

Schedule of Service Items and Specifications

Reds Meadow II – Fuels Reduction Project

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SCHEDULE OF SERVICE ITEMS:

Scope of Work

This project involves removal of ladder and surface fuels. Conifers under 12” diameter at breast height (DBH) will be mechanically cut or hand felled and selection will be completed by the contractor with the selection criteria below. Slash material will be disposed of following Biomass Disposal specifications.

Treatment Units:

Unit ID	DBH Limit (inches)	Mechanism	Contract Status	Quantity (Acres)
FR-7	12	Mechanical/ Hand	Mandatory	167
FR-8	12	Mechanical/ Hand	Mandatory	58
FR-9	12	Mechanical/ Hand	Mandatory	137
FR-10	12	Mechanical/ Hand	Mandatory	39
FR-11	12	Mechanical/ Hand	Mandatory	82
FR-12	12	Mechanical/ Hand	Mandatory	68
FR-13	12	Hand	Mandatory	6
FR-14	12	Hand	Mandatory	9
FR-15	12	Hand	Mandatory	7
FR-16	12	Hand	Mandatory	14
FR-17	12	Hand	Mandatory	2
FR-18	12	Hand	Mandatory	9
FR-19	12	Hand	Mandatory	4
FR-20	12	Hand	Mandatory	4
Total				606

Fuels Reduction – Thinning and Coarse Woody Debris

Treatments under this line item are completed using a combination of hand and mechanized equipment to remove understory trees. Use of mechanical operations within FR units will be restricted to low-pressure equipment such as skid steers and tracked chippers, operators wishing to use other traditional timber equipment in these units will require approval from the INF District Ranger.

1.1 Cut Live Trees: Trees selected for removal shall be directionally felled away from meadows, streams, and wet areas. Leave trees shall be left undamaged by timber operations, except for minor bark scraping, which does not expose the cambium. Trees that are excessively damaged shall be cut.

1.2 Stump Height: 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.

1.3 Leave Tree Density/Spacing: Conifer trees shall be thinned to an average residual spacing of 20 feet (110 trees per acres (TPA) across the unit taking into account live trees greater than 12” DBH. Spacing should not be uniform and should vary across the entire unit from 10 – 30 feet to create a

“natural” aesthetic. Overstory tree health should be taken into account in understory tree selection and dead/dying overstory trees should not be considered in a leave tree TPA.

Exceptions to 110 TPA average:

- Red fir dominated stands and regeneration clumps should be thinned to 115 TPA.
- Jeffrey pine regeneration clumps should be thinned to 50 TPA.

1.4 Selection Criteria for Cut Trees: All trees less than 12” DBH will be considered for removal based on the following criteria:

- a. Trees showing damage due to insects, disease, physical, and mechanical issues. Trees showing minimal mechanical damage can be retained to meet spacing requirements.
- b. Trees within the dripline of a leave tree with a DBH greater than 20”, unless the tree greater than 20 inches DBH is showing signs of fading or has signs of pest or pathogens.
- c. Cut all trees, regardless of DBH or species actively infested with bark beetle, with 1/3 of the bole or more with pitch tubes. Contractor may leave cut infested trees and leave them on the ground, where removal would cause an unacceptable amount of damage. In these occasions the trees should be bucked so the bole lies within a foot of the surface of the ground, and branch material should be removed and disposed of using one of the methods described in the “Biomass Disposal” section.
- d. Cut all trees within 100 feet of health aspen trees or within 10 feet of the edge or a meadow or riparian vegetation.
- e. **Do not cut any 5-needle pines or Sierra juniper** unless they are actively infested with bark beetle or dead. 5-needle pines include: Whitebark pine, western white pine, and limber pine. Contractor is responsible for identifying 5-needle pines.
- f. Preferentially retain species in the following order:
 - (1) Jeffrey pine (JP)
 - (2) Red fir (RF)
 - (3) Mountain hemlock (MF)
 - (4) White fir (WF)
 - (5) Lodgepole pine (LP)

Unit ID	Additional Notes
FR-7	Where LP intermediate/overstory diseased select in preference for RF saplings.
FR-8	No additional notes
FR-9	Retain JP, removal of diseased/dying trees on north slopes towards DEPO.
FR-10	No additional notes
FR-11	Thin RF and JP regeneration clumps.
FR-12	No additional notes
FH-13	No additional notes
FH-14	No additional notes
FH-15	No additional notes
FH-16	No additional notes
FH-17	No additional notes
FH-18	Where LP intermediate/overstory diseased select in preference for RF saplings.
FH-19	No additional notes
FH-20	Where LP intermediate/overstory diseased select in preference for RF saplings.

1.5 Standing Dead and Hazard Trees: All standing dead less than 12” DBH should be cut and removed. All standing dead cut by contractor will be disposed of using the Biomass Disposal Section below.

1.6 Mechanical equipment: Mechanical tree felling and removal can be utilized in the FR units using the following methods:

- a. Low ground pressure equipment can be used, such as tracked chipper and skid steers. Additional equipment may be approved in writing by the District Ranger.
- b. Soils must be dry to a 6” depth for mechanical operations.
- c. May not enter the 25-foot equipment exclusion zone for any waterbody.
- d. Restricted to slopes less than 30%, endlining will be permitted on slopes greater than 30%.
- e. No trees greater than 20 inches shall be end-lined or skidded from the meadow. Unless they can be felled so that 50% of the tree bole is outside of the meadows edge.
- f. Operations shall minimize the need to turn equipment when retrieving bole material to reduce disturbance.
- g. If ruts > 2 inches in thickness that extend > 25 feet are created, work will pause and be reassessed by a COR.
- h. All main skid trails within meadows will be flagged and approved prior to project start.

1.7 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. Coarse woody debris greater than 12” in diameter may be removed if it interferes with operations and will be disposed of using one of the methods described in the biomass disposal section.

1.8 Activity Generated Material: All material created during operations, limbs and tops, that does not meet the Utilization Specification, material less than 10 inches in diameter, shall be disposed of using one of the methods described in the “Biomass Disposal” section.

Biomass Disposal (All Units)

Contractor may choose one of the following methods to dispose of activity generated slash and coarse woody debris as described in specifications 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.

Burn Piles

Biomass disposal may occur using a burn pile technique. This method will be accomplished by using mechanized equipment and/or hand operated equipment (chainsaws).

2.1a Machine/Hand Piles: Unless approved otherwise by the inspector in writing, maximum pile size shall be 15 feet in diameter by 12 feet in height, and minimum pile size shall be 7 feet in diameter by 5 feet in height at the time of final inspection. In circumstances where there is limited space to meet pile spacing requirements, windrows may be constructed. Windrows are elongated piles

which may exceed 12 feet in length in one direction; windrows shall not exceed 12 feet in width and 15 feet in height. All spacing requirements stated below apply to windrows.

- a. All piles shall be constructed by laying limbs, stems, cut boles, and all other slash, in the pile so it is triangular in shape. All material placed in piles shall be bucked to 4-foot lengths to facilitate tight piles. Minimum piece size to be piled would be 3 inches in diameter and 4 feet in length. All piles shall be neat, compact, and sufficiently free of dirt to allow consumption of the piled debris when burned.

2.3a Pile Locations: All activity generated material and coarse woody debris must be added to a pile.

Piles should generally be 20 feet apart.

Piles shall **NOT** be placed:

- Within 50 feet of Meadow Restoration Units
- Closer than 15 feet to boles of residual trees and outside of the dripline of residual trees, for piles less than 8 feet in height.
- Closer than 20 feet to boles of residual trees and outside the dripline of residual trees, for piles greater than 8 feet in height.
- Within 5 feet of any down logs exceeding 12 inches in diameter at the small end unless approved by the inspector.
- Within campgrounds, roads, or within 50 feet of infrastructure (buildings, roads, powerlines, etc.).
- Within 20 feet of trails.
- Within 1.5 times the pile diameter from a five needle pine individual or clump (e.g. a pile that is 15 feet in diameter shall be located at least 22.5 feet from the canopy of a five-needle pine of any size).
- Within 10 feet of unclassified channel bottoms or 25 feet of designated classified streams and meadows as shown on the contract area map and/or designated on the ground.
- Within control areas.

If such locations are not present, the contractor can request to pile outside of the unit in writing to the COR. No piling outside the units is allowed until approved. No cutting or piling will be allowed outside the NEPA boundary.

2.4a Pile Covering: 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 by environmental conditions. For windrows, Kraft paper shall be placed in the top third of the pile along the length of the pile to ensure adequate coverage.

Chipping

Biomass disposal may be accomplished by chipping material dispersing it across the unit and areas adjacent to the unit.

2.1b Chipped Material: Activity generated material and coarse woody debris can be chipped. Minimum piece size to consider for chipping would be 3 inches in diameter and 4 feet in length. Chips should be blown outside of the meadows into, upland, FR or FH units and spread to a depth no greater than 2 inches on average with a max of 4 inches over less than 10 percent of any one acre. When

chips are spread within units where five-needle pines are present, chip depth will not exceed 2 inches and they will be spread in a discontinuous manner.

2.2b Chip Location: Chips material shall **NOT** be dispersed:

- Into or near classified or unclassified streams or drainages where material has the likely potential to enter streams or lakes.
- Into pre-constructed erosion control features
- Into meadows
- Within 50 feet of any infrastructure (buildings, trails, roads, powerlines, etc..).
- In a continuous manner when around five-needle pines (dispersal shall be discontinuous/leaving some areas without chips).

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 Fuels Reduction

1. Trees per acre
2. Height of stumps

Performance Measures for Biomass Disposal

1. Piles
2. Chipping/Mastication

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
Fuels Reduction	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	Piles	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
	Chipping/Mastication	Activity generated material has been treated	Depths exceed specified depths on ≤10% of the chipped area	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.