

## **04 – Establishing Vegetation**

354th Civil Engineering Squadron

OPR: CES/CEIE

ISSUED: 10 May 2017

### **Purpose**

These standards will serve as the primary planting criteria reference documents for services provided by architectural and engineering (A&E) firms and consultants in the development of both design-bid-build and design-build contracts. This document is not intended to be used in lieu of detailed design documents in the procurement of facility construction. No part of this document should be considered inclusive to all government requirements.

### **1. Grass**

- 1.1. Preferred Planting Season: 15 May to 1 August and winter dormant seeding, planting just before the ground freezes in the fall.
- 1.2. Acceptable Planting Season: 1–15 August. Planting between 1–15 August can only be justified if the seeded area is watered and the construction sites or disturbed areas needing revegetation were not available for planting before August. Although a light frost will not affect newly seeded grass, grass planted after 1 August can be damaged if prolonged hard freezing temperatures set in prior to 1 October. August planting must be dictated by fall weather conditions. Fertilizer applied to grass planted after 1 August should contain little or no nitrogen and a light application of phosphorus and potassium. High nitrogen levels in the spring encourage snow mold.
- 1.3. Recommended Grass Species
  - 1.3.1. For lawn and field areas:
    - a. Kentucky bluegrass (*Poa pratensis*)—'Nugget' or 'Park' varieties are preferred, but 'Common' from a northern grown seed source is acceptable
    - b. Creeping red fescue (*Festuca rubra*)—'Arctared' variety is preferred, but 'Pennlawn' or 'Common' are acceptable varieties
  - 1.3.2. For Airfield Bird/Aircraft Strike Hazard Zone:
    - a. Wainwright Germplasm slender wheatgrass (*Elymus trachycaulus*)
    - b. Creeping red fescue (*Festuca rubra*)—'Arctared' variety is preferred, but 'Pennlawn' or 'Common' are acceptable varieties
  - 1.3.3. For hillsides with erosion problems:
    - a. Creeping red fescue (*Festuca rubra*)—'Arctared' variety is preferred, but 'Pennlawn' or 'Common' are acceptable varieties
    - b. Bering hairgrass (*Deschampsia beringensis*)—'Norcoast' variety
  - 1.3.4. For wet areas:
    - a. Blue-joint grass (*Calamagrostis canadensis*) (wet areas)

**04 – Establishing Vegetation**

354th Civil Engineering Squadron

OPR: CES/CEIE

ISSUED: 10 May 2017

- b. American sloughgrass (*Beckmannia syzigachne*)—'Egan' variety (very wet areas).
- 1.4. Seed Mixtures and Seeding Rate
  - 1.4.1. Kentucky bluegrass/creeping red fescue (50/50 mix): 3.5–4.0 lbs/1,000 sq ft
  - 1.4.2. Kentucky bluegrass: 2.5–3.0 lbs/1,000 sq ft (unshaded areas)
  - 1.4.3. Creeping red fescue: 3.5–4.0 lbs/1,000 sq ft (shaded, acid, erosion, or drought areas)
  - 1.4.4. Wainwright Germplasm slender wheatgrass /creeping red fescue (50/50 mix): 2.3 lbs/1000 sq ft, use .3 lbs of slender wheatgrass with 2.0 lbs of creeping red fescue (Bird/Aircraft Strike Hazard Zone)
  - 1.4.5. Bering hairgrass: 0.4 lbs/1,000 sq ft (erosion areas)
  - 1.4.6. American sloughgrass: 0.2 lbs/1,000 sq ft (very wet areas).
- 1.5. Nurse or Protective Crop: Perennial ryegrass (*Lolium perenne*) or Annual ryegrass (*Lolium multiflorum*) may be used as a nurse or protective crop for the recommended grass species. Ryegrass shall be no more than 20 percent of the seed mixture.
- 1.6. Fertilizer
  - 1.6.1. Formula: 20-20-10.
  - 1.6.2. Rate: 300 pounds per acre or 3/4 pound per 100 square feet.
  - 1.6.3. Time: Prior to seeding.
  - 1.6.4. Method of Application: Hand (small areas) spreader (large areas).
- 1.7. Water
  - 1.7.1. Newly seeded areas must be kept moist. Moist conditions are critical for proper germination. If precipitation does not occur frequently enough to keep the seed bed moist, water must be applied. Watering should stop when runoff begins.
- 1.8. Mowing
  - 1.8.1. The first mowing should be delayed until the grass is 3 to 4 inches tall.
- 1.9. Length of Maintenance Period
  - 1.9.1. Eight (8) weeks for all types of grass.

**2. Trees and Shrubs**

- 2.1. Planting Seasons and Requirements: Trees and shrubs will be transplanted from forested areas only when they are dormant. The preferred transplanting season is after a fall killing frost. Trees and shrubs can usually be transplanted from 15-20

**04 – Establishing Vegetation**

354th Civil Engineering Squadron

OPR: CES/CEIE

ISSUED: 10 May 2017

September to freeze-up. Trees can also be transplanted in the spring (approximately 1–15 May) before the leaves are more than one-fourth open. The spring transplanting season is less desirable as the ground may be partially frozen, especially in heavily shaded or wooded areas. Balled and burlaped, containerized, and bare-root nursery stock can be planted when the ground is not frozen. Planting berry or fruit producing trees, shrubs, or hedges is prohibited.

2.2. Recommended Tree Species

- |                               |                                      |
|-------------------------------|--------------------------------------|
| 2.2.1. White spruce           | <i>Picea glauca</i>                  |
| 2.2.2. Paper birch            | <i>Betula papyrifera</i>             |
| 2.2.3. Quaking aspen          | <i>Populus tremuloides</i>           |
| 2.2.4. Lodgepole pine         | <i>Pinus contorta var. latifolia</i> |
| 2.2.5. Scotch pine            | <i>Pinus sylvestris</i>              |
| 2.2.6. Alaskan larch, Tamarac | <i>Larix laricina</i>                |

2.3. Recommended Shrub Species

- |                         |                               |
|-------------------------|-------------------------------|
| 2.3.1. Late lilac       | <i>Syringa villosa</i>        |
| 2.3.2. Potentilla       | <i>Potentilla fruticosa</i>   |
| 2.3.3. Common juniper   | <i>Juniperus communis</i>     |
| 2.3.4. Creeping juniper | <i>Juniperus horizontalis</i> |

- 2.4. Tree and shrub stock should be locally grown, within about 100 miles of Fairbanks, or from local seed stock. In some cases material from the same latitude is acceptable if local material is not available. Stock from Delta Junction and Nenana are acceptable, but the photoperiod and winter temperatures south of these locations are different enough to cause concern. If local seed has been sent to nurseries outside of the local area the plant materials should still be locally adapted and could be acceptable. Any deviations must be approved by Natural/Cultural Resources in writing. All nursery stock shall be healthy and free from disease, insect pests, mold, and fungus. The minimum recommended sizes and planting distances for trees and shrubs are shown in Table 1 and Table 2 below.

**04 – Establishing Vegetation**

354th Civil Engineering Squadron

OPR: CES/CEIE

ISSUED: 10 May 2017

**Table 1 - Minimum Ball Diameters**

Height of Plant (feet)	Tree Diameter 1 Foot Above Ground (inches)	Diameter of Ball (inches)
<b>Trees*</b>		
0 - 4	1	24
5 - 8	1-2	30
8 - 12	2-3	36
<b>Shrubs</b>		
0 - 3	N/A	12
4 - 6	N/A	18
7 - 9	N/A	24
10 - 12	N/A	30

Note: \*If tree height and stem diameter are in different ball size classes the larger root ball is required.

**Table 2 - Minimum Planting Distances for Trees and Shrubs**

From	Cantonment Area		Base Housing	
	Trees	Shrubs	Trees	Shrubs
Other Trees/Other Shrubs	20'	15'	10'	10'
Clumps of Trees/Clumps of Shrubs	20'	15'	10'	10'
Buildings	20'	6'	15'	6'
Street	25'	25'	8'	8'
Sidewalk	6'	6'	6'	6'
Power Lines	20'	15'	20'	8'
Utilidor	20'	15'	20'	15'

Notes: 1. When group or clump planting, the minimum distance from other trees/shrubs does not apply.

2. Do not plant trees/shrubs where they will interfere with the line of sight at a street intersection or with snow removal that may damage them.

**04 – Establishing Vegetation**

354th Civil Engineering Squadron

OPR: CES/CEIE

ISSUED: 10 May 2017

2.5. Watering

2.5.1. Transplanted trees or shrubs should be watered once weekly, soaking the ground thoroughly except during periods of adequate rainfall during the first year of growth. Trees and shrubs should be watered during the growing season only, from leafing out in the spring until their leaves turn in the fall.

2.6. Guarantee (if required)

2.6.1. Growth will be guaranteed for one full year after the first two years of watering.