

**EXHIBIT D- DESIGNATION BY DESCRIPTION (DXD)**

The selection criteria shown below shall be used by the purchaser in determining which trees are to be retained and which trees are to be cut and removed.

The selection of retention and cut trees shall comply with the West Fork II Special Provisions Section 44. The Purchaser shall leave all boundary trees, trees marked with orange paint, all hardwood trees, non-hazardous snags, and pre-existing dead and down material in harvest units. Trees that are removed to facilitate logging do not count toward the leave tree requirements described below.

**I. Sample Mark Areas**

BLM forestry staff has sample marked approximately 1 acre (locations are shown on Exhibit A map) to demonstrate selection criteria outlined below:

**II. Selection Criteria**

The selection criteria shown below shall be used by the Purchaser in determining which trees greater than 7 inches diameter at breast height (DBH) (defined as 4.5 feet, above ground level on the uphill side of the tree) are designated for retention and which are designated for falling.

Utilize variable density thinning by creating gaps (small openings in the canopy), small skips (areas left unthinned), and thinning from below with a target retention of approximately 36 trees per acre to address forest health concerns, provide big game winter range, and reduce visual impact. 200 feet from private property lines bordering clearcuts require retention of 60 trees per acre.

Tree removal shall be focused on insect and root diseased pockets, and intermediate or suppressed trees growing into the crowns of healthy dominant and/or co-dominant trees. In areas experiencing significant mortality, where there are few or no living trees, skips may be considered with prior approval from the Contracting Officer.

Tree selection shall be based on the perimeters listed in section III.

**III. Tree Selection Parameters**

A. Prioritize the retention of healthy and disease-free dominant and co-dominant western larch, western white pine, and ponderosa pine with a diameter at breast height (DBH) greater than 24 inches.

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- B. Retain all hardwood tree species. Hardwoods are not to be included in spacing requirements described above.
  - 1. Hardwood species include:
    - a. Quaking aspen
    - b. Paper and water birch
    - c. Alder
- C. An emphasis will be placed on retaining approximately 5 standing dead trees (snags) greater than 14 inches DBH per acre, except those snags that must be felled to permit safe working operations.
- D. All existing downed wood regardless of decay class are reserved from harvesting. No “snapped off” leave tree timber inside the logging unit may be severed unless determined to be a safety hazard.
- E. In selecting which trees to retain to meet the density management requirement shown above, apply the following criteria in the hierarchically designated order of importance:
  - 1. Where available, retain vigorous trees exhibiting the desired form and vigor. Such vigorous trees are defined as:
    - a. Trees that have a live crown ratio of 40 percent or greater. The live crown ratio is determined by dividing the height of the tree containing a live crown by the total height of the tree.
    - b. Trees that exhibit mostly dark green needles with very little yellowing of the needles.
    - c. Trees that are free from severe mistletoe, disease, wounds, insect, or poor form (dead or forked tops, sweep, or crook, etc.).
  - 2. Where available, on a per-acre-basis, 75 percent or more of retained trees shall consist of the dominant and co-dominant trees of the initial stand.
  - 3. Where available, retain the following preferred tree species in the designated order of preference:
    - a. Western White Pine (WP)
    - b. Ponderosa pine (PP)
    - c. Western larch (WL)
    - d. Western redcedar (WRC)
    - e. Douglas-fir (DF)
    - f. Grand fir (GF)
    - g. Engelmann spruce (ES)
    - h. Lodgepole pine (LPP)
    - i. Western hemlock (WH)
    - j. Subalpine fir (AF)

**IV. Compliance Inspection Criteria**

Compliance inspection will consist of visual observation of on-going operations and collecting plot data after the trees have been felled as specified below:

- A. Visual observation compliance will consist of subjective monitoring by the Authorized Officer (AO) for compliance with the selection criteria. Compliance will be considered satisfactory if 90 percent of the observed cut or retained trees are determined by the AO to meet the selection criteria.
- B. The AO shall inspect felling operations by random plot selections through felled areas. At each plot, the following will be inspected to determine if the approval level is being met:
  - 1. Diameter and species of stumps measured at 1 foot or less above ground on the uphill side.
  - 2. DBH and species of residual trees.
  - 3. Average spacing between residual trees 7 inches DBH and larger.
  - 4. Number of trees significantly damaged by the Purchaser's operation at each plot.
  - 5. The selection of residual trees and the work quality.
- C. The purchaser's operations will be considered approved if:
  - 1. 90 percent of the residual trees meet the selection criteria in Section II.
  - 2. More than 95 percent of the residual trees are not significantly damaged by operations under the contract. Significant damage is defined as any tree having greater than 30 percent of the bark removed from the circumference of the tree, any tree with top diameter broken at 3 inches in diameter or greater, or any tree being visually root-sprung.

If the Purchaser's operations fall below any one of these approval levels, a written warning will be immediately issued to the Purchaser.

**V. Definitions**

- A. Co-dominant- Trees with crowns forming the general level of the main canopy that receive full light from above but comparatively little from the sides.
- B. DBH- Diameter of a tree at breast height, measured at a point 4.5 feet above ground level on the uphill side of the tree.
- C. Dominant- Trees with crowns of extending above the general level of the main canopy that receive full light from above and partial light from the sides.
- D. Form (tree form) - The general shape of the tree. For this contract, good form will be defined as trees with straight boles, full crowns, small branches that are perpendicular to the bole that have pyramidal crowns (not flattened).

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- E. Snag- A standing dead tree at least 14 inches in diameter and at least 30 feet tall, from which the leaves and most of the branches have fallen.