

PART 1 – GENERAL

1.1 RELATED SECTIONS

- .1 Section 02 91 00 – Tree Protection
- .2 Section 31 23 10 – Excavation, Trenching and Backfilling.

1.2 REFERENCES

- .1 U.S. Environmental Protection Agency (EPA) / Office of Water
- .2 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.
- .3 Comply with regulations of the Canadian Food Inspection Agency concerning the removal and disposal of wood and residue from regulated species.

1.3 DEFINITIONS

- .1 Clearing isolated trees consists of cutting off to not more than specified height above ground level of designated trees and disposing of felled trees and debris.
- .2 Grubbing consists of excavation and disposal of stumps and roots, boulders and rock fragments of specified size to not less than a specified depth below existing ground surface.

1.4 QUALITY CONTROL

- .1 Take the necessary health and safety precautions in accordance with Health and Safety Requirements.

1.5 QUALIFICATIONS AND EQUIPMENT

- .1 Work of this contract is to be performed by professional tree workers who, through related training and on-the-job experience, are familiar with the techniques and hazards of the work including trimming, maintenance repairs and removal. Familiarity with equipment required to perform this work is essential.

The minimum standards in regard to personnel qualifications that are acceptable for work on this contract are:

~~I. Class A Tree Climber – Minimum five (5) years' experience in climbing, rigging and large tree removals. ISA Certified Arborist.~~

~~II. Class B Tree Climber – Minimum three (3) years' experience in climbing, rigging and tree removals. ISA Certified Arborist.~~

III. Ground person - Minimum certified chainsaw operator

- .2 Prior to commencement of work on site, the Contractor shall provide a list of personnel to the NCC Representative indicating experience and qualifications. Amendments to and updating of this list shall be submitted to the NCC Representative for approval. Any employee not on the list and reporting to work may, at the discretion of the NCC Representative, not be accepted and asked to leave.

- .3 Work Crews: Each work crew shall include a minimum of three persons comprised of:

~~One (1) Class "A" Climber~~

~~One (1) Class "B" Climber~~

Two (2) One (1) Ground Persons

One of the above crew members shall be appointed as working foreman.

Partial crews will not be accepted.

- ~~.4 Equipment for each crew shall include:~~

~~One (1) truck with aerial device (minimum 17 m reach and 340° rotation) and enclosed box (at least 10 m³ capacity), or~~

~~One (1) chip truck 1 ¾ tonne or better with enclosed box (commercial 2.4 m (8 foot) box.~~

~~Chipper that can accommodate a 30 cm diameter wood~~

- .5 Number of crews: The number of crews provided shall be adequate to perform this work within the allotted schedule.

1.6 EQUIPMENT AND TOOL INVENTORY

- .1 All equipment and tools necessary to perform the work shall be supplied by the contractor. This will include but not be limited to:

- Saws- pole saws/ bypass cutter (with extensions), chainsaws (size appropriate given material size), hand saws, also cleaning solutions for tools for disease management (see Part 3, section 3.4 of this specification).
- ~~Climbing equipment- all ropes, friction devices, climbing saddles, ladders, etc.~~
- ~~Rigging Equipment- ropes, port a wrap (or other lowering device), blocks, pulleys, slings, etc.~~
- Traffic control equipment- pylons/ cones, portable signage for roadway/ sidewalk approach, etc.

1.7 VEHICLES

- .1 Fuelling to be done off site before working hours and/or after working hours. All repairs to be done off site. All fluid leaking/dripping from equipment is not permitted and vehicles and equipment will be removed from the site immediately. All small equipment such as chainsaw, pruning pole, hand saw will be sharpened off site prior to the hours of work.
- .2 All vehicles used by the contractor shall display the company name prominently and have a flashing roof light.

1.8 COMMUNICATION

- .1 Contractor shall identify the level of authority of his personnel. The site crew shall have a communication device in order to permit the NCC representative to communicate with them at all time during the working hours and during emergency operation.

1.9 HOURS OF WORK

- ~~.1 The normal working hours shall be from 7 am to 3:30 pm daily Monday to Friday excluding Statutory Holidays.~~

1.10 HEALTH AND SAFETY

- ~~.1 Comply with all applicable health and safety legislation and regulations, including but not limited to:~~
- ~~• Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations~~
 - ~~• Ontario Occupational Health and Safety Act and Regulations~~
 - ~~• Canadian Standards Association (CSA)~~
 - ~~• Health Canada/Workplace Hazardous Materials Information System (WHMIS)~~
 - ~~• Canada Labour Code, Canada Occupational Safety and Health Regulations~~
 - ~~• Worker's Compensation Act of the Province of Ontario~~
 - ~~• Acts and regulations that may be applicable to the workplace for work of this contract~~

1.11 ENVIRONMENTAL REQUIREMENTS

- .1 At the start of the contract, review with NCC Representative the general methodology, approach and sequencing of work of this contract.
- Identify the work sites: describe the work activities, identifying the products, tools, equipment and machinery proposed for the work activities
 - Identify potential risks, negative impacts and/or disruptions to services or operations on the site resulting from carrying the work activities
 - Describe proposed mitigation measures to be put into effect to minimize and/or prevent negative impacts
 - Provide modifications and/or amend proposed work methodology to satisfy NCC Representative.
- .2 Plant Protection: Protect trees not designated for removal, plant material and pathways adjacent to and within the area of work.
- .3 Control emissions from equipment, tools and vehicles utilised for work of this contract. Maintain these to a minimum. Ensure emissions are within local authorities requirements.
- .4 Ensure that work activities generating noise pollution are carried out within the hours permissible by governing local authorities and as approved by NCC Engineer.
- .5 The Contractor shall protect natural environment from leakage of fuels, oils and other such substances detrimental to the environment, from faulty equipment, tools, machinery and vehicles utilised for work of this contract. This shall include delivery and waste removal vehicles.
- .6 The Contractor shall be responsible for all costs associated for the cleaning and/or decontamination of any such spillage resulting from the work of this contract on the site.
- .7 Sustainable Approach: In carrying work of this contract, the Contractor is to utilise materials, products, fuel and equipment least detrimental to the environment.

1.12 STORAGE AND PROTECTION

- .1 Prevent damage to trees, landscaping, natural features, bench marks, existing buildings, existing pavement, utility lines, site appurtenances and root systems of trees which are to remain.
- .2 Repair any damaged items to approval of NCC Representative as applicable.
- .3 Replace any trees designated to remain, if damaged, as directed by NCC Representative.

1.13 TRAFFIC CONTROL

- .1 Should traffic control be required, it shall be done in coordination with on-site RCMP. The NCC field manual of traffic control shall also be used. All signs used for traffic control shall be bilingual. Safety vests shall be worn when possible conflict between vehicles, employees and the general public exists.

1.14 WASTE MANAGEMENT AND DISPOSAL

- .1 Salvage felled material that could be processed into sawlogs, pulpwood, bars, poles, crosspieces or marketable fire wood.
- .2 Stockpile these materials at a location adjacent to worksite.

PART 2 – PRODUCTS

2.1 MATERIALS

- .1 Backfill materials: **Refer to Section 31 23 10.**
- ~~.2 Fill: free of debris, waste, roots, wood, plant material, contaminated soft particles and harmful or deleterious materials.~~
- ~~.3 Backfill removed and stored for reuse.~~

PART 3 – EXECUTION

3.1 PREPARATION

- .1 Inspect site and verify with NCC Representative items designated to remain.
- .2 Notify utility authorities before starting grubbing work.
- .3 Keep roads, access lanes and sidewalks free of dirt and debris.
- .4 Tree Tags: The contractor shall remove all identification tags located on trees prior to removal. Tags are to be turned in daily to the NCC Representative.

3.2 UTILITIES

- .1 Work of this contract may occur near and/or above utilities lines, such as but not restricted to Hydro, Cable, etc.
 - ~~Note specifically the location of wires associated with overhead lighting and sound in the skating rink area.~~
 - There are numerous underground services located within the area of work. The Contractor will be made aware **shall provide underground service locates** of the location of the services. Care must be taken to avoid damage to these services during stump removal procedures.
 - ~~The Contractor will also be informed of the location of underground security wiring in the area of work. The Contractor must avoid driving and parking heavy equipment in these locations.~~

~~3.3 USE OF CLIMBING SPURS:~~

- ~~.1 Unless otherwise instructed, climbing spurs or irons are not approved for use on live trees. These can only be used on dead trees or for tree removal.~~

3.4 DISINFECTION:

- .1 Tools are to be disinfected with methyl alcohol at 70% (denatured wood alcohol diluted appropriately with water) or chlorox solution prior to commencing work on each tree. Disinfection to take place after each cut on diseased trees as per the direction of the NCC Representative. If/when the contractor identifies a tree as diseased, he must notify the NCC Representative immediately.

3.5 COMPLIANCE

- .1 Manufacturer's instructions: comply with manufacturer's requirements, recommendations and written specifications, including all available technical bulletins, product handling, storage and installation instructions and product data sheets.

3.6 TREE AND STUMP REMOVAL - SPECIAL INSTRUCTIONS

- .1 The contractor must arrive on site each day without any branches or wood chips in the truck.
- .2 The contractor will be expected to comply with all regulations set forth by the Canadian Food Inspection Agency regarding the management of other controlled materials such as Ash (fraxinus spp.). The contractor is responsible for the payment of any associated fees for disposal of trimmings, branches, brush chips and bark, and wood material.
- .3 Contractor is to be aware that elm wood removal shall be done separately from other wood. Elm wood shall be destroyed, buried or burnt at a location off site, in compliance with local bylaws, at the contractor's expense, as soon as possible after removal. It shall not be made available for firewood. The Contractor shall follow all regulations by the Canadian Food Inspection Agency.

3.7 TREE REMOVAL

- .1 Trees shall be removed leaving a stump no higher than 6" (15 cm). If a situation dictates that a higher stump must be left, approval must be sought from the NCC technical Representative. Foreign objects may be encountered in some trees..

3.8 GRUBBING

- .1 Where ~~grubbing tree removal~~ is indicated, grub out stumps and roots. ~~more than 7.0 cm in diameter, tangled roots and designated stumps.~~
- .2 Remove stumps and roots to not less than 600 mm below ground surface.
- ~~.3 Unless instructed otherwise by NCC Representative or on drawings, area to be backfilled with topsoil and seeded with a Parkmix grass seed.~~

3.9 CLEAN-UP AND DISPOSAL

- .1 All trimmings and debris resulting from the work herein specified shall be removed from the work site at the end of each working day.
- .2 Broken branches of adjacent trees, shrubs or valuable undergrowth shall receive the proper corrective treatment recognized for these conditions.
- .3 The removal and transportation of the above trimmings and debris shall be done in such a manner as to leave public thoroughfares clean and free of debris and all local by-laws are adhered to concerning the transportation of loose material.
- .4 All disposal fees associated with this contract are the responsibility of the contractor.

3.10 FINISHED SURFACE

- .1 Leave ground surface in condition suitable for immediate grading operations and stripping of topsoil to approval of NCC Representative.

3.11 CLEANING

- .1 Once installation and performance control work is complete, remove surplus materials, waste and equipment off site.

END OF SECTION