

Attachment 19

Toll Facilities Maintenance Scope of Work

Contents

SECTION A – AIR CONDITIONING EQUIPMENT	1
SECTION B – ELECTRICAL COMPONENTS	3
SECTION C - FIRE AND CARBON MONOXIDE ALARMS AND FIRE EXTINGUISHERS.....	6
SECTION D - STANDBY GENERATORS.....	8
SECTION E – SECURITY COMPONENTS	12
SECTION F - TOLL FACILITY VAULTS.....	14
SECTION G - PRESSURE CLEANING	16
SECTION H - PEST CONTROL	18
SECTION I - GROUNDING AND GROUND SYSTEM TESTING	20
SECTION J – FIBER OPTIC NETWORK (FON)/ UTILITY LOCATING.....	22
SECTION K - MAINTENANCE OF TRAFFIC (MOT).....	23
SECTION L – PROPANE SERVICES	24

SECTION A – AIR CONDITIONING EQUIPMENT

Description

Perform inspection, maintenance, repair, and replacement of all air conditioning equipment.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's Heating Group 3, Class 1 Contractor license from the State of North Carolina.

Preventative Maintenance/Responsibilities

Monthly Maintenance:

- Replace filters (pleated high efficiency filters shall be used).

Semi-Annual Maintenance:

- Perform inspection and maintenance checks/cleaning (preventive maintenance) on all units. All items in the preventive maintenance inspection shall be checked along with any other item necessary to ensure that each unit is operating properly.
 - Clean condenser and evaporator coils, with industry approved chemicals and methods and per recommendations by the manufacturer.
 - Clean oil air handling units (per manufacture recommendations).
 - Clean drain pans and condensate lines.
 - Lubricate all motors required.
 - Clean inlet and outlet registers.
 - Check controls and thermostats for proper operation.
 - Check for leaks and adjust amounts of refrigerant as needed.
 - Record refrigerant pressures.
 - Check electrical connections.
 - Check for vibrations and noises.
 - Check all belts and belt pulleys and replace worn belts.

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.
- If unit or item cannot be repaired or is not functional within twenty-four (24) hours, a temporary unit or item shall be provided until repairs are completed. The Contractor is required to provide, transport, install and operate a temporary unit when required. The same operation inspections and maintenance checks on the temporary unit will be required. This applies to units under warranty.
- The Contractor shall be responsible for replacing units or items as part of the Contract requirements. The NCTA must approve items being replaced that are not Original Equipment Manufacturer (OEM) or identical components.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION B – ELECTRICAL COMPONENTS

Description

Perform inspection, maintenance, installation, replacement, and repair of electrical items including but not limited to panel boxes, panels, breakers, fuses, contactors, disconnects, indoor and outdoor fixtures, switches, ballasts, fittings, controls, rewiring, severed/damaged conduits, cables, and vault lighting or any exterior or parking area lighting serviced from vault.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's electrical certification in accordance with the laws of the State of North Carolina.

Preventative Maintenance/Responsibilities

As-Needed Maintenance:

- Replace bulbs, including any lighting fixture (interior or exterior, including parking or powered from the vault) within twenty-four (24) hours of observation or notification.

Monthly Maintenance:

- Electrical Distribution Equipment
 - Inspect for warning signs, wear, or malfunction.
 - Inspect enclosures for damage, unauthorized openings, and corrosion of metallic objects. Repair and paint to match as required. Inspect air passages and remove any blockage.
 - Inspect, investigate, and solve conditions producing unusual odors.
 - As equipment is operated and tested, listen, investigate, and mitigate conditions for unusual noises.
 - Inspect equipment grounding components such as conductors and connections. Inspect insulators for damage.
 - Inspect liquid immersed equipment for leaks and damage.
 - Inspect indicating lights for correct illumination.
 - Remove debris, dirt, insect nests, and other foreign objects from all components, housings, cabinets, panels, etc.
 - Verify operation of space heaters and control thermostat. Check thermostat set point for proper setting.

Annual Maintenance:

- Electrical Distribution System
 - Inspect electrical connections for degradation.
 - Torque all electrical connections to design value.
 - Verify the grounding of the equipment and associated neutral where applicable.
 - Conduct infrared test on all main current carrying equipment for hot spots that may indicate overheat conditions or loose connections.
 - Using calibrated test instruments, calibrate ammeters, voltmeters, etc. Verify continuity of metering selector switch contacts with ohmmeter.
 - Inspect electronic power meter on Main Distribution Panels for proper operation.

- Low Voltage Panel boards
 - Inspect electrical insulation for discoloration and degradation.
 - Service circuit breakers per manufacturers' recommendations.
 - Inspect breakers' current carrying components for discoloration that may indicate overheating.
 - Perform insulation resistance test on each phase-to-phase and phase-to-ground using a megohmmeter.
 - Prove circuit breaker operation by actuation of each associated protective device.
 - Verify Surge Protection Device (SPD) is functioning (lights).
 - Measure and record neutral currents.
- Automatic Transfer Switches
 - Inspect, operate, adjust, and lubricate mechanical linkages.
 - Verify operation of mechanical interlocks.
 - Inspect and dress current carrying contacts in accordance with manufacturer's recommendations.
 - Test automatic transfer switches. Perform insulation resistance test on each phase-to-phase and phase-to-ground using a megohmmeter.
 - Perform contact resistance test.
 - Prove correct operation of the transfer switches by manually initiating transfers in both directions.
 - Simulate the automatic conditions requiring automatic transfer switches to transfer in both directions
 - Verify generator start on transfer.
 - Verify correct indicating light operation.
 - Verify equipment alarms – critical monitoring system.
- Safety Switches (Disconnects)
 - Inspect, operate, adjust, and lubricate mechanical linkages.
 - Verify operation of mechanical interlocks.
 - Inspect and dress current carrying contacts in accordance with manufacturer's recommendations.
 - Test safety switches. Perform insulation resistance test on each phase-to-phase and phase-to-ground using a megohmmeter on each critical load switch.
 - Perform contact resistance test on each critical load switch.

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.
- If unit or item must be repaired or replaced within seventy-two (72) hours. This applies to all units, including those covered under warranty.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION C - FIRE AND CARBON MONOXIDE ALARMS AND FIRE EXTINGUISHERS

Description

Perform inspection, maintenance, repair, testing, and any necessary replacements of smoke and carbon monoxide detectors in accordance with applicable NFPA standards, OSHA standards, and local, state and federal codes.

Provide a 10Lb. Class ABC portable fire extinguisher at all toll zone facilities. In addition, provide inspection, maintenance, repair, testing, and any necessary replacements of portable fire extinguishers at all toll facilities.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's licenses in accordance with the laws of the State of North Carolina.

Preventative Maintenance/Responsibilities

As-Needed Maintenance:

- Replace Batteries

Monthly Maintenance:

- Test smoke detector per manufacture's specification.
- Test carbon monoxide detector per manufacture's specification.
- Visual inspection of all devices.
- Clean smoke detectors using a vacuum cleaner attachment to remove dust and cobwebs. If possible, carefully vacuum inside the unit as well.
- Clean carbon monoxide detectors using a vacuum cleaner attachment to remove dust and cobwebs. If possible, carefully vacuum inside the unit as well. Retest test\silence button after each cleaning.

Annual Maintenance:

- Detector maintenance check.
- Check charge on fire extinguisher.
- Replace batteries

Every two (2) years Maintenance:

- Replace carbon monoxide detectors.

Every five (5) years Maintenance:

- Re-fill and conduct a hydrostatic test on fire extinguishers.

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.
- If smoke detector, carbon monoxide detector, or fire extinguisher fails, unit must be replaced immediately.
- The Contractor shall be responsible for replacing units or items as part of the Contract requirements. The NCTA must approve items being replaced that are not Original Equipment Manufacturer (OEM) or identical components.
- All portable fire extinguishers shall be maintained in a fully charged and operable condition.
- The Contractor shall ensure that any fire extinguisher certificates that are about to expire be renewed at least ten (10) days in advance of the expiration date.
- If during the routine inspections, the Contractor finds that portable fire extinguishers are missing or not found at the designated location, the Contractor shall replace the portable fire extinguisher within twenty-four (24) hours.

General Description of Equipment

- BRK Carbon Monoxide Detector, AC Powered Alarm with battery backup
- First Alert AC Powered Smoke Alarm with battery backup and Silence

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION D - STANDBY GENERATORS

Description

Perform inspections, routine maintenance, preventive maintenance, parts replacements, fueling of tanks and repair of standby generator equipment.

Personnel performing the work on the generator shall have a minimum of five (5) years of experience in inspecting, maintaining and repairing standby generator sets of the size and capacity of those on the system and shall have a current Certificate of Training issued by the respective generator manufacturer for any unit being maintained or repaired.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's licenses in accordance with the laws of the State of North Carolina.

Preventative Maintenance/Responsibilities

Weekly Maintenance:

- Exercise cycle run for twenty (20) minutes.
- Visual inspection of generator for obvious issues.
- Verify the exercise cycle has run.

Monthly Maintenance:

- Visual inspection of all devices.
- Perform standby generator inspections.
- Check all systems for leaks.
- Engine
 - Test low oil pressure (LOP) safety – record seconds to shut down.
 - Test high engine temperature (HET) safety - record seconds to shut down.
 - Test over speed (O/S) safety – record seconds to shut down.
 - Check pre-alarms if applicable.
 - Check over crank (O/C) item – record seconds to shut down.
 - Check cycle cranks time.
 - Check noises or leaks.
- Oil System
 - Check oil filter and gaskets.
- Cooling System
 - Check general condition.
 - Sample and test anti-freeze and add if needed.
 - Check coolant level.
 - Pressure test system.
 - Check and replace belts and hoses if needed.

- Exhaust System
 - Visually check for leaks, corrosion and check condensation trap and muffler condition.
 - Drain condensation if possible.
- Fuel System
 - Check for leaks; check all visible connections and flexible hoses. Replace flexible hoses if needed.
 - Adjust carburetor as needed.
 - Service air filters as needed.
 - Clear debris from around engine from grass or other foreign sources.
 - Check tanks to ensure they meet EPA requirements for standby generators.
 - Keep monthly log of fuel tank inspection reports.
- Generator
 - Visually inspect generator condition, check slip rings and commutator for wear, check lubrication of rear generator bearing.
 - Check diode heat sinks.
- Battery
 - Check specific gravity and load test.
 - Check water level.
 - Clean terminals and posts and coat with inhibitor.
 - Check battery charge.
 - Replace all batteries at the end of the contract.
- Ignition System
 - Check all wires.
 - Inspect plugs and electronic ignition
 - Lubricate upper and lower bearing.
 - Set timing as needed.
- Accessories
 - Lubricate all hinges, door locks and cover snaps. Test locks and replace or repair as needed.
 - Inspect annunciator.
 - Inspect battery charger.
 - Adjust battery charger - AMP-MA
 - Adjust annunciator battery lights.
 - Inspect tanks for rust and corrosion; prepare and paint all areas showing signs of rust or corrosion.
 - Prepare and paint any areas on the generator enclosure showing signs of rust or corrosion.

Quarterly Maintenance:

- Testing
 - Check unit under actual or full load as approved by the NCTA. This check should be performed after hours or during weekends.
 - Adjust voltage and frequency under actual load.
 - Adjust clock exerciser, day, time, load, no load.
 - Test delay start, pick up, transfer, cool down, transition and preheat.
 - Calibrate Under Voltage (UV) sensors, generator sensor, and Over Voltage (OV) sensors.
 - Record load per leg, voltage, hertz, oil pressure and water temperature.

- Check battery charging system.
- Test transfer switch relays for proper operation including loss of single phase power.
- Provide certification of proper operation.
- Load test the Generator as recommended by the equipment manufacturer.
- Annual 2 hour Load Bank test per manufacturer recommendation.
 - Provide load test reports.
 - Visually check for leaks.

Semi-Annual Maintenance:

- Oil System
 - Change engine oil.
 - Change oil filter and gaskets.
 - Visually check for leaks.

Annual Maintenance:

- Replace batteries.
- Replace filters annually.

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.
 - If unit or item cannot be repaired or is not functional within seventy-two (72) hours, a temporary unit or item shall be provided until repairs are completed. The Contractor is required to provide, transport, install and operate a temporary unit when required. The same operation inspections and maintenance checks on the temporary unit will be required. This applies to units under warranty.
- The Contractor shall be responsible for replacing units or items as part of the Contract requirements. The NCTA must approve items being replaced that are not Original Equipment Manufacturer (OEM) or identical components.
- Service and repairs to standby generators shall be performed by individual(s) certified in accordance with North Carolina law to perform such service and repairs to propane engines.
- Perform standby generator service calls, including emergency service to diagnose problems and make repairs, adjustments and replacements, as necessary to keep the emergency generators in good operating condition.
- The Contractor shall also dispatch a generator technician to any reported loss of line power regardless of whether the generator is operating or not.

General Description of Equipment

- 60kW Propane Gas Generator

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION E – SECURITY COMPONENTS

Description

Perform general locksmith services for locks on vaults or locks on cabinets including, but not necessarily limited to: installation, replacement and repair of door locks, door hinges, door handles, master keying and rekeying, duplicating keys, replacing/rekeying lock cylinders, and opening vaults (lockouts).

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's licenses in accordance with the laws of the State of North Carolina.

Preventative Maintenance and Service/Responsibilities

Initial Start-up Service

- Re-Key all toll facility vaults to a common Key for all locations
- Re-Key/provide padlocks for all distribution disconnect panels with same key configuration
- Maintain Master set of keys
- Create 5 sets for distribution to the Contractor and NCTA designated staff

Quarterly Maintenance:

- Check all locks are in working order.
- Lubricate all locks per manufacturer's recommendations.
- Verify keys for all locks can be located.
- Note and report any lock tampering

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.
- Any item that compromises the security of the toll site or tolling equipment must be repaired before being left unattended.
- A unit or item must be repaired and be functional within seventy-two (72) hours the Contractor shall be responsible for replacing units or items as part of the Contract requirements. The NCTA must approve items being replaced that are not Original Equipment Manufacturer (OEM) or identical components.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities

- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION F - TOLL FACILITY VAULTS

Description

Maintain the toll facility vaults' structural integrity and appearance.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's licenses in accordance with the laws of the State of North Carolina.

Preventative Maintenance Responsibilities

Weekly Maintenance:

- Clear and remove all debris, litter, etc. inside vaults and out.
- Remove cobwebs and insect nests from walls, corners and ceilings of all vaults.
- Clean exterior door jambs, frames and transoms in all entrances.

Quarterly Maintenance:

- Perform Visual Inspections
 - Inspect the vaults for cracks in panels at sharp angles near doors and openings and at panel connection joints.
 - Inspect coatings for peeling on the doors where concrete was cracking.
 - Inspect the floor coatings for chipping and wear.
 - Inspect for rust stains found around cracks, or exposed reinforcing steel, or other causes for concern.
 - Look at door and vault seals, caulking, exposed backer bar, or door jamb seals missing or damaged.
- As-needed maintenance:
 - Repair all cracks on interior or exterior walls, roof, sidewalk, and floor surfaces.
 - Repair joints.
 - Repair water infiltration.
 - Repairs to paint, sealants, and coatings.
 - Repair door seals.
 - Any issues noted during inspections that negatively affect the appearance & structural integrity of the vaults as determined by the inspectors or NCTA.

Annual Maintenance

- Inspection by and report on condition from a qualified structural engineer.

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.

- Unit or item must be repaired or replaced within seventy-two (72) hours. This applies to units under warranty.
- The Contractor shall make provisions to assure the facilities are maintained in a secure condition at all times. Cracks in interior or exterior walls and the roof should be repaired per the manufacturer's recommendations. Coatings should be repaired per the manufacturer's recommendations.
 - Before applying and handling any repair products, always review the application instructions, container labels, and the material safety data sheet (MSDS). If there are any questions relating to requirements specified on the MSDS, the Contractor shall contact the manufacturer of the product. All recommended safety requirements must be followed at all times.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION G - PRESSURE CLEANING

Description

Perform pressure cleaning, hand cleaning and chemical cleaning of toll facilities. Cleaning shall include but not be limited to all equipment cabinets, external masonry, concrete and stucco walls, brick walls, walkways and sidewalks located within the screen wall. Maintenance of the screen wall (inside and out) is included within this change order.

Preventative Maintenance/Responsibilities

Semi-Annual Maintenance:

- Pressure Washing
 - Provide all labor, materials, tools, equipment and incidentals (including water if not available at the facility) necessary to perform the work as specified. Use cleaners, degreasing agents and other approved means to remove all dirt, oil, tar, exhaust residue, spider webs and egg sacs, mud dauber nests, wasp and bee nests and any other deposit or film which may be present on the exterior of the vaults. Streaking of surfaces will not be allowed and manual scrubbing may be required in order to attain the desired results.
 - Materials Safety Data Sheets (MSDS) for all chemicals used shall be submitted by the Contractor. All chemical agents and additives must be approved by NCTA prior to beginning any work.
 - Protect all NCTA equipment during the time that cleaning is in progress. The Contractor shall be responsible for any and all damages caused by their contractor's operations to either NCTA property or to the public moving through the facilities. No equipment, vehicles or materials may be stored at any NCTA facility.
 - Upon completion of each day's work, the Contractor shall ensure that the toll zone or facility being cleaned is free from debris caused by the work and remove and dispose of such debris off NCTA right-of-way.
 - The cleaning equipment shall be independently powered and capable of attaining adequate pressure and temperature to perform a job that meets the desired cleaning results. The equipment must also be designed to apply approved cleaning agents to surfaces to be cleaned in a volume sufficient to attain the desired cleaning results. Chemical cleaners that are used on surfaces in areas of plants and grass shall not be harmful to vegetation. Care shall also be taken to avoid any damage to existing grass, plants, shrubs and trees by equipment or personnel. Any plants or foliage damaged shall be replaced with equal or better plantings at no cost to the NCTA.
- Follow approved cleaning procedures for surfaces coated with the concrete sealer or stain.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found

- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION H - PEST CONTROL

Description

Perform pest control services. Pests are defined as general household pests such as mice, rats, roaches and common ants (including ghost ants and fire ants), carpenter ants, pharaoh ants, subterranean termites, dry wood termites, bird control, rodents, snakes, etc.

Qualifications

Pesticides that comply with the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act (7, U.S.C. 136 et. seq.) as amended by the Federal Environmental Pesticide Control Act of 1972 and the regulations issued there under are permitted. Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's licenses in accordance with the laws of the State of North Carolina.

Preventative Maintenance Responsibilities

As-Needed Maintenance:

- Emergency removal of pests.

Quarterly Maintenance (change of season time frames – Dec, March, June and September):

- Insect control includes those measures which are necessary to suppress general household insects, as defined above, within and around the facilities by using properly registered and labeled pesticide products and approved devices.
- Rodent control includes those measures necessary to suppress populations of rats and mice that become a nuisance within or around the NCTA premises and equipment. There shall be no signs of infestations.
- The program for the control of general pests shall be continually in effect. There shall be no signs of infestations.
- Treat all areas of the facility to eliminate those pests listed above. These areas include, but are not limited to, vaults (interior and exterior perimeter which extends for a distance of fifteen feet (15') around the vaults), toll cabinets, emergency generators, and storage facilities.
- Protect NCTA equipment during the time the work is underway. All materials for pest control shall conform to federal, state and local ordinances and precautions shall be used to avoid accident or injury to the employees and prevent damage to the facilities.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required

- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION I - GROUNDING AND GROUND SYSTEM TESTING

Description

Test grounding systems and rods and repair and retest out of tolerance grounding systems at all of the vaults. Typically one third to one half of the ground rods will be tested. If more than half of the ground rods tested are out of tolerance, all rods at the facility shall be tested. Subsequent years shall include testing, repairing and certifying the grounding system at toll zones suspected of having out of tolerance grounding systems as directed by the NCTA.

Use a ground testing measuring device approved for that function such as Fluke, GISCO, Extech, AMEC, etc. with calibration certificate within the past calendar year of tests.

Qualifications

Personnel performing the work shall be currently licensed by the State of North Carolina in accordance with State laws. Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's licenses in accordance with the laws of the State of North Carolina.

Preventative Maintenance/Responsibilities

As-Needed:

- Check system for damage and needed repair.
- Perform repairs as needed.

Semi-Annual Maintenance:

- Testing
 - Perform testing of ground rods at each toll zone and facility as directed by the NCTA to determine the resistance of each ground rod. Document, certify, correct and provide a report of Ground Resistance Test for the results of all tests performed.
 - For all ground rods exceeding 25 ohms (unless otherwise specified), furnish and install 5/8" x 10' copper clad ground rods or ground rod segments as necessary to achieve the grounding requirements until ground resistance of 25 ohms (unless otherwise specified) or less is achieved.
 - Furnish and install exothermic weld connections, Cadweld by ERICO approved equal as necessary to achieve the testing requirements.
 - Perform testing and provide and certify a report of Ground Resistance Test at each toll zone grounding system upon completion of installation of new ground rod(s).

Unscheduled Service, Repairs and Replacements

- Repair response time (the time taken to arrive at the site after notification) shall not exceed two (2) hours regardless of the day or time of the notification for non-routine or emergency repairs.
- Provide unscheduled service calls, including emergency service, to diagnose problems and make repairs, adjustments and replacements, as necessary, to keep the equipment in good operating condition.
- Unit or item must be repaired or replaced within seventy-two (72) hours. This applies to units under warranty.

- The Contractor shall be responsible for replacing units or items as part of the Contract requirements. The NCTA must approve items being replaced that are not Original Equipment Manufacturer (OEM) or identical components.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION J – FIBER OPTIC NETWORK (FON)/ UTILITY LOCATING

Description

The intent of this attachment is for the Contractor to locate and investigate the NCTA FON/Utility underground infrastructure as needed or requested.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's contractor who will be performing this work.

Responsibilities

- Underground infrastructure to locate:
 - Conduit (power, communications)
 - Propane Tanks
- Areas needing to be marked should be marked using the color code chart for North Carolina 811: <http://nc811.org/colorcodechart.htm>

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacements part required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION K - MAINTENANCE OF TRAFFIC (MOT)

Description

The intent of this attachment is for the Contractor to furnish, install, and maintain traffic control devices for both routine repair and any emergencies affecting the Roadside Toll Collection System (RTCS) and facilities maintenance.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit a copy of the Contractor's contractor who will be performing this work. The Contractor shall be certified to perform Maintenance of Traffic in the state of North Carolina.

Responsibilities

- Install all necessary traffic control devices, as required to perform the maintenance items identified herein, in accordance with the Manual of Uniform Traffic Control Devices, the NCDOT Roadway Standard Drawings, and NCDOT Standard Specifications for Roads and Structures.
- Upon determining that the emergency repair requires a lane closure the Contractor will consult with NCTA to determine the priority of the fault. It may be determined that some repairs that require a lane closure can be scheduled for next business day, allowing a greater than 24 hour notice to the MOT vendor. If the decision by NCTA is made that MOT is required without providing a 24 hour nor greater notice to the MOT vendor, the Contractor will notify the MOT vendor that an emergency lane closure (under 24 hours notice) is required. The Contractor repair time will start once proper MOT is in place and the lane/lanes in need of service are completely secured with the proper traffic control devices.
- Provide a pricing sheet for typical MOT. Pricing shall include single lane closures, two lane closures, full roadway closure and/or detour route signing, and any applicable emergency or holiday mobilization fee or premium.
- The NCTA must be notified prior to establishing any MOT.
- Pre-approval for a one-lane closure is granted for the hours of 9 a.m. – 4 p.m., and 7 p.m. – 6 a.m. daily. If a more strenuous lane closure is needed, NCTA's approval will be required. Routine repair closures must not fall during an NCDOT holiday.

Documentation and Reporting

Upon completion of any and all service performed on the equipment identified above the Contractor will update the Maintenance Log File with all detailed information including:

- Date of Service Request
- Date of Service Completion
- Date of regularly scheduled maintenance activities
- Detail of tasks performed
- List any issues found
- List any replacement parts required
- Notification to NCTA for replacement part approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.

SECTION L – PROPANE SERVICES

Description

The intent of this attachment is for the Contractor to provide propane fuel services at each toll plaza.

Qualifications

Not later than 60 days prior to Commissioning of the first tolling location, the Contractor shall submit the name and contact information for the subcontractor who will be performing this work.

Responsibilities

Maintain levels of propane fuel to allow for specified performance of the system.

Documentation and Reporting

Upon completion of any and all services performed on the equipment identified above, the Contractor shall update the Maintenance Log File with all detailed information, including:

- Date of Service Request
- Date of Service Completion
- Date of Regularly Schedule Maintenance Activities
- Detail of Tasks Performed
- List any Issues Found
- List any Replacement Parts Required
- Notification to NCTA for Replacement Part Approval

The Contractor will submit the Facility Maintenance Log to NCTA monthly or upon request.