

**APPENDIX A**

**WORK ITEMS**

## Project Number 001 - Pre-commercial Thinning

### Desired outcome

The goal of pre-commercial thinning is to reduce stand densities in older plantations, increasing the growth rate of dominant trees, and enhancing and restoring species diversity. Reducing hazardous fuels is also an important objective. The end result is an average stand density of 130 healthy trees per acre for the 18x18-foot spacing.

**Table 1. Precommercial Thinning Units**

Unit Number	FACTS ID	Unit Name	Legal Description	Section/ Unit	Tree Spacing	Acres
183	0002380058	WEST BUDD 15	29S R1W	7-10	18x18	6
181	0002390566	WEST BUDD 16	29S R1W	7-11	18x18	14
166	0002390613	WEST BUDD 7	29S R1W	17-7	18x18	12.1
189	0002390552	THIN STRAIGHTER 10	29S R1W	8-7	18x18	10.0
		<b>Subtotal Project # 001</b>				<b>42.1</b>

### Technical Specifications For Precommercial Thinning and Conifer Release

#### A. Selection of Leave Trees

The maximum DBH cut limit shall be 6.9 inches unless otherwise specified on the maps and Data Sheets.

1. Leave all conifer and hardwood trees that exceed maximum DBH cut limit specified in the Data sheets. Conifers and hardwoods over the listed maximum cut limit **shall** be counted when determining proper spacing of leave trees unless otherwise noted on the unit maps and Data sheets.
2. Hardwoods may be managed as commercial species on specified units (see maps and Detailed Unit Summary Sheets). **DO NOT** cut Pacific yew. The associated Exhibit# 3 will be provided to the Contractor by the District.
3. Leave trees shall generally be those of tallest height, largest crown, and straightest stems that are free of damage due to insects, disease, physical, or mechanical causes. The Contractor shall select leave trees in the following priorities:
  - a. Leave all conifer trees which exceed maximum DBH cut limit and all conifers less than 2 feet tall.

- b. If no healthy undamaged tree exists at the required spacing interval, leave a tree with minor damage.
  - c. If no healthy tree with minor damage exists, a hardwood may be selected as a leave tree.
  - d. The species preference for leave trees shall be as follows: Western white pine (WWP), Sugar pine (SP), Ponderosa pine (PP), Douglas-fir (DF), Incense cedar (IC), White fir (WF) and Western hemlock (WH).
4. A diseased or damaged tree with the following characteristics may be left:
  - a. Trees up to 1" DBH - No visible mistletoe.
  - b. Trees between 1" and 3" DBH - No visible mistletoe above the lower 1/3 of the live crown.
  - c. Trees between 3" and 5" DBH - No visible mistletoe in the upper 1/3 of the live crown.
  - d. Trees less than 50% girdled by animals or logging damage.
  - e. Trees with blister rust on lateral limbs only.
5. When selecting leave trees, the average spacing specified shall be followed. However, in order to select the most desirable tree the allowable spacing variance is 25%. The number of leave trees per acre shall not be materially increased or decreased when spacing variation is necessary. Where a spacing of 18 x 18 feet is specified in this contract, the allowable spacing variance is between 13.5 and 22.5 feet.
6. There will be areas within individual units in this contract where multiple species exist as leave trees. In these cases, all species **except** pines shall require 18 x 18 foot spacing where as pines shall require 22 x 22 foot spacing. This has been generally captured in Table #1 above. Where a pine leave tree is adjacent to a leave tree of another species, the spacing shall be determined by the pine.
7. All live specified vegetation shall be cut which is within, or could reach into a cylinder-shaped space centered around each crop tree. Release specifications are shown on Exhibit 1A. This specifies a release cylinder of 4 feet. Released trees shall be kept from damage at all times, including severing, nicking the stem, cutting branches, touching or breaking by cut hardwoods or vegetation in the process of meeting specifications.

## B. Cutting Methods

1. **Stump Height.** All trees and vegetation other than leave trees shall be cut below the lowest live limb, except when prevented by natural obstacles; in which case any live limbs below the cutting point shall be removed except low live limbs which are less than 2" from the ground surface measured directly from ground to limb. Trees shall be completely severed from the stump. Stump height shall not exceed 6 inches above ground level or natural obstacles. Low live limbs, which are covered with dirt or duff adjacent to the bole of the tree, shall be cut where they emerge from dirt or duff.
2. **Felling.** Cut trees shall be felled away from unit boundaries, roads, telephone lines, established livestock and game trails, stock driveways, fence lines, established land corners, private property

lines, and stream buffers. Any trees falling on such areas shall be removed as specified elsewhere herein.

3. Hang-Ups. All thinning slash shall be placed on or near the ground surface, so that it shall not lean against or be suspended by an uncut tree, and interfere with the form, stem position, or affect the growth of crop trees.

### **CONTRACTOR QUALITY CONTROL PLAN**

The Contractor shall provide a quality control plan at the post award conference. The plan shall be provide a procedure that ensures the work meets the specifications and shall be similar in nature to the Government's Quality Assurance Surveillance Plan so that inspections results are comparable.

### **GOVERNMENT QUALITY ASSURANCE SURVEILLANCE PLAN**

#### **1. PRECOMMERCIAL THINNING AND RELEASE**

Inspection will require a series of 1/50th acre circular plots, with slope corrections, distributed over the entire unit sufficient in number to yield at least one plot per 2 acres.

Inspection plots will be located on a systematic grid basis. The plot grid shall be approximately 4.5 chains by 4.5 chains (300' x 300').

- A. All plot centers will be marked on the ground with plastic flagging and by tying a plastic ribbon (with the plot number marked on it) on the nearest bush or other object at least four (4) feet above ground level. Plot location will be systematically located on the project map, and numbered to correspond with the plot cards.
- B. Initial inspections will consist of a 100 percent visual inspection and shall be based on adherence to the contract specifications.
- C. Each plot will be examined and the findings recorded as listed below:
  1. The number of trees that should have been left.
  2. The number of trees that were left.
  3. The number of satisfactory leave trees.
  4. The number of deficient trees.
  5. The number of excess trees.
- D. Other Deductions - The following list describes several of the most common examples of non-compliance, and how they should be recorded on the thinning inspection form.
  1. High stumps will be recorded as an excess tree and noted as such under remarks on the thinning inspection form.
  2. Trees not completely severed from the stump will be recorded as an excess tree and noted as such under remarks on the thinning inspection form.

- 3. Poor Choice - Any tree cut that was not selected according to the technical specifications will be recorded as a deficient tree.
- 4. Release cylinder – Any shrubs left uncut within the specified release radius
- 5. Damaged Crop Tree - Any leave tree damaged during the thinning or release operation will be recorded as a deficient tree.
- 6. Hang-ups - When thinning or release slash leans against, or are suspended by a leave tree, that will be recorded as a deficient tree.
- 7. Low Live Limbs - Any cut tree that has live limbs more than 2" above the ground surface at the stump will be recorded as a deficient tree.

**The following deductions will be made:**

Improper tree selection	one tree
Improper spacing (excess tree)	one tree
Damaged crop tree	one tree
Uncut release cylinder	one tree
Low live limbs	one-third tree
High stumps	one-third tree
Hang-ups	one-third tree

E. Calculation of Quality Percentage - Upon completion of all plots for the item, the quality of thinning or release will be calculated as follows:

$$\text{Quality \%} = 1 - \frac{\text{no. of deficient trees \{D\} + no. of excess trees \{E\}}{\text{no. of trees that should have been left \{L\}}} \times 100$$

Percentage of thinning quality as calculated will be rounded to the nearest whole percent.

## Project Number 002 - Commercial Thinning

### Desired outcome

The goal of the commercial thinning is to reduce stand densities and increase the growth rate of dominant trees, while maintaining species diversity, and reducing hazardous fuels. The desired long-term mature tree stocking goal is 50 to 125 trees per acre, and this treatment shall move the stands toward that future level.

### Technical Specifications For Commercial Thinning

#### A. Selection of Leave Trees

The leave trees shall be selected using Designation by Description as described in Appendix B, K-C.3.5.7# - INDIVIDUAL TREE DESIGNATION (OPTION 1). (5/05).

#### B. Felling and Yarding Requirements

Notwithstanding G.4.1 and G.4.1.1 felling objectives shall be accomplished by the type of felling methods and equipment listed herein. Methods or equipment other than those specified may be approved. For Subdivisions shown in the following table, Contractor shall submit a cutting plan for Forest Service acceptance, prior to the start of felling operations.

<b>Felling Methods and Equipment</b>	<b>Subdivisions</b>
Directional felling of all trees to protect residual trees, riparian vegetation, no cut areas and to facilitate yarding. Fell timber to maximize volume recovery.	All
Contractor and Forest Service shall agree to ground-based skid trail/road locations and skyline corridor locations prior to felling. Mechanized felling equipment shall not operate on slopes greater than 30 percent, unless operating on existing skid trails/roads.	All

Contractor shall submit for Forest Service approval a Yarding/Skidding Plan prior to the start of felling operations. Requirements other than those specified in the following table may be approved.

<b>Ground-based</b>	<b>Subdivisions</b>
Equipment shall not be operated in Riparian Reserves. Class IV stream Riparian Reserves shown on the Contract Area Map are 100 feet each side of the channel. Class III stream Riparian Reserves are 150 feet each side of the channel.	All Mechanical units
Equipment shall operate on designated skid trail/road locations spaced to minimize soil compaction. Existing skid trails shall be used as much as practicable. Locations shall be agreed to prior to felling. Equipment shall operate in areas less than 30% ground slope or on existing skid trails/roads.	All Mechanical units

<b>Skyline</b>	<b>Subdivisions</b>
System shall be capable of suspending the lead end of the log during inhaul. Intermediate supports may be needed. Skyline corridors should be spaced 150 feet apart to minimize the number of corridors, unless otherwise agreed to in writing to protect the residual stand. The width and location of corridors in Riparian Reserves shall be minimized.	All Skyline units
Contractor and Forest Service shall agree to the landing locations prior to felling, unless otherwise agreed to in writing.	All Skyline units

C. Damage Limits

Leave trees shall be protected during felling and yarding as much as possible. Felling and yarding of material may be restricted from April 15 to July 1 to protect leave trees during the bark slippage season. Skyline corridor and skid trail rub trees can be designated by the COR to be used to limit damage to the rest of the stand. In this case, rub trees shall not be more than 5 feet from the centerline of the corridor or skid trail. White fir and western hemlock rub trees shall be designated for removal after the tributary volume has been yarded.

D. Slash Cleanup Requirements

Slash is defined as vegetative debris including, but not limited to, cull logs, stumps, chunks, broken tops, limbs, bark, and damaged brush, resulting from the Contractor's operations. All slash within the roadway shall be piled. Roadway is defined as the area from the top of the cutbank to the toe of the fill slope. All landing and decking area slash shall be piled.

Piles must be free of noncombustible material and as compact as possible. Outside edge of piles shall be at least 30 feet from the base of any live trees or adjacent timber. Outside edge of piles shall be at least 50 feet from the edge of any live stream.

All piles shall be covered with black polyethylene plastic 0.006 inch thick or its equivalent as approved by the Forest Service. Covering shall be placed on top of the pile and weighted down with combustible material. The entire top of the pile shall be covered. Piles shall be covered with covering extending one-half of the way down the sides. All protruding pieces shall be bucked off and placed on the piles.

**GOVERNMENT QUALITY ASSURANCE SURVEILLANCE PLAN**

The Government's Quality Assurance Surveillance Plan will consist of a 100 percent visual inspection and shall be based on adherence to the contract specifications.

## **Project Number 003 – Road Maintenance**

### **Desired outcome**

Roads used for this project shall drain water effectively, not contributing to runoff and sediment. The roads shall be safe for hauling of products and administration of the contract.

### **Technical Specifications For Road Maintenance**

The technical specifications are stated in Appendix C.

### **GOVERNMENT QUALITY ASSURANCE SURVEILLANCE PLAN**

The Government's Quality Assurance Surveillance Plan will consist of a 100 percent visual inspection and shall be based on adherence to the contract specifications.