

Arboricultural Operations Procedures

Effective Date: 1/2013

Last Reviewed: 3/2018

Last Revised Date: 7/2017

Applies to: Faculty, Staff, Students, Others

For More information Contact: EHS, Occupational Health and Safety 860-486-3613 or ehs@uconn.edu

1.0 Purpose and Scope

The purpose of this procedure is to ensure that all reasonable efforts are taken to safeguard the public and University employees during tree trimming and tree removal operations. The procedure pertains to University of Connecticut employees involved tree care operations.

Exception: These procedures do not apply to the following maintenance work performed from the ground where such work is carried out by appropriately trained and protected persons:

- on felled trees; or
- felling trees less than 6 inches in diameter (measured 4.5 feet above ground level measured on the uphill side of the tree); or
- removing limbs less than 6 inches in diameter (measured at the base) on standing trees.

2.0 Supervision

2.1 Tree trimming or tree removal operations must be performed under the direction of a qualified arborist possessing the core competencies, (as listed in Appendix B), necessary for the work performed.

2.2 While every effort must be made to comply with the specifics of this procedure, in instances where strict use of this procedure would, in the professional opinion of the Arborist, increase the hazard to any employee, the public or to property, then the Arborist may use their professional discretion to alter the work practices to make the work safer.

2.3 Upon receiving a job assignment from the supervisor the arborist shall go to the job site and begin to fill in the Tree Work Safety Checklist, (Appendix A), with the job planning information including:

2.3.1 accessibility to job area, size of work area;

2.3.2 job challenges, (e.g., fall location relative to persons, property and electrical conductors, height and species of tree, lean of tree, wind force and direction, loose limbs and decayed or weak spots, terrain characteristics, etc.)

2.3.3 how many people will be needed to do this job safely;

2.3.4 what equipment will be needed for the job;

2.3.5 how long will the job take;

2.3.6 will the job impact road traffic, block lanes, or require a police officer;

2.3.7 are there any overhead or underground utilities affecting this job;

- 2.3.8 is there radio and/or cell phone service for emergency services communications.
- 2.4 The arborist will meet with the supervisor (or the manager in their absence), and review the job assignment and complete the Tree Work Safety Checklist. The supervisor and arborist will sign and date the checklist upon completion of the review.
- 2.5 A job safety briefing shall be conducted by the qualified arborist prior to the start of each job. The arborist shall communicate the job the requirements of the Tree Work Safety Checklist to all workers involved including;
 - 2.5.1 unique hazards or challenges involved with the job and the safety requirements necessary to perform the job;
 - 2.5.2 required personal protective equipment;
 - 2.5.3 equipment positioning and expected target areas;
 - 2.5.4 safe work areas and work site boundaries;
 - 2.5.5 specific work procedures;
 - 2.5.6 work zone safety requirements;
 - 2.5.7 communication procedure in the event of an emergency;
 - 2.5.8 rescue plan in event of a fall.

3.0 Training

- 3.1 Core competencies specific for tree trimming and tree removal tasks are outlined in appendix B.
- 3.2 Before an employee can be given a task to perform independently under this procedure, he/she must be qualified in the core competencies for that task.
- 3.3 The Supervisor or Arborist, at the time of checklist review, shall verify that employees assigned to the job have the proper core competencies prior to assigning them to perform tasks under this procedure.
 - 3.3.1 Only employees working under job classifications that include qualifications for tree climbing should be allowed to enter trees by climbing or from aerial devices.
- 3.4 Arborists and other permanent employees used in tree work operations shall have current first aid, CPR-AED training and means to summon emergency services (radio or cell phone, etc.).
- 3.5 All employees used in tree work shall be trained in how to summon emergency services and how to react in accordance to the fall rescue plan for each specific job. Both of these topics shall be reviewed during the job briefing for each job.

4.0 Pre-work Inspections

- 4.1 After the worker safety briefing is complete, workers shall inspect equipment and safety devices prior to use. Repair any equipment found to be defective immediately or remove it from use. Never use any part of the body to locate or attempt to stop a hydraulic leak.
- 4.2 Perform daily preventative maintenance checks and services to vehicles and equipment per manufacturer's requirements.

- 4.3 Verify that an inspected and fully charged fire extinguisher and first aid kit are onboard each truck used for the job.

5.0 Traffic Control

When tree maintenance operations are going to interrupt the flow of pedestrian or vehicular traffic, effective means for controlling that traffic shall be instituted as follows:

- 5.1 a perimeter barrier shall be established to identify the work zone area. Signage stating “DANGER Do Not Enter” shall be posted along the continuous barrier surrounding the work zone area;
- 5.2 ground crew personnel shall monitor perimeter boundaries and challenge any non-qualified persons from entering the work zone. All work shall stop if a non-qualified person enters the work zone;
- 5.3 work in or along roadways require the use of work zone safety guidelines set forth in the UConn Facilities Work Zone Safety Guidelines booklet. Signage and cone placements shall be established using this guide;
- 5.4 if traffic lanes need to be closed, contact UConn Police in advance of the job to arrange for a police officer to direct traffic during the lane closing.

6.0 Fire Protection

- 6.1 Gasoline powered equipment shall be refueled only when the engine is off.
- 6.2 Spilled fuel must be removed before attempting to restart.
- 6.3 Keep other running equipment, smoking and other ignition sources at least 10 feet away from the refueling area.
- 6.4 Where work sites have high grass, care should be taken to ensure vehicle exhaust systems do not present a fire hazard.
- 6.5 Fire extinguishers shall be kept in each truck used for tree trimming work.
- 6.6 Truck compartments where extinguishers are stored shall be labeled with “Fire Extinguisher Inside” on the door of the storage compartment.

7.0 Electrical Hazards

- 7.1 All overhead and underground electrical conductors and all communication wires and cables shall be considered energized with potentially fatal voltages.
- 7.2 If there are any overhead or underground utilities affecting the job, and there are questions concerning their potential, a qualified Facilities Electrician shall be called to evaluate and advise the arborist.
- 7.3 No tree trimming or tree removal shall take place within 10 feet of any overhead electrical conductor.
- 7.4 If a felled tree or branch makes contact with any power line, the arborist shall immediately contact the Facilities Electric Shop and remain clear of the area until they or the power company advise that there are no electrical hazards.

8.0 Environmental Hazards

- 8.1 Aerial tree maintenance operations are not permitted during adverse weather conditions such as thunderstorms, high winds, and snow and ice storms, and shall be suspended when storms approach.
- 8.1.1 During storm conditions where fallen trees or limbs require cutting and removal from roadways, travel lanes, sidewalks, etc., ground work, including bucking, limbing, chipping, and transport of tree debris is permitted.
- 8.2 In an emergency situation where the UConn Fire Department requires aerial tree trimming or removal to help mitigate an emergency condition, then section 8.1 of this procedure may be waived. However, the tree crew shall work in strict accordance with the remainder of this procedure and under the guidance of the incident commander.

9.0 Climbing

- 9.1 The following procedures shall be used for arborists performing tree climbing:
- 9.1.1 A second tree crew worker trained in emergency plan procedures shall be within visual or voice communication when an arborist is elevated above 6 feet.
- 9.1.2 A visual hazard assessment shall be performed by the arborist prior to climbing, entering, or performing any work in the tree.
- 9.1.3 Arborists shall be tied in or secured while ascending, completing work in, or descending the tree.
- 9.1.4 An arborist does not need to be tied in or secured when ascending a ladder to gain access to a tree; however, the arborist shall not work from or leave the ladder until they are tied in or secured.
- 9.1.5 An arborist shall have available a minimum of two means of being secured while working aloft; for example, a climbing line and a work-positioning lanyard.
- 9.1.6 An arborist, whenever possible, shall tie in above the work position to prevent an uncontrolled pendulum swing in the event of a slip.
- 9.1.7 A figure-eight knot shall be tied in the end of the climbing line to prevent pulling the rope through the climbing hitch, when working at heights greater than one-half the length of the climbing line.
- 9.1.8 Arborists should maintain three points of contact, whenever possible, while climbing.
- 9.1.9 When large cuts are being made in single-spar trees, both ends of the work-positioning lanyard should be attached to a single point on the saddle to prevent injury should the spar split.

10.0 Tree Trimming

- 10.1 The following procedures shall be used when trimming trees:
- 10.1.1 A Tree Work Safety Checklist shall be completed before trimming is performed on any standing tree. The arborist and supervisor shall perform the procedures outlined in section 2.0 prior to safely trimming a tree.
- 10.1.2 Communications shall be established between the arborist aloft and the workers on the ground before cutting and dropping limbs. The command “stand clear” from aloft and “all clear” from the ground are terms that may be used for this purpose.
- 10.1.3 Arborists other workers returning to the work area shall be acknowledged by tree

care workers aloft.

- 10.1.4 A separate work line shall be attached to limbs that cannot be dropped safely or controlled by hand. Climbing lines and work lines shall not be secured to the same tree crotch.
- 10.1.5 All cut branches shall be removed from trees before completion of work.
- 10.1.6 Pole pruners and pole saws, when hung, shall be securely positioned to prevent dislodgement and shall be removed when an arborist leaves a tree.
- 10.1.7 Saw sheaths and scabbards and closed folding saws shall be hooked to the saddle when not in use.
- 10.1.8 Arborists and other workers on the ground shall not stand under the work area of a tree when a cabling system is being installed in a tree.
- 10.1.9 Workers in trees should be positioned off to one side in order to avoid injury in case of cable system failure.
- 10.1.10 Cabling tools shall be carried in a bag or on a belt designed to hold such tools, or attached to a tool lanyard.
- 10.1.11 Arborists performing lowering operations shall inspect trees to determine if the tree can withstand the strain of lowering procedures, and if not, provide other means of lowering branches.
- 10.1.12 Arborists in the tree should be above or to the side of the limb being lowered, when large limbs are lowered in sections.

11.0 Tree Felling and Removal

- 11.1 The following procedures shall be used when felling and removing trees:
 - 11.1.1 A Tree Work Safety Checklist shall be completed before cutting and removing any tree. The arborist and supervisor shall perform the procedures outlined in section 2.0 prior to safely removing a tree.
 - 11.1.2 Workers shall be positioned and their duties organized so that the actions of one worker will not create a hazard for any other worker.
 - 11.1.3 A planned escape route for all workers shall be prepared before cutting any standing tree or trunk. The preferable escape route is 45 degrees on either side of a line drawn opposite the intended direction of the fall. The chain saw operator should use this path for egress once the cut has been completed.
 - 11.1.4 Workers not directly involved shall be clear of the work area.
 - 11.1.5 Workers returning to the work area shall not enter until the arborist has acknowledged that it is safe to do so.
 - 11.1.6 All limbs shall be trimmed to a height and width sufficient to allow the tree to fall clear of any wires and other objects in the vicinity.
 - 11.1.7 Wedges, block and tackle, rope, wire cable (except where an electrical hazard exists) or other appropriate devices shall be used when there is a danger that the tree or trees being removed may fall in the wrong direction or damage property.
 - 11.1.8 Notches shall be used on all trees and trunks over 5 inches in diameter at breast height.
 - 11.1.9 Notches and back cuts shall be made at a height above the highest ground level to enable arborists to safely begin the cut, control the tree or trunk and have freedom of movement for escape.
 - 11.1.10 Notches shall be 45 degrees or greater and large enough to guide the fall of trees and trunks to prevent splitting.
 - 11.1.11 Notch depth should not exceed one-third of the diameter of the tree.

- 11.1.12 The back cut shall not penetrate into the predetermined hinge area.
- 11.1.13 With a conventional notch or Humboldt notch, the back cut shall be 1-2 inches above the apex of the notch to provide an adequate platform to prevent kickback of the tree or trunk. With an open-face notch (greater than 70 degrees), the back cut should be at the same level as the apex of the notch.
- 11.1.14 The two cuts that form the notch shall not cross at the point where they meet.
- 11.1.15 Before commencing the back cut, there shall be a command such as “stand clear” from the tree care worker operating the chain saw and a response such as “all clear” from the workers supporting the removal operation.
- 11.1.16 Once the back cut has been completed, the arborist shall immediately move a safe distance away from the tree or trunk on the planned escape route.

11.1.17 Visual contact should be maintained with the tree or trunk until it is on the ground.

12.0 Limbing and Bucking

12.1 The following procedures shall be used when limbing and bucking:

- 12.1.1 Chain saws should be operated away from the vicinity of the legs and feet. Employ natural barriers where possible, such as limbs between the saw and the body. Whenever possible, cut on the opposite side of the log from you.
- 12.1.2 Maintain sight of the tip of the saw to prevent kickback.
- 12.1.3 Do not limb above your shoulders.
- 12.1.4 The preferred working position is on the uphill side of the work.
- 12.1.5 When necessary to prevent rolling, logs shall be blocked with wood or other suitable material.
- 12.1.6 Trees, segments of trees, limbs or saplings under stress or tension due to pressure or weight of another object are hazardous and shall be removed by mechanical means such as pulling down with a cable.
- 12.1.7 Trees that have become lodged in adjacent trees are especially dangerous and shall be removed by mechanical means. NEVER walk underneath the lodged tree.
- 12.1.8 Wedges should be used as necessary to prevent binding of the guide bar or chain when bucking up trunks of trees.
- 12.1.9 Cant hooks or peaveys should be used as an aid in rolling large or irregular logs to complete bucking.

13.0 Brush Chipping

13.1 The following procedures shall be used when chipping brush:

- 13.1.1 Remove brush to a designated location for chipping, so that hazards are not created in the tree cutting area.
- 13.1.2 Brush and logs shall be fed into chippers, butt or cut end first from the side of the feed table centerline, and the operator shall immediately turn away from the feed table when the brush is taken into the rotor or feed rollers.
- 13.1.3 The brush chipper discharge chute or cutter housing cover shall not be raised or removed while any part of the chipper is turning or moving.
- 13.1.4 Do not feed foreign materials such as stones, nails, sweepings or rakings into chippers.
- 13.1.5 Do not wear loose clothing, climbing equipment, body belts, or gauntlet-type gloves during chipper operation.
- 13.1.6 Do not place hands or other body parts into the in-feed hopper. Use a long stick to assist branches into the hopper.

14.0 Vehicles and Mobile Equipment (Equipment Specific Operating Procedures)

14.1 The following procedures shall be used for all vehicles and mobile equipment that are being used for tree care operations:

- 14.1.1 Operators must visually inspect vehicles and equipment daily if used.
- 14.1.2 Use of equipment shall be within the manufacturer's instructions and safeguards.
- 14.1.3 Only trained and properly qualified employees are permitted to operate such equipment.
- 14.1.4 Safety seatbelts are to be worn at all times when vehicle is in motion.
- 14.1.5 Any vehicle or mobile equipment shall be turned off and properly locked-out before any repairs or

adjustments are made. Any defects or malfunctioning equipment must be corrected before placing equipment back in service.

- 14.1.6 Any vehicle with a rear view obstruction or being towed will require a spotter to assist the driver in backing up.
- 14.1.7 Any materials or equipment carried on the vehicles must be properly stored and secured to prevent falling or damage.
- 14.1.8 Riding outside or on top of vehicles is not permitted.
- 14.1.9 If the vehicle is left unattended then the keys must be removed during that period of time.
- 14.1.10 Logs and brush shall be securely loaded onto vehicles. Attention needs to be made to the weight and capacity of the vehicle and the load being placed onto it. Overloading a vehicle can cause serious safety hazards. It will increase stopping distance and handling of the vehicle. A second trip or truck should be used to prevent overloading.
- 14.1.11 Logs and brush shall not overhang the sides or obscure tail lights, brake lights, and vision.
- 14.1.12 Wood chips should not be left in a truck bed for an extended period of time to avoid spontaneous combustion.

15.0 Aerial Devices – (Equipment Specific Operating Procedures)

- 15.1 The following procedures shall be used when operating aerial devices:
 - 15.1.1 Aerial devices must have a point of attachment to secure a full body harness with a retractable lanyard. Fall protection must be worn when working aloft.
 - 15.1.2 Loads shall not exceed manufacturer's ratings, which shall be posted on the aerial device.
 - 15.1.3 Aerial devices shall not be used as a crane or hoist to lift or lower materials, unless specifically designed by the manufacturer to perform such operations.
 - 15.1.4 Wheel chocks and outriggers shall be set before lifting the aerial device.
 - 15.1.5 The operator shall ensure adequate clearance and give warning prior to lowering outriggers.
 - 15.1.6 Pads shall be set under outrigger feet when needed to ensure stable footing.
 - 15.1.7 The operator shall look in the direction of travel of the bucket and be aware of the location of the booms in relation to all other objects and hazards.
 - 15.1.8 Clearances from passing vehicles shall be maintained or traffic control shall be provided when booms or buckets are operated over roads.
 - 15.1.9 One-person buckets shall not have more than one person in them when aloft.
 - 15.1.10 Booms or buckets shall maintain at least 10 feet clearance from energized electrical conductors, and utility poles.
 - 15.1.11 Electric cables (as used with electric saws, lights, or other conductive material) shall not be run from the vehicle to the bucket.
 - 15.1.12 Vehicle mounted aerial devices shall not be driven with an arborist in an elevated bucket, except for equipment that is specifically designed for such operation.
 - 15.1.13 During aerial device operations, Arborists shall maintain a minimum approach distance of 10 feet from energized electrical conductors.
 - 15.1.14 Underground hazards such as propane tanks, oil tanks and septic systems shall be located on the work site prior to operation an aerial device.
 - 15.1.15 Dielectric testing shall be performed annually on any aerial lift used for tree work.

16.0 Brush Chippers, Stump Cutters, and Log Splitters – (Equipment Specific Operating Procedures)

16.1 The following procedures shall be used when operating brush chippers, stump cutters, and log splitters:

- 16.1.1 Employees must wear appropriate PPE including: hard hats, hearing, eye and hand and body protection .
- 16.1.2 All enclosures and guards must be in place before using the equipment.
- 16.1.3 Workers shall not, under any circumstances, reach into the in-feed hopper of a chipper unless the machine is turned off and locked out.
- 16.1.4 Towable equipment must be chocked or otherwise secured in place when detached from the vehicle.
- 16.1.5 Maintain housekeeping around these machines to avoid trip hazards.

17.0 All Hand Tools and Portable Power Hand Tools – (Equipment Specific Operating Procedures)

17.1 The following procedures shall be used with all hand tools and portable power hand tools:

- 17.1.1 Tools shall be used according to manufacturer’s operating and safety instructions.
- 17.1.2 Tools will be maintained in serviceable condition, with handles that are tight-fitting, properly shaped, and free of splinters or sharp edges.
- 17.1.3 If used, tools shall be inspected daily before use and adjusted, repaired, or replaced if they are unsafe or damaged.
- 17.1.4 Tree care workers shall not carry tools in their hands while climbing, unless they are tools that are used to assist them in their climbing. Tools other than ropes or throw lines shall not be thrown into a tree, out of a tree, or from worker to worker while in a tree—climbing lines or hand lines shall be used to raise or lower tools and equipment.
- 17.1.5 Corded electric power tools shall not be used in trees or aerial devices.
- 17.1.6 Pole tools with poles made of metal or other conductive material shall not be used where electrical hazards exist.
- 17.1.7 All portable electric power tools shall be double insulated.
- 17.1.8 If extension cords are used, workers should prevent them from becoming entangled, damaged, or cut by blades and bits.

18.0 Axes, Brush Hooks, Machetes, and Other Chopping Tools – (Equipment Specific Operating Procedures)

18.1 The following procedures shall be used when operating axes, brush hooks, machetes, or other chopping tools:

- 18.1.1 Chopping tools that have loose or cracked heads or splintered handles shall not be used.
- 18.1.2 Chopping tools shall not be used while working aloft.
- 18.1.3 Chopping tools shall be swung away from the feet, legs, and body, using minimum forces practical for function and control using a secure grip, firm footing, and after ensuring clearance of overhead hazards.
- 18.1.4 Chopping tools shall not be driven as wedges or used to drive wedges.

19.0 Wedges, Chisels, and Gouges

19.1 The following procedures shall be used when operating wedges, chisels, and gouges:

- 19.1.1 Wedges, chisels and gouges shall be properly pointed and tempered and free of cracks or flaws.

Tools with mushroomed heads shall not be used.

19.1.2 Eye protection shall be used during impact operations.

19.1.3 Only wood, plastic, or soft-metal wedges shall be used to prevent binding while operating chainsaws.

20.0 Gasoline Powered Chain Saws - (Equipment Specific Operating Procedures)

20.1 The following procedures shall be used when operating gasoline powered chain saws:

20.1.1 When carrying a chainsaw, make sure the chain guard or scabbard is on and always walk with the bar pointing behind you.

20.1.2 Before beginning work, clear the area of debris and obstructions that might cause you to trip and fall or block your retreat path.

20.1.3 Ensure saw chains are properly adjusted; mufflers, chain breaks and nose shielding devices are in place and operational; and cutting edges are sharp and shaped properly.

20.1.4 Employees must wear appropriate PPE including: hearing, eye and hand and body protection.

20.1.5 When being started at ground level, chainsaws shall be held firmly on the ground or otherwise held in a manner that does not allow movement of the saw when pulling the handle and the chain brake shall be engaged. Drop-starting saws when working on the ground is not permitted.

20.1.6 The chainsaw shall be held with the thumbs and fingers of both hands encircling the handles during operation unless it can be demonstrated that a greater hazard is posed by keeping both hands on the chain saw in a particular situation.

20.1.7 Chainsaws shall be started at least 10 feet from the fueling area.

20.1.8 Chain saws shall not be used to cut directly overhead.

21.0 Ropes and Climbing Equipment - (Equipment Specific Operating Procedures)

21.1 The following procedures shall be used when operating ropes and climbing equipment:

21.1.1 Type II saddle belts and lanyards as specified in ANSI A10.14 shall be worn when above ground level. Alterations on saddles or lanyards are not permitted.

21.1.2 Climbing lines shall be identified by the manufacturer as suitable for tree climbing.

21.1.3 Prusik loops, split tails, and work-positioning lanyards used in a climbing system shall meet the minimum strength standards for climbing lines.

21.1.4 Carabineers used in securing the climbing line and/or work-positioning lanyard to the climbing saddle shall be of the self-closing positive-locking type with a minimum tensile strength of 5000 pounds.

21.1.5 Rope snaps used in climbing shall be the self-closing, locking type with a minimum tensile strength of 5000 pounds.

21.1.6 Equipment used to secure an arborist in the tree or from an aerial lift shall not be used for anything other than its intended purpose, except that climbing line may be used to raise and lower tools.

21.1.7 Ropes and climbing equipment shall be stored in such a manner as to prevent damage through contact with sharp tools, cutting edges, gas, oil, or chemicals.

21.1.8 Climbing lines shall never be left in trees unattended.

22.0 Ladders - (Equipment Specific Operating Procedures)

22.1 The following procedures shall be used when using ladders:

- 22.1.1 Ladders shall be inspected prior to use to ensure their parts are in good working order, are not contaminated with grease or oils or slippery substances and that the ladder is rated for the work to be performed.
- 22.1.2 Ladders made of conductive material shall not be used where electrical hazards exist.
- 22.1.3 Cleats, metal points, skid-resistant feet, lashing, or other effective means of securing the ladder shall be used when there is danger of slipping.
- 22.1.4 Ladders shall be stored under suitable cover, protected from the weather, and kept in a dry location away from excessive heat. While in storage they shall be supported to prevent sagging.

23.0 Personal Protective Equipment

- 23.1 Supervisors are responsible for ensuring that each employee is issued the required PPE, ensuring that they wear the appropriate PPE, and training employees on proper PPE use and care.
- 23.2 Periodic inspections by the employee and their supervisor of all PPE are required to ensure it is in good working order. Any items that are defective or damaged shall be repaired or the unserviceable PPE shall be replaced before work is commenced.
- 23.3 Personal Protective Equipment must be worn as required by the department's Workplace Hazard Assessment form. Guidance for required PPE, according to task, can be found in Appendix C of the procedure.
- 23.4 Loose fitting clothing and jewelry should not be worn when performing tree work. All loose items should be removed or secured by taping them down. Loose items can become entangled quickly in saws and chippers and can pull the employee into the saw blade or chipper. Limbs can also snag onto loose items and knock the employee off balance.
- 23.5 Long pants and long sleeves shall be worn to protect the employee from cuts and abrasions. Chain saw resistant leg protection, such as ballistic nylon chaps, shall be worn when an employee is operating a chain saw on the ground. Employees who are engaged in operating a chain saw on a ladder, climbing rope or aerial bucket are not required to wear chain saw resistant pants if it interferes with the employee's mobility and safety.

24.1 Emergency Procedures

- 24.2 Whenever aerial devices or tree climbing are used, the arborist shall call and notify the Facilities Service Desk by radio or cell phone. The Service Desk personnel shall notify UConn Public Safety Dispatch that aerial tree work is to begin at a specific location.
 - 24.2.1 Upon ending aerial work for that location, the arborist shall notify the Service Desk that this work is ending and the Service Desk shall advise Public Safety Dispatch that this work has ceased at the location called in earlier.

- 24.2.2 If UConn Fire Rescue is dispatched on a committed call and cannot support an aerial rescue, they will call the Facilities Service Desk to order the work to stop until they can respond. The Service desk will relay this info to the arborist who will stop all aerial work until rescue is available.
- 24.2.3 If the Service Desk cannot make contact with the tree crew, (due to high background noise, etc.), then they shall contact a Landscape Department supervisor who will physically go to the job site to relay the message from the Service Desk and UConn Fire Rescue.
- 24.3 Communication to emergency services is essential for this work. The arborist or supervisor shall verify that they have radio or cell phone communication prior to performing any tree trimming or tree removal operations.
- 24.4 A fall rescue plan must be established for each new job that involves climbing or the use of an aerial device. The arborist shall review with the crew how to react when a fall takes place at each job briefing.

Tree Work Safety Checklist

Location of job _____ WO# _____

Access to job area _____ Size of work area _____ Terrain issues? _____

_____ Devices needed to direct the fall _____

Tree Height? _____ ft. Species? _____ Decay, weak spots, dead limbs seen? _____

Are overhead or underground utilities or tanks affecting this job? Y N Wind direction _____ Speed _____

What equipment will be needed for the job? _____

Will the job impact road traffic? Y N Block lanes? Y N Require a police officer? Y N **Work Zone Safety Guidelines** req'd equipment _____ Posted speed limit? _____

Is there radio and/or cell phone service for emergency services communications? _____

How many people are needed to do this job safely? _____ How long will the job take? _____

Job challenges _____

Arboretum Committee has approved this trimming or removal? Y N

Arborist - Sketch work site layout with tree locations, buildings and property, shrubs & hedges, roadways, pedestrian walkways, as well as above and below ground utilities and tanks on the back side of this checklist to use in pre-job checklist review discussion with supervisor. SKETCH ON REVERSE SIDE----->

	Yes	Done	TECHNICAL REQUIREMENTS	Yes	Done
Job briefing discussion including fall rescue plan			18" Road cones quantity = _____		
Call to Service Desk for aerial work			28" Road cones quantity = _____		
Call to UCPD for Traffic Control Officer			Hi-Viz traffic vests quantity = _____		
Hearing protection			Road sign "Work Area Ahead"		
Safety glasses			Road Sign "Lane Closed Ahead" (R or L)		
"Danger-Do Not Enter" tape & 40" cones			Sunscreen		
Snow fencing barricade w/ fence posts			Ivyblock lotion		
Leather gloves			Drinking water		
"Forestry helmets" with face shields quan = _____			Bee Spray		
First Aid Kits			Ropes, block and tackle		
Climbing helmet, saddle, ropes and tackle			Cant hook		
Fall protection harness, retractable lanyard			Lifting chains (grade 80 or 100 only)		
Protective Chaps quantity = _____			Other:		
Verify workers have steel-toed shoes			Other:		

Reviewed By:

_____ Date _____ Date _____

Landscape Services Supervisor **Arborist**

Appendix B

Tasks/Duties

Core Competencies

Arborist

- Able to properly use handsaws, pole saws, and other miscellaneous pruning tools
- Able to safely operate chainsaws, and understands all safety features (including chain brake, chain catcher, and throttle interlock)
- Able to properly maintain and sharpen chainsaws
- Able to safely understand all felling procedures involved in arboriculture
- Able to properly and safely operate all arborist equipment, including chippers, stump grinders, aerial lifts, air spade, etc.
- Able to demonstrate correct truck operations, including proper backing, hookup, dumping, and parking precautions
- Understands all EHAP/ electrical hazards when working near any electrical utilities
- Possesses a basic understanding of tree growth in their relation to proper pruning cuts, as well as university pedestrian traffic and buildings
- Able to identify poisonous plants and animals
- Knowledge and possession of all PPE, including hardhat, proper footwear, eye protection, chaps, long pants, long sleeved shirt (when applying pesticides), and ear protection
- Able to ascend a tree safely, using approved rope and saddle, and able to look for hazards before ascending
- Inspects all arborist tools before use, including rope, saddle, carabiners, and pruning tools
- Understands approved trimming procedures, including proper finish cuts, crown cleaning, thinning, raising, and crown reduction
- Knowledge of proper rigging techniques, including lowering points, safe working loads, and utilization of lowering devices
- Knowledge of knots for the correct job, including being able to tie a bowline, running bowline, timber hitch, clove hitch, and a bowline on a bight
- Proper placement of all safety devices, including signs, cones, and tape
- Properly reviews all job sites with managers and other crew members before the job
- Ensures first aid kits are available on all trucks, and should be versed in First Aid and CPR
- Understanding and experience with pesticides and fertilizers, including proper mixing, spraying, PPE, knowledge of using the label, and storage procedures
- Possesses record keeping skills for both applications as well as tree work

Tree falling and limbing standing trees

- Climb trees, using climbing hooks and belts, or climb ladders to gain access to work areas.
- Safely stop saw engines, pull cutting bars from cuts, and run to safety as tree falls.
- Appraise trees for certain characteristics, such as twist, rot, and heavy limb growth, and gauge amount and direction of lean, in order to determine how to control the direction of a tree's fall with the least damage.
- Saw back-cuts, leaving sufficient sound wood to control direction of fall.
- Clear brush from work areas and escape routes, and cut saplings and other trees from direction of falls, using axes or chainsaws.
- Measure felled trees and cut them into specified log lengths, using chain saws and axes.
- Assess logs after cutting to ensure that the quality and length are correct.
- Determine position, direction, and depth of cuts to be made, and placement of wedges or jacks.
- Control the direction of a tree's fall by scoring cutting lines with axes, sawing undercuts along scored lines with chainsaws, knocking slabs from cuts with single-bit axes, and driving wedges.
- Trim off the tops and limbs of trees, using chainsaws, delimiters, or axes.
- Select trees to be cut down, assessing factors such as site, terrain, and weather conditions before beginning work.
- Set up work zone and select proper PPE for the task
- First Aid CPR-AED
- Implement rescue plans

Limbing felled trees and Bucking

- Operate trucks, loaders, stump chippers, brush chippers, tractors, power saws, trucks, sprayers, and other equipment and tools.
- Clean, sharpen, and lubricate tools and equipment.
- Cut away dead and excess branches from trees from ground level
- Using chainsaws, hooks, handsaws, shears, and clippers.
- Remove low-hanging branches.
- Prune, fertilize, and spray trees as directed by arborists.
- Hoist tools and equipment to arborists, and lower branches with ropes or block & tackle.
- Operate shredding and chipping equipment, and feed limbs and brush into the machines.
- Load debris and refuse onto trucks and haul it away for disposal.
- Set up work zone and select proper PPE for the task
- First Aid and CPR-AED
- Implement rescue plans

Operate Chippers

- Clean, sharpen, and lubricate tools and equipment.
- Operate shredding and chipping equipment, and feed limbs and brush into the machines in accordance with manufacturer's instructions.
- Load debris and refuse onto trucks and haul it away for disposal.
- Set up work zone and select proper PPE for the task
- First Aid and CPR-AED
- Implement rescue plans

Appendix C

Personal Protective Equipment Guidance

- **Ground level personnel using chainsaws are required to use:**
 - A helmet with mesh face shield
 - Safety glasses (must be used in addition to the mesh face shield)
 - Tinted lenses if sunny conditions
 - Hearing protection
 - Protective leg chaps
 - Steel toed shoes
 - Leather gloves
 - Hi Viz safety vests if work is in the roadway or road side

- **Personnel using wood chippers:**
 - A helmet w/ mesh face shield
 - Safety glasses (must be used in addition to the mesh face shield)
 - tinted lenses in sunny conditions
 - Hearing protection
 - Protective leg chaps
 - Steel toed shoes
 - Leather gloves
 - Hi Viz safety vests if work is in the roadway or road side

- **Support personnel, (e.g., workers who drag branches or wood to chippers, or load trucks with debris)**
 - Safety glasses and hearing protection and steel toed shoes if dragging branches to chipper
 - Safety glasses and steel toed shoes if loading trucks with branches and debris
 - leather gloves in all cases
 - Hi Viz safety vests if work is in the roadway or road side
 - Hard hat if they are supporting overhead work.

- **Arborists in Aerial Devices**
 - A helmet w/ integrated hearing protection and face shield
 - Safety glasses (must be used in addition to the face shield)
 - Tinted lenses if sunny conditions
 - Steel toed shoes
 - Leather gloves

- **Arborists climbing trees**
 - Climbing helmet
 - Leather gloves
 - Safety glasses with lanyard to keep in place
 - Tinted if sunny conditions

References

ANSI Z133.1 American National Standard For Arboricultural Operations – Pruning,
Repairing, Maintaining, And Removing Trees, And Cutting Brush - Safety Requirements – 2006

ANSI A92.2 Vehicle Mounted Elevating And Rotating Aerial Platform - 2009