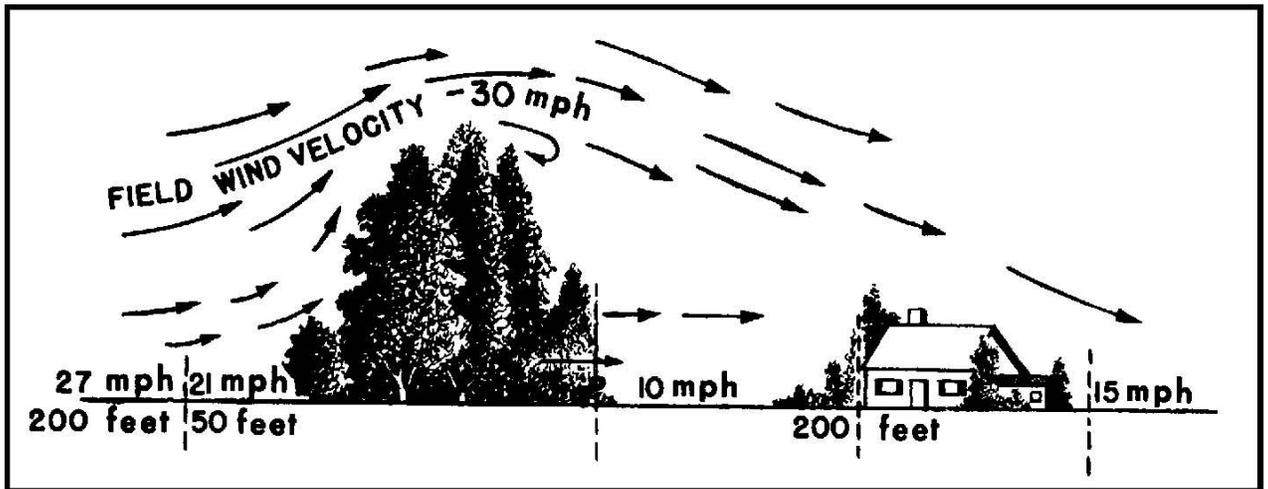


Windbreak/Shelterbelt Establishment

Landowner _____

WINDBREAKS



Windbreaks reduce wind currents. Part of the air current is diverted over the top of the trees and part is filtered through the trees.

WHAT ARE WINDBREAKS? Windbreaks are single or multiple rows of trees and/or shrubs in linear configuration, designed to reduce and redirect wind currents.

PURPOSE

- Reduce soil erosion from wind.
- Protect plants from wind related damage.
- Alter the microenvironment for enhancing plant growth.
- Manage snow deposition.
- Provide shelter for structures, animals, and people.
- Enhance wildlife habitat and provide travel corridors.
- Provide noise screens.
- Provide visual screens.
- Improve air quality by reducing and intercepting air borne particulate matter, chemicals and odors.
- Delineate property and field boundaries.
- Improve sprinkler irrigation efficiency.
- Increase carbon storage in biomass and soils.
- Reduce energy usage.

Windbreaks are generally established to protect or shelter nearby structures, but can and are used to protect livestock, crops, highways, and sensitive areas. Such plantings are used to reduce energy, manage snow, enhance aesthetics, control views, reduce noise, alter the microenvironment to enhance plant growth and provide wildlife habitat and travel corridors.

WHERE THE PRACTICE APPLIES

Windbreaks apply to wherever achieving the above described purposes are desired. This can be because the area has moderate to high winds, snow, extreme temperature fluctuations, minimal natural forest cover or any of the other concerns such as dust control or noise reduction. The site should also be capable of growing the proposed trees and shrubs.

APPLYING THE PRACTICE

A ranch or farmstead windbreak needs to provide maximum protection to the major buildings and the living and working areas of the farm or ranch.

Protection from the cold winter winds is the major concern in portions of Texas. These winter and early spring winds are predominantly from the north or northwest, therefore windbreaks will generally be designed for the north and west sides of the area needing protection.

Ideally, the windbreak should be located within 2-5 times the height (H) of the tallest tree row from the area needing wind protection. An example would be a tree row with the tallest row having a mature height of 50 feet; the area of protection on the downwind or leeward side would range from 100 to 250 feet.

Areas and objects more than 10 times the height from the windbreak will receive little protection.

An area of protection also exists on the upwind or windward side from 1-3 times the height.

Windbreaks should be constructed at right angles to the prevailing wind direction.

Avoid planting windbreaks where they will interfere with utilities, both above ground and below ground.

Sufficient space must be provided to store snow when windbreaks are being used as a snow fence. The required space varies but usually ranges from 100-200 feet. This distance is measured from the farthest windward tree row to the primary area needing protection.

A windbreak should be planted no closer than 25 feet from a road in order to prevent the creation of a site hazard.

The planting will need to be protected from adverse impacts such as livestock damage and fire.

Lanes or access roads that go through a windbreak should be at an angle to prevailing winds so they will not funnel winds into the farmstead. Because of wind turbulence around the end of a windbreak, the windbreak should extend 100 to 200 feet beyond the area needing protection.

Wildlife needs should be considered when selecting tree and shrub species.

Rows should be spaced to accommodate width of equipment needed for maintenance.

MAINTAINING THE PRACTICE

Trees and shrubs in a windbreak or shelterbelt need periodic maintenance and, later on, possible renovation. In arid areas windbreaks may need supplemental water or the use of water-harvesting techniques for successful establishment.

Livestock must be excluded until the trees are taller than the livestock.



This multiple-row windbreak protects livestock and provides important wildlife habitat.



This multiple-row windbreak protects grain storage buildings, equipment sheds, a house and provides important wildlife habitat.

Windbreak/Shelterbelt Establishment Practice – Job Sheet

Landowner _____ Field number _____

Purpose (check all that apply)	
<input type="checkbox"/> Reduce soil erosion from wind	<input type="checkbox"/> Provide living visual screens
<input type="checkbox"/> Protect plants from wind-related damage	<input type="checkbox"/> Improve air quality
<input type="checkbox"/> Alter microenvironment for enhancing plant growth	<input type="checkbox"/> Delineate property and field boundaries
<input type="checkbox"/> Manage snow deposition	<input type="checkbox"/> Improve irrigation efficiency
<input type="checkbox"/> Provide shelter for structures, livestock, and people	<input type="checkbox"/> Increase carbon storage in biomass and soils
<input type="checkbox"/> Enhance wildlife habitat	<input type="checkbox"/> Reduce energy use
<input type="checkbox"/> Provide living noise screens	

Location and Layout	
Width (feet; include widths of maintenance areas next to outer rows): _____	
Length (feet): _____	Area (acres): _____
Total area of zone protected/sheltered (acres; based on expected height and density of the windbreak/shelterbelt): _____	
Additional requirements: _____	

Woody Plant Materials Information					
Species/cultivar by row number:	Kind of stock ¹ :	Planting Dates	Distance between plants within row (ft):	Total number of plants for row:	Distance (ft) from this row to next row ² :
1					
2					
3					
4					
5					
6					
7					--

¹Bareroot, Container, Cutting; include size. ²Adjusted for width of maintenance equipment.

Temporary Storage Instructions
Planting stock that is dormant may be stored temporarily in a cooler or protected area. For stock that is expected to begin growth before planting, dig a V-shaped trench (heeling-in-bed) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly. Additional requirements: _____

Site Preparation
Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. Prepare supplemental moisture materials for installation if required by trees and/or shrubs. Additional requirements: _____

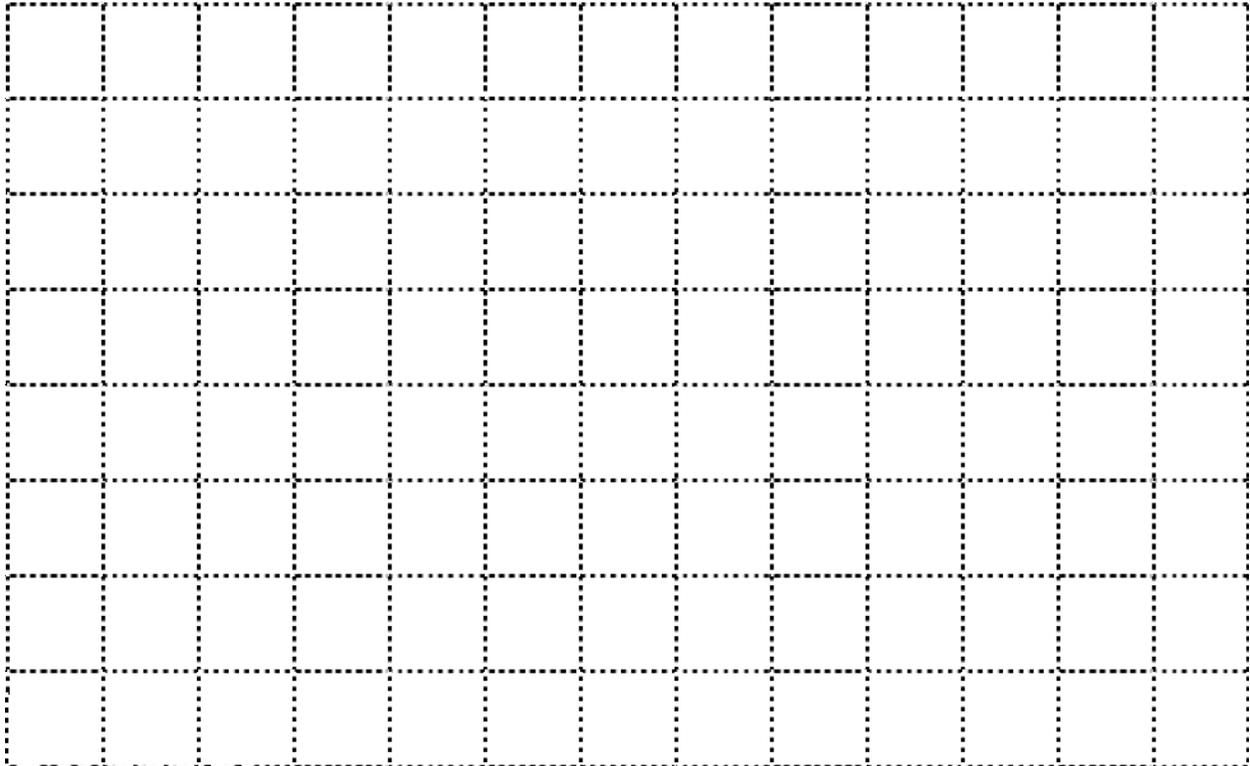
Planting Methods
For container and bareroot stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant. Cuttings are inserted in moist soil with at least 2 to 3 buds showing above ground. Additional requirements: _____

Operation and Maintenance
Inspect windbreak/shelterbelt components periodically and protect from damage so proper function is maintained. Replace dead or dying tree/shrub stock and continue control of competing vegetation to allow proper establishment. Install and begin supplemental irrigation if available. Additional requirements: _____

Windbreak/Shelterbelt Establishment Practice – Job Sheet

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:

NRCS Signature _____

Client Signature, as needed _____

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