

NextEra Energy Transmission New York, Inc.

(NEETNY)

Empire State Line

Case 18-T-0499

Appendix C

**Detailed Specifications for Transmission Right-of-Way
Vegetation Maintenance**

[Contained within Appendix E Long-Range Right-of-Way Management Plan]

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1.0 GENERAL

1.1 General Instruction

All work shall be performed in a workmanlike manner according to these specifications. The Contractor shall at all times exercise care to prevent injury to any persons and to prevent damage to any property during performance of the work. A particular right-of-way (ROW) may be treated by one or several of the treatment methods included in these specifications, but in any respect, the method or methods to be used will be specified by the Company. Any discrepancies between field conditions and instructions for completion of work are to be reported to the Vegetation Specialist immediately. It is the responsibility of the Contractor to perform the work as specified and ensure that all vegetation scheduled for removal is treated to the specified width.

1.2 Precautions

Contractor employees performing line clearance work near energized conductors shall have received electrical safety training in accordance with Occupational Safety and Health Administration (OSHA) Standard 29 Code of Federal Regulations (CFR) 1910.269, paragraphs (a)(2), (b), (c), (g), (k), (p), and (r) and in accordance with American National Standards Institute (ANSI) standard Z 133.1. It shall be understood and agreed by the Contractor that work near existing electric transmission and distribution lines shall be undertaken while the lines are presumed to be energized and operating at voltages up to and including 345 kV. Extreme caution shall be taken to provide safety for personnel and to prevent damage to the line.

Contractor employees shall wear hard hats and safety glasses at all times, and wear chainsaw chaps when using a chainsaw while standing on the ground.

No trimming or removal of trees or vines shall be done when the trees or vines to be removed within the minimum approach distance, specified in Table R-6 of OSHA Standard 29 CFR 1910.269, of an energized transmission circuit.

The Vegetation Specialist or Operations shall be notified immediately when trees are identified within these minimum approach distances. Trees that are located outside the minimum approach distances that could fall into an energized conductor shall be not be removed until:

- The tree has been topped to a height that makes it impossible to fall into the line or;
- The tree has been roped guyed to prevent it from falling into the line and Operations has informed the Contractor that the recloser circuit “off” switch has been replaced in the off position.

1.3 Definitions

Buffer Zone	Areas adjacent to highways, streams, public property, scenic area, historic sites or other areas of special concern.
Herbicide Applications	The application of a chemical herbicide formulation to vegetation for the purpose of removing the vegetation.
Company	NextEra Energy Transmission New York, Inc.
Vegetation Specialist	Person or persons designated as such by the Company.
Operations	Person or persons designated as such by the Company
Contractor	Firm that has been awarded a formal contract to perform work described in these specifications.
Danger Trees	Trees designated as such by the Company, which are located outside the specified ROW clearing lines and whose retention would jeopardize line reliability.
Disposal Method	A specific technique utilized for disposing of cut vegetation.
Property Owner	Party from whom easements or other permits and licenses have been secured.
ROW	Right-of-way
Selective Treatment	The removal, by spraying or cutting, of vegetation designated for removal and the retention of vegetation designated to be preserved.
Trimming	The removal of branches from tree growing alongside the transmission line.
Slash	Debris including tree branches, etc., resulting from cutting
Treatment Method	A specific technique utilized for removing vegetation from a ROW.

1.4 Scope of Work**A. Obligation of Contractor**

The Contractor shall furnish all supervision, labor, tools, equipment, materials, and transportation necessary to perform the contract. The Contractor shall:

1. Arrange for weekly updates with the Vegetation Specialist, advising of the work locations and work planned for the week.

2. Complete and update the work batch manifest as instructed by the Vegetation Specialist. All such completed reports are to be available for inspection by the Vegetation Specialist at all times and submitted to Vegetation Management department upon completion of work on each project.
3. Cut and/or spray all vegetation designated for removal in accordance with these specifications.
4. Cut all danger trees as specified by the Vegetation Specialist.
5. Provide protection for existing structures, communication lines, power lines, pipelines, fences roads, and trees within and adjacent to the ROW.
6. Dispose of all cut vegetation in accordance with these specifications as directed by the Vegetation Specialist.
7. Adequately instruct employees on the selective vegetation retention requirements and environmental protection measures set forth in these specifications.
8. Maintain a designated job foreman on the project site on a full-time basis during the course of the work performed. The Contractor shall provide the foreman with the instructions and drawings for the work to be performed. If it becomes necessary to change foremen, it shall be the responsibility of the Contractor to provide the new foreman with instructions and drawings.
9. Provide full time on-site supervision by a certified pesticide applicator who is certified in the ROW category within the state where the work is being performed. There shall be a certified pesticide applicator for each crew applying herbicides at separate sites.
10. Notify Operations and the Vegetation Specialist at least one week prior to beginning the job.
11. Report immediately to the Vegetation Specialist any inquiry complaint or claim received during the course of the work.
12. Place a brightly colored marker at the edge of the specified treatment width, at each end of every site requiring treatment. Markers shall also be placed along both edges of each treatment site every 150 feet or less.
13. Provide signs displaying the Contractor's Company name for all vehicles used on the ROW or for vehicles used during contacts with property owners for access or notification.
14. Provide notification to the Company regarding starting and stopping of each project. Such notification shall be made in accordance with the specific instructions provided by the Vegetation Specialist. The contact numbers for these notifications are listed in Appendix M.

15. All general foremen, crew foremen and any other individuals making property owner contacts shall have a wallet-size, laminated picture I.D. The I.D. shall include the individual's name and the Contractor's company name.
16. All workers shall have their name prominently displayed on the front of their hard hats.
17. Report to the Vegetation Specialist and/or Operations any abnormalities on the ROW such as encroachments, damaged poles, broken or slack guy wires, etc.
18. Report to Operations any incidents such as damage to facilities, contact with a live conductor, serious personal injuries, etc.
19. Provide for work zone traffic control in accordance with the state and/or federal Manual of Uniform Traffic Control Devices when working with any public highway ROW.

B. Obligation of the Company

The Company shall:

1. Specify and provide GPS locations of marked danger trees.
2. Provide batch manifest for reporting records of vegetation treatment.
3. Conduct all ROW negotiations with property owners.
4. Authorize in writing to the Contractor any change in the scope of the work.
5. Where possible, provide a map of the ROWs to be treated showing all ROW restrictions.
6. Specify to the Contractor the specific treatment methods disposal methods and herbicide formulations to be utilized.

1.5 Access to the Right-of-Way

- A. Existing public roads shall, whenever possible, be used for access to the ROW.
- B. Private access to the ROW shall not be used without the consent of the property owner.
- C. Where private access to the ROW is utilized, the Contractor shall be responsible for any damage thereto.
- D. Access shall be in accordance with the EM&CP

1.6 Access on the Right-of-Way

Where requested by the Vegetation Specialist or Operations, to facilitate access for visual inspection of the facilities or for emergency repairs, a 16-foot access path shall be clear cut of all woody vegetation except through road screens. Where an access road exists, the access road shall

serve as the path and it shall be clear cut of all woody vegetation. Where no access road exists a 16-foot access path shall be clear cut under the conductors. When clear cutting the access road or path, the following shall apply:

- A. All woody vegetation cut from the path or access road shall be piled to the side of the clear cut area.
- B. Stumps within the clear cut area shall have a maximum height of 3 inches.
- C. Where chemical treatment is specified it shall be performed in accordance with Section 5.5 of these specifications.

1.7 Buffer Zones

At road crossings and stream crossings, designated by the Vegetation Specialist, additional vegetation shall be left or trimmed to provide visual screening of the ROW or the stream. In buffer zones the following shall apply:

- A. Vehicle traffic shall be restricted to a single lane roadway through the buffer zone.
- B. Vegetation cut in a buffer zone shall be disposed of outside of the buffer zone.
- C. Trees designated for removal from buffer zones shall be removed so as not to damage remaining vegetation.
- D. Plants designated by the Vegetation Specialist to remain that are inexcusably damaged or removed by the Contractor shall be replaced by the Contractor. Replacements shall be planted at sites selected by the Company with species having total value equal to those damaged.

1.8 Crossing of Stream and Wet Areas

While working in the immediate area of stream crossings or wet areas, the

- A. Contractor shall employ all necessary precautions to protect the waterway from pollution caused by vehicular movement or disturbance to the stream bed and banks.
- B. The Contractor shall comply with all applicable federal, State, and local laws and regulations; and the rules and regulations of any agency having jurisdiction over any crossing of a stream or wet area.
- C. Where access roads are indicated on plan and profile drawings, the Contractor shall cross streams and wet areas with vehicles only at the crossings indicated on the plan and profile drawings.

- D. Where access roads are not indicated on plan and profile drawings, the Contractor shall contain crossings of streams and wet areas, with vehicles, to one location.
- E. The Contractor shall limit the number of times any one stream or wet areas is crossed with vehicles to the minimum number necessary for completion of the work.
- F. The Contractor shall be responsible for repairing any damage such as deep ruts or scarified areas, which, in the opinion of the Vegetation Specialist or Operations, could cause erosion.

2.0 TREATMENT METHODS

The treatment method or methods to be utilized will be specified by the Vegetation Specialist at the time of bidding:

2.1 Selective Treatment

The following shall apply in areas designated for selective treatment:

- A. Selective treatment shall be performed utilizing one of the following methods as described in Section 5 of these specifications:
 - 1. Selective Cutting and Stump Treatment
 - 2. Selective Basal Spray
 - 3. Selective Stem Foliar Spray
 - 4. Selective Low Volume Foliar Spray
- B. All tall-growing woody vegetation including but not necessarily limited to those listed in Appendix I, except those designated for trimming, shall be removed by cutting and/or herbicide application as specified.
- C. All low growing vegetation including but not necessarily limited to those listed in Appendix J shall be retained, except as otherwise requested by the Vegetation Specialist.
- D. Low growing woody vegetation shall, when possible, be avoided by vehicles used for traversing the ROW. Where driving over low growing vegetation cannot be avoided, any low growing vegetation that is damaged shall be cut and lopped so as to be in close contact with the ground.
- E. Each spray applicator and saw operator shall be able to differentiate between those species that are to be treated and those that are to be retained.
- F. No treatment shall be performed in ravine and valley crossings where conductor height is sufficient to allow for all species to remain at their mature height. The Vegetation Specialist shall determine at what point, in ravines and valleys, treatment should cease.
- G. All woody vegetation within 15 feet of a structure and all vines growing on guy wires poles or towers shall be removed by cutting and/or herbicide application as specified.

2.2 Selective Cutting

All tall-growing woody vegetation including but not necessarily limited to those listed in Appendix I shall be cut. Selective cutting shall be performed in accordance with the following:

- A. Trees to be removed shall be cut to a maximum stump height of 6 inches.
- B. Stumps shall have a smooth surface, free of splinters.
- C. Cut vegetation shall be disposed of by one of the methods described in Section 3 of these specifications as requested by the Vegetation Specialist.
- D. Care shall be taken in felling tree such that they do not fall into power and communications lines pavements, roads, etc.
- E. Care shall be taken to avoid damage to compatible vegetation to be retained.

2.3 Cutting

A. Trimming

Where trimming is specified the following shall apply:

- 1. Trees designated by the Vegetation Specialist shall be trimmed to provide the clearance specified by the Vegetation Specialist.
- 2. The Vegetation Specialist shall specify whether trees shall be trimmed to the cutting line or back to the trunk.
- 3. Limbs shall be felled inside the ROW to avoid damage to trees and property outside the ROW.
- 4. Caution shall be taken to see that the falling limbs do not come in contact with conductors, guys, poles, or other facilities.
- 5. Cut material shall be disposed of by the disposal method designated by the Vegetation Specialist as described in Section 3 of these specifications.

2.4 Mechanized Cutting

A. Selective Sites Such as Electric ROWs

Mechanized cutting shall be performed by cutting all woody vegetation within the ROW, except as noted below, with rotary or flail type cutters. Where mechanized cutting is specified the following shall apply:

- 1. Vegetation shall be cut to a maximum stump height of 6 inches.

2. Slash shall be cut so that it lies in close contact with the ground.
3. Pure stands of low growing vegetation listed in Appendix J shall be preserved.
4. Vegetation shall be cut so that slash and other debris does not enter water bodies, highways, lawn areas, agricultural fields, or other areas where personal injury or property damage could result.
5. Where wet ground conditions would result in rutting, incompatible vegetation shall be selectively cut as per Section 2.2 of these specifications. The slash resulting from selective cutting shall be disposed of as specified by the Vegetation Specialist.
6. Streams shall be crossed at one point only.
7. Vegetation to be cut from stream bank shall be selectively cut as per Section 2.2 of these specifications. Slash shall be removed from areas subject to flooding.
8. Deep ruts or erosion caused by mechanical cutting shall be repaired and seeded with a seed formulation approved by the Vegetation Specialist.
9. Measures including hand cutting shall be taken to protect structures guy, communication lines, power lines, pipelines, fences, roads, and trees to remain within and adjacent to the ROW.
10. All vines that are growing on guy wires, poles, or towers shall be hand cut and removed.

B. Non-selective Sites Such as Pipelines and Access Paths

Mechanized cutting shall be performed by cutting all vegetation within the ROW, or designated access path except as noted below, with rotary or fail type cutters. Where mechanized cutting is specified, the following shall apply:

1. Vegetation shall be cut to a maximum stump height of 6 inches.
2. Slash shall be cut so that it lies in close contact with the ground.
3. Vegetation shall be cut so that slash and other debris does not enter water bodies, highways, lawn areas, agricultural fields, or other areas where personal injury or property damage could result.
4. Where wet ground conditions would result in rutting; all woody vegetation shall be cut by hand. The slash resulting from hand cutting shall be disposed of as specified by the Vegetation Specialist.
5. Streams shall be crossed at one point only.
6. Vegetation to be cut from stream buffers shall be cut by hand. Slash shall be removed from areas subject to flooding.

7. Deep ruts or erosion caused by mechanical cutting shall be repaired and seeded with a seed formulation approved by the Vegetation Specialist.
8. Measures including hand cutting shall be taken to protect structures, guys, communication lines, power lines, pipelines, fences, roads, and trees to remain within and adjacent to the ROW.

3.0 SLASH DISPOSAL

3.1 General Instructions

- A. Cut vegetation shall not be disposed of in the following locations:
 - 1. Access roads
 - 2. Within 25 feet of a structure
 - 3. In streams or low lying areas subject to flooding
 - 4. In buffer zones
 - 5. In agricultural fields
 - 6. In areas maintained as lawns
- B. Vegetation cut from scattered areas, fence ROWs, or isolated trees in cultivated areas shall be removed and placed along the nearest fence line or accepted area for piling.
- C. Toxic vegetation, such as cherry, which presents a hazard to livestock, shall be disposed of outside of active pasture areas.
- D. In those locations where vegetation is cut and no method of disposal is specified, the Lop and Scatter method of disposal shall be utilized in accordance with Section 3.4 of these specifications.

3.2 Piling

Where cut vegetation is to be piled, the piles shall have a maximum height of 3 feet and a maximum width of 15 feet. The piles shall have a 20-foot break every 100 feet of pile length to serve as a fire break. Piles shall have a neat and orderly appearance. Void of any excessive protruding material.

A. Piling with Equipment

Piling with equipment shall be performed in accordance with the following:

- 1. Cut vegetation shall be carried or dragged, not pushed, to pile locations.
- 2. Piles shall be compacted to less than the specified maximum height by traversing with tracked vehicles and/or other equipment.

3.3 Chipping

Cut vegetation shall be reduced to chips by the use of an approved chipping machine in accordance with the following:

- A. Chips shall be disposed of such that chips accumulate to depths no greater than 3 inches to serve as a mulch for erosion control purposes.
- B. No chips shall enter any watercourse, wetland area, or agricultural fields.
- C. Vegetation that cannot be chipped shall be disposed of by another method approved by the Vegetation Specialist.

3.4 Lop and Scatter

Trees to be removed shall be felled, de-limbed of all branches greater than 2 inches in diameter and cut into sections such that the entire length of each tree is in close contact with the ground. Vegetation disposed of in this manner shall not protrude more than 2 feet above the surface of the ground.

Where an access road exists cut vegetation shall not be disposed of within the access road. Where no access road exists a 16-foot swath, directly under the conductors, shall remain clear of cut vegetation.

4.0 HERBICIDE APPLICATIONS

4.1 General

- A. All herbicide applications shall be done in a manner that will prevent damage to trees and property outside the ROW.
- B. Spraying shall be discontinued when windy conditions may result in off-target spray drift.
- C. The Contractor shall be registered with the New York State Department of Environmental Conservation as a Pesticide Applicator Business for the current application year for work done in New York State.
- D. The Contractor shall provide fulltime on-site supervision by a certified pesticide applicator within the state where the work is being performed. There shall be a certified pesticide applicator for each crew applying herbicides at separate sites.
- E. The application of herbicides shall be performed in accordance with the product label, appropriate governmental regulations, and these specifications. The Contractor shall be in compliance with the OSHA Hazard Communication Standard 29 CFR 1910 1200.
- F. The Company shall consider unskilled or careless application by workmen as just cause for stopping work or cancellation of the contract.
- G. Foliar spray units shall be refilled with water from a supply vehicle. Water shall not be pumped directly from a water source into the spray tank.
- H. Herbicide concentrate shall not be transported on a vehicle used for supplying water to foliar spray equipment.
- I. Each vehicle used for herbicide application or for transportation of herbicide concentrate on the ROW shall be equipped with a shovel and absorptive material for containing and controlling spills. All herbicide spills shall be reported immediately of the Vegetation Specialist.
- J. All evergreens scheduled to be removed shall be cut and disposed of unless otherwise directed.
- K. The Contractor shall periodically review the results of the work to insure adequate coverage of target species.

4.2 Record Keeping

The Contractor shall complete Herbicide Treatment Form (see Appendix K) on a daily basis as required by the herbicide contractor and the Vegetation Specialist. All information requested shall be supplied. Reports shall be turned over to the Vegetation Specialist at the completion of work

on each transmission line. The Company may issue a stop work order when these reports become delinquent and withhold payment for work performed until all reports have been submitted.

4.3 Security of Spray Equipment and Herbicides

The Contractor shall take the following precautions to protect his equipment and materials from vandalism and unauthorized use when left unattended on the ROW or on Company property not within a locked fence.

- A. Power-pack or back-pack sprayers shall be emptied or stored in locked compartments.
- B. Ignition keys shall be removed for all vehicles used for spraying vehicles containing herbicide concentrate, or spray solution.
- C. Ignition keys shall be removed from engines that provide power to pumps on power-driven spray equipment. Engines without lockable ignition systems shall have the sparkplug wire disconnected or made inoperable in some similar fashion.
- D. The opening to the spray tank, on power spray units, shall be locked.
- E. Drains on spray tanks shall be fitted with lockable valves or threaded caps.
- F. Containers carrying herbicide concentrate shall be securely locked or bolted to spray units or other vehicles used to transport herbicide concentrate.
- G. Valves or barrel pumps on containers carrying herbicide concentrate shall be locked or removed and replaced with threaded plugs. Threaded plugs shall be mechanically tightened to prevent removal by hand.
- H. The pressure control valve shall be closed.
- I. Any equipment used for operations involving herbicide applications shall not be left unattended within 100 feet of any stream, water body, or wetland.

5.0 HERBICIDE TREATMENT METHODS

5.1 Selective Cutting and Stump Treatments

All tall-growing woody vegetation shall be cut as described in Section 2.2 of these specifications. All stumps of vegetation out shall be treated in accordance with the following:

- A. Spray Formulation – The formulation to be used shall be specified by the Company and it shall be one of those listed in Section 6.2 of these specifications. The formulation types are described below:
 - 1. Low Volume - The herbicide concentrate is mixed with a mineral oil type carrier specifically designed and labeled for this purpose. The herbicide concentrate comprises 20% to 30% of the total mix.
 - 2. Cut Surface Concentrate - The herbicide is applied as a ready-to-use concentrate or it is diluted with water.
- B. Application – The formulation shall be applied in accordance with methods described below:
 - 1. Low Volume - The formulation shall be applied to wet the cut surface, bark, root crown, and exposed roots. Particular attention shall be given to a complete encircling and wetting of the root collar at the ground line.
 - 2. Cut Surface Concentrate - The concentrate shall be applied only to the cut surface of the stump. Particular attention shall be given to wetting the entire cambium area next to the bark.
- C. Equipment – The application equipment to be used is dependent on the formulation type and shall be as follows:
 - 1. Low Volume - Application to be made with a hand operated backpack sprayer equipped with approved spray gun and cone jet nozzle or equivalent gun and nozzle.
 - 2. Cut Surface Concentrate - Application to be made with a hand operated sprayer or trigger operated squirt bottle.
- D. Weather Conditions - No application shall be made while rain is falling. Low volume formulations shall not be applied when snow or ice is two or more inches in depth around the stumps to be treated. Cut surface concentrates may be applied when snow or ice is present as long as the cut surface to be treated is free of ice and snow. Stumps treated 1 hour or less prior to rain shall be sprayed again but not until 1 hour after runoff has stopped.

- E. Timing - The stump shall be treated before cutting (pre-spray) or immediately after they are cut. Where pre-spray is specified a waiting period between spraying and cutting, established by the Company, shall be observed. Where a pre-spray is utilized, only formulations containing an oil type carrier may be used.
- F. Restrictions - The following areas, even though within the ROW, are not to be sprayed; vegetation to be removed shall be cut and dispose of as requested by the Vegetation Specialist:
 - 1. Within 5 feet of any stream or water body or within 100 feet of a regulated wetland without a permit, or where specifically instructed by the Vegetation Specialist.
 - 2. Within 100 feet of a potable water supply.
 - 3. Within any orchard, nursery planting, or crop planting.
 - 4. Within active pasture areas.
 - 5. Areas identified on plan and profile sheets or in written instructions to the Contractor.
- G. Guarantee – The Contractor shall guarantee that the percentage of kill will be at least 95% as determined during the next growing season in the year following the treatment.

5.2 Selective Basal Treatment

All tall growing woody vegetation including but not necessarily limited to those listed in Appendix I shall be sprayed. Selective basal spraying shall be done in accordance with the following:

- A. Spray Formulation - The formulation to be used shall be specified by the Company and it shall be one of those listed in Section 6.2 of these specifications. The herbicide concentrate is mixed with a mineral oil type carrier specifically designed and labeled for this purpose. The herbicide concentrate comprises 20% to 30% of the total mix.
- B. Application - The solution shall be applied to each stem from a point 18 inches high on the stem to ground line completely encircling the stem and any exposed roots. The solution shall be applied only to wet the stem and all exposed roots. Where sprout growth originates from a stump, the treatment shall also be applied to completely encircle the stump and any exposed roots.
- C. Equipment - Application to be made with a hand-operated backpack sprayer equipped with an approved spray gun and cone jet nozzle or equivalent.
- D. Weather Conditions - No application shall be made while rain is falling or when snow or ice is 2 inches or more in depth around the stems to be treated. Stems treated 1 hour or less prior to rain shall be sprayed again but not until 1 hour after runoff has stopped.

- E. Timing - Basal spray may be applied at any time of the year unless the selective basal spray shall be done between the time of fall foliage coloration and bud break in the spring. All species of ash, oak, and hickory shall be cut and stump treated when treatment occurs between September 15 and March 1.
- F. Restrictions - The following areas, even though within the ROW are not to be sprayed; vegetation to be removed shall be cut and disposed of as requested by the Vegetation Specialist.
 - 1. Within 15 feet of any stream or water body, or within 100 feet of a regulated wetland without a permit, or where specifically instructed by the Vegetation Specialist.
 - 2. Within 100 feet of a potable water supply.
 - 3. Within any orchard, or nursery planting, or crop planting
 - 4. Within active pasture areas.
 - 5. Areas identified on plan and profile sheets or in written instructions to the Contractor.
- G. Special Conditions - All species of oak greater than 2 inches in diameter shall be cut and the stumps sprayed when using formula C.
- H. Guarantee - The Contractor shall guarantee that the percentage of kill will be at least 95% as determined during the next growing season in the year following the treatment.

5.3 Selective Stem Foliar Treatment

All tall growing woody vegetation including but not necessarily limited to those listed in Appendix I shall be treated. Selective stem foliar treatment shall be done in accordance with the following.

- A. Application - The solution shall be applied so as to thoroughly wet the entire stem and foliage to achieve runoff. The applicator shall stand within 10 to 15 feet of the target vegetation.
- B. Spray Formulation - The formulation to be used shall be specified by the Company and it shall be one of those listed in Section 6.3 of these specifications.
- C. Equipment - The spray solution shall be applied with power-driven equipment. Spray nozzles shall be adjusted to produce a coarse spray of large droplets at a maximum of 50 psi at the nozzle. Spray nozzles shall be equipped with a No. 8 or larger office disc.
- D. Weather Conditions - Spraying shall not be done during rain or while rain is dripping from the foliage. Foliage sprayed one hour or less prior to rain shall be sprayed again after runoff has stopped.

- E. Timing - Spraying shall be done during the growing season while the foliage is fully developed and still has its normal green color and vigor, approximately from mid-June to the end of August.
- F. Restrictions - The following areas, even though within the ROW, are not to be sprayed; vegetation to be removed shall be cut and disposed of as requested by the Vegetation Specialist.
 - 1. Within 25 feet of any stream or water body, or within 100 feet of a regulated wetland without a permit, or where specifically instructed by the Vegetation Specialist.
 - 2. Within 100 feet of a potable water supply.
 - 3. Within any orchard, nursery, or crop planting.
 - 4. Within active pasture areas or within 10 feet of a fence that encloses an active pasture area.
 - 5. Areas identified on plan and profile sheets or in written instruction to be Contractor;
- G. Guarantee – The Contractor shall guarantee that the percentage of kill will be at least 95% as determined during the next growing season in the year following the treatment.

5.4 Selective Low Volume Foliar Treatment

All tall-growing woody vegetation including but not necessarily limited to those listed in Appendix I shall be treated. Selective low volume foliar treatment shall be done in accordance with the following:

- A. Application - The solution shall be applied so as to partially wet all foliage.
- B. Spray Formulation - The formulation to be used shall be specified by the Company and it shall be one of those listed in Section 6.4 of these specifications.
- C. Equipment - The spray solution shall be applied with either a motorized or hand operated backpack sprayer.
 - 1. Motorized Backpacks - Motorized units shall operate at pressures from 50 to 90 pounds per square inch (psi). The spray gun shall be equipped with at least two spray tips: one for tall vegetation and one for short vegetation.
 - 2. Hand Operated Backpacks - Hand operated units shall be equipped with spray guns that have at least two spray tips: one for tall vegetation and one for short vegetation.
- D. Weather Conditions - Spraying shall not be done during rain or while rain is dripping from foliage. Foliage sprayed 1 hour or less prior to rain shall be sprayed again after run-off has stopped.

- E. Timing - Spraying shall be done during the growing season while the foliage is fully developed and still has its normal green color and vigor, approximately from mid-June to the end of August.
- F. Restrictions - The following areas, even though within the ROW, are not to be sprayed, vegetation to be removed shall be cut and disposed of as requested by the Vegetation Specialist.
 - 1. Within 15 feet of any stream or water body or within 100 feet of a regulated wetland without a permit, or where specifically instructed by the Vegetation Specialist.
 - 2. Within 100 feet of a potable water supply.
 - 3. Within any orchard, nursery, or crop planting.
 - 4. Within active pasture areas or within 10 feet of a fence that encloses an active pasture area.
 - 5. Areas identified on plan and profile sheets or in written instructions to the Contractor.
- G. Guarantee – The Contractor shall guarantee that the percentage of kill will be at least 95% as determined during the next growing season in the year following the treatment.

5.5 Access Path Follow-up Treatment

A non-selective stem foliar treatment shall be applied to areas cleared for access paths and designated for follow up herbicide treatment by the Vegetation Specialist. The non-selective stem foliar treatment shall be applied one year after initial path clearing and in accordance with the following:

- A. Spray Formulation - The formulation to be used shall be specified by the Company and it shall be one of those listed in Section 6.3 of these specifications.
- B. Application - The spray formulation shall be uniformly applied over the area to be treated so as to wet all vegetation in the treated area. Each successive application pattern shall overlap the previous pattern to avoid untreated strips.
- C. Equipment - The spray solution shall be applied with power-driven equipment Spray nozzles shall be adjusted to produce a coarse spray of large droplets at a maximum of 50 psi at the nozzle. Spray nozzles shall be equipped with a No. 8 or larger orifice disc.
- D. Weather Conditions - Spraying shall not be done during rain or while rain is dripping from the foliage. Foliage sprayed 1 hour or less prior to rain shall be sprayed again after run-off has stopped.

- E. Timing - Spraying shall be done during the growing season while the foliage is fully developed and still has its normal green color and vigor, approximately from mid-June to the end of August.
- F. Restrictions - The following areas even though within the ROW, are not to be sprayed; vegetation to be removed shall be cut and disposed of as requested by the Vegetation Specialist.
 - 1. Within 25 feet of any stream or water body, or within 100 feet of a regulated wetland without a permit, or where specifically instructed by the Vegetation Specialist.
 - 2. Within 100 feet of a potable water supply.
 - 3. Within any orchard, nursery, or crop planting.
 - 4. Within active pasture areas or within 10 feet of a fence which enclosed an active pasture area.
 - 5. Areas identified on Plan and Profile drawings or in written instructions to the Contractor.
- G. Guarantee – The Contractor shall guarantee that the treated area shall be at least 95% free of broadleaf vegetation as determined during the next growing season in the year following the treatment.

6.0 HERBICIDE FORMULATIONS

6.1 General

All label restrictions for mixing shall be adhered to. The formulations listed to these specifications specify minimum quantities of active ingredients. The Contractor may increase the quantity of active ingredients as long as label recommendations are not exceeded. The Contractor shall seek the prior approval of the Vegetation Specialist concerning any deviation from the formulation specified by the Company.

Trade names are mentioned here only for ease of understanding. It does not constitute endorsement of one product over another. Any product, labeled by the appropriate State and federal regulatory bodies for the specified use, which meets this specification may be substituted.

Each formulation shall be agitated sufficiently to ensure proper mixing. The Contractor shall notify the Vegetation Specialist as to the source of water, to be used for mixing, prior to withdrawing water from any sources.

6.2 Formulations for Selective Basal Spray and Stump Treatment

Formula	Type	Minimum Quantities of Active Ingredient	Type or Active Ingredient	Quantity of Concentrate	Type and Quantity of Carrier
C	Low Volume Basal & Stump Treatment	4 lbs. Triclopyr	Buxtoxyethyl Ester	1 gal. Garlon 4 Ultra ⁽¹⁾	3 gallons of an approved mineral oil diluent that is labeled for this purpose
D	Low Volume Basal & Stump Treatment	3 lbs. Triclopyr 25 lbs. Imazapyr	Buxtoxyethyl Ester Isopropylamine Salt	3 qt. Garlon 4 Ultra ⁽¹⁾ 16 oz. Stalker ⁽³⁾	3 gallons of an approved mineral oil diluent that is labeled for this purpose
E	Stump Treatment	1.6 lbs. Glyphosate 0.08 lbs. Imazapyr	Isopropylamine Salt Isopropylamine Salt	38 oz. Aquastar ⁽²⁾ 5 oz. Arsenal ⁽³⁾	85 oz. Water 0.64 oz. Marking dye
F	Stump Treatment	1lb. 2,4-D 0.25 lb. Picloram	Trilsopropanolamine Salts	1 gal. Pathway ⁽¹⁾	Undiluted
P	Stump Treatment	2 lbs. Glyphosate	Isopropylamine Salt	0.5 gal. Aquastar ⁽²⁾	0.5 gal. water 0.64 oz. Marking Dye

⁽¹⁾ Trademark of Corteva Agrosciences LLC

⁽²⁾ Trademark of Albaugh, LLC/Agri Star

⁽³⁾ Trademark of BASF Professional and Specialty Solutions

6.3 Formulations for Selective Stem Foliar Spray

The Contractor shall add a drift control additive, a surfactant and any other adjuvant specified on the product label to all selective stem foliar spray formulations. These adjuvants shall be mixed according to the manufacturer's directions. Adjuvants shall be selected for those listed under Section 6.5 of these specifications.

Formula	Minimum Quantities of Active Ingredient	Type of Active Ingredient	Quantity of Concentrate	Type And Quantity of Carrier
G	6 lbs. Fosamine 1.5 oz. Imazapyr 0.6 oz. Metsulfuron Methyl	Ammonium Salt Isopropylamine Salt	1.5 gal Krenite S ⁽²⁾ 6 oz. Arsenal ⁽⁴⁾ 1 oz. Escort XP ⁽⁵⁾	98.5 gal. Water
H	5 lbs. Glyphosate 1.5 oz. Imazapyr	Isopropylamine Salt Isopropylamine Salt	4 qts. Aquastar ⁽¹⁾ 6 oz. Arsenal	99 gal Water
K	1.5 lbs. Triclopyr 0.5 lb. Picloram	Triethylamine Salt Potassium Salt	0.5 gal Garlon 3A ⁽³⁾ + 1 qt. Tordon K ⁽³⁾	99.25 gal. Water
M	5.4 lbs. Glyphosate	Isopropylamine Salt	4 qts. Aquastar ⁽¹⁾	99 gal. Water
N	4 lbs. Glyphosate 0.6 oz. Metsulfuron Methyl	Isopropylamine Salt	3 qts. Aquastar ⁽¹⁾ 1 oz. Escort XP ⁽⁵⁾	99.25 gal. Water
S ⁽⁷⁾	2.25 lbs. Triclopyr 0.6 oz. Metsulfuron Methyl	Triethylamine	3 qts. Garlon 3A ⁽³⁾ 1 oz. Escort XP ⁽⁵⁾	99.25 gal. Water

⁽¹⁾ Trademark of Albaugh, LLC/Agri Star

⁽²⁾ Trademark of Albaugh Inc.

⁽³⁾ Trademark of Corteva Agrosiences LLC

⁽⁴⁾ Trademark of BASF Professional and Specialty Solutions

⁽⁵⁾ Trademark of Bayer Environmental Services

⁽⁶⁾ Any surfactant at the rate of 2 quarts. Per 100-gallon mix

⁽⁷⁾ An equivalent amount of Garlon 4 in terms of active ingredient may be substituted for Garlon 3A with the written authorization of the Company Representative

6.4 Formulations for Selective Low Volume Foliar Spray

The Contractor shall add a surfactant, and any other adjuvant recommended on the product label, to the formulation at the manufacturer’s recommended rate. Adjuvants shall be selected from those listed under Section 6.5 of these specifications.

Formula	Minimum Quantities of Active Ingredient	Type of Active Ingredient	Quantity of Concentrate	Type And Quantity of Carrier
T	21.6 lbs. Glyphosate 75 lbs. Imazapyr	Isopropylamine Salt Isopropylamine Salt	4 qts. Aquastar ⁽¹⁾ 48 oz. Arsenal ⁽³⁾	96 gal. Water
W	21.6 lbs. Glyphosate 1.8 oz. Metsulfuron Methyl	Isopropylamine Salt	4 qts. Aquastar ⁽¹⁾ 3 oz. Escort XP ⁽⁴⁾	96 gal. Water
Y	20 lbs. Fosamine 0.5 oz. Imazapyr 1.8 oz. Metsulfuron Methyl	Ammonium Salt Isopropylamine Salt	5 gal. Krenite S ⁽²⁾ 32 oz. Arsenal ⁽³⁾ 3 oz. Escort XP ⁽⁴⁾	94.75 gal. Water
Z	27 lbs. Glyphosate	Isopropylamine Salt	5 gal. Aquastar ⁽¹⁾	95 gal. Water

⁽¹⁾ Trademark of Albaugh, LLC/Agri Star

⁽²⁾ Trademark of Albaugh Inc.

⁽³⁾ Trademark of BASF Professional and Specialty Solutions

⁽⁴⁾ Trademark of Bayer Environmental Services

6.5 Spray Adjuvants and Basal Oil Diluents

Drift control additives, surfactants and basal oil diluents shall be selected from those listed below or an equivalent. Equivalents shall be labeled for such use and approved by the Vegetation Specialist prior to use.

A. Drift Control Additives

1. Arborchem 41A (Arborchem Products Co.)
2. Alligare Drift Control (Alligare)
3. Non-ionic Drift and Deposition Aid (Generic)

B. Surfactants

1. Agri-Dex (Helena Chemical Co.)
2. Arborchem Aquatic Surfactant (Arborchem Products Co.)

3. Arbochem Kingpin (Arborchem Products Co.)

4. Nu-Film-IR (Miller Chemical Co.)

C. Basal Diluents

1. Arborchem Basal Oil (Arborchem Products Co.)

2. Hy-Grade EC (CWC Chemical, Inc.)

7.0 QUALITY CONTROL AND GUARANTEE

7.1 Completion of Work

When all work has been completed, the Contractor shall review the job and ensure that:

- A. All specified cutting has been completed and all cut vegetation disposed of in accordance with the job instructions.
- B. All areas scheduled for herbicide application have been treated and all areas where incomplete application is discernible have been retreated. After this review, the Contractor shall invoice the Company of all work performed less any retainage that is to be held by the Company.
- C. Receipt of the invoice by the Company shall serve as notice that the work has been completed and that items A and B above have been performed. Upon receipt of the invoice, the Vegetation Specialist shall review the completed work and, if in agreement, process the invoice for payment. If the Vegetation Specialist is not in agreement with the invoice or some aspect of the work, the Contractor will be notified so that correction can be made.

7.2 Guarantee

During the next growing season after completion of the work, the Contractor shall review the job and ensure that:

- A. All specified cutting has been completed and all cut vegetation disposed of in accordance with the job instructions.
- B. The percentage of kill is 95% or greater on each site where herbicide application was specified.
- C. There are no living incompatible species greater than 6 feet in height located in the area extending from the centerline of the ROW horizontally to a point 10 feet outside the conductors. Trees greater than 6 feet in height found within this area during the final review shall be cut and the stumps treated. The formulation utilized for stump treatment shall be approved by the Vegetation Specialist.
- D. Upon completion of this review and any necessary corrections to the work, the Contractor shall submit a written statement certifying that items A, B, and C above have been completed and that the job is submitted for final acceptance by the Company. The written statement shall be provided to the Vegetation Specialist no later than August 1 during the year following treatment.

If the review is not completed by August 1, the Vegetation Specialist may have the final review performed and any necessary corrective action completed at the expense of the Contractor.

7.3 Final Company Review

The Vegetation Specialist will verify the work in the field and then process the invoice of any retainage that has been withheld. Any locations found that are not in accordance with A, B, or C of Section 7.2 may jeopardize the Contractor's standing under this contract and their future inclusion on the list of approved bidders.