NRCS Natural Resources Conservation Service

# *Riparian Forest Buffer – Job Sheet and Specifications PA391*

Landowner_____ Location/ Field Numbers_____

**Definition:** Riparian forest buffers are areas of predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies. Dominant vegetation in the buffers consists of native species of trees and/or shrubs. General requirements and purpose-specific requirements are found in the practice standard. Additional site-specific requirements may be listed on this job sheet.

## Design Requirements:

| **Purpose (check all that apply)** Riparian forest buffers can significantly improve surface and/or shallow ground water quality, lower water temperature, and restore terrestrial and aquatic habitats. | |
|---|---|
| ☐ Reduce excess sediment, organic material, and nutrients in surface and/or shallow ground water (*see Riparian Forest Buffer width requirements,* below) | ☐ Restore terrestrial and aquatic wildlife habitat(s) |
| | ☐ Create shade to lower or maintain water temperature; provide a source of detritus and woody debris |
| ☐ Reduce pesticide drift into water body (see below) | ☐ Increase carbon storage in plant biomass and soils |

| **Layout** | |
|---|---|
| Stream or Water Body name/description: | |
| **Buffer dimensions (ft)** – Specify left and right of stream, facing upstream (use only left for water body). | |
| Trees or Trees & Shrubs | Rip. Herbaceous Cover (include Rip Herb Cover Job Sheet) |
| Left: ft. Right: ft. | Left: ft. Right: ft. |
| **Buffer length: ft.; Buffer acres: ac. + Herb. Cover acres: ac. = TOTAL acres: ac.** | |
| *Riparian Forest Buffer requirements:* | |
| -- General purpose riparian forest buffers: min. 35 feet wide | |
| -- Areas with high nutrients, sediments, or animal waste application on untreated land adjacent to planned buffer: min. 50 feet wide **OR** 35 feet of riparian forest buffer plus 35 feet of adjacent Riparian Herbaceous Cover (390). | |
| -- To reduce pesticide drift: min. 35 feet wide, min. 30 feet tall (on average) at maturity, min. 60% canopy closure at maturity | |

**Woody Plant Materials Information -- TREES**

| Dry Site Species: | Plant Material[1] | # | Wet Site Species: | Plant Material[1] | # |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| | TOTAL | | | TOTAL | |

[1]BB Ball and Burlap, COntainer, BAreroot seedling, LS livestake, Seed, NR Natural Regeneration. Include size, stem dia., height, and age as applicable.

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| **Woody Plant Materials Information -- SHRUBS** | | | | | |
|---|---|---|---|---|---|
| Dry Site Species: | Plant Material[1] | # | Wet Site Species: | Plant Material[1] | # |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| | TOTAL | | | TOTAL | |

[1]BAreroot, COntainer, CUtting, Seed; include size, stem dia., height, and age as applicable.

| **Shelter Information for woody plants** *(refer to Specifications, page 4, for additional information)* | | | |
|---|---|---|---|
| Shelter Types for Trees: | # | Shelter Types for Shrubs: | # |
| | | | |
| | | | |
| | | | |
| TOTAL | | TOTAL | |

| **Herbaceous Plant Materials Information** *(also refer to Riparian Herbaceous Cover Job Sheet)* | | |
|---|---|---|
| Species/cultivars: | lbs/acre[1] | Seeding dates |
| **Grasses** | | |
| 1 | -- | -- |
| 2 | | |
| 3 | -- | -- |
| **Forbs** | | |
| 1 | -- | -- |
| 2 | -- | -- |
| 3 | -- | -- |

[1]Pure Live Seed (PLS)

# Installation Requirements:

| **Site Preparation** |
|---|
| Mow the existing vegetation and/or apply herbicide where trees or shrubs will be planted (at least 4 ft. dia. around each seedling). Additional requirements: |
| **Planting Methods** (applicable information can be found in the *Practice Guide for Riparian Forest Buffers*) |
| Site-specific planting methods are: |
| **Operation and Maintenance** |
| The riparian forest buffer will be inspected periodically and protected from adverse impacts that may occur from activities such as vehicular and pedestrian traffic, pest infestations (damaging weeds, insects, funguses, etc.), concentrated flows, pesticides, livestock or wildlife damage and fire. Replacement of dead trees or shrubs and control of competing vegetation will continue until the buffer is, or will progress to, a fully functional condition. Maintain tree shelters, including stakes and nets, when installed. |

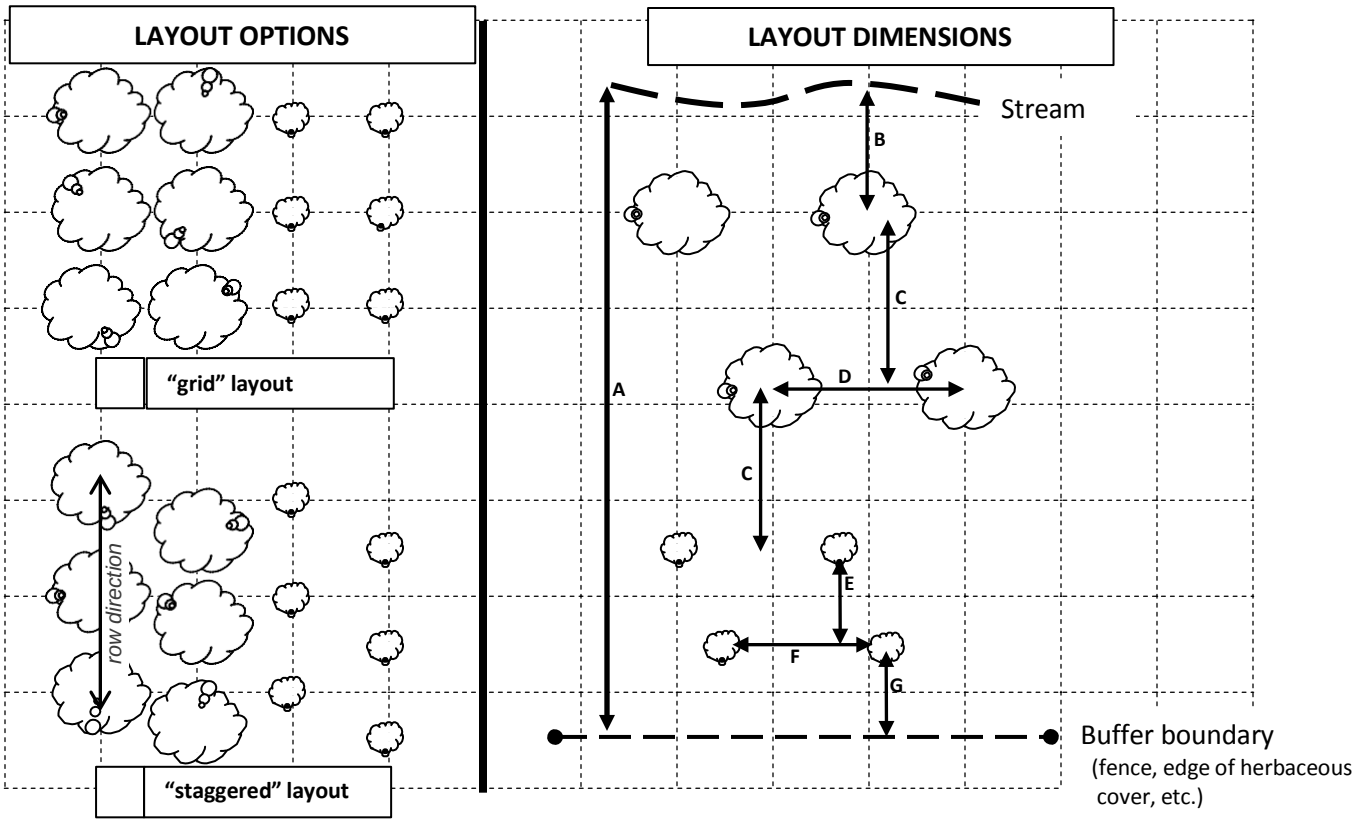
If needed, an aerial view or a side view of the practice can be drawn on an attached document to further illustrate the requirements or accurately show the location of the practice installation. Other relevant information, complementary practices and measures, and additional specifications may be included below or on an attached specification sheet.

| **Additional Specifications and Notes:** |
|---|
| |

## Riparian Forest Buffer – 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")




**Layout Dimensions, continued** *(refer to layout graphic, above right)*

A. Looking upstream, the total Buffer width averages_____feet on left side of stream and_____feet on right side of the stream, as measured from top of streambank to the outer boundary of Buffer (including Filter Strip, when applicable).

B. Distance from top of streambank to first row of trees is_____feet.

C. Distance between tree rows is_____feet.

D. Distance between trees within a row is_____feet.

E. Distance between shrub rows is_____feet.

F. Distance between shrubs within a row is_____feet.

G. Distance from outer row of plants to buffer boundary is_____feet (including Rip. Herb. Cover, when applicable).

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This practice has been planned according to current PA NRCS Standards and Specifications for Riparian Forest Buffer (391).

Planned by: _____ Date: _____

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## Check Out and Certification Requirements:

I certify that the above Design and Installation requirements ☐ have ☐ have not been met in accordance with the criteria of the NRCS PA Conservation Practice Standard PA 391. _____acres of this practice (including adjacent Riparian Herbaceous Cover, if applicable), as covered by this Job Sheet, were installed on the date of_____.

_____ _____

Signature of Designated Conservationist *or* Technical Service Provider Date

## NATURAL RESOURCES CONSERVATION SERVICE

# RIPARIAN FOREST BUFFER

**(Ac.)**

# SPECIFICATION

**CODE 391**

### SCOPE

The work shall consist of furnishing planting stock and other materials, and installing all components of the riparian forest buffer.

**Planting Trees and Shrubs**

The maximum spacing for trees shall be 20 feet by 20 feet (creating a minimum density of 100 tree seedlings per acre). At this low planting density, two to three year old bare-root or containerized tree seedlings (3-4 inch pots), or larger planting stock, shall be used. Shrubs shall be planted at a closer spacing, usually six to eight feet, either in rows or in clumps.

At higher densities, a variety of plant materials are acceptable, including bare-root plants, containerized plants, balled-and-burlap plants, live stakes and cuttings, and direct seeding.

When tree shelters or tubes are used, shelters shall be made of a translucent, mesh, or netting material and be at least four feet tall, preferably five feet tall in areas of moderate to heavy deer pressure. Shelters bottoms shall be sealed at the bottom, either by being tapped 2" into the soil or by piling 2" of loose soils around the bottom of the shelter. Bird nets shall be used with solid shelters, and shall be removed before the saplings emerge from the shelter.

Shelters with perforated seams may be left on the trees. Shelters without perforated seams shall be split lengthwise or removed when sapling trunks are 1 ½ inches in diameter at the top of the shelter. This removal criteria also applies to metal stakes.

Multi-stemmed shrubs may be protected with shelters made from woven-wire metal or UV-resistant plastic fence materials, or acceptable wood materials. Shrub shelters shall be at least four feet tall, preferably five feet tall in areas of moderate to heavy deer pressure. Shrub shelters shall be at least three feet in diameter, to accomodate the growth and natural spread of multi-stemmed shrubs. Shrub shelters shall be securely anchored using at least two durable stakes.

All shelters shall be securely anchored with durable stake(s). Wooden stakes shall be hardwood, a minimum dimension of one inch by one inch, and shall not include sapwood.

**Planting Trees and Shrubs to Reduce Excess Amounts of Sediment, Organic Material, Nutrients and Pesticides in Surface Runoff and Shallow Ground Water Flow**

The first two rows adjacent to the stream or water body shall be deciduous broad-leaved trees (hardwoods). Both trees and shrubs may be planted beyond the first two rows. Coniferous trees shall be limited to a maximum of 20 percent of the total number of trees planted, and shall not be planted in the first two rows adjacent to the stream or water body. All trees and shrubs shall be native to the U.S., and preferably native to Pennsylvania. *Tree and Shrub Information for PA NRCS* contains information which will help with plant selection for riparian forest buffers.

**ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE:**