

## Windbreak/Shelterbelt Establishment

### Virginia Conservation Practice Job Sheet

380



#### Definition

Windbreak or shelterbelts are single or multiple rows of trees or shrubs in linear configurations.

#### Criteria

Vegetation may be established by using bare-root seedlings, containerized stock, or balled-and-burlapped stock. Only viable, high quality planting stock shall be used.

The location, layout and density of the planting will accomplish the purpose and function intended within a 20-year period.

Consider plant growth rates, shade tolerance, soil moisture requirements and tolerances, and other plant characteristics when selecting species. Within a row, use only one species, or select a mix of species that have similar growth forms and growth rates.

Select plant species that are native to Virginia, or are introduced and are non-invasive (i.e., not likely to spread beyond the planted area and displace native species). Plantings consisting of two or more species, especially locally native plant species, shall be encouraged. For best results, use species and varieties with proven conservation traits. Plant species must be selected based on the planned purpose(s) and the soil, climate and site conditions.

Density is the solid portion of the barrier, i.e., the amount of leaves, branches and trunks in the windbreak. The density of a windbreak is determined by the choice of species (especially evergreen vs. deciduous), the number of rows used, and the spacing of the plants between and within rows. Plan windbreaks to meet density requirements as specified in the standard for specific purposes.

The maximum design height (H) for the windbreak or shelterbelt shall be the expected height of the tallest row of trees or shrubs at age 20 for the given site.

Orient the Windbreak as close to perpendicular to the troublesome wind as possible.

The length of the windbreak will be sufficient to protect the site including considerations for the “end effect” and the change in the wind direction.

Follow recommendations for planting rates, methods, and dates obtained from the Virginia Plant Establishment Guide, Tree and Shrub Establishment Standard (612).

Spacing between and within rows shall be based on the needed growing space for plant type and species, the accommodation of maintenance equipment, and the desired characteristics of the stem(s), branches and canopy as required for a specific purpose.

Use staggered spacing in multiple row plantings. Plant taller-growing trees or shrubs in center rows, and medium or lower growing species in outer rows.

Be sure plans and specifications for establishment of the windbreak are prepared in accordance with the criteria listed in the practice standard

## Site Preparation

Site conditions, including soil quality and the type and density of existing vegetation, will determine how much site preparation you will need to do before planting. Around buildings and other structures, soil may be heavily compacted or contaminated with construction debris, gravel, and other fill material that can severely hinder plant rooting and survival. If grasses or weeds are tall, you should mow or brush hog the planting strips. It is recommended that the planting strips either be tilled up or treated before planting with a non-selective herbicide such as glyphosate (for example, Roundup, KleenUp), following all label directions.

Perform site preparation and seeding or planting at a time and in a manner that best ensures survival and growth of the selected species. Specify what constitutes successful establishment, e.g. minimum percent ground/canopy cover, percent survival, stand density, etc. before application.

## Planting

Trees and shrubs that are planted correctly will grow faster, and are more likely to survive, than ones that are planted incorrectly.

Always check for utility lines (gas, water, cable, electricity) before planting. Avoid planting on top of buried utility lines, or below overhead lines.

## Plant Availability and Planting Dates

Containerized and balled and burlapped plants are usually available throughout the year. The preferred planting times are in the fall or early

spring. Do not plant during the summer months when high temperatures and lack of rainfall will make survival very difficult or in the winter if the ground is frozen. Refer to the *Plant Establishment Guide for Virginia* for recommended planting dates for the different types of woody plant-materials, and or the Virginia Department of Forestry representative.

Schedule planting dates during periods when soil moisture is adequate for germination and/or establishment.

Use the *Plant Establishment Guide for Virginia* when selecting species to plant.

Select plant species that are:

- Able to withstand partial burial from sediment deposition and
- Tolerant of herbicides used on the area that contributes runoff to the filter strip.
- Suited to current site conditions and intended uses.

Select species with stiff stems and a high stem density near the ground surface.

Selected species will have the capacity to achieve adequate density and vigor within an appropriate period to stabilize the site sufficiently to permit suited uses with ordinary management activities.

Specify species, rates of seeding or planting, minimum quality of planting stock, such as PLS or stem caliper, and method of establishment before application. Only use viable, high quality seed or planting stock.

Producer \_\_\_\_\_ Farm # \_\_\_\_\_ Tract # \_\_\_\_\_

Field Office \_\_\_\_\_ Contract # \_\_\_\_\_

Planting Date \_\_\_\_\_

**Producer’s Purpose**

- |   |  |
|---|--|
| <input type="checkbox"/> Reduce soil erosion from wind. | <input type="checkbox"/> Protect plants from wind related damage.  |
| <input type="checkbox"/> Provide noise screens.         | <input type="checkbox"/> Delineate property and field boundaries.  |
| <input type="checkbox"/> Provide visual screens.        | <input type="checkbox"/> Improve irrigation efficiency.  |
| <input type="checkbox"/> Manage snow deposition.        | <input type="checkbox"/> Increase carbon storage in biomass and soils.   |
| <input type="checkbox"/> Enhance wildlife habitat.      | <input type="checkbox"/> Provide shelter for structures, animals and people.   |
| <input type="checkbox"/> Reduce energy use.             | <input type="checkbox"/> Improve air quality by reducing and intercepting air borne particulate matter, chemicals and odors. |

**Practice Specifications**

Layout	Strip 1	Strip 2	Strip 3
Planting Location			
Row No.			
Row Length (LF)			
Spacing (LF) Between Plants Within Each Row			
Spacing (LF) Between Row(s)			

Tree or Shrub Species (list cultivar, if needed)	Total Quantities Needed	Seeding Date
Row 1:		
Row 2:		
Row 3:		

**Site Preparation**

Site conditions, including soil quality and the type and density of existing vegetation, will determine how much site preparation you will need to do before planting. Around buildings and other structures, soil may be heavily compacted or contaminated with construction debris, gravel, and other fill material that can severely hinder plant rooting and survival.

If grasses or weeds are tall, you should mow or brush hog the planting strips. It is recommended that the planting strips either be tilled up or treated before planting with a non-selective herbicide such as glyphosate (for example, Roundup, KleenUp), following all label directions. Then plant the trees and shrubs.

### **Planting Methods**

Trees and shrubs that are planted correctly will grow faster, and will more likely to survive, than ones that are planted incorrectly.

Always check for utility lines (gas, water, cable, electricity) before planting. Avoid planting on top of buried utility lines, or below overhead lines.

Containerized and balled-and-burlapped plants are usually available throughout the year. The preferred planting times are in the fall or early spring. Do not plant during the summer months when high temperatures and lack of rainfall will make survival very difficult or in the winter if the ground is frozen. Refer to the VA Plant Establishment Guide for recommended planting dates for the different types of woody plant-materials, and or the Virginia Department of Forestry representative

### **Operation and Maintenance**

The completed Job Sheet can serve as the operation and management plan as well as supporting documentation and shall be provided to the client. If necessary, additional management requirements can be developed on a site specific basis to assure performance of the practice as intended.

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life:

- Inspect trees and shrubs periodically and protect from adverse impacts including insects, diseases, fire, or damage from livestock and wildlife;
- Control competitive grasses and weeds around plants by mowing, mulching, and/or chemical control until plants are well-established. Control all noxious weeds as required by state law;
- Provide supplemental water as needed;
- Replace dead trees and shrubs until the barrier is functional;
- Thin or prune the barrier as needed to maintain its function;
- For windbreaks that are planted to reduce particulates, build-up of particulates on leaves may threaten to smother and kill the plants. When feasible, periodically remove the accumulated particulate matter from the leaves by hosing the plants with water. Excessive accumulation of particulates may require installation of additional barriers such as fencing or netting to protect the plants.

**Planner Certification**

This Windbreak/Shelterbelt plan meets the requirements of NRCS Conservation Practice Standard 380.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

**Certification of Practice Completion**

This Windbreak/Shelterbelt practice has been completed and maintained according to NRCS plans and specifications. (Indicate in Practice Specifications if there were any changes to the planned practice and acreage.)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"= \_\_\_\_\_ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")


Additional Specifications and Notes:

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