

NATURAL RESOURCES CONSERVATION SERVICE

IDAHO SPECIFICATION

CRITICAL AREA PLANTING

(Acre)

CODE 342

PLANS AND SPECIFICATIONS

A site investigation shall be conducted to identify any physical, chemical or biological conditions that could affect the successful establishment of vegetation, and to plan the needed site preparation and protective measures.

Plans and specifications are to be prepared for each treatment area and include planting area preparation, methods and rates of planting, species (mixture) to be planted, seed depth, time of planting, fertilizer requirements, irrigation requirements, establishment requirements, site protection requirements and long-term management requirements.

Form ID-CPA-025; Seeding/Planting Plan Specification will assist practice planning and documenting application for seedings.

Form ID-CPA-028; Tree-Shrub-Riparian Planting Specification will assist practice planning and documenting application for plantings.

Under severe circumstances, structural (engineering) practices may be required in association with this practice to ensure long-term site stability.

Seed/Planting Stock

Use of certified seed is encouraged. All seed and planting materials shall be labeled and meet state seed quality law standards.

Based on seed tags, adjust seeding rates at field site to ensure the required amount of pure live seed (PLS) is applied to site. See Plant Materials Technical Note 4.

Most legume seed is pre-inoculated when purchased. If fresh inoculation is needed, guidance on inoculation and the proper species of viable Rhizobia for each legume is listed in Plant Materials Technical Note 26.

Tree and shrub planting stock should be as described in Idaho Plant Materials Technical Note 43.

Seedbed/Planting Site Preparation

The area will be shaped or graded if needed to eliminate existing surface erosion patterns and improve ease of seeding operations. Sites reshaped with heavy equipment may have a smooth hard surface and compacted soils making it difficult to prepare a good seedbed. Disking, ripping or other treatment may be necessary to prepare the site for seeding.

A firm weed-free seedbed that ensures seed contact with mineral soil and ample soil moisture to uniformly facilitate seedling emergence is desired. Use of chemicals as an alternative to mechanical seedbed preparation should be considered when appropriate.

Seedbed Firmness Rule-of-thumb: a person's footprint will be no deeper than ½ inch.

A weed-free seedbed will generally not exceed one (1) seedling per square foot of an unwanted plant at time of planting.

The horizontal indentations left by tracked equipment operating up and down slope may provide a suitable seeding site on steep slopes.

Planting site preparation for trees and shrubs using tillage, scaling, chemicals and weed barrier fabric will be in accordance with recommendations found in Idaho Plant Materials Technical Note 43.

Fertilizer

Based on a soil analysis, soil amendments will be added as necessary to ameliorate or eliminate physical or chemical conditions that inhibit plant establishment and growth. Consider initial and follow up applications of fertilizer to ensure stand establishment.

Amendments, such as compost or manure to add organic matter and improve soil structure and water holding capacity; agricultural limestone to increase the pH of acid soils; or elemental sulfur to lower the pH of calcareous soils shall be included in the site specification with amounts, timing, and method of application.

Fertilization will meet the requirements of Nutrient Management (590).

Seeding

Critical area planting sites are generally severely eroded or disturbed and have low fertility and few, if any, resident seeds. High seeding rates are commonly needed to insure adequate vegetative cover.

Seeding with a drill is recommended. The drill used should provide depth control with bands or other suitable method such that seed placement depth does not exceed recommended depths expressed in Plant Materials Technical Note 24 for that species or seed mixture.

Inspect, clean, repair and calibrate equipment prior to seeding to ensure proper rate, distribution and depth of seeding.

Drill seeding rates will be 150 to 200 percent of the normal drill seeding rates listed in Plant Materials Technical Note 24.

Broadcast seeding rates will be 200 to 300 percent of the normal drill seeding rates. When seed is broadcast planted, where possible, seed should be covered by a roll-type packer or by trampling with grazing animals on mineral soil seedbeds. High organic residue seedbeds should be lightly dragged or raked.

Seeding rates on irrigated land will be 150 to 200 percent of rates specified in Plant Materials Technical Note 24.

Actual seeding rates of applied seeding mixture will be within approximately 80 to 125 percent

of rate specified during the planning process in the ID-CPA-025 Seeding/Planting Plan Specification.

Seeding Dates

On light to medium textured soils, dormant fall planting is the preferred time for planting.

Heavy to medium textured soils that tend to form soils crusts over winter, early spring planting should be considered.

On temporarily irrigated land, seed anytime during the growing season when temperatures are favorable for seed germination and seedling growth. Sufficient irrigation water must be available, and applied often enough to allow the soil surface to remain moist and favorable for seed germination and seedling emergence. Avoid seeding during very hot periods such as mid to late June through mid-August.

Fall seeding requires irrigation and seedlings are expected to attain the 3-5 leaf stage prior to cessation of growth in the fall. This requires at least 30-45 days of growth from date of planting.

Generally accepted planting dates are:

MLRA	Spring* (before)	Fall** (before)	Dormant*** (after)
8	4/1	10/1	11/15
9	4/15	9/20	11/1
10	5/15	9/10	10/20
11	4/15	9/20	11/1
12	5/15	9/20	11/1
13	5/15	9/10	10/20
25	5/15	9/10	10/20
28A	5/1	9/20	11/1
43A	5/15	9/1	10/20
43B	5/15	9/1	10/20
43C	5/15	9/1	10/20
44	5/15	9/1	11/1
47	5/15	9/10	10/20

Seeding dates may vary from these guidelines based on local experience and conditions.

* Complete spring plantings as early as possible.

** Fall seedings on irrigated land only.

*** Earlier dormant planting dates are ok if the measured soil temperature is below 45^oF.

Fall, dormant and very early spring seedings may expose legumes and forbs to potential killing frosts during seedling stage.

Planting Dates

Plant trees and shrubs in the spring after frost is out of the ground. All stock will be planted by:

MLRA	Spring (before)
8, 9, 11, 28A	May 1
10, 12, 13, 25, 44	May 15
43A, 43B, 43C, 47	June 1

The District Conservationist may extend these dates by 14 days if local soil, moisture and climate conditions justify an extension and conditions are documented.

When using weed barrier fabric, good soil moisture conditions will be extended beyond conditions not using these materials.

When woody cuttings of willow, dogwood and cottonwood are planned, planting may occur in late fall or early spring (refer to Plant Materials Technical Note No. 23).

Be aware that time extensions may require increased need for supplemental irrigation, wind protection and/or shade protection.

Cover and Nurse Crops

On sloping land where relatively weed-free crop residues are present or will result from the existing or planned crop, consider minimizing seedbed operations to maintain adequate residues on the surface to protect the new planting.

Nurse crops will not be used for this practice.

Special Erosion Control Considerations

Straw is the preferred mulch but needs to be anchored in place with equipment such as rollers and crimpers. Wheat straw deteriorates less rapidly and results in less volunteer growth compared to barley straw. Use clean straw to minimize spread of weeds. Tackifiers, woven fabric, netting and other covers can be used to anchor mulch when slopes are too steep to use equipment on the site. Artificial mulches can also be used.

On degraded sites, additional practices such as erosion control fabric, hydro-mulching, hydro-seeding and sod should be considered in addition to soil amendments, to provide additional

erosion control and to improve the chance of vegetation establishment.

Consider using hydro-seeding and mulching on steep, inaccessible sites not suitable for straw mulch planting. Do not use when high winds are expected to interfere. Consider the effective range of straw blowing equipment and hydro-seeders when use is planned.

A split hydro-mulch and hydro-seeding operation is recommended on sites suitable to hydro-mulch planting. Seed and fertilizer should be applied first to provide better seed to soil contact and then the mulch is hydro-mulched over the site. If mulching is needed, follow the Mulching (484) practice.

Fertilization, mulching, hydro-seeding, hydro-mulching, erosion control fabric or other facilitating practices shall be timed and applied to improve the chance of establishment of the planned species. Apply all nutrients in accordance with the Nutrient Management (590) practice.

When using sod, the soil surface will be smoothed so air pockets will not form beneath the sod.

Sod strips will be fit closely together and tamped tightly in place. Sod will be staked down as needed to protect it from movement on steep slopes.

Cut sod will be kept moist. The maximum time period between cutting and laying sod will not exceed 96 hours.

Areas covered with sod will be irrigated until sod is well established. Species that require permanent irrigation to maintain adequate sod cover are not recommended.

Seeding/Planting Protection

This practice will be undertaken only where domestic grazing animals can be excluded to permit stand establishment. Temporary fencing may be required.

When plantings are irrigated for establishment, maintain adequate moisture at least in the upper six (6) inches of soil during the first four (4) weeks and then in the upper 12 inches until the end of the growing season.

Noxious and competitive invasive weeds should be controlled by mowing, clipping or herbicides. Grass seedlings should be allowed to attain at least 4-5 leaf stage before herbicides are applied.

Planting Evaluations

Seeded species may be considered established when they are well-rooted (not easily pulled out of ground by hand) and/or are producing reproductive stems. A minimum of two full growing seasons are recommended prior to grazing.

Refer to Plant Materials Technical Note 12 for additional guidance with seeding establishment and Plant Materials Technical Note 43 for additional guidance with planting establishment.

OPERATION AND MAINTENANCE

Maintenance needed for this practice include:

1. Periodic inspection and evaluation of vegetation to determine establishment and maintenance needs.
2. Management of vegetation growth, as applicable, by mowing, approved chemicals or other means to establish the desired cover.
3. Replanting due to drought, insects or other event which prevented adequate stand establishment should be addressed within 1-3 years of planting. Recommendations may vary from complete re-establishment to overseeding or spot replanting. Thin stands may only need additional grazing deferment during the growing season.
4. Repair of appurtenances and fences.
5. Pest (weeds, grasshoppers, rabbits, rodents, etc.) control will be undertaken when pests are determined to be detrimental to establishing new seedlings. Any control specified shall be in accordance with Pest Management (595).

REFERENCES

FORMS

ID-CPA-025 Seeding/Planting Plan – Specification

ID-CPA-028 Tree-Shrub-Riparian Planting Specification

NRCS – Idaho Plant Materials Technical Notes

No. 4 – Reading Seed Packaging Labels and Calculating Seed Mixtures

No. 7 – Mixing Seed with Rice Hulls

No. 9A – Plants for Saline to Sodic Conditions

No. 10 – Pasture and Range Seedings

No. 11 – Pasture Species Selection and Grazing Management Guidelines

No. 12 – Guidelines for Determining Stand Establishment

No. 19 – Calibrating a Seed Drill

No. 23 – Planting Willow, Dogwood and Cottonwoods

No. 24 – Grass, Grass-Like, Forb, Legume and Woody Species for the Intermountain West

No. 26 – Legume Inoculation

No. 43 – Tree Planting, Care and Management

Land Resource Regions and Major Land Resource Areas of the United States, Issued 2006.

ASSOCIATED PRACTICES

Engineering practices

Fence (382)

Irrigation Water Management (449)

Mulching (484)

Nutrient Management (590)

Pest Management (595)

Upland Wildlife Habitat (645)