOISE AND VIBRATION

The Contractor shall comply with the recommendations for practical measures to reduce noise set out in BS 5228: Noise and Vibration Control on Construction and Open Sites: 2009: Parts 1 & 2.

LCC has informally agreed that the following measures would be acceptable and these are given as a guide; however it is for the Contractor to decide whether to seek the LCC formal consent to his proposed methods of work and to the steps he proposes in order to minimise noise.

The total noise level from all sources when measured in free field conditions over a 12 hour period at the Noise Control Stations selected by the LCC shall not exceed the appropriate level given in the Schedule below.

Exceptionally the Contractor may be given permission to carry out works which exceed the noise level in the Schedule, provided that 7 days' notice of the date and timing of these works is given to the LCC and the Contractor demonstrates that they intends to take all reasonable measures to mitigate the noise nuisance. After consultations with the LCC and any other interested bodies a decision will be made within 4 days of receipt of the notice.

(i) Although permitted noise levels are shown in the Schedule the Contractor shall whilst constructing the Works by the best practicable means endeavour to reduce noise levels of operating plant by modification etc, whenever possible.

(ii) Compressors shall be of the noise reduced type fitted with sealant acoustic jackets of an approved type and all ancillary pneumatic equipment shall have mufflets or similar as appropriate and as approved by the LCC.

(iii) Reciprocating pumps and generators etc, shall be suitably "boxed" and when installed shall be sited so as to cause the least nuisance.

(iv) (a) All site vehicles and construction plant shall be fitted with an efficient silencer of an approved type.

(b) All site vehicles and construction plant shall be shut off when not in use.

(v) The Contractor shall monitor the noise levels at Noise Control Stations shown on the drawings using the methods described in this Clause and demonstrate compliance with this Clause to the LCC.

Compliance with the overall requirement of this Contract shall not relieve the Contractor of their liabilities under the Control of Pollution Act.

Measured Pre-existing (ambient) noise level Leq 2 or 3hr 0200-0400hrs 0800-1000hrs 1900-2100hrs or as appropriate	TIME PERIODS							
	Normal weekday working Monday to Saturday excluding Bank Holidays						All times outside normal weekday working	
	Days Hours 0700 - 1900		Evening Hours 1900 - 2200		Night Hours 2200 - 0700		Day 1000-1800 (Any 3hr)	Other Times
	Leq (12 hr)	L max	Leq (3 hr)	L max	Leq (Any 1hr)	L max		
35	65	86	55	65	40	45		
40	65	86	55	65	45	50		
45	70	86	60	70	50	55	AS FOR	AS FOR
50	70	91	60	70	55	60		
55	70	91	65	75	60	65		
60	75	96	65	75	65	70	EVENINGS	NIGHTS
65	75	96	65	75	65	70		
70	75	96	65	75	65	70		
75	80	101	65	75	65	70		

Notes:

(i) Figures indicate dB(A).

(ii) Leq = equivalent continuous noise level dB(A).

(iii) L max = peak noise level dB(A).

(iv) Peak noise levels refer to levels reached on a sound level meter which meets the requirements of BS5969 Type 1 set to slow response.

(v) The ambient equivalent continuous noise level Leq. is the noise level to which people in the neighbourhood are normally exposed and which does not originate from the site, as defined in BS5228.

(vi) Noise levels shall be monitored by the methods set out in Appendix B of BS5228: Part 1.

(vii) Noise levels relate to free field conditions. Where noise control stations are located 1 metre from facades of buildings the permitted noise levels can be increased by 3dBA.

CLAUSE 4046 TRAFFIC SAFETY AND MANAGEMENT

The Contractor shall be responsible for all traffic safety and management and all associated work.

The Contractor shall supply the name, address and telephone number of their representative who is responsible for organising and managing the agreed traffic safety plan.

The Contractor shall submit to Lincolnshire County Council for approval prior to commencing work on site a traffic management programme, including layouts for all phases of the works, for the approval of the Overseeing Authority. This should include:-

a) phasing of works

b) drawings showing traffic management layout including as appropriate:-

- position of traffic signs
- position and size of traffic signs
- position and spacing of traffic cones and cylinders
- width of lanes
- working area
- safety zones
- running lane for emergency vehicles
- location for emergency vehicles

c) timing of operations

d) road lighting requirements

Traffic management schemes may not be implemented without prior approval of LCC.

The Contractor, when planning and programming traffic safety and management measures, shall comply with the requirements of the Traffic Signs Manual, Chapter 8 requirements and the Safety at Street Works Code of Practice.

Whenever the works interfere with any public road or private access onto the Highway, the Contractor shall ensure alternative routes (including suitable provision for people with visual or other disabilities) are available. These will be agreed in advance with Lincolnshire County Council's Streetworks and Permitting team..

The Contractor shall also give advance notification and warning to all affected frontages.

Should the Contractor's proposals for temporary diversion for traffic require Statutory Orders; a period of 8 weeks will be required from the formal application to the appropriate Authority to the making and publication of the Orders.

CLAUSE 4052 TRAFFIC SIGNAL POLES

Traffic Signal Poles will conform to the dimensions and requirements shown on the Contract Drawings. Particular attention is drawn to the requirement for all poles to be galvanised to prevent corrosion (EN ISO 1461) and that all holes drilled in poles are treated to prevent corrosion and that all unused holes are fitted with purpose made blank inserts. Poles for new installations will be black in colour and meet the requirements of BSEN10219-1 & PPA571 RAL 9005. Poles in grey to PPA571 RAL 7046 may be required at older sites.

The signal poles shall be suitable for accommodating the signal equipment specified at the location provided by Lincolnshire County Council and shall comply in all respects with the requirements of Lincolnshire County Council Standard Drawings.

The Contractor shall number traffic signal poles at new installations, whether installed as part of this contract or by another Contractor as indicated on the contract drawings. Black on White or Yellow 40 to 80mm high self-adhesive vinyl labels shall be used and be positioned immediately below the signal head(s).

LCC'S Representative will inspect the condition of poles prior to installation works commence and will reject any poles that are damaged. Poles that have scratched plastic coating and have metal exposed will be automatically rejected. The final acceptance of poles with minor scratch and scuff damage will be conditional on agreeing an acceptable method of repair between the Contractor and LCC'S Representative.

The Contractor is responsible for protecting the poles from any damage caused during the construction phase of the works and LCC will carry out a final inspection of the condition of the poles at the Site Acceptance Test. The cost of all works to replace damaged poles will not be accepted as Compensation Events in the contract as the Contractor is required to take action to protect the poles and the cost of this protection shall be included in the contractor's rates.

CLAUSE 4054 SIGNAL HEADS AND PEDESTRIAN DEMAND UNITS / INDICATORS

Pedestrian demand units and nearside indicators shall operate at extra-low voltage obtained from within the controller case. Where damaged push button units are mains voltage it may be necessary to replace with mains voltage type. For Puffin / Toucan style facilities, separate push button units and near side indicator units will be provided.

All traffic signal heads shall be aligned on site, in accordance with the instructions of Lincolnshire County Council, at the time of the commissioning of the installation.

Where pedestrian demand units and nearside indicators are to be attached to un-drilled signal poles the Contractor will carry out all necessary drilling of these signal poles. Drilled holes shall be treated to prevent corrosion. All pedestrian demand units and nearside indicator units must be adequately sealed to always prevent water ingress.

All pedestrian demand units will normally be fitted with tactile indicator units. Audible signals will be fitted when appropriate and when instructed by Lincolnshire County Council.

Until the signals are officially switched on the Contractor shall ensure that all signal heads, including pedestrian aspects are covered such that all aspects can be fully tested without displaying any illuminated signals to vehicles or pedestrians. Pedestrian demand units shall be concealed in a similar manner.

All new traffic signal installations will use ELV LED Traffic Signal Aspects that use Central Light Source type illumination. In addition, all new pedestrian/cycle indicators and regulatory signs attached to traffic signal equipment shall use LED illumination. On all new installations that include new traffic signal controllers the LED Traffic Signal equipment must be compatible with the controller to enable full monitoring facilities to be operated on LCC Traffic Signal Control Systems.

Where maintenance operations require the replacement of existing tungsten halogen units a site-by-site decision will be made by LCC on the type of illumination unit to be used in the replacement unit.

Only composite brackets shall be used to fix standard signal heads to traffic signal poles.

CLAUSE 4056 TRAFFIC SIGNAL CONTROLLERS

The controllers supplied in this contract shall be ELV microprocessor type in accordance with TOPAS2500B and in accordance with the latest amendments to this specification.

The controller shall be compatible with any UG405 equipment.

Full lamp monitoring output from the controller must be included in all controllers and where a pedestrian phase is included red lamp monitoring shall be provided. It shall be possible to change the lamp type to be monitored on a phase-by-phase basis via the controller handset or web interface.

Dimming facilities shall be provided controlled by solar switches. Electricity supply is housed in an adjacent pillar. Whilst the provision and re-siting of the Electricity Company supply is the responsibility of LCC the Contractor must include all connections and mains isolators from the Electricity Company's supply to the controller. A separate fused supply is required for ancillary equipment such together with a 13-amp maintenance socket.

Provision must be made in the controller for the installation of a British Telecom junction box as well as space for housing a router. A non-conductive board shall be provided by the Contractor for the mounting of this equipment by others. A door pocket shall be provided large enough to store a A4 ring binder. The controller door shall be fitted with a door stay that holds the door open at an angle of at least 120 degrees.

The internal face of the Police Panel Door shall be fitted with a printed label indicating the function of the manual panel stage buttons as detailed in the controller specification forms.

New and replacement Outstation Transmission Units (OTUs) and broadband routers shall be fully UG405 compatible and shall be capable of operating on a Yunex STRATOS SCOOT/UTMC system. All OTUs shall be securely fixed in a 19" rack inside the controller cabinet of any type being operated by Lincolnshire County Council.

Outstation Transmission Units shall be freestanding and integral Outstation Transmission Units are not to be used unless otherwise agreed by LCC.

Standard self-tuning detectors shall be mounted inside the controller with each unit/channel clearly labelled to indicate to which detector they are connected.

When required, MOVA will be provided as a facility within the Outstation Transmission Unit and may be supplied integral to the controller where agreed by LCC.

When required by the speed of approaching traffic, speed discrimination equipment will be ordered and provided within the controller.

CLAUSE 4058 REPLACEMENT/MODIFICATION OF CONTROLLER CONFIGURATIONS

LCC will supply the Contractor with a works specification sheet at the time of placing an order for works to be carried out. The controller configuration will be supplied within the timescale specified on the task order.

The Contractor shall facilitate a factory acceptance test on any new/replacement controller configuration. LCC requires 7 days' notice of all testing including repeat tests and LCC'S approval/presence is required at all factory acceptance tests unless otherwise agreed.

LCC reserves the right to make minor changes to the configuration data at the time of testing. Any repeat factory acceptance tests required due to initial failures of the test shall be carried out within 7 days.

No controller shall be switched on at the installation after being replaced or modified without the permission and approval of LCC. Where a new or revised configuration is involved LCC shall be on site to check and approve the installation when it is switched on.

The facility to allow LCC to make adjustments and changes to the controller configuration shall be provided by the successful bidder. This will include up to 5 days of training to be provided at a LCC premises.

Also refer to Clause 4014 for further information

CLAUSE 4060 TERMINATION CABINETS

Termination cabinets shall be the same units as used for controller cabinets including the anti-graffiti coating.

The cabinet will be provided with a wooden backing board for fixing equipment minimum size 500 x 500mm.

CLAUSE 4062 POWER SUPPLY

Lincolnshire County Council shall arrange for the connection and disconnection of power supplies with the relevant Electricity Companies. All costs incurred shall be the responsibility of Lincolnshire County Council.

The demounting of an Electricity Company "Live" cut out is prohibited by any person working on any works as part of this contract.

The details of power supply pillars provided in the contract are given in the Standard Details and contained in the Data Room.

CLAUSE 4064 ELECTRICAL TESTING

When new or replacement traffic signal equipment is to be tested on Site, the Contract Administration must be advised and afforded the opportunity for a member of staff to be present on Site during testing.

New and replacement traffic signal equipment must be tested electrically in accordance with the current I.E.E. Regulations and shall include, but not be restricted to, as appropriate:

Earth continuity test
Earth loop impedance test
Insulating resistance test
Polarity check
Residual Current Device test

The following certificates must, when appropriate, be completed by Contractor and given to the Contract Administration prior to commissioning of traffic signal equipment:

a) The Traffic Signal Installation Electrical Test Certificate (NB the traffic signal installation will NOT be brought into operation, other than for testing, until this Certificate has been received by the Contract Administration).
b) The Certificate of Detector Performance, which must be completed at the time of the loop installation and returned to the Contract Administration.

Periodic Electrical Testing

All traffic signal installations must be inspected and tested annually to verify that they comply with the IEE Regulations including:

a) Earth continuity test

b) Earth loop impedance test:

i) annually - controller, pedestrian push buttons (at pole tops for low voltage units where applicable)

ii) Three-yearly - at all pole caps (NB In the first year of the contract both annual and three-yearly checks must be made.)

c) Residual current device test, if applicable.

d) All earth straps.

Test Certificates for Periodic Electrical Testing must be completed and provided to the Contract Administration within 5 days of the inspection.

CLAUSE 4066 DETECTORS

Above Ground Detectors:

a) On-crossing detectors will be radar type detectors

b) Kerbside Detectors will be optical type detectors, standard or volumetric as specified by LCC

c) Vehicle Detectors will be either video imaging type or radar type detectors as specified in the Task Order and contract drawings

Wireless Below Ground Detectors:

Vehicle detectors will be wireless magnetometer type and shall only be used where on existing sites where they are currently in operation. No new magnetometers sites shall be installed unless otherwise specified by LCC

Cycle detectors will be wireless radar type.

Below ground detectors will be mounted in composite type surface mounted detector boxes.

When instructed by Lincolnshire County Council, the Contractor shall arrange for the below ground detector manufacturer to carry out a site survey and design to ensure that the detectors and wireless communications can be installed correctly and can be operated reliably in accordance with the manufacturer's recommendations.

IP Enclosures for Detectors

IP Enclosures for detectors shall have a rating of IP68.

CLAUSE 4068 DETECTOR LOOPS

The position of the detector loops shall be as indicated in the appropriate drawing or as instructed on site.

Loop cables shall be 50/0.25mm sq single core of copper with insulation complying with TR2029D. The insulation shall be capable of withstanding temperatures of 90 deg C without suffering damage or deformation. It shall be possible to bend the cable through a 90 deg bend of 25mm minimum radius without damage to the insulation.

Slots shall be cut in the finished pavement with a width of 10mm and be continued through any concrete kerb and backing or channel as necessary unless otherwise indicated. The edges of the slots shall be rounded, and the bottoms and sides shall be free from any sharp protrusions and angles shall be sufficiently opened out on the inside to permit the loop cable to be bent to a radius of approximately 25mm. Cable slots shall be linked to ducts of the type and in the locations indicated by LCC

All loops, unless specifically instructed otherwise by LCC will be provided with three cable turns. The depth of the slot will be 65mm and the cover to the loop will be 50mm to the top of the loop.

For a loop of any number of turns the depth of the slot shall be 50 + 5n mm where n is the number of turns. A cover of 50 mm shall be maintained for the top cable.

It should be noted in concrete carriageways the depth of slots shall be determined by LCC to ensure at least 50mm clearance above any metal reinforcement unless indicated otherwise.

When cutting the loops, the saw blade should be lowered to form a dip in the floor in the slots at a point where the slots cross. This will allow the extra bulk of crossing cables to lie in the dip while still maintaining a 50mm coverage for the top cable. The same rule applies to all loops cut at the point where the feeder cables join the loop.

All slots shall be thoroughly cleaned and completely dry before the cable is inserted and no foreign matter shall be permitted to enter or remain in any slot after cleaning and drying.

Each detector loop shall consist of a continuous single core cable, without joints, to provide the loop and feeder as defined in the DfT Specification MCE0100. The cable for each loop shall be installed in one continuous operation, it shall be laid evenly in the slots without kinking, ensuring that no damage occurs, and in particular sharp-edged tools shall not be used.

Where feeders cross grass verges or paved footways they shall be laid in ducts, the feeders for each loop shall be separately paired and shall be twisted together at the rate of not less than 15 turns per metre and be individually identified at its terminal points by the attachment of a waterproof label, prior to drawing through ducts. At least 1 metre of additional cable length shall be provided at the terminal point for each feeder.

Slots shall be filled with porous backfill or Hotpour Rubberised Joint Sealer as appropriate and shall be well filled, but not overfilled, to allow for settlement and to minimise the occurrence of air cavities. The cable manufacturer's instructions shall be strictly adhered to regarding heating temperatures so as to ensure the effectiveness of the compound and to prevent damage to the cable installation.

All loop tails shall be clearly labelled as to which loop it is within the inspection chamber with a permanent label indicating the loop reference in accordance with the installation drawings.

When reinstatement has been completed, ie after the sealant has hardened, and before being put into operation, each loop shall be tested for continuity and insulation. The insulation resistance to earth shall be not less than 10 mega ohms when tested at 500 volts dc. Three copies of the test result shall be provided to LCC.

The Contractor shall remove all excavated and other surplus material from the site of the work to his own tip unless otherwise directed by LCC, leaving the road in a clean and tidy condition.

The installation of cables in the carriageway shall cease during wet or frosty weather.

The Contractor shall be responsible for the setting out of all slots.

The feeder/loop cable connection shall use approved encapsulated/re-usable joint with a minimum IP of 68.

CLAUSE 4072 LAMP DISPOSAL

The disposal of lamps shall comply with the Waste Electrical and Electronic Equipment Directive (WEEE Directive).

Spent lamps shall be returned intact to the maintenance contractor's depot where they shall be stored in approved containers prior to collection for safe disposal and recycling.

The Contractor shall arrange for the lamps to be collected by a registered waste carrier and taken to a lamp disposal/recycling point for processing.

The Contractor shall authorise the Waste Transfer note and retain a copy for inspection by LCC

The lamp recycling process shall remove/neutralise contaminants as necessary. After processing metals will be recycled in the industry and the glass will be reused in an industrial process.

Broken lamps are to be treated as special/hazardous waste and shall be stored in an appropriate secure container and disposed of by a Special Waste Contractor.

The Contractor shall maintain, for inspection Lincolnshire County Council, a full audit trail of the recycled material and special/hazardous waste material.

CLAUSE 4074 FACTORY ACCEPTANCE TEST SITE ACCEPTANCE TEST

The results of the Factory Acceptance Test (FAT) are recorded on the form shown in Appendix 40/3. – check references

The results of the Site Acceptance Test (SAT) are recorded on the form shown in Appendix 40/4. - check references

Lincolnshire County Council will supply the Contractor with a works specification sheet at the time of placing an order for works to be carried out. The controller configuration will be supplied within the timescale specified on the task order.

The Contractor shall facilitate a FAT on all new/replacement controller configurations. LCC requires 7 days' notice of all testing including repeat tests and LCC staff's approval/presence is required for all FATs unless otherwise agreed.

LCC reserves the right to make minor changes to the configuration data at the time of testing. Any repeat factory acceptance tests required due to initial failures of the test shall be carried out within 7 days.

Testing beyond the requirement of this clause shall be paid for separately in the Schedule of Rates.

No controller shall be switched on at the installation after being replaced or modified without a successful SAT and the permission/approval of Lincolnshire County Council. Where a new or revised configuration is involved LCC shall be on site to check and approve the installation when it is switched on.

CLAUSE 4076 CABLE DESIGN, CABLE REFERENCING, AS BUILT DRAWINGS AND HAND OVER DOCUMENTATION

Cable Design

The design of the cabling for a traffic signal installation shall conform to the requirements of the latest version of National and European electrical regulations.

Cable provision for new and modified installations will also conform to the following Lincolnshire County Council operational requirements:

1. Spare cores:

A minimum of 4 spare cores will be provided in each cable section. These can be the yellow and/or green cores as long as the exposed section of cable is sleeved in an alternative colour and this is recorded on the electrical test certificate.

2. Separation of Primary and Secondary Traffic Signal Aspects:

Cable use shall be designed, as far as possible, that in the event of losing a single aspect on a phase (i.e. a single pole knocked down) the installation will be left with at least one aspect (primary or secondary) in use on that phase.

3. Feeder Cable:

Feeder cable must be armoured to prevent "cross talk".

54 Number of cables in a single post:

A maximum of 5 cables are permitted in a single post i and in cranked cables only it is permitted to use unarmoured cable for "dropper" cable connections to push buttons etc if there is insufficient space for armoured cable.

5. As Built Cable Schedule:

Three copies of the "As Built" cable schedule are provided by the cable installer (one copy laminated for storage in the controller).

6. Maximum Number of cables connected to the controller:

Generally the maximum number of cables that can be connected to a single controller is 45 depending on the mix of cable sizes. Any cable design in excess of this number of cables will require the use of additional distribution cabinets.

7. Lincolnshire Standard Core Use:

LV	
PURPLE	RED
ORANGE	AMBER
GREY	GREEN
BROWN	RED
WHITE	AMBER
BLUE	GREEN
RED/WHITE	REDMAN
RED/BLUE	GREENMAN
RED	REGULATORY
YELLOW	EARTH
GREEN	EARTH
BROWN/RED	SOLAR LIVE
YELLOW/RED	SOLAR LOAD
GREY/RED	REG NEUTRAL
BLACK/RED	SOLAR NEUTRAL
BLACK	NEUTRAL

ELV	
ORANGE	PB+VE
WHITE	0V
BROWN	WAIT+VE
BLUE	WAIT-VE
RED	TACTILE+VE
BLACK	TACTILE-VE
PURPLE	24V+VE
GREY	24V-VE
GREEN	ONXING INPUT
YELLOW	KERBSIDE/VEHICLE INPUT
RED/WHITE	REDMAN+VE
RED/BLUE	GREENMAN+VE
RED/BLACK	REDMAN-VE
RED/YELLOW	GREENMAN-VE
RED/GREY	BUZZER+VE
RED/BROWN	BUZZER-VE

Cable Referencing

Cables shall be referenced in accordance with the County Council's standard system. The referencing system shall be used for the cabling schedule or schematic diagram on the on the drawings (including as built drawings) and for labels that shall be fitted on site to the cable ends and within chambers with a permanent tagging system. This will enable cables to be quickly identified and cross referenced with the drawing on site to assist ongoing maintenance and future modification works.

The system shall identify the cable type/use and number/destination (pole) using a minimum of characters for simplicity and ease of installation. Detection cables will serve more than one loop or phase so this information must be covered on the schematic or schedule.

The Cable Referencing System shall comply with the following:

- A separate number shall be used for each cable length between terminations or joints.
- Signal cable to post no.1 = C1 etc.
- Link cable from post 1 to post 2 = C2 etc.
- Push button/pedestrian facilities cable to pole 2 = P2 etc
- Above ground detection on post 3 = A3 etc.
- D system loops = D1 etc.,

- All detection loops (except SCOOT loops) shall be labelled according to appropriate phase = AX, AY, AZ etc.

- SCOOT loops = S1 etc

- SCOOT loop to be numbered sequentially on the drawings and indicated on the cable schematic or schedule as SL1, SL2 etc., as actual node and link information may not be known or may change.

- SDE loops = SD1 etc., drawing to use controller specification reference.

<u>As Built Drawings</u>

1. Drawing format:

In addition to Scope Clause 1025, two drawings per installation, preferably A1 size but A0 if necessary. Each drawing will have an individual AutoCad file set up which can just be opened and printed without the need to change any layers, titles or drawing numbers.

The first drawing will be primarily used to indicate the signal head layout and staging information.

The second drawing will show the duct network and cabling information.

Scale 1:200 for the main detail but with 1:500 inserts if necessary to indicate remote chambers and loops.

The drawings should have the road layout and road names but minimal O/S information to prevent clutter i.e. highway boundaries, street furniture and significant buildings.

Drawing Title Block Details:

- DRG. No. =	drawing size ref. / TS / site ref. / drawing no. eg. B/TS/L040/1 amendments indicated as /A etc.
- Parish =	Lincoln etc.
- Structure No.=	SCN no.
- Scheme =	Installation Name eg. Tritton Road/Dixon Street
- Drg. Description -	/1 = "Signal Head Layout", /2 = "Duct Network and Cabling" or on older sites "Duct Network" if this can be determined and no cabling information is known.

2. "Signal Aspect Layout" Drawing Content:

Signal posts numbered as on site.

Cranked posts marked CP and showing direction of crank, short posts marked SP, next to post number (indicate in the key). Alternatively the post schedule can be used on newer schemes.

Signal heads and equipment (PBUs, AGDs, louvres etc indicated) and any special brackets noted. Side or rear hanging heads to be indicated accurately. Staging and phasing diagrams.

Controller, power supply pillar and BT pillar if exists.

Road markings and dropped crossings.

Detector loops (all types) as cut with references as controller specification.

Guard rail.

Street furniture, bollards (types), lamp columns, service covers if compromise design.

Anti-skid surfacing (hatch which doesn't obscure loop details)

Small location plan.

Key to identify detail, especially KeySignals elements.

North point.

3 "Duct Network"/"Duct Network and Cabling" Drawing Content:

Signal posts numbered as on site.

Cranked posts marked CP and showing direction of crank, short posts marked SP, next to post number. Alternatively the post schedule can be used.

Chambers types and duct runs (no.s and sizes if can be determined on older sites), details in the key.

Controller and power supply pillar. BT pillar if installed.

Road markings and dropped crossings.

Tactile paving layouts.

Detector loops (all types) with references as controller specification, with loop tails indicating which chamber they are cut into or notes for those beyond the extent of the drawing.

Guard rail.

Anti-skid surfacing (hatch which doesn't obscure loop details).

Street furniture, bollards lamp columns, service covers if compromise design.

Cabling information. A schematic diagram or schedule which identifies individual cables origin, destination, size (no. of cores), use and associated detector loops.

Key.

North point.

Hand Over Documentation

1. Take Over Certificate:

A properly completed and signed take over certificate will be provided on completion of the works. If there are outstanding minor works to complete when the site is commissioned an interim certificate shall be issued and a final certificate issued when the work is completed.

2._____TOPAS 2500B Forms (including all relevant appendices):

- A copy of the as built hand-written forms completed in block capitals.
- Issue number, date and page number to be completed on each sheet.
- A full set of forms using the next issue number shall be completed for any new or revised controller configuration.
- On the staging diagram indicate road names for live stages/phases and indicate UTC stages if known (quick aid when on site).
- Add a full phase allocation diagram in the last stage box.
- Site documents to be stored in the controller in a weatherproof pouch issued by the Principal Engineer (Traffic Signals).
- Special or unusual facilities will be explained on the special conditioning sheets.

3. RAM Data:

- RAM data changes made on site during the commissioning should be recorded on a RAM data card issued by the Principal Engineer (Traffic Signals).
- Significant changes require a revised controller configuration to be installed.
- Superseded or temporary works configuration forms shall use design issue references and remain on the design file.

4. Controller Build Specification:

- Two copies of the latest specification. . One copy for the installation file in the Traffic Signals filing system. One copy for storage in the controller cabinet on site.
- Superseded or temporary/works specifications should remain on the design file. These can have scheme references and issue numbers.
- Operating dates for temporary or superseded configurations should be recorded on the front page of the specification and in the Visit Log Book in case of future court actions.

5. As Built Drawings:

- Two copies of drawings per site in accordance with Appendix B. One drawing for the Installation file in the Traffic Signals filing system. One drawing for storage in the controller cabinet on site.
- Operating dates for temporary or superseded layouts should remain on the design file.

Site documents shall be stored in the controller in a weatherproof pouch issued by the Principal Engineer (Traffic Signals).

CLAUSE 4078 QUALITY ASSURANCE AND STANDARDS

Where work or materials required under the Contract are covered by an accepted Quality Assurance Scheme only work or materials provided through such a Scheme shall be used.

Any material or article used in compliance with a British Standard for which there is an associated Kite Mark or Safety Mark Scheme shall bear the mark of the scheme. Where materials or articles required under the Contract are covered by an accepted Kitemark, Safety mark or other certification-marked Quality Assurance scheme only materials or articles provided through such a scheme shall be used.

Where the supply of materials or articles which require an Agrèment Board Certificate, or typed approval, or registration with the Department, are required or allowed by the Contract, only materials or articles so certified, type approved or registered shall be used in the Contract.

Where work or materials are provided through an accepted Quality Assurance scheme, the Contractor shall in each case submit to the Engineer a certificate of conformity affirming compliance with the scheme.

Nothing in the sub-Clauses 1, 2, 3 and 4 of this Clause shall relieve the Contractor from his obligations under the Contract.

Any requirement of the Contract that any material or article shall comply with any specified standard, whether a British Standard, other named standard or otherwise, shall be satisfied by compliance with any relevant national or governmental standard of any member state of the European Communities, or any relevant international standard recognised in such a member state, provided that in either case the standard in question offers guarantees of safety, suitability and fitness for purpose equivalent to those offered by the Standard which is specified in the Contract.

Any requirement of the Contract to use material or an article which is defined by reference to a named supplier or manufacturer or a specified Quality Assurance scheme or Agreement Certificate, or which is registered with or has otherwise received the approval of the Overseeing Department shall be satisfied using material or an article which has received equivalent approval in another member state of the European Communities provided that the material or article in question is as safe, suitable and fit for the relevant purpose as material or an article complying with the requirement as set out in the Contract.

The following publications to which reference is made in the Specification are:

a. British Standards (Published by the British Standards Institution).

b. British Standards Codes of Practice (Published by the British Standards Institution).

c. British Standards Draft for Development (Published by the British Standards Institution).

d. Department of Transport Publications (Published by TSO).

e. Department of Transport Publications (Published by the Department).

f. Transport Research Laboratory Publications (Published by TRL)

SCHEDULE C – THIRD PARTY AGREEMENTS

SCHEDULE D – COMMERCIALLY SENSITIVE INFORMATION

SCHEDULE E – PRICING DOCUMENTS

Lincolnshire COUNTY COUNCIL

Working for a better future

Traffic Signals Contract

Price List

April 2025 Version 1

Price List & Method of Measurement

PRICE LIST AND METHOD OF MEASUREMENT

Each Series of the Price List has its own tab.

THE FORMAT OF THE PRICE LIST

The format of the Price List follows the industry standard headings in table format. The layout working left to right comprises of columns for the item reference, item description, unit and rate. The rate breakdown section allows pricing to three decimal places and includes columns for each Cost Component heading. A column for Charges has been included for specific items in Schedule 1: Preliminaries. Greyed out cells indicate that no entry is required.

Tender Evaluation quantities are provided at tender stage by the Local Highway Authority for transparency and to achieve best value.

Each item has a unique reference number listed in the left hand column, column D, i.e. 41.005.005, and is used to create a standalone item description for use at the Contract delivery phase. The first two numbers represent the series reference; the next three represent the division or group under which similar items belong; and the final three represent the feature for each item of measure.

The Contractor must complete all cells marked with the colour green as below.

TRAFFIC SIGNALS CONTRACT

PRICE LIST

Model Cost

Fee%

Schedule

S1	Preliminaries
S2	Traffic Signal Maintenance Service
S3	Traffic Signal Installations (Construction)
S4	Time Charge
S5	Restricted Working
S6	Materials
S7	Switch Off / On Service

Appendices

A1	Staff Allocation

Lincolnshire County Council

Traffic Signals

APPENDIX 1
PRICE ADJUSTMENT PROCEDURE

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This schedule details the Price Adjustment Factors that are used with Option X1 to adjust the prices on the Price List. It also gives the timetable for adjustment and the Index dates to be used.

Values used in calculating the Price Adjustment Factors given in the schedule cannot be adjusted without the agreement of the Parties.

Inflation Data

The table reflects the Work Categories and Resource Cost Index proportions currently used by The Building Cost Information Service (BCIS) to calculating the Work Category Indices.

Base Date

The *base date* for indices shall be June 2025.

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Resource Cost Indices		PRICE ADJUSTMENT FOR INFLATION					
		Proportions for Work Category Indices					
		Preliminaries	Traffic Signal Maintenance Service	Traffic Signal Installations (Construction)	Time Charge (People)	Time Charge (Equipment)	Materials
4/HM/R/01	Management and Administration	45.00%	-	-	-	-	-
4/HM/R/02	Highways Maintenance Labour	-	45.00%	45.00%	100.00%	-	-
4/HM/R/04	Road Vehicles	10.00%	15.00%	15.00%	-	75.00%	-
4/HM/R/05	Operational Plant	5.00%	4.00%	4.00%	-	10.00%	-
4/HM/R/06	Aggregates including Levy	-	-	-	-	-	-
4/HM/R/07	Aggregates for Surface Dressing	-	-	-	-	-	-
4/HM/R/08	Ready Mixed Concrete	-	2.00%	2.00%	-	-	-
4/HM/R/09	Cast and Spun Iron Products (including pipes)	-	-	-	-	-	-
4/HM/R/10	Plastic Products (including pipes)	-	3.00%	3.00%	-	-	20.00%
4/HM/R/11	Asphalt for Paving	-	-	-	-	-	-
4/HM/R/12	DERV Fuel	5.00%	13.00%	13.00%	-	15.00%	-
4/HM/R/13	Gas Oil Fuel	-			-	-	-
4/HM/R/14	Metal Sections	-	3.00%	3.00%	-	-	20.00%
4/HM/R/15	Waste Disposal	-	2.00%	2.00%	-	-	-
4/HM/R/16	Precast Concrete Non-Structural Components	-	-	-	-	-	-
4/HM/R/18	Thermoplastic	-	-	-	-	-	-
4/HM/R/19	Lighting Supplies	-	-	-	-	-	-
4/HM/R/20	Information and Communications Technology (ICT)	5.00%	3.00%	3.00%	-	-	20.00%
4/HM/R/21	Insurance	5.00%	-	-	-	-	-
4/HM/R/22	Vehicle Parts	-	-	-	-	-	-
R10/17	Electrical Supplies	-	10.00%	10.00%	-	-	40.00%
R10/19	Property Maintenance	25.00%	-	-	-	-	-
		100.00%	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Additions to the Price List

During the Service Period, if new Price List items are required, they can only be added following agreement from the *Service Manager*. Any new Price List items will be calculated back to the *base date* to enable uplift of the Price List.

Timetable

The Price List will be adjusted for the first year of the contract (i.e. from 1 April 2026) based upon the change in the relevant indices between the *base date* and December 2025 (Confirmed later by BCIS)

For subsequent years (i.e. from 1 April 2027) onwards, prices will be adjusted annually on 1 April based upon the preceding December indices (Confirmed later by BCIS). No Price List adjustment shall be made in respect of work which is commenced before the *inflation adjustment dates*.