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Civil Engineer

LANDSCAPING PLANNING

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This instruction establishes policies for landscaping McChord Air Force Base. This regulation applies to all agencies and personnel who work or reside on McChord Air Force Base property.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

1. General.

1.1. The landscaping theme for McChord AFB is “Pacific Northwest Military Park”. This theme provides for cohesive visual attractiveness and is required for all base facility landscaping. McChord AFB is situated in a region that is world-recognized for its majestic mountains and evergreen forests. The Pacific Northwest Military Park theme reflects the rich, dark greens, and warm earth tones of these evergreen forests.

1.2. The Base Natural Resources Manager is to be consulted during all landscaping design phases and must concur with the final design or require adjustments. The final design must receive the Base Natural Resources Manager’s approval to be acceptable.

2. Guidelines.

2.1. Planning of landscape designs is to be such that the natural and man-made features of McChord AFB are enhanced to the fullest extent. Designs must provide for low maintenance plantings, considered both from short-term and long-term aspects, and be compatible with Force Protection guidelines/requirements. Landscaping must include informal cluster, groove or height-graduated plantings to minimize or de-emphasize rigid structural outlines of building and facilities. Where possible, spacious

vistas bordered by stately trees and counter pointed by informal under-plantings will be established. Existing landscaping theme should be reflected in new landscaping projects.

2.2. Plant material must be of compatible foliage coloration and texture as well as size and form when mature. Shade and sun tolerance of the plants as well as insect, disease, drought, and air pollution resistance have been taken into consideration in these guidelines.

3. Definitions. For purpose of clarity, the following definitions are stated for trees, shrubs, and wood ground covers.

3.1. Trees. Woody plants having one erect stem or trunk, a more or less definitely formed crown of foliage, and a mature height of at least 12 feet. A number of Rhododendrons are classed as trees.

3.2. Shrubs. Woody plants smaller than trees, commonly with several perennial stems growing from the same root. There are large or high shrubs and low or small shrubs. Defined as low shrubs are creeping or prostrate plants with woody stems or woody at the base, even if only 1 to 2 inches above the ground (woody ground covers).

4. Design Style.

4.1. Trees, shrubs, ground covers, and turf comprise the elements in planting compositions. Plants selected should be as few as possible to satisfy the requirements and objectives of the design. By limiting the number of plants, rather than cluttering the design with a planting mixture, clashing colors and forms are less likely to occur, and a unified composition will be created. Repetition with occasional contrast contributes to a successful planting design. Large masses of a single color are generally more satisfying than a heterogeneous mixture of several colors. Care should be exercised to pick colors that are harmonious when seen together.

4.2. To ensure maximum effectiveness with the lowest maintenance, emphasis should be placed on the use of evergreen trees and larger growing shrubs such as Rhododendron instead of extensive use of small shrubs. Trees are ultimately less expensive to maintain than shrubs. Evergreen trees and shrubs (with their various color forms) are advantageous because they provide color and background during the winter months when deciduous plants are leafless. Deciduous plants will be utilized only in so far as they provide color focal-points or add emphasis to specific features. Only specified ground covers will be used and then sparingly (See [Attachment 3](#)). The planning of all landscaping must assume that the planting will receive little or "NO" maintenance (including watering) after installation.

4.3. While informal or natural arrangement of plants is desirable for overall appearance, the importance of certain areas, selected building or approaches to them can be emphasized for formal planting. Formality in planting requires high maintenance to retain a consistently satisfactory appearance. Plant losses are conspicuous and difficult and costly to replace. Informal or naturalistic plantings soften the environment and, if losses occur, they are inconspicuous and may be replaced easily with small plants. In planting along streets, excellent results may be obtained by a combination of formal and informal planting of trees. Planting should be predominantly informal with only occasional use of symmetry to accent a particular architectural or site feature.

5. Earth Berms. Maximum use will be made of earth berms and land forms to provide vertical relief in the landscape. Earth berms can effectively screen parking lots and other unsightly features from view

from roadways. Planted earth berms facing the street should be designed relative to the 52 inch viewing height, or eye level, of a motorist.

6. Selection. Specific kinds and types of trees and shrubs will be selected for landscaping particular locations on the basis of ultimate mature growth sizes and forms (see [Attachment 2](#) and [Attachment 3](#) for list of approved plants). Plants are to be located a sufficient distance away from roads, walks, utilities, structures and building foundations, windows and doors to provide for ultimate mature growth. These plants should “never” require pruning (other than removal of dead, diseased, or damaged parts) to prevent blockage of, damage to, or interference with these facilities. Root systems of selected plants should not interfere with or damage subterranean utilities (electric and telephone lines, sewers, etc.).

7. Planting Setbacks.

7.1. For buildings of frame construction, trees will be sited a minimum distance, on center, away from building foundations -- this distance being equal to the maximum diameter of the tree’s mature crown (spread). With the exception of woody ground covers, shrubs will be sited away from the foundations of all buildings a minimum distance, on center of plant, three-quarters the average diameter of the mature spread of the shrub or 1 foot beyond the building’s roof drip line -- whichever distance if greater. Low shrubs (woody ground covers) will be planted, on center of plant, a minimum of 3 feet beyond the roof drip line of all buildings (see [Attachment 4](#) for Tree and Shrub Planting Details).

7.2. For buildings of masonry or metal construction, trees will be planted away from the building foundation a minimum distance, on center of plant equal to three-quarters the diameter of the maximum mature crown (spread) of the tree.

7.3. Specific requirement setbacks of trees and shrubs from various facilities such as utility lines, road curbs, walks, parking areas, etc., will vary with each individual planting situation and the species or varieties of plants proposed for use. Ultimate planting types, methods, locations and other related requirements will be subject to concurrence by the Base Natural Resources Manager.

7.4. These planting setbacks apply except in locations where Force Protection measures require greater distances.

8. Guy Staking. The primary purpose of guying and staking trees is to prevent excessive movement of the trunk, thus keeping new fibrous roots from breaking their hold in the ball of earth and the surrounding new soil. However, artificial support is usually unnecessary except for trees with slender, weak trunks over 2 inches in caliper. Evergreen trees 6 feet and under usually do not need support. Unsupported trees tend to develop stronger and more resilient trunks. Guying and staking is also to be avoided because of the labor and material involved.

9. Bare Root Plants. Bare root plant material is not authorized for planting on McChord AFB, except for riparian plantings or when approved by the Base Natural Resources Manager.

10. Planting Beds. Outlining of planting beds adjacent to turf areas is recommended. Concrete mow strips may be used.

11. Mulch. The base soils consist mainly of glacial drift and outwash. The typical soil is a gravelly, sandy loam some four to six inches in depth. During even short periods without rainfall, this soil becomes

extremely dry, subjecting plants to strong moisture-stress conditions. For this reason, proper and adequate mulching of plants is essential. All plants must be mulched with beauty bark-type mulch to a minimum of three (3) inches in depth. Planters, traffic islands, bedded areas, etc., will be mulched in their entirety to the outside definition of the planter. Traffic islands and shrubs require a minimum mulched area beneath the plant that is defined as the plant's drip line of the ground area covered by the outer limit of the circumference of the plant's foliage.

12. Turf. The type and mixture of grasses and other plants, such as clover, as well as the methods of installation for the establishment of turf will require a project-by-project determination based on the site use, erosion control considerations, and immediacy of visual impact.

13. Tree Removal.

13.1. AFI 32-7064, *Integrated Natural Resources Management*, requires that forest products, such as firewood, from areas cleared for construction projects must be salvaged and sold by the government.

13.2. All usable trees and limbs six (6) inches in diameter or greater (minus foliage, stumps, and roots) are to be transported by the contractor to a location determined by the Base Natural Resources Manager.

13.3. Tree debris designated for re-use by the government is to be taken to the recycling center collection yard. Contact the recycling center for specific requirements. The contractor is required to remove all other trees and limbs, stumps, roots, and other waste and dispose of this material in a location off base (as authorized by the applicable county or state agencies) in accordance with current rules and regulations governing the disposal of solid waste. The contractor will pay disposal fees and sundry charges.

14. Tree Protection. Landscaping plans must provide for protection of trees and shrubs remaining in final work and immediately adjacent to construction sites. These plants will be protected by the placement of wood barricades located no closer to the plants than the crown circumference as defined by the outer drip line of the plant's crown.

15. Nursery Stock Standard. All landscaping plants must meet the specifications of ANSI Z60.1, American Standard for Nursery Stock. Prior to installation, all plants are to be inspected by the government to ensure that the plants are true to name and meet the specifications of the ANSI Z60.1. The point of contact is 62d Civil Engineer Squadron Environmental Management Flight (62 CES/CEV).

16. Hydroseeding. Hydroseeding is to be done by the mechanical application of a mixture containing 250 pounds of mixed types of fescue grass seed, 500 pounds of 10-20-20 fertilizer, and 2,000 pounds of green cellulose fiber on a per-acre basis.

17. English Ivy. English ivy will not be planted on base. Any English ivy found on base trees and buildings in the landscaping area shall be removed. When removing ivy from trees, care should be taken to avoid damaging tree bark and limbs. The complete ivy plant, including aerial rootlets and ground root system, shall be removed.

18. Topsoil Specifications.

18.1. Topsoil will contain 70 percent sandy loam and 30 percent organic material.

JAMES A. FELLOWS, Colonel, USAF
Commander, 62d Airlift Wing

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 32-1064, *Integrated Natural Resources Management*

Abbreviations and Acronyms

AFB—Air Force Base

AFI—Air Force Instruction

ANSI—American Nursery Stock Institute

Attachment 2

AUTHORIZED TREES AND SHRUBS

Table A2.1. Authorized Trees and Shrubs.

TREES		
SCIENTIFIC NAME	COMMON NAME	DESCRIPTION
<i>Abies grandis</i>	'Grand Fir'	Deep green, glossy above, white lines beneath, 1 – 1 ½ long needles in two rows along branches. One of the largest firs reaching 300 ft. Prune it high.
<i>Abies magnifica</i>	'Red Fir'	Tall, stately tree w/symmetrical, horizontal, rather short branches. New growth silvery gray. Blue green 1" needles curve upwards on upper limbs. Hard to grow at low elevations.
<i>Abies procera</i>	'Noble Fir'	Similar in appearance to Red Fir. Grows 90-200 ft. high in wilds. Short stiff branches, w/blue green, 1 in long needles. Large cones with extended bracts.
<i>Acer 'saccharum'</i>	'Sugar Maple'	Deciduous. Growth to 60 ft. or more. Stout branches with upward sweep form fairly compact crown. Leaves 3-6 in. wide, green above/pale below. Spectacular fall color.
<i>Acer palmatum 'Dissectum'</i> ,	'Laceleaf Maple'	Small shrub with drooping branches, green bark; pale green finely dissected leaves turn gold in autumn.
<i>Acer palmatum</i>	'Moonfire' Japanese Maple	At maturity 15 ft. high; purple-red lobed leaves from 3-5 in. in length, 4 ½ in. wide turning crimson in fall.
<i>Acer platanoides 'columnare'</i>	'Columnar' Maple	Deciduous 50-60 ft. Slow grower, narrower form than the species. Leaves dark green 3-5 in. wide; yellow in fall.
<i>Acer platanoides</i>	'Crimson King' Maple	Deciduous 50-60 ft. Holds purple foliage color until leaves drop. Slower growing than the species.
<i>Acer platanoides</i>	'Emerald Queen' Maple	Deciduous 50-60 ft. Quick grower with good form.
<i>Acer rubrum</i>	'Bowhall' Maple	Deciduous fairly fast growth to 40 ft. or more with 20 ft. spread. Tall, narrow, cone shaped with orange red foliage color in fall.

<i>Acer rubrum x A. saccharinum</i>	'Autumn Blaze' Maple	Deciduous open form fast growth, weak wood & narrow crotch angles break easily; semipendulous branches. Silvery gray bark, leaves 3-6 in. wide. Good fall color.
<i>Acer rubrum</i>	'Armstrong' Maple'	Tall, very narrow tree with good red fall color. Leaves 2-4 inches long.
<i>Calocedrus decurrens,</i>	'Incense Cedar'	Evergreen, symmetrical growing 2 ft. per year to 75-90 ft with dense, narrow, pyramidal crown; trunk reddish brown with cones. Drought tolerant when mature, takes sun, tolerates poor soils; good green wall/high screen.
<i>Carpinus betulus,</i> 'Fastigiata'	'European Hornbeam'	Deciduous; dark green leaves and dense pyramidal form to 40 ft high. Needs ordinary garden watering.
<i>Cedrus Atlantica</i> 'Glauca',	'Blue Atlas Cedar'	Slow growing to 60 ft. Silver blue foliage, pyramidal in form, 30-40 ft. wide. Less spreading than other cedars.
<i>Cedrus c. deodara</i>	'Deodar Cedar'	Fast growing, graceful to 80 ft. w/40 ft. spread at ground. Softer, lighter texture than other cedars. Pruning makes tree more dense/drought resistant once established.
<i>Chamaecyparis nootkatensis,</i>	'Nootka Cypress'	Alaska cedar reaching 35-40 ft. with cones. Conical crown w/drooping dark bluish/grayish green branches. Good in abundant soil & atmospheric moisture.
<i>Chamaecyparis obtusa,</i> 'Gracilis',	'Dwarf Hinoki Cypress'	Dark green compact foliage, pyramidal, somewhat weeping form, narrow. Slow growing to 10 ft. high.
<i>Cornus kousa,</i>	'Japanese Dogwood'	Dark green leaves, late flowering, small tree to 15 ft. wide.
<i>Cupressocyparis leylandi,</i>	'Leyland Cypress'	Bluish green foliage, fast growing to 60-70 ft & 15 ft. wide. Can be pruned indefinitely to maintain certain shape.
<i>Fraxinus 'latifolia</i> (<i>oreona</i>)	'Oregon Ash''	Deciduous growing to 40-80 ft. Leaves 6-12 in, long light green. Male and female flowers on separate trees.
<i>Malus</i>	'Snowdrift' Crabapple	Rounded, dense crown growing to 20-25 ft tall, 20 ft wide. Red buds open to white long bloom flowers. Orange red fruit less than 1/2 in. across.
<i>Picea glanca</i>	'White Spruce'	Conical tree to 60-70 ft. Dense when young with pendulous twigs and silver green foliage.

<i>Picea pungens</i>	'Colorado Spruce'	Stiff, regular, horizontal branches forming broad pyramid growing 80-100 ft. Foliage blue green to steely blue.
<i>Pinus nigra</i>	'Austrian Pine'	Slow to moderate growth to approx. 40 ft. Dense, stout pyramid with uniform crown; 3-6 ½ in. stiff, dark green needles; cones 2-3 ½ in. Good screen or windbreak.
<i>Populus -tremuloides'</i>	'Quaking Aspen'	Fast growing, short-lived to 40-50 ft with 20-30 ft. spread. Dainty, light green, round leaves; good yellow fall color.
<i>Populus trichocarpa</i>	'Black Cottonwood'	Tall, spreading tree to 40 ft. in 15 yrs. Heavy limbed with dark gray, furrowed bark. Leaves triangular, deep green above, silver below 3-5 in. across.
<i>Prunus serrulata</i>	'Kwanzan' Cherry'	Most popular & hardy; double deep pink flowers, 30-40 ft high & wide tree. Red leaves; branches stiffly upright.
<i>Prunus serrulata</i>	Royal Burgundy' Cherry p.p. No 6520	Similar to Kwanzan but slightly smaller w/purple leaves.
<i>Pseudotsuga menziesii</i>	'Douglas Fir'	Densely set, soft needles, 1 to 1-1/2", dark green or blue green. 70-250 feet in forests. Cones oval and hang down.
<i>Pyrus calleryana</i> , 'Whitehouse'	'Whitehouse Callery Pear'	Deciduous ornamental growing to 15-25 ft. in full sun. Leaves 1 ½-3 in. dark green/glossy. White clustered flowers, early bloom. Fruit small, round, inedible.
<i>Quercus bicolor</i>	'Swamp White Oak'	Deciduous medium to slow growth to 60 ft. Leaves dark shiny green to 7 in. Tolerates wet well-drained soil.
<i>Quercus coccinea</i>	'Scarlet Oak'	Deciduous reaching 60-80 ft. High, light, open-branching habit. Leaves bright green to 6 in. & bright scarlet in autumn nights. Roots grow deep. Good street or law tree/fine to garden under.
<i>Quercus robur</i>	'Westminister Globe" (Michround) P.P. No 3708	Large, massive oak. Slow-medium growth rate w/ symmetrical form and branch development, dark green leaves w/acorns.
<i>Quercus rubra</i>	'Red Oak'	Deciduous fast growing to 90 ft.; broad, spreading branches & round-topped crown. Leaves 5-8 in. red in spring & red/brown/orange in fall. Deep roots.

Salix babylonica	'Weeping Willow'	To 30-50 ft. w/equal or greater spread. Leaves 3-6 in.; more pronounced weeping habit.
<i>Sequoiadendron giganteum</i> ,	'Giant Sequoia'	Evergreen reaching 325 ft. w/30 ft. trunk diameter. Dense prickly foliage gray green w/short, overlapping leaves w/sharp points. Dark reddish brown cones 2-3 ½ in.
Thuja plicata	'Western Red Cedar'	Reaches over 200 ft., slender, dropping branchlets w/dark green leaves forming lacy sprays. Brown cones ½ in.
Tilia cordata	'Greenspire' Linden'	Deciduous 10-15 ft. w/small fragrant white flowers in drooping clusters. Leaves 1 ½-3 in. dark green. Excellent lawn/street tree. Upright conical shape.
Tsuga canadensis	'Eastern Hemlock'	Height 40-70 ft. by 25-35 ft. spread; 25-50 ft. in 15-30 yrs. Graceful evergreen hedge, excellent screening/groupings. Small, slender ½-1 in. cones.
<i>Continus coggygria</i> ,	'Royal Purple' (Purple Smoke Tree)	Height 10-15 ft. by 10-15 ft. spread; medium growth rate. Foliage maroon-red darkening to purple red/black. Sparse flower bloom in May-Jun changing to smoky pink "hairs" Jun-Sep.
SHRUBS		
SCIENTIFIC NAME	COMMON NAME	DESCRIPTION
<i>Berberis thunbergii</i> , 'Crimson Pygmy'	Dwarf Redleaf Barberry	Hardy to -10 degrees, less than 1 ½ ft high & 2 ½ ft wide. Leaves bronzy blood red. Requires sun to develop color.
Continues coggygria	'Royal Purple' (Purple Smoke Tree)	Hardy to -10 degrees, less than 1-1/2 ft high and 2-1/2 ft wide. Leaves bronzy blood red. Requires sun to develop color.
Euonymous alata, 'Conpactus'	'Burning Bush'	Height 15-20 ft. , similar spread. Leaves med. To dark green – fall bright red. Excellent hedge or screen without pruning.
Ilex crenata, 'Helleri'	'Dwarf Japanese Holly'	Looks like boxwood. Dense, dwarf to 12 in. high. Narrow finely toothed leaves ½-¾ in. Black berries. Hardy in cold weather, excellent hedges, edgings; sun or shade.
Juniperus chinensis, 'Armstrong'	'Armstrong Juniper'	Dwarf to 3-4 ft. w/equal or greater spread, branches horizontally spreading. Bright green that holds in cold.

Juniperus chinensis, 'Torulosa'	'Hollywood Juniper'	Grown as tree or shrub to 20-30 ft high. Leaves vivid green, scale-like. Excellent heat & salt tolerance.
Juniperus horizontalis, 'Wiltoni'	'Blue Rug Juniper'	Flat growing form w/trailing branches 4-6 in. by 6-8 ft. fairly fast growing. Foliage intense silver-blue, light purplish tinge in winter. Most common ground cover.
<i>Juniperus abina</i> , ' <i>Tamariscifolia</i> '	'Tam Juniper'	Low spreading, mounded form, branches horizontal; bluish green. Grows 18 in. tall; 10-15 ft. across in 15-20 yrs. Susceptible to blight.
<i>Pieris japonica</i> , ' <i>Mountain Fire</i> '	"Mountain Fire Pieris"	Growing 9-12 ft high, 6-8 ft spread. Leaves long and narrow dark green above, lighter beneath. New growth fire red w/white flowers
<i>Pieris japonica</i> , ' <i>Variegata</i> '	' <i>Variegata</i> Pieris'	Growth 10-12 ft. w/age, leaves w/white margins. White flowers pretty in nook of garden.
<i>Prunus laurocerasus</i>	'Otto Luyken Laurel'	Growth 3-4 ft. high spreading to 6-8 ft. Leaves dark green 4 in. by 1 in, very free flowering. Grows in shade.
Rhododendron	'Virginia Richards'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Flowers large pale yellow w/ pink overtone.
Rhododendron	'Boule de Neige'	Size 3-6 ft. in height w/finest white flowering type. Evergreen foliage is dark, lustrous green.
Rhododendron	'Chionoides'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. White flowers w/yellow centers.
<i>Rhododendron</i>	'Cynthia'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Large and vigorous rosy crimson flowers w/blackish crimson markings.
Rhododendron	'Dora Ameteis'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Floriferous white flowers, lightly spotted w/green, slightly aromatic.
Rhododendron	'Elisabeth'	Size 3-6 ft in height w/similar or greater spread. Leaves dark green. Red flowers.
Rhododendron	'Jean Marie de Montague'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Bright scarlet blooms.
Rhododendron	'Lord Roberts'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Flowers red with a dark blotch.

Rhododendron	'Purple Splendour'	Size 3-6 ft. in height w/similar or greater spread. Leaves dark green. Flowers dark purple w/black blotch.
Rhododendron	'Scintillation'	Medium height, compact plant w/dark green leaves. Flowers gold-throated pink.
Thujaoccidentalis 'Pyramdalis'	'Pyramdalis Arborvitae'	Height 40-60 ft., 10-15 ft. spread w/narrow pyramidal formal outline w/bright green soft textured foliage.
Viburnum davidii	'David Viburnum'	Low, compact 3-5 ft. high dark blue-green evergreen foliage. Pink budded in Apr-May.
GROUNDCOVER		
SCIENTIFIC NAME	COMMON NAME	DESCRIPTION
Arctostaphylos uva-ursi	'Bearberry' or 'Kinnikinnick'	Popular ground cover spreading & rooting as it creeps to 15 ft. wide. Bright glossy green 1 in. leaves turning to red in winter. Flowers white or pinkish; fruit red or pink.
Dianthis	'Rose bowl'	Gray green, narrow leaves form tight mat 2-3 in. high. Fragrant, cerise rose flowers on 6 in. stems. Blooms continuously if spent blooms removed regularly.
<i>Calluna vulgaris</i>	Scotch Heather	Crowded, tiny, scale-like dark green leaves and one-sided spikes of bell-shaped rosy pink flowers.
Linnaea borealis ssp. Longiflora	Twinflower	A native trailing ground cover with small, shiny evergreen leaves and dainty pairs of nodding flowers. Plants are usually under two inches tall, white to pink.
Viola adunca	Violet	A native violet that grows in dry to moist open areas. Has blue to purple flowers. Plants are about three inches tall. Has long-stalked leaves.

Attachment 3

MCCHORD AIR FORCE BASE LIVE GROUNDCOVER ANALYSIS – 1 APRIL 2003

Table A3.1. McChord Air Force Base Live Groundcover Analysis.

References: 62 CES/CEVN, <i>Sunset New Western Garden Book</i> ; <i>Manual of Woody Landscape Plants</i> , Michael A. Dirr, 1990; Furney's Nursery, Federal Way; Molback's Nursery, Woodinville.						
Groundcover type	Criteria 1 Rapid green cover	Criteria 2 Survivability	Criteria 3 Maintenance level	Criteria 4 Leaf/litter trap	Criteria 5 Max plant spacing	Comments
Sod	Fastest lush cover, almost instantaneous	Excellent, with medium care and adequate topsoil (6"-9" compacted)	Medium: weekly irrigation, 7-10 day mowing, weeding several times/year	Low: holds only very small leaves	NA for sod	Most expensive
Seeded Grass	30-60 days to lush cover	Excellent, with medium care and adequate topsoil (6"-9" compacted)	Medium: weekly irrigation, 7-10 day mowing, weeding several times/year	Low: holds only very small leaves	NA for seeded grass	Economical cost, compared to sod
Kinnickinnick Arctostaphylos uva-ursi "Massachusetts" "Vancouver Jade"	3-5 yrs with close-spaced initial planting (slow growing)	Excellent with low care: Sturdy plant Good in most soils	Low: occasional irrigation in dry season, weed several times/year until well established	Medium: plants up to 4"-6" tall, holds leaves	Starters 10"-12" maximum spacing	Full sun/partial shade Medium cost Bright/glossy green leaves, flowers Example: Burger King

References: 62 CES/CEVN, <i>Sunset New Western Garden Book</i> ; <i>Manual of Woody Landscape Plants</i> , Michael A. Dirr, 1990; Furney's Nursery, Federal Way; Molback's Nursery, Woodinville.						
Groundcover type	Criteria 1 Rapid green cover	Criteria 2 Survivability	Criteria 3 Maintenance level	Criteria 4 Leaf/litter trap	Criteria 5 Max plant spacing	Comments
Heather <i>Calluna vulgaris</i>	3-5 yrs with close-spaced initial planting (slow growing)	Good with medium care: Less sturdy plant	Medium: regular irrigation, occasional pruning and weed several times/year	Medium: plants up to 4"-10", hold leaves	Starters 10"-12" maximum spacing	Full sun/partial shade Medium cost Crowded, tiny, dark green leaves, flowers

Attachment 4

PLANT AND SHRUB PLANTING DETAILS

Figure A4.1. Tree Planting Detail.

