



**SPECIFICATION**

**for**

**LOCAL DISTRIBUTION**

**LINE CLEARANCE**

**TREE WORK and BRUSH CONTROL**

**Revision 2014-B**

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# **Eversource Specification for Local Distribution Tree Work and Brush Control**

## **1. General Requirements**

This document describes the scope of work and technical requirements for the Eversource Distribution Line Clearance Program. All work shall be performed by qualified line clearance contractors. Safety shall take precedence over all requirements described herein and at no time shall work be performed in an unsafe manner.

- All contact with the public and government officials shall be done in a courteous manner.
- Work shall be subject at all times to inspection by Eversource and government officials. The crew foreman, or the contractor's designee, shall notify Eversource of the crew's daily work location and of any change made during the day.
- Work shall be performed in such a manner that it will not interfere with or affect in any way the operation of any existing energized lines or electrical equipment, except as specifically directed by Eversource.
- All line clearance work shall be performed in strict accordance with all applicable federal, state and local governmental laws and regulations or approved standards and safety practices – ANSI A300 (Part 1)-2008, Best Management Practices – Utility Pruning of Trees, ANSI Z133.1-2012, OSHA 29 CFR 1910.269. The contractor shall be responsible for the knowledge, supervision and enforcement of them.
- Each crew will have on the vehicle the Eversource Image Summit forms and door hanger. Administration of the process will be in accordance of all Eversource Image Summit procedures and guidelines.
- When necessary, the contractor requests permission from tree owners and others to perform line clearance tree work around electrical conductors. Where the tree owner is not at home, use the appropriate permission card and customer brochure. For all refusals, light trims or no contacts the contractor shall fill out a copy of form DISTRIBUTION LINE CLEARANCE MODIFICATION FORM and submit the form weekly, or approved electronic form
- The crew foreman shall complete and submit weekly company approved reporting forms, adding information daily for all T&M work. Paper forms of this report shall be submitted to Eversource no later than Tuesday of the

week following the completed work week. Electronic forms shall be submitted at least weekly, depending on syncing and uploading system requirements.

- The line clearance crew shall work progressively along the distribution system starting at the substation, or as directed by Eversource, and shall complete all work on a given portion of the line before starting work at another location, unless otherwise approved by Eversource.
- Re-trimming will be required to correct all situations where trimming quality is determined by Eversource to be improper.
- Climbing irons shall not be used in any tree unless the tree is to be removed.
- Wherever Eversource is solely responsible for clean-up on scheduled work, clean-up shall be completed daily and the site shall be left in at least as neat and orderly condition as it was found.

## **2. Scope of Work**

This Specification covers the trimming and removal of trees and brush, including the use of herbicides (CT only) for brush control along rural and urban overhead electrical lines and around substations owned or used by Eversource. This includes clearing for existing lines as well as for new lines, and applies to local distribution only, along and off-roads, and not bulk supply distribution rights-of-way. Each tree must be evaluated on its own at the time it is trimmed. The tree crew must consider the variables including tree species, condition, growth rate and location.

### **2.1. Scheduled Maintenance Trimming (SMT)**

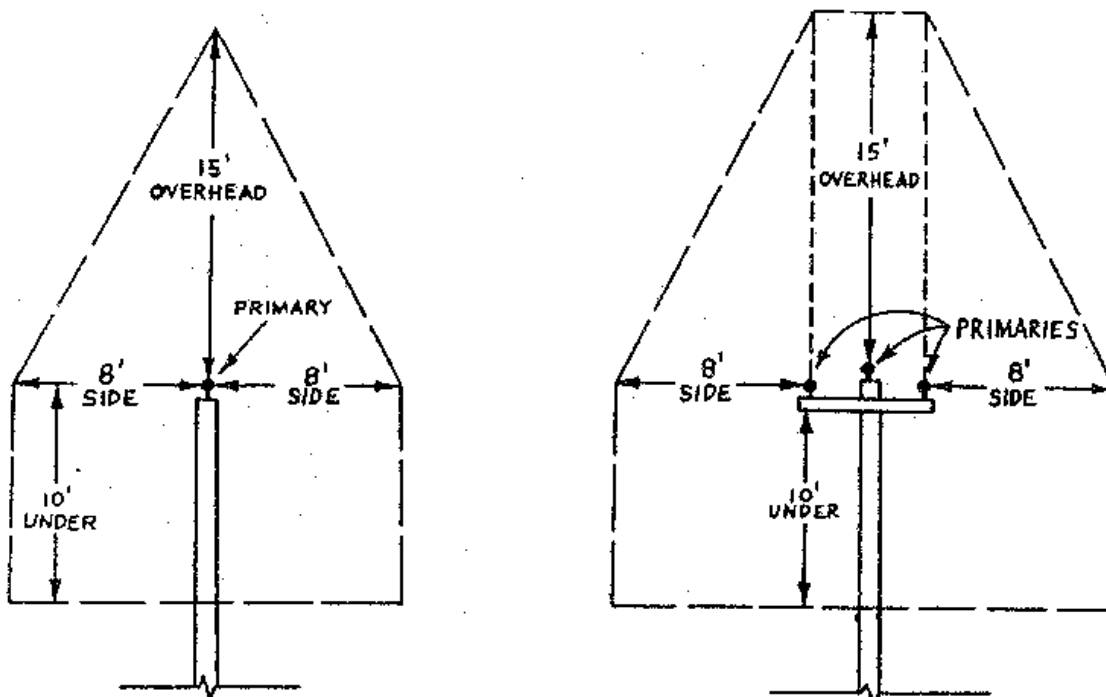
#### **2.1.1. Primary Conductors**

Conductor clearances relative to various primary wire positions are shown in Figure 1. Normally, remove all branches within the clearance zone bounded by the dashed line perimeter and all overhead hazards within reach of a 55' aerial lift.

Watersprouts and suckers shall not be trimmed; they shall be removed back to the originally established clearance level.

**Figure 1**

**CLEARANCE ZONE DIMENSIONS**  
**For**  
**PRIMARY VOLTAGE CONDUCTORS (2.4 to 34.5 kV)**



**2.1.1.1. Overhead Clearances**

15 feet overhead clearance shall be measured vertically upward from the highest primary.

**2.1.1.2. Side Clearances**

8 feet (10 feet MA-E) side clearance shall be measured horizontally outward from the outermost primary.

**2.1.1.3. Under Clearances**

10 feet under clearance shall be measured vertically downward from the lowest primary.

**2.1.1.4. Brush and Vine Clearances**

Selectively remove only that tree brush which is presently at least 16 feet tall within the zone or growing into the zone. All vines which are growing up poles or guy wires shall be cut at the ground line and cleared 6 feet up the pole or guy.

**2.1.2. Secondaries Without Primaries Above and Service Drops**

### 2.1.2.1. Triplex

Do not clear around them unless authorized by Eversource. When approved, trim only limbs in contact with the conductor. Trimmed branches shall provide 2 feet of clearance around all conductors.

### 2.1.2.2. Open Wire Secondary

Do clear, trimmed branches shall provide 2 feet of clearance around all conductors.

### 2.1.3. Tree Removal

Remove all hazard trees up to and including 16 inches DBH within 8 feet of the outermost conductor. The removal of any tree greater than 16 inches DBH must be approved by Eversource. Eversource will provide specific instructions in each case depending upon whether others are sharing the cost or disposing of the tree parts.

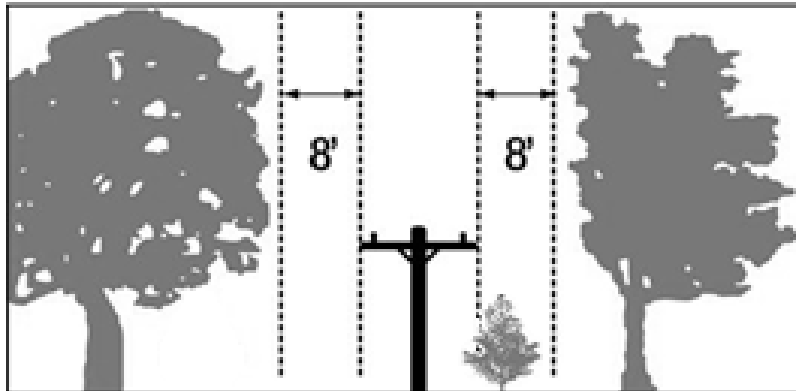
## 2.2. Enhanced Tree Work (ETT)

### 2.2.1. Primary Conductors

Conductor clearances relative to various primary wire positions are shown in Figure 2. Normally, remove all branches and tall growing trees within the clearance zone bounded by the dashed line.

Figure 2

Clearance Zone Dimensions for  
Enhanced Tree Work



- 2.2.1.1. Overhead Clearances**  
Prune and remove all limbs in the clearance zone over the outermost primary
- 2.2.1.2. Side Clearances**  
8 feet side clearance shall be measured horizontally outward from the outermost primary
- 2.2.1.3. Under Clearances**  
Prune and remove all limbs in the clearance zone under the outermost primary
- 2.2.1.4. Brush and Vine Clearances**  
Remove all brush that is capable of growing tall enough to touch the primary conductors that are in or growing into the clearance zone. All vines which are growing up poles or guy wires shall be cut at the ground line and cleared 6 feet up the pole or guy
- 2.2.2. Arboricultural Tree Management**  
Remove trees if foliage removal from obtaining clearance exceeds ANSI A300 pruning standard
- 2.2.3. Fall Zone Hazard Tree Management**  
  
Inspect, evaluate and eliminate all hazardous trees within the fall zone by pruning or removal. Utility compatible species may remain.

## **2.3. Maintenance Enhanced Tree Trimming (METT)**

- 2.3.1. Primary Conductors**
  - 2.3.1.1. Overhead Clearances**  
Re-clear to the previously established ETT clearances including new growth into the clearance zone. Remove all overhead hazards within reach of a 70 foot aerial lift.
  - 2.3.1.2. Side Clearances**  
8 feet side clearance shall be measured horizontally outward from the outermost primary
  - 2.3.1.3. Under Clearances**

Prune and remove all limbs in the clearance zone under the outermost primary

**2.3.1.4. Brush and Vine Clearances**

Remove all brush that is capable of growing tall enough to touch the primary conductors that are in or growing into the clearance zone. All vines which are growing up poles or guy wires shall be cut at the ground line and cleared 6 feet up the pole or guy

**2.3.2. Hazard Tree Management**

Remove hazard trees up to 16 inches DBH within 8 feet of the outermost conductor.

**2.4. Mid-Cycle Trimming**

Inspect and evaluate tree conditions along the entire back bone section of line scheduled. Prioritize pruning and removals based on tree conditions and likelihood of a tree causing an outage prior to the next scheduled routine trim. Where necessary:

- Remove hazard trees within the fall zone.
- Prune and remove all overhead hazards.
- Cut vines on all poles and guy wires.

**2.5. New Business and Capital Construction**

Prune all branches and remove all tall growing tree species in a strip centered on the pole line 8 feet to either side of the outermost conductors.

Provide hazard tree removal as specified in article 2.2.2 and clearance as specified in article 2.1.1 for laterals and 2.2.1. for backbones.

**3. Tree Removal**

- Contractor shall not "top" trees unless authorized by the Owner's Representative. Normally, these trees will be removed.



- Remove any tree which would after trimming to clearance exceed ANSI A300 foliage removal standard. Trees greater than 16 inches DBH shall be removed only after authorization from Eversource.
- Specific instructions on billing of removals, depending upon whether others are sharing the cost will be provided by the Owner's Representative.

#### **4. Stumps**

All stumps shall be cut as close to the ground as possible, and in no case shall they be cut higher than 3 inches unless used as supports for a fence or approved otherwise by Eversource. All stumps shall be cut off parallel to the ground to avoid leaving sharp points on the stumps.

In Connecticut, sproutable cut-off stumps (all hardwoods, pitch pine and vines) shall be treated with an Eversource approved herbicide mixture in accordance with label directions and regulatory requirements.

#### **5. Brush and Vine Removal**

##### **5.1. Brush**

Brush shall not be trimmed or topped. The width of the brush removal area shall be 8 feet on each side of the outermost conductor or growing into that zone. Flat cutting or selective brush removal shall be approved by Eversource.

Cutting of tree brush and woody vines shall be done with care to minimize damage to non-interfering shrubs such as the following that are permitted to remain:

Pinxterbloom Azalea	Hazelnut
Highbush Blueberry	Gray Dogwood
Redosier Dogwood	Huckleberry
Oldfield Common Juniper	Spicebush
Sweetfern	Mountainlaurel
Bayberry	Rhododendron

##### **5.2. Vines**

All woody vines which are growing up poles or guy wires shall be cut at the groundline and cleared for 6 feet up the pole or guy.

#### **6. Wood and Chip Disposal**

The contractor shall make every effort to minimize the amount of wood and wood chip disposal that requires hauling away from the site. This can be

accomplished by; making agreements with property owners to leave logs and larger limbs at the site for use as firewood, blowing chips onto the ground in rural and unimproved natural locations with approval, and offering chips to property owners for use as mulch. All debris shall be disposed in accordance with all local laws and regulations.

The tree contractor shall not sell any unwanted logs or chips.

The contractor shall not leave wood debris that can be chipped overnight except on off-road sections.

### **6.1. Chips**

Smaller limbs, branches, or cut-off brush shall be chipped, normally by chipping into a truck mounted dumping chip box. However, at unimproved natural locations, chips may be blown upon the ground provided that the depth of fresh chips shall be no greater than 3 inches. Limited brush piling may be done along the edges of off-the-road pole lines, either method being subject to the land owner's approval.

### **6.2. Logs**

Logs from the tree trunks and larger limbs shall be cut into mutually agreed or convenient handling lengths. No logs shall be split.

### **6.3. Debris disposal**

The tree owner shall be given first preference to utilize logs and/or chips. This agreement shall be made at the time the work is scheduled.

#### **6.3.1. Chips**

Where chips cannot be left on site, they shall be delivered to the nearest appropriate disposal space.

#### **6.3.2. Logs**

Logs shall be left at the work site in a safe location, not to pose a hazard to anyone, for a maximum of 7 days, during which time they will be available for pick up. Any logs remaining after 7 days shall be delivered to the appropriate disposal site.

## **7. Substation Perimeter Clearing**

This section describes how tree and brush work shall be performed around substations. Prior to beginning any work around a substation, Eversource

personnel will provide site specific guidelines to the contractor. At no time shall contractor personnel enter the fenced area of the substation without an Eversource approved escort.

## **7.1. Brush removal**

### **7.1.1. Non-visually sensitive or non-landscaped substations**

Cut and remove all brush within 10 feet of the substation fence. If the land adjacent to the substation fence slopes toward the fence, the cleared area shall be 20 feet.

### **7.1.2. Visually sensitive or landscaped substations**

Clear as far away from the fence as practical as directed by the Eversource representative.

## **7.2. Pruning**

Trim back all branches to a minimum of 10 feet from the fence.

## **7.3. Ornamental Screens**

Ornamental trees and shrubs (arborvitae, hemlock, white pine, yew, etc.) that have been planted to provide a visual screen of the substation shall not be removed. If necessary, shearing shall be performed as directed by the Eversource representative.

## **7.4. Stump treatment**

All stumps from trees and brush that have been removed and are capable of re-sprouting shall be herbicide treated with an appropriate herbicide as directed by the Eversource representative (CT only).

## **7.5. Cleanup**

Remove and dispose of all trimmings and removal debris away from the job site unless directed otherwise by Eversource. The site shall be left in at least as neat and orderly condition as it was found.

## 8. Definitions

**ANSI A300 (Part 1)-2008 Pruning** – American National Standard for Tree Care Operations – Tree Shrub, and Other Woody Plant Maintenance – Standard Practices (Pruning)

**ANSI Z133.1-2012** – American National Standard for Arboricultural Operations – Safety Requirements.

**Backbone** – a section of line starting at a substation and extending to the first fused device or single/double phase reclosing device.

**Brush** - Tree species with a DBH of less than 6 inches (less than 1.5 inches DBH in MA in town lay out), that can grow tall enough to reach conductors. Occasionally, shrub species are considered as brush, if they have to be removed for line clearance or access.

**Clearance** - the distance between vegetation and conductor.

**Contractor** - the business or employees of that business, that has contracted with Eversource to perform line clearing.

**DBH - Diameter Breast Height** - Diameter of a tree measured at a point 4 1/2 feet above ground.

**Fall Zone** - The area including the roadside clearance zone and extending from the conductors out a distance to where an uprooted tree could strike the conductor and cause an outage.

**Hazard tree** – Any tree or part of a tree that is (A) dead, (B) extensively decayed, or (C) structurally weak, which, if it falls, would endanger utility infrastructure, facilities or equipment.

**Lateral** – a section of primary voltage line extending from the end of backbone to a secondary or service wire.

**Line Clearing** - Controlling vegetation to maintain proper clearance from conductors which includes tree trimming, removal, and brush and vine removal.

**Modification** – when the property owner requests modification to required clearances.

**OSHA** – Occupational Safety and Health Administration.

**Overhead hazards** – dead, dying, diseased, insect infected and structurally weak branches including those which could break at weak points and strike conductors.

**Refusal** – When a property owner does not allow any tree work to be performed.

**Risk Tree** – The combination of; the likelihood of a tree-wire conflict or tree failure occurring, and the severity of the potential consequences including but not limited to injury, utility infrastructure damage or electric service disruption

**Shrub** - A woody plant normally maturing less than 20 feet in height and presenting a generally bushy appearance because of its several erect, spreading or prostrate stems.

**Stump Treatment** - Herbicide applications made to sproutable cut-off stumps (all hardwoods and Pitch Pine) in order to prevent the stump from sprouting.

**Substation** - An electrical facility that receives electricity at high voltages and reduces the voltage so that it can be passed on to customers at a lower voltage.

**Tree** - A woody plant normally maturing at 20 feet or more in height, usually with a single trunk, unbranched for several feet above ground, with a definite crown.

**T&M** – Tree work performed at Time and Material billing rates. Work is recorded on the Weekly Distribution Tree or Brush Control Report using labor and equipment codes approved by Eversource's Procurement Department or via electronic submission

**Wires/Lines/Conductors** - the overhead wires which carry the electric current at required voltages. Also to be considered for tree clearance and safety are other pole mounted equipment such as transformers, fuses, circuit breakers, etc.

#### **Wire types –**

**Primary** - A wire running from pole to pole operating at a voltage level exceeding 600 volts (2400 to 34500 volts on the Eversource overhead System), and normally located at the top of a pole.

**Secondary** - A wire running from pole to pole operating at a voltage level of 600 volts or less (normally 120 to 240 volts on the Eversource overhead System), and generally located approximately 4 feet below the primary.

**Triplex** - Two insulated wires in a twisted configuration around a bare neutral wire.

**Open Wire Secondary** - Three parallel wires normally in a vertical configuration separated from each other by a few inches.

**Service Drop** - The secondary wires connecting the point of attachment on the premises being served to the nearest pole of the distribution system.