

**Construction Specification for
Removal of Electrical Equipment****Table of Contents**

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TTS 815.100.01 SCOPE

This specification covers the requirements for removal of electrical equipment and materials completely or in part, including the requirements for demolition, salvage and disposal of materials.

TTS 815.100.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

City of Toronto Standard Specifications

TS 1.00	Construction Specification for Maintenance of Traffic
TS 2.10	Construction Specification for General Excavation
TS 5.00	Construction Specification for Sodding
TS 5.10	Construction Specification for Growing Medium
TS 13.10	Specification for Unshrinkable Fill
TS 1010	Material Specification for Aggregates – Base, Subbase, Select Subgrade, and Backfill Material (Amendment to OPSS.MUNI 1010)
TTS 815.100	Construction Specification for The Removal of Electrical Equipment

TTS 815.100.03 DEFINITIONS – Not Used

TTS 815.100.04 SUBMISSION AND DESIGN REQUIREMENTS – Not Used

TTS 815.100.05 MATERIALS – Not Used

TTS 815.100.06 EQUIPMENT – Not Used

TTS 815.100.07 CONSTRUCTION

TTS 815.100.07.01 Timing of Work

Existing electrical systems identified by the City to remain active shall continue to be in service during the work until new or modified systems have been tested, accepted and are operational.

Any required downtime due to power switchover shall be requested, stating the date and the duration to the Contract Administrator 72 hours before the planned downtime. The Contractor shall not proceed without prior approval from the Contract Administrator.

TTS 815.100.07.02 Excavation

Where existing electrical equipment is installed in asphalt boulevards, the dry cutting of the asphalt shall include all applicable safety measures and procedures according to City measures and procedures for roadwork with asphalt containing asbestos fibres.

Excavation for the removal of electrical equipment shall be carried out according to the requirements of TS 2.10.

TTS 815.100.07.03 Backfill and Trimming

Backfill and trimming for the removal of electrical equipment shall be carried out in accordance with the requirements of TS 2.10, TS 5.00, TS 5.10, TS 13.10 and TS 1010.

TTS 815.100.07.04 Demolition

Demolition of concrete, brick, timber and masonry structures, including pole footings, equipment pads and concrete poles shall be carried out such that adjacent pavement, utilities, other works or electrical equipment remain in place and are not disturbed. Proper care shall be taken such that materials designated for salvage are not damaged by the work.

Where partial removal of pavement, sidewalk, curb and gutter or other structures is required for removal of electrical equipment, the broken edges of the structure remaining in place shall be squared up and trimmed along straight lines at a minimum distance of 300 mm from any area disturbed by removal operations.

Structures which are completely or partly underground shall be removed entirely where such structures interfere with other work. Structures not interfering with other work shall be removed to a minimum depth of 600 mm below finished grade, and the remaining portion shall be abandoned in place.

Steel reinforcement, conduit, ducts, wire and debris associated with the removed portions of such structures shall be removed for disposal.

TTS 815.100.07.05 Disposal of Debris

All concrete, steel reinforcement, brick masonry, timber, cable, conduit, traffic signal equipment, lighting equipment and incidental materials not requiring salvage shall become the property of the Contractor and shall be removed from the right-of-way.

TTS 815.100.07.06 Poles

Poles shall be removed for salvage or disposal as specified in the Contract Documents.

TTS 815.100.07.07 Luminaires, Signal Heads and Internally Illuminated Signs

The Contractor shall remove all lamps for prior to removing luminaries, signal heads and internally illuminated signs for salvage. Lamps shall be disposed as specified in this document.

All hardware, fittings and accessories shall be removed and salvaged as indicated in the Contract.

TTS 815.100.07.08 Brackets, Mast Arms, Pole Attachments

Brackets and mast arms complete with fittings, hardware and accessories shall be removed and salvaged as indicated in the Contract.

Pole attachments, fittings, hardware and accessories for aerial cables shall be removed for disposal.

TTS 815.100.07.09 Cables and Conduits

Existing underground cables and conduit systems which are abandoned and do not form part of the finished systems shall be completely removed for disposal. Where complete removal is not possible, they shall be removed from accessible points and cut back to a depth of 600 mm below finished grade and abandoned in place as indicated in the Contract.

Overhead cables shall be removed for disposal.

Surface mounted conduit systems on poles including all junction boxes, fittings, hardware, accessories and associated cables shall be removed for disposal.

TTS 815.100.07.10 Pole Mounted Power Supply Control Equipment

Conduit systems, junction boxes, wiring, fittings, hardware and accessories shall be removed for disposal.

Equipment enclosures complete with all fittings, mounting hardware and accessories, with all internal components and wiring shall be removed for salvage or disposal as indicated in the Contract.

TTS 815.100.07.11 Traffic Signal Controllers and Electronic Equipment

Traffic signal controllers and electronic equipment including all fittings, hardware and accessories shall be removed and salvaged as indicated in the Contract.

Removal work shall be timed so that outdoor storage, or storage in non-ventilated or humid areas is not required.

TTS 815.100.07.12 Removal of Handwells

Concrete handwells shall be removed or demolished according to sub-section 815.100.07.04, herein. Handwell cover and ring shall be salvaged.

TTS 815.100.07.13 Temporary Installations

All equipment and materials supplied by the Contractor for use with temporary installations shall be removed for disposal upon completion of the temporary stage. All equipment and materials supplied by the City for use with temporary installations shall be removed and salvaged as indicated in the Contract.

TTS 815.100.07.14 Salvage of Equipment

TTS 815.100.07.14.01 Inspection

Prior to removal operations, the Contract Administrator will inspect all equipment to be removed and salvaged. The Contractor shall give the Contract Administrator a minimum of 24 hours advance notice for the removal work.

TTS 815.100.07.14.02 Damages

The Contractor shall exercise due care when removing equipment for salvage. Materials damaged through improper handling or through loss after removal shall be repaired or replaced by the Contractor.

Prior to removal operations, the Contractor shall notify the Contract Administrator of any broken or deteriorated equipment where salvage is not practical.

TTS 815.100.07.14.03 Packaging and Storage of Materials

Traffic signal controllers and electronic equipment shall have all portable equipment removed, securely packaged and identified.

Where temporary storage of equipment is required, materials other than traffic signal controllers and electronic components shall be stored in accordance with the requirements of TS 1.00.

TTS 815.100.07.14.04 Shipping of Salvaged Equipment

The Contractor shall load, transport, unload and stack all salvaged equipment at the location indicated in the Contract. Delivery shall be made between 9:00 a.m. and 3:30 p.m. Monday to Friday. The Contractor shall give the Contract Administrator 24 hours advance notice before delivering the equipment.

TTS 815.100.07.14.05 Reinstallation Equipment

Where indicated in the Contract, the Contractor shall remove and salvage materials and equipment for re-installation. Such materials shall be packaged and stored at a storage site indicated in the Contract.

TTS 815.100.07.15 Restoration Work

When restoration of surfaces or structures such as pavement, sidewalk, curb and gutter, topsoil, sod and granular surfaces are not specified elsewhere in the Contract, the Contractor, as part of this work, shall restore the surface or structure to the original condition or better. Restoration is not required for surfaces or structures designated for disposal or abandoning that are disturbed by removal operations. Such work shall be done in accordance with the requirements of applicable City specifications related to the work.

TTS 815.100.07.16 Signal Operations

Existing or new intersection traffic signal devices such as traffic signals, PXOs, flashing beacons and so on to remain fully operational. Note that signal displays shall not be blocked or obscured.

TTS 815.100.07.17 Quality Control**TTS 815.100.07.17.01 Pre-Removal Testing and Inspection**

Components specified for removal shall be inspected prior to removal. If the components are to be salvaged for reuse within the Contract limits or for storage at City premises, the Contractor shall make a list of imperfections of those components and shall submit the list to the Contract Administrator three Working Days prior to the commencement of removal.

TTS 815.100.07.17.02 Proof of Performance Testing and Inspection

The removal work shall be inspected to ensure that all electrical removals have been carried out and that all components requiring disposal at approved sites have been completed so that no such materials remain on the City land.

TTS 815.100.08 QUALITY ASSURANCE – Not Used**TTS 815.100.09 MEASUREMENT OF PAYMENT****TTS 815.100.09.01 Removal of Electrical Equipment**

Measurement of removal of electrical equipment shall be lump sum.

TTS 815.100.10 BASIS OF PAYMENT**TTS 815.100.10.01 Removal of Electrical Equipment – Item**

Payment at the Contract Price for the above tender item shall be full compensation for all labour, Equipment and Material to do the Work.