

Schedule of Service Items and Specifications
Reds Meadow II – Forest Health Units

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Schedule of Service Items

Scope of Work:

The objective of this work is to improve forest health and reduce the likelihood of a high severity fire through mechanical thinning of conifers to a more natural density. This will create more resilient and healthier forests by reducing competition and increasing water availability.

Treatment Units:

Unit ID	Acres	Treatment	Designation	Status
FH-1	31	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-2	22	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-3	10	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-4	28	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-5	17	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-6	8	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-7	32	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-8	14	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-9	40	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-10	39	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
FH-11	9	Overstory Thinning	Individual Tree Mark	Mandatory
		Understory and CWD	Description by Prescription	Optional
250		Total Acres		

Item 1: Overstory Thinning (Mandatory)

Treatments under this item are mandatory and are to be completed using a combination of mechanical and hand equipment to remove designated cut trees.

1.1 Cut and Remove Included Timber: All conifer trees 10.0" - 29.9" DBH designated for removal will be cut, skidded and removed from the project area. Trees will be designated with blue or green Timber Marking Paint, each designated cut tree will be painted around the bole above breast height with at least one butt mark. Purchaser shall remove all included timber that meet the Utilization Specification from Inyo National Forest lands unless otherwise approved by COR in writing.

1.2 Stump Heights: Stumps shall not exceed, on the side adjacent to the highest ground, the maximum height of 8 inches except that occasional stumps of greater heights are acceptable when Contractor determines that they are necessary for safe and efficient conduct of logging. Unless otherwise agreed, Contractor shall re-cut high stumps so they will not exceed 8 inches in height and shall dispose of severed portions in the same manner as other activity generated slash. All cut stumps shall have no residual live limbs left attached to the stump.

1.3 Felling and Bucking: Felling shall be done to minimize breakage of designated cut trees and damage to residual timber. Trees that are excessively damaged, the cambium is exposed on 1/3 of the bole or more, shall be cut. Bucking shall be done to permit removal of all minimum pieces set forth in in the utilization specifications (Appendix F, F.AT2). Contractor may buck out cull material when necessary to produce pieces meeting Utilization Standards. Such bucked out material shall contain a minimum amount of sound wood, not in excess of the net merchantability factor (Appendix F, F.AT2). If necessary to assess extent of defect, Contractor shall make sample saw cuts or wedges. All cut trees will be bucked into standard timber log lengths starting at 10 feet and then in increments of a foot up to a maximum of 42 feet before decking. Purchaser may request alternative log lengths and shall be approved by the COR in writing.

1.4 Skidding/Yarding: All cut material that meets the utilization specification shall be limbed and cut to length prior to being skidded/yarded to landings. Whole tree yarding may occur if proposed landings can be sufficiently sized and is approved by the COR in writing. All skidding/yarding operations shall be ground based unless otherwise agreed to by the COR in writing. Cut material may be skidded on specified dirt roads listed in Appendix F. No skidding on paved roads will occur unless otherwise approved by the COR in writing.

- a. Endlining may be required for distances up to 100 feet slope distance.
- b. Low-ground pressure equipment requirements and mechanical exclusion zones are identified on the contract map and described in Appendix C, Pre-Operation & Resource Protection Measures.

1.5 Utilization Specifications (Appendix F, F.AT2): Logs on the small end measuring 6 inches or greater in Diameter Inside the Bark (DIB) and have a length of 10 feet or greater. All designated cut trees shall have at least one utilized log. Utilization of material less than 6 inches DIB or 10 feet is not required but can be utilized subject to agreement with the COR. Tops and limbs not meeting the utilization specification shall be disposed of by one of the methods described in the Biomass Disposal section.

1.6 Activity Generated Slash: All tops, limbs and activity generated material created during the cutting operations that does not meet the utilization specification shall be disposed of using one of the methods as described in the Biomass Disposal section.

Item 2: Understory & CWD (Optional)

Treatments under this line item are optional and are to be completed using a combination of hand and mechanical equipment to thin understory trees and remove Coarse Woody Debris (CWD).

2.1 Cut Live Trees: All conifers less than or equal to 9.9” DBH shall be evaluated to be removed or retained. All trees which are selected to be removed shall be cut to a stump height of less than 8 inches tall (as measured from the uphill side) with no residual live limbs left attached to the stump. All leave trees shall be left undamaged by timber operations, except for minor bark scraping, which does not expose the cambium on 1/3 of the bole or more. Trees that are excessively damaged shall be cut.

2.2 Leave Tree Density/Spacing: All conifer trees less than or equal to 9.9” DBH shall be thinned to an average residual spacing of 20 feet (110 trees per acres (TPA)) across the unit considering trees greater than 9.9” DBH in the spacing. Spacing should not be uniform and should vary across the entire unit from 10 – 30 feet to create a “natural” aesthetic.

2.3 Radial Thinning: Cut all conifer trees less than or equal to 9.9” DBH:

1. Within the dripline of any leave tree greater than 20 inches DBH, unless the tree greater than 20 inches DBH is showing signs of fading or has signs of pest or pathogens.
2. Within 100 feet of healthy aspen trees.
3. Within 10 feet of the edge of a meadow or riparian vegetation.

2.4 Leave Tree Characteristics: Leave trees should be vigorously growing with dark green crowns which are not fading or chlorotic with live crown ratios greater than 40%. Leave trees should be free of signs of pests or pathogens such as mistletoe or bark beetle. All conifers less than or equal to 9.9” DBH which have been successfully attacked by bark beetle shall be cut. Trees which have been successful attacked have pitch tubes which are pink/orange in color where the beetle entered the tree. If trees meeting these criteria cannot be identified the healthiest trees shall be retained.

2.5 Leave Tree Species: DO NOT CUT any five needle pines and Sierra juniper (whitebark, western white, or limber pine). Preferentially retain species in the following order:

1. Jeffrey pine
2. Mountain hemlock
3. Red fir
4. White fir
5. Lodgepole pine

2.6 Standing Dead Trees: All standing dead trees less than 12” DBH will be cut and disposed of utilizing one of the biomass disposal methods described below.

2.7 Coarse Woody Debris: Existing coarse woody debris less than 12 inches in diameter that is not excessively decomposed or embedded in the ground shall be disposed of using one of the methods as described in the Biomass Disposal section.

2.8 Timber Subject to Agreement: Contractor may elect to remove forest products that do not meet the utilization specifications. These forest products must be accounted for separately and agreed to in writing by the Contracting Officer before any removal may occur.

Item 3: Biomass Disposal

This item applies to both Item 1 and 2. Contractor may choose one of the following methods described in this item to dispose of non-merchantable timber not meeting the Utilization Specification, activity generated slash and coarse woody debris as described above. The maximum piece size to be disposed of using one of these methods is 20 inches in diameter and less than 10 feet in length. All other larger cull material and coarse woody debris shall be decked in landing (greater than 10 feet in length) or left in place (less than 10 feet in length).

3.1 Machine/Hand Piles: Tops and limbs of designated cut trees processed out in the units and cut trees less than 9.9 inches DBH shall be machine or hand piled. Unless otherwise approved by COR in writing the maximum pile size shall be 20 feet in diameter by 15 feet in height, and the minimum pile size shall be 8 feet in diameter by 6 feet in height. All piles shall be neat, compact, and constructed by laying limbs, stems, cut boles, and all other slash, in the pile so it is conical in shape. Slash shall be bucked to lengths no larger than 4 feet and the minimum piece size to be piled shall be 3 inches in diameter and 4 feet in length.

(a) Piles shall **NOT** be placed:

- Within 50 feet of a Meadow Restoration Unit
- Within 15 feet of boles of residual trees.
- Within 15 feet of the dripline of a five-needle pine crown.
- Within the dripline of residual trees.
- Within 5 feet of any down logs exceeding 12 inches in diameter at the small end.
- On logs, rocks, or stumps, in roadways, trails, swales or drainage ditches.
- Within 10 feet of unclassified channel bottoms or within 25 feet of designated classified streams as shown on the contract area map and/or designated on the ground.
- Within 50 feet of powerlines.
- Within 25 feet of trails and roads.
- Within control areas.

(b) All constructed piles shall receive one, 4 foot wide by 4-foot-long sheet of Kraft paper in the top third of the pile. Contractor shall pile additional material (top third) on top of the Kraft paper to prevent paper from moving off the pile under environmental conditions.

3.2 Landing Piles: Tops and limbs of trees which are processed at landings shall be piled. Unless otherwise approved by COR in writing the maximum pile size shall be 25 feet in diameter by 20 feet in height, and the minimum pile size shall be 15 feet in diameter by 10 feet in height. All landing piles shall be neat, compact, and sufficiently free of dirt to allow consumption of the piled debris when burned. Piles shall be constructed by alternating the butt ends of the logs and tops to help provide fine material on either end of the pile, to achieve pile compaction and to help aid in ignition.

(a) Piles shall **NOT** be placed:

- Within 50 feet of a Meadow Restoration Unit.
- Within 20 feet of the boles of Leave Trees
- Within 20 feet of the dripline of a five-needle pine crown.
- Within the dripline of residual trees
- Within 5 feet of any down logs exceeding 12 inches in diameter at the small end.
- On logs, rocks, or stumps, in roadways, trails, swales or drainage ditches.

- Within 10 feet of unclassified channel bottoms or within 25 feet of designated classified streams as shown on the contract area map.
 - Within 25 feet of trails and roads.
 - Within 100 feet of powerlines.
- (b) Upon completion of a machine pile, piles must be “lined” with a 4-foot horizontal distance around the pile cleared to mineral soil to prevent creep when burning.

3.3 Mastication: ONLY trees less than 6 inches DBH selected for removal for fuels reduction may be masticated to a stump height less than 8 inches on the side adjacent to the highest ground.

- (a) Masticated material shall be no larger than 24 inches in length and 3 inches in diameter.
- (b) Material shall be dispersed and not exceed an average depth of 3 inches with a max of 5 inches over less than 10 percent of any one acre.

Inspections and Acceptance of Work

Work will be accepted for payment based on the results of the Final Inspection. Final Inspection will determine whether the work has been performed satisfactorily according to the specifications. The inspections will be plot based and the plots will be located throughout the units so as to obtain a representative sample of the area. Units will be inspected separately and not combined for the purpose of determining percent of satisfactory work. Inspections are for the purpose of satisfying the Government that the services are acceptable and do not relieve the Contractor of the responsibility for maintaining quality control.

Performance Measures for Overstory Thinning (Item 1)

1. Cut trees
2. Height of stumps
3. Log utilization
4. Biomass Disposal
5. Skid trail rehabilitation
6. Landing rehabilitation

Performance Measures for Understory and CWD (Item 2)

1. Trees per acre
2. Height of stumps
3. Biomass disposal

As needed, a series of 1/20th acre plots (26.3 foot plot radius) per every 5 acres, with a minimum of three plots per unit, will be sampled by a fixed series of plots evenly distributed over the entire treatment area. The plot size will be a fixed radius measured in horizontal distance.

On each plot the designated inspectors will record the plot number, whether the plot is satisfactory or unsatisfactory and the reason if unsatisfactory. Each plot will be examined to record findings on

individual items as listed below. To be considered satisfactory these items must meet the following criteria:

Item	Performance Measure	Inspection Metric	Pass	Fail
Overstory Thinning (Item 1)	Cut Trees	Designated trees have been cut	All designated trees have been cut	≥1 designated trees has NOT been cut without justification
	Height of Stumps	Stumps less than 8 inches tall on the uphill side	≤1 trees per plot	>1 trees per plot fail
	Log Utilization	Logs meeting utilization are removed from project area	All material meeting utilization has been removed	Material meeting utilization has NOT been removed
	Piles	Cull and activity generated material has been treated	≥9/10 piles meet specifications and <1 piece of material per plot not treated	<9/10 piles meet specifications and ≥1 piece of material per plot not treated
	Skid Trail Rehabilitation	Rehabilitation to specification	Skid trails have been rehab to specification	Skid trails have NOT been rehab to specification
	Landing Rehabilitation	Rehabilitation to specification	Landings have been rehab to specification	Landings have NOT been rehab to specification
Understory and CWD (Item 2)	Trees Per Acre	Remaining Trees Per Acre	100 – 120 TPA	<100, >120 TPA
	Height of Stumps	Stumps less than 8 inches tall on the uphill side	≤1 trees per plot	>1 trees per plot fail
	Biomass Disposal	All cull and activity generated material has been treated	≥9/10 piles meet specifications, <1 piece of material per plot not treated, and mastication depths exceed specified depths on ≤10% of the chipped area	<9/10 piles meet specifications, ≥1 piece of material per plot not treated, and depths exceed specified depths on >10% of the chipped area

Acceptance

Work on this Agreement will be deemed acceptable when a score of 90 percent or more is achieved. For a score of 80 percent or more but less than 90 percent, 2 percent of the unit price pay will be deducted

for that unit for each percentage point below 90%. If the inspection score is less than 80 percent then there is no pay. The unit may be reworked ONCE and then re-inspected. This re-inspection score will be the final result for payment on that unit, (see re-inspection after rework below).

Government Inspections

Government inspections are for the purpose of satisfying the Government that the services are acceptable and do not relieve the Partner of the responsibility for maintaining quality control.

The Agreement Officer's Representative or designated inspector will conduct all inspections. The Partner (or designated representative) is encouraged to be present to observe inspections. Summary results will be made available on request.

Compliance Inspections. Visual compliance inspections will be made on a periodic basis. Such inspections are not final and do not constitute acceptance by the Government.

Final Inspections. Final (formal) inspections for payment will be made on completed sub-items only. The Partner shall request final inspections in writing and give the Forest Service at least two working days advanced notice. Inspection forms will be provided to the Forest Service at the time of final inspection request. Inspections will be completed within ten working days after the notice is received. If the work is not ready for inspection at the time specified by the Partner, the cost associated with the inspection attempt may be charged to the Partner.

Disputed Inspection

The Contractor may request re-inspection without rework if the results are unacceptable. Re-inspection must be requested in writing within 48 hours after receiving written notice of the inspection results. Re-inspection will be accomplished within five working days after receipt of the Contractor's written request.

The same sampling and inspection procedures will be used, but new samples will be taken. The inspection pattern will be shifted so that new samples will not overlap previously inspected samples. Results will be rounded to the nearest whole percent.

If re-inspection results are within five percentage points of the first inspection, the original inspection result will be used in determining acceptability and payment. If re-inspection results are greater than five percentage points above or below the first inspection, the re-inspection results will be used.

If the re-inspection results are within five percentage points of the first inspection, the Contractor shall pay the actual costs of the re-inspection.

Re-inspection after Rework

Where rework after a failed inspection may improve the inspection results, the Contractor may rework the area and request (in writing) a second inspection. The Whitebark Institute will charge to the Contractor the cost of this additional inspection. Re-inspection will be accomplished within five working days after the notice is received. The results of the second inspection will be final, and no further rework will be permitted. Areas not ready for re-inspection at the time specified by the Contractor will not be re-inspected, and the results of the first inspection will be final.