APPENDIX A

TECHNICAL SPECIFICATIONS FOR SERVICE WORK ITEMS

SECTION I – GENERAL DESCRIPTION of WORK:

The purpose of the Mitchell Jackson DxP Stewardship Project IRSC is to modify the forest fuel conditions that influence fire intensity across the landscape, and reduce the potential for wildland fire to spread into Operable Unit 3 (OU3) and the corresponding exposure and migration risks in of Libby Amphibole Asbestos (LA) released from contaminated source media (e.g., soil, duff, and post-fire ash).

All work described herein is split into two separate subdivisions. Subdivision #1 will be henceforth referred to as Area 56. Subdivision #2 will be henceforth referred to as Powerhouse.

The contractor shall provide all management, supervision, labor, personnel, transportation, materials, equipment, and supplies, unless otherwise stated under Government Furnished Equipment and / or supplies. Contractor will also maintain written Quality Control documentation that will be made available to the COR at the completion of the work. All work shall be performed in accordance with the description of work for each individual work item included. All state, federal and local laws and regulations must be followed.

SECTION II – WORK ITEMS

Item #1: Commercial Timber Harvesting of 2,153 acres across both subdivsions.

Cut and remove from the Contract Area timber which meets the minimum tree specifications identified in Appendix B. Appendix B contains the estimated commercial product quantities, contractor requirements (Division A), general contract clauses (Division B), and contract provisions (Division C) specific to the harvesting of timber products within each of the two subdivision areas.

Item #2 and 3: Road Construction and Reconstruction

Powerhouse Subdivision: Refer to attachments 5a and 5b for Specifications and performance requirements.
Area 56 Subdivision: Refer to attachments 5c and 5d for Specifications and performance requirements.

Item #4: Road Maintenance associated with the Commercial Timber Harvesting Described in Item #1.

Refer to attachment 4-Appendix C for specifications. Road Maintenance will be performed commensurate with use and upon determination of the Forest Service.

Item #5: Timber Stand Improvement

ITEM #	DESCRIPTION of PRE-COMMERCIAL THINNING (PCT) DENSITIES
5a	**PCT - Low Density Thinning:** - Hand (manual) work within designated units. Cutting of Small Trees 1.5 Feet in height or greater, and 0.00 to 6.90 inches in diameter at breast height, Cutting 0 – 700 Trees Per Acre. **Area 56 Subdivision PCT Units:** N/A **Powerhouse Subdivision PCT Units:** P-59, P-63, P-70, P-191, (110 Acres)
5b	**PCT - Moderate Density Thinning:** - Hand (manual) work within designated units. Cutting of Small Diameter Trees – 1.5 Feet in height or greater, and 0.00 to 6.90 inches in diameter at breast height, Cutting 701 – 1,500 Trees Per Acre. **Area 56 Subdivision PCT Units:** P-23, P-26 (137 Acres)

	Powerhouse Subdivision PCT Units: P-47, P-51, P-52, P-54, P-60, P-64, P-65, P-66, P-67, P-68, P-69, P-83, (210 Acres)
5c	**PCT** - **High Density Thinning:** - Hand (manual) work within designated units. Cutting of Small Diameter Trees – 1.5 Feet in height or greater, and 0.00 to 6.90 inches in diameter at breast height, Cutting 1,501 or more Trees Per Acre. **Area 56 Subdivision PCT Units:** P-20, P-21, P-22, P-24, P-25 (92 Acres) **Powerhouse Subdivision PCT Units:** P-44, P-46, P-48, P-49, P-50, P-53, P-55, P-56, P-57, P-58, P-62, P-71, P-72 (295 Acres)

Silvicultural prescriptions for each individual PCT unit will be provided by the FS upon request of the contractor.

1. General leave tree descriptions will include good crown form, live crown ratio > 40%, species preference, good leader growth, color of foliage, straight bole, no significant defect or damage, and insect/disease free. Tree spacing and specifics will be covered in the individual harvest prescriptions.
2. Trees designated for removal as defined in the prescription shall be cut below the lowest live limb, except when prevented by natural obstacles. All live limbs below the point where cut, shall be removed.
3. Stumps shall be cut flat and not exceed 6 inches in height as measured from ground surface on the uphill side and shall be cut flat or with a minimal angle to avoid creating a sharp stump. Trees shall be completely severed from the stump.
4. Designated cut trees shall be felled away from unit boundaries, roads, telephone lines, established trails, stock driveways, fence lines, established land survey monuments, and streams. Any trees falling on such areas shall be removed. Any tree that is felled onto private land, roadside ditches, or within culvert inlets shall be pulled back a minimum of 10 feet into the PCT unit.
5. All PCT slash shall be placed on or near the ground surface, not to exceed an average of 2 feet in depth and shall be cut into lengths no greater than 6 feet long, so that it is not leaning against or suspended by an uncut tree, stump, log, or any obstacle. Snags may not be cut unless the contractor elects to fall them for safety reasons and receives concurrence from the FS prior to felling.
    a. If felled, snags should be felled prior to selecting leave trees within a distance equal to the height of the snag in the direction of fall.

Item 5d: Western White Pine (WP) Pruning

General Requirements

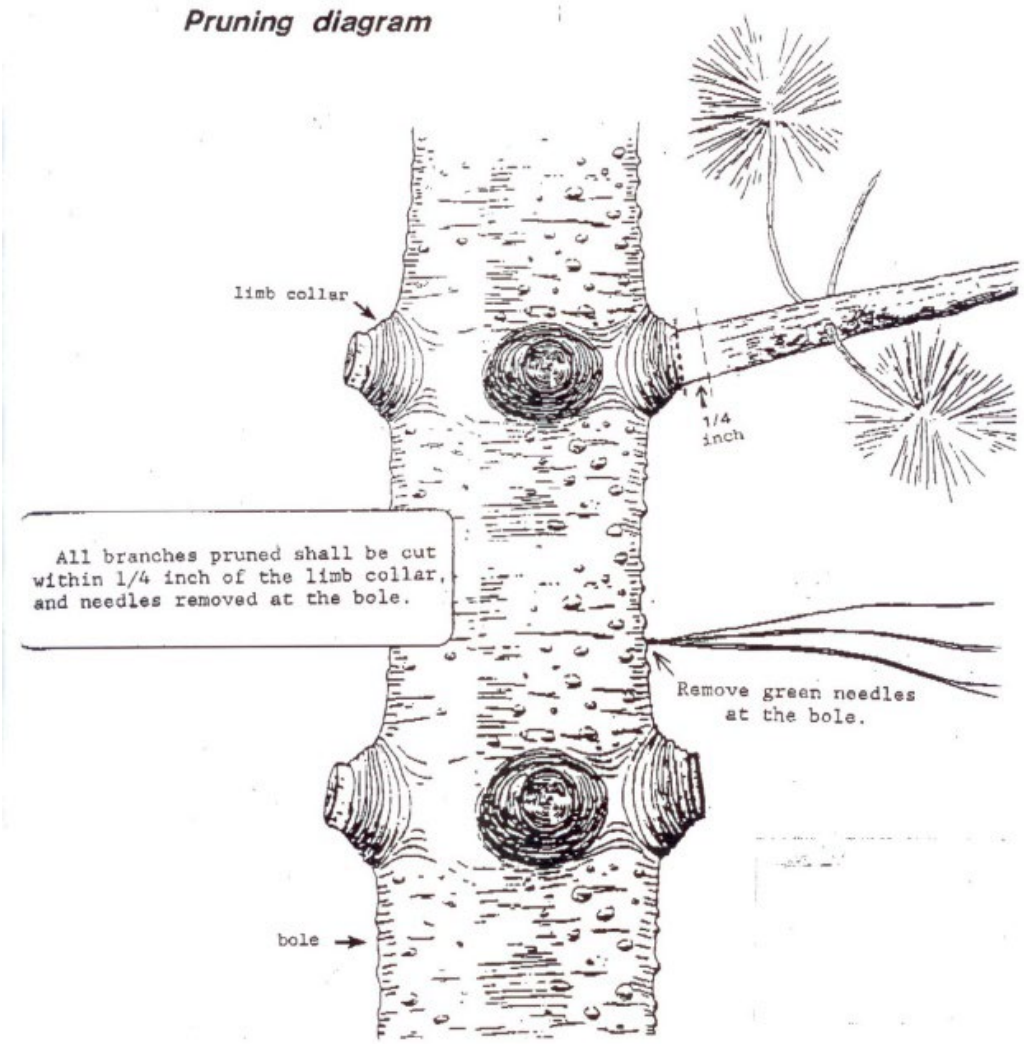
All work shall be performed in accordance with this description of work and the Silvicultural Prescription which is prepared for each unit. When prescribed, the pruning will occur at the same time as the thinning.

White Pine Pruning, Area 56 and Powerhouse Subdivisions			
Unit number	**Unit Acres**	**Planted WP Acres**	**Notes**
P-47	11	11	50 TPA (550 total) WP planted, mostly in the eastern 1/2 of unit.

P-51	19	19	2.5 TPA (50 total) WP planted, mostly below the road
P-55	11	11	2.5 TPA (50 total) WP planted, mostly below the road
P-56	14	14	72 TPA (1,080 total) WP planted, mostly above the road
P-24	6	6	92 TPA (550 total) WP planted.
Total Acres	**61**	**61**	

Specifications for Correctly Pruning Western White Pine

Prune all trees 8 feet and greater in height unless a different height is specified. All branches within the lower ½ of the bole will be pruned up to a maximum height of 8 feet, leaving ½ of the crown of the tree or at least four whorls. All limbs pruned shall be cut to within ¼ inch of the limb collar and needles removed at the bole. A diagram is included below. Pruned limbs shall be completely severed from the tree. The contractor may need to remove duff from around base of tree to ensure all live branches are severed according to specifications. The bole of the tree and limbs to be retained shall not be damaged in the pruning operation. The Contractor shall not use chainsaws for pruning unless approved in writing by the Contracting Officer. Bypass pruners are preferred.



Western White Pine Pruning diagram

5e: Western Larch Girdling within PCT Units.

Dwarf mistletoe is a parasitic plant the relies on its host for water and nutrients. The focus in this contract is western larch (larch) dwarf mistletoe. Heavily infected stands typically have many trees with stunted growth, witches' brooms, dying or dead tops. Dwarf mistletoe impacts larch by increasing mortality, reducing growth rates, lowering timber quality and results in loss of vigor. Infected larch trees should be killed once reproduction is established to reduce the chances of infection to small trees.

- When prescribed, the girdling will occur at the same time as the PCT.

Unit Number	Unit Acres	Girdle Acres
P-20	16	16
P-21	33	2
P-22	16	16
P-24	6	6
P-25	21	21
P-44	29	29
P-46	22	22
P-52	13	13
P-55	11	3
P-58	35	7
P-60	20	4
P-66	9	9
P-67	6	6
P-71	15	15
P-72	26	26
P-83	15	15
Total Acres	**293**	**274**

Girdle Acres represent the estimated acres within each PCT unit listed which contain larch that are appropriate for this treatment.

Girdling.

Girdling deliberately kills the tree and the associated dwarf mistletoe, leaving the tree to become a snag. The Contractor shall select, and girdle trees specified in Silvicultural Summary Prescription. Girdling shall utilize a minimum of two 1" wide cuts, 6" apart, completely through the bark and cambium tissue (but not more than ¾ inch past the cambium), completely encircling tree bole so that trees are deliberately killed. To facilitate public safety, specified larch within two tree lengths of an open road or trail may be felled rather than girdled pending prior FS approval.

Not all overstory larch will need to be girdled. Only larch with a Dwarf Mistletoe Rating (DMR) of 2 or greater will be girdled. Use the Hawksworth Dwarf Mistletoe Rating instruction to determine the DMR.

<table>
<tr><th colspan="2">Instructions: Hawksworth Dwarf Mistletoe Rating</th><th>Example:</th></tr>
<tr><td>Step 1</td><td>Divide live crown into thirds.</td><td rowspan="2">`` `` Rating of 1</td></tr>
<tr><td>Step 2</td><td>Rate each third separately. Each third should be given a rating of 0, 1, or 2 as described below.

0 = No visible infections

1 = Light infection (1/2 or less of the total number of branches in the crown-third are infected).

2 = Heavy infection (more than 1/2 of total number of branches in the crown-third are infected).</td><td rowspan="2">Rating of 2

`` Rating of 0

The dwarf mistletoe rating for the above tree is 3 (top 1 + middle 2 + bottom 0).</td></tr>
<tr><td>Step 3</td><td>Add ratings of thirds to obtain rating for total tree.</td></tr>
</table>

Item 6: Reforestation – Tree Planting and Seedling Protection within designated commercial units post-harvest.

General Reforestation Requirements – Items 6a, 6b, 6c, and 6d

General Description of Services:

All work shall be performed in accordance with this description of work and the Silvicultural Prescription which is prepared for each unit. Government will supply seedlings, maps, plot sheets, and a Detailed Information Chart for each individual planting unit.

Refer to the Attachment 2b Tree Planting and Animal Damage Control Performance Work Statement and associated Exhibits (Reforestation PWS), for all tree planting and Animal Damage Control (ADC) guidance on technique, quality control requirements, term definitions, tree handling specifications and anything else required to execute a successful tree planting program. A COR and/or Government Technical Monitor will always be present during the planting / ADC treatments. They will be responsible for tree delivery to each unit, tree distribution, species mix if required and Government Quality Assurance monitoring for payment. Each planting unit will have an individual Detailed Information Chart that includes the specifications required such as, but not limited to, spacing, scalp size requirements, shade requirements, species mix, and ADC treatment materials and specifications.

ITEM #	DESCRIPTION of PLANTING SPACING
6a	**15 x 15-foot plant spacing** **Area 56:** Seedling planting within commercial units: 3, 3A, 6, 10, 11, 17, 17A, 20B, 20C, 20D, 60, 61, 62, 63, 64, 66, 67, 69, 71, 72, 75, 76, 84, 85, 86, 88, 89, 89A, 109, 112, 113, and 190 (570 Acres). **Powerhouse:** Seedling planting within commercial units: 125, 126, 130, 152, 163, 177, and 233 (157 Acres).
6b	**17 x 17-foot plant spacing** **Powerhouse:** Seedling planting within commercial units: 143, 157, and 174 (34 Acres).
6c	**20 x 20-foot plant spacing** **Area 56:** Seedling planting within commercial units: 90 (20 Acres). **Powerhouse:** Seedling planting within commercial units: 149, 150, 150A, 151, 158, 162, 173, 175, 175A, 179, 179A, 179B, 182, 186, (258 Acres).

Item 6d: Animal Damage Control (ADC): Install rigid seedling protector tubes on Ponderosa Pine seedlings within specified commercial units.

Area 56- ADC Installation within units: 3, 3A, 6, 10, 11, 17, 17A, 20B, 20C, 20D, 62, 63, 64, 66, 67, 72, 75, 76, 84, 88, 90, 109, 112, 113, and 190.

Powerhouse- ADC Installation within units: 130, 143, 149, 150, 150A, 151, 152, 158, 162, 163, 173, 174, 175, 175A, 179, 179A, 179B, 182, 186.

Item 7: Site Preparation for Reforestation

Item 7a Hand Slashing (cutting) of Ninebark brush to create planting sites within certain commercial timber harvesting units. Area 56: Ninebark Slashing within units 11 and 112.

Slash a 6-foot x 6-foot area every 15 feet throughout each specified unit. Slash all brush within the created 6-foot x 6-foot openings for planting. Cut stems must be completely severed from the stump, removed from the 6-foot area, and are to be left within 24 inches of the ground level. Any cut stems 6 feet or greater in length shall be cut in half. Openings created from slashing will be evenly distributed across the units. Trees are intended to be planted within each of the 6-foot x 6-foot slashed openings. Slashing of brush will occur only one fall prior to the planned spring planting.

Item 7b Mechanical (Excavator) Soil Scarification within commercial units for reforestation.

Area 56: Scarification within units 6, 10, 17A, 20C, 60, 63, 64, 66, 67, 69, 71, 72, 75, 76, 84, 86, 88, 89, 89A, 109, and 113.

General Scarification Specification

An excavator type machine equipped with a digging bucket is to be used. Other machines are subject to approval by Forest Service.

A minimum of 20 percent and a maximum of 30 percent of the workable ground shall be scarified to reduce duff to less than ½ inch or to mineral soil. Scarified patches (at least 1 meter by 1 meter square) shall be evenly distributed over the workable ground in the unit. Scarification shall only be done during periods of dry soil conditions as determined by the Forest Service. In cutting units in which utilization is accepted between July 16th and September 30th, scarification work shall be completed by October 31st of the same year. In cutting units in which utilization is accepted between October 1 of the previous year and July 15th of the current year, scarification work shall be completed by October 31st of the current year.

Items 7c and 7d Fireline/Fuel break Construction: Mechanical (Machine) and Hand Construction

ITEM #	DESCRIPTION of CONSTRUCTION METHOD
7c	**Mechanical Construction:** Fireline/fuel break. Low to gentle to moderate slopes, easy terrain with little to no features that would slow production rates. Fuel loading for fuel break is low to small portions of moderate loading.
7d	**Hand Construction:** Fireline/Fuel break on moderate to steeper slopes, with short pitches of 40%. Terrain is moderate to difficult which may slow production. Fuel loading for fuel break is moderate with small portions of high loading.

A. Fireline and fuel breaks may be constructed with either an excavator with bucket and thumb or by hand crews. Excavators will not be permitted to operate on slopes with a continuous run over 35%, however, it may exceed 35% for short runs.

B. Fireline/ Fuel break Specifications

   1. Fireline is composed of a continuous line of bare mineral soil 18 - 24 inches wide.
   2. Fuel breaks are constructed on both sides of the constructed fireline which removes all concentrations of vegetation material that will easily ignite, maintain, or increase fire intensity. Fuel breaks will be a minimum of 20 feet in width with the fireline roughly in the middle of the fuel break (approximately 10 feet on either side of fireline).

C. Miles of fireline/fuel break construction:

1. **Machine Construction**: approximately 10.28 miles
2. **Hand Construction**: approximately 7.66 miles

Item 8: Fuels Treatments

Item 8a (OPTIONAL): Air Curtain Burner Operations for Slash Disposal

Purpose: An air curtain burner is a piece of equipment designed to minimize air pollution associated with the burning of wood and vegetative waste – the burner uses a series of air blowers to generate a "curtain" of air that drives volatile gases back into the burner to be consumed as fuel in the fire.

Scope: Either trench or box style burners, or other approved methods may be used. Air curtain burning will be conducted at agreed upon log landing sites to dispose of slash at the landing. Only landing piles will be burned while using an air curtain. Landing piles will be fed into the air curtain burner with an excavator with brush rake or bucket with thump. Air curtain burning will only be allowed when fire danger is **LOW** and approved by the Forest Service. The ground must be wet, or snow covered to prevent any fire spread. Once the location of the air curtain burning operation is completed, the contractor must cover the trench, and/or spread the ashes to recontour the site to its original condition.

Items 8b and 8c: Slashing (cutting) Within designated <u>COMMERCIAL</u> Units

Area 56 Ground-Based Skidding Units: 3A, 6, 10, 17A, 20, 20C, 60, 66, 67, 68, 71, 72, 73, 75, 76, 84, 87, 89, 91, 94A, 96A, and 113.

Area 56 Cable-Based Yarding Units: 3, 11, 17, 20B, 20D, 61, 62, 63, 64, 69, 85, 86, 88, 89A, 90, 109, 112, and 190.

Powerhouse Ground-Based Skidding Units: 126, 127, 127A, 129, 134, 145, 150, 150A, 151, 157, 158, 169, 173, 186, 189, and 226.

Powerhouse Cable-Based Yarding Units: 125, 130, 134A, 138 ,143, 149, 152, 162, 163, 166, 168, 174, 175, 175A, 177, 179, 179A, 179B, 182, 185, 189A, 193, and 233.

ITEM	DESCRIPTION of COMPLEXITY
8b	Within Commercial Units Utilizing Ground-Based Skidding – Cutting of Non-Saw material.
8c	Within Commercial Units Utilizing Cable-Based Yarding – Cutting of Non-Saw material.

Slashing within commercial harvests units may be performed mechanically with feller-buncher, masticator, or similar machinery, or by hand crews with chainsaws.

1. Cutting Specifications

A. Silvicultural prescriptions for slashing will be provided by the FS upon request of the contractor.

B. Contractor shall fell all live and dead conifers not meeting utilization standards and over 2 feet in height, unless otherwise designated to be left standing.

i. All material shall be felled into the units and away from identified fireline, improvements, and property boundaries.

ii. Remaining stumps shall be less than 6 inches in height as measured from the ground surface on the uphill side and shall be cut flat or with a minimal angle to avoid creating a sharp stump.

iii. Completely sever cut material from the stump, leaving no live limbs on the stump. Keep all systems roads and drainage structures, including roadside ditches, free of slashed material from within the units.

iv. Buck all resulting slash greater than 3 inches to a maximum of 10-foot lengths. The maximum slash depth throughout the unit shall be less than 18 inches above the surface of the ground.

C. Commercial Units Requiring Slashing

Items 8d: Machine Piling of Slash within Designated COMMERCIAL Units.

Area 56 Commercial Units: 6, 10, 17A, 20C, 60, 63, 64, 66, 67, 69, 70, 71, 72, 73, 75, 76, 84, 86, 87, 88, 89, 89A, 91, 92A, 92C, 94B, 94C, 97, 101, 109, and 113.

Powerhouse Commercial Units: 126, 127, 127A, 129, 134, 157, 158, 173, 186, 189, and 226.

1. Machine Piling Specifications

A. Silvicultural prescriptions for units requiring machine piling of created slash will be provided by the FS upon request of the contractor.

B. Contractor shall pile timber harvesting slash within the commercial units or portions thereof as shown on the Contract Area, Hazard Reduction, and Site Preparation Map.

i. Equipment used for piling shall be equipped with thumb, grapple or other attachment and approved by the Forest Service.

ii. Piles shall be reasonably compact and free of soil and stumps to facilitate clean burning.

iii. Slash to be piled shall include material greater than 3-inch diameter at the large end, however, smaller material may be piled incidental to and in conjunction with this material.

iv. The minimum piece length will be 3 feet.

v. Piles shall range from 6 feet to 15 feet in height and 4 feet to 15 feet in diameter.

vi. Piles shall be placed no closer than 20 feet from the outside perimeter of the unit, system roads, wet areas, or other areas designated on the ground by the Forest Service.

vii. No pile shall be closer than 15 feet from any standing residual trees.

viii. All pieces which extend more than 8 feet in any direction from the pile profile will be cut off and returned to the pile.

ix. Stack boles of trees parallel so piles are compact.

C. Conduct piling operations when soils conditions are dry, frozen, or as approved by the Forest Service.

D. In the event timber harvesting activities result in significant accumulations of Contractor generated slash due to breakage or resulting from slashing activities, machine piling shall be performed to mitigate the accumulations of slash that can include diameters less than 3-inch on the large end.

i. A significant accumulation of slash is defined as Contractor created slash concentrations over one-tenth acre in size that could be accumulated into a pile with a minimum of 6 feet in height and 4 feet in diameter.

E. Units Requiring Machine Piling of fuels by subdivision

Item 8e: Mechanical Mastication of Roadside Material Roadside Mastication Units (Powerhouse Subdivision): 175x Road, 192x Road, and 195x Road

Roadside mastication will consist of a boom-mounted masticator masticating to the following specs within units located along road #4872 within the Powerhouse Subdivision area. Mastication will be accomplished to 25 feet from the edge of the road on both sides.

Using a boom mounted masticator the contractor shall masticate the following material:

- All shrubs and brush greater than 1-foot in height.
- All trees with a diameter at breast height (DBH) of 8 inches or less and greater than 1-foot in height that can be masticated without damaging leave trees.
- All limbs that extend over the road prism and are 14 vertical feet or less above the road.
- Maximum stump height of 8 inches as measured on the uphill side of the stump and no lower live limbs left on the stump.
- The result of the roadside mastication will be small debris (limbs, sticks, needles, "chips") less than or equal to 3-inch diameter and 1 to 4 feet in length.
- Contractor shall remove any debris, slash material or chip residue, that is cast into or falls onto roadways.
- Contractor shall remove any debris concentrations that will interfere with the function of ditches and/or culverts created from masticated materials.
- All existing facilities such as signs, cattleguards, gates, barricades, and drainage structures damaged by the Contractor shall be replaced or repaired by the contractor at no additional cost to the Government.
- The contractor shall include all applicable work zone signage while working along the roadway.

Item 8f: Mechanical Mastication in NON-COMMERCIAL Units.

Powerhouse: Units S10 and S12

1. Mastication Specifications
   A. Acceptable mastication equipment will consist of a boom-mounted masticator.
   B. Silvicultural prescriptions for mastication will be provided by the FS upon request of the contractor.
      i. Operate machinery in a way so as not to damage any residual trees (a maximum of 10% damage to the residual stand) or cause undo damage to surrounding resources such as roadways, trails, ditches, etc.
      ii. Machines used shall be designated and operated in such a way to minimize soil disturbance such as rutting and compaction.
      iii. After mastication, stump heights shall be no more than 6 inches in height as measured on the uphill side or 4 inches above natural obstacles.
      iv. No slash of vegetative debris shall be more than 12 inches deep as measured from the natural ground level. A maximum of 15% of the individual pieces of slash or vegetative debris will be allowed to exceed 6 feet in length. No masticated or cut material shall lean against or be suspended by a residual tree.
      v. Masticated material will be within the following specifications unless otherwise designated: 75% of chips from masticating must be < 3 feet in length, 25% of chips from masticating may be a maximum of 8 feet in length, however, a slash depth must be no more than 12 inches in depth.

vi. In addition to standing vegetation, mastication of existing downed wood may be required in some individual unit prescriptions.

Item 8g: Hand Slashing (cutting of small diameter trees; ladder fuels reduction.) In NON-COMMERCIAL units.

Units: S4, S6, S7, S8, S11, S16, S24, S24A, S25, S26, S31, S32, S37, S20z North, S20z East, S20z West, S71z, S75z, S88z, S90z, S94z, S96z, S97z, S98z, S100z, S101z, S113z, S122z, S180z, S183z, S125x, S126x West, S126x North, S127x, S127x South, S129, S133x, S135x East, S135x West, S138x, S139x, S141x, S143x, S144x, S145x, S149x, S150x, S151x, S157x, S162x, S164x, S166x, S175x East, S175x North, S179x North, S185x, S189x, S124x, and S126x.

1. Hand slashing Specifications
   A. Silvicultural prescriptions for hand slashing will be provided by the FS upon request of the contractor. Prescriptions may vary by individual units. The maximum diameter of tree to slash is 7.9" DBH.

Item 8h: Hand piling of slash within NON-COMMERCIAL units.

Units: S4, S6, S7, S8, S11, S16, S24A, S25, S26, S31, S32, S37, S20z North, S20z East, S20z West, S71z, S75z, S88z, S90z, S94z, S96z, S97z, S98z, S100z, S101z, S113z, S122z, S180z, S183z, S125x, S126x West, S126x North, S127x, S127x South, S129, S133x, S135x East, S135x West, S138x, S139x, S141x, S143x, S149x, S157x, S162x, S164x, S166x, S175x East, S175x North, S179x North, S185x, S189x, S124x, and S126x.

1. Hand Piling Specifications
   A. Silvicultural prescriptions for hand piling will be provided by the FS upon request of the contractor.
   B. Hand pile all slash created from the hand slashing within units identified as needing hand piles. Minimum acceptable hand pile size will be 3 feet in height and range from 3 to 8 feet in diameter.
      i. Piles shall be compact with smaller material such as needles and branched in the bottom and center, and larger material such as boles on top to compress lighter fuels.
      ii. Boles of trees will be oriented parallel to the slope (pointing up and down hill) to prevent rollout during burning.
      iii. Piles constructed on slopes exceeding 30% may be secured by leaving one or two activity generated stumps per piles 4-6 feet in height with a minimum stump diameter of 4 inches or greater, slash shall be piled perpendicular to the stumps on the uphill side.
      iv. Materials shall be piled in a parallel configuration, similar to pencils in a box. Once a pile meets the minimum diameter and height; slash maybe added vertically on the edge of ta pile to prevent the pile from toppling.
      v. Pile covering is required for all hand piles built by the contractor. Piles shall be covered with a burnable 80# kraft, water-repellent, non-toxic (when burned) paper. Plastic or tar paper will not be approved for pile covering. Paper shall be firmly places within the pile such that ¾ of the diameter and ¾ of the height of the pile is covered and held firmly in place be heavy slash on top of it.

Item 9: Noxious Weed Treatment

The roads shown in the Table 1 below and being used by the Contractor shall be treated with herbicide to remove seed-bearing noxious weeds.

Unless otherwise agreed, Contractor shall:

A. Include a schedule for herbicide treatment of noxious weeds as part of the Annual Operating Schedule.

B. Treat roads or road segments required to have noxious weeds treated between **June 1** and **September 30**

C. Follow the "TECHNICAL SPRAYING SPECIFICATIONS" below.

Treatment shall consist of spot applications that target those noxious weeds identified on the **State of Montana's**Noxious weed list (Refer to Exhibit B) that occur on the listed roads. Reasonable care shall be exercised to limit application so that spraying does not contact native forbs, grasses, herbs, and trees.

Table 1 – Road Segments to Recieve Noxious Weed Treatment

Road Number	Road Termini MP to MP	Total Miles	Post-Reconstruction	Post-Haul
755	0.00 to 4.20	4.20	YES	YES
1018	0.00 to 3.02	3.02	YES	YES
4736	0.00 to 1.30	1.30	YES	YES
4751	0.00 to 1.22	1.22	YES	YES
4752	0.00 to 1.08	1.08	YES	YES
4752A	0.00 to 0.83	0.83	YES	YES
4753	0.00 to 6.96	6.96	YES	YES
4753H	0.00 to 2.00	2.00	YES	YES
4755	0.44 to 1.48	1.04	YES	YES
4756	0.00 to 5.21	5.21	YES	YES
4756G	0.00 to 0.19	0.19	YES	YES
5033	0.00 to 0.28	0.28	YES	YES
5082	0.00 to 0.31	0.31	YES	YES
5083	0.00 to 0.41	0.41	YES	YES
4753N	0.00 to 1.45	1.45	YES	YES
5348	0.00 to 1.79	1.79	YES	YES
14413	0.00 to 1.57	1.57	YES	YES
14415	0.00 to 0.79	0.79	YES	YES
14419	0.00 to 0.16	0.16	YES	YES
14421	0.00 to 0.17	0.17	YES	YES

Road Number	Road Termini MP to MP	Total Miles	Post-Reconstruction	Post-Haul
99443B	0.00 to 0.58	0.58	YES	YES
5348EXT	1.79 to 2.01	0.22	YES	YES
4755A	0.00 to 1.22	1.22	YES	YES
14415EXT	0.79 to 1.71	0.92	YES	YES
1018EXT	3.02 to 3.75	0.73	YES	YES
1018A	0.00 to 1.72	1.72	YES	YES
99443AEXT	0.83 to 1.15	0.32	YES	YES
4753HEXT	2.00 to 2.97	0.97	YES	YES
4755RA	0.00 to 0.51	0.51	YES	YES
4857	0.00 to 1.52	1.52	YES	YES
4857D	0.00 to 0.93	0.93	YES	YES
4872	0.00 to 7.68	7.68	YES	YES
4872B	0.48 to 0.82	0.34	YES	YES
4873	0.00 to 3.51	3.51	YES	YES
4878	0.00 to 2.50	2.50	YES	YES
4879	0.00 to 2.08	2.08	YES	YES
8833	0.81 to 1.12	0.31	YES	YES
99443A	0.00 to 0.83	0.83	YES	YES
99444	0.00 to 0.65	0.65	YES	YES
228	0.00 to 4.11	4.11	YES	YES
4872B	0.00 to 0.48	0.48	YES	YES

Technical Spraying Specifications for the Kootenai National Forest

1. The Contractor shall give the Forest Service a 48 hour notification prior to spraying.
2. All treatments will occur when target plants are most identifiable. This is dependent on species and localized conditions including time of year, location, elevation, and aspects.

3. Spraying will be done by a **State of Montana**licensed commercial applicator and personnel under the direct supervision of the licensed applicator.
4. A **BLUE** water-based dye shall be used to further identify target species that have been sprayed and shall be added at a rate in compliance with the EPA lable.
5. The following herbicides and application rates are approved for use. Other herbicides and appliction rates shall be approved by the Forest Service prior to use. All use of herbicides, dyes and surfactants shall follow EPA label requirements.

Common Name	Trade name(s)	Application Rate (lbs active ingredient / acre or oz / ac)	Dye (application rate)
Aminopyralid	Milestone	3-7 oz/acre	6-32oz/100gal of water
2,4-D	Broadrange 55	24 oz/acre	6-32oz/100gal of water
Metsulfuron-methyl	Escort XP	1 oz/acre	6-32oz/100gal of water
Indaziflam	Rejuvra	5 oz/acre	6-32oz/100gal of water
Organosylicone/modified vegetable oil concentrate	Syl-Tac-EA	4 oz/acre	6-32oz/100gal of water
Picloram	Tordon	16 oz/acre	6-32oz/100gal of water

6. For treatments from **July 1** to **September 30**,surfactants that cause herbicide to adhere to the plant (stickers) shall be applied with herbicides.
7. Weed infestations within **15**feet of open water and/or wet areas can only be treated with **herbicides** labeled for the treatment of aquatics, unless otherwise approved in writing by the Forest Service. No spray shall come in contact with open water at any time.
8. No spraying shall occur when rain is expected within six (6) hours of completion of the treatment.
9. Nozzles shall be made of stainless steel or ceramic material.
10. All equipment shall be in good mechanical condition and will be inspected prior to work. The spray pattern, application rates, and calibration shall also be checked before beginning the job and thereafter as deemed necessary by the Forest Service.
11. A tight-fitting lid on all spray tanks is mandatory.
12. Mixing, loading, and equipment cleaning shall be done more than 200 feet from private land or open water. Mixing and cleaning water shall come from public or cooperator supplies, and shall be transported to the site in labeled containers separate from water used for other purposes. On-site locations for water drafting must be approved in advance by the Forest Service. Equipment used to draft water from creeks or rivers must be equipped with anti back siphoning devices.
13. Weather conditions shall be monitored before and during all spraying projects. Spraying is NOT allowed when any of the following conditions exist:

    Hand-held equipment: temperature greater than 95 degrees F.; humidity less than 20 percent, or wind greater than 5 MPH.

Truck-mounted equipment: temperature greater than 95 degrees F.; humidity less than 20 percent; or wind greater than 5 MPH.

14. Herbicides shall be transported daily to the project site with the following conditions: Transport only the quantity needed for that day's work; transport concentrate containers only in a manner that will prevent spills; and transport spray in a compartment that is isolated from food, clothing, and safety equipment.
15. Mixing shall only occur on site.
16. The Contractor shall inspect equipment daily for leaks.
17. The Contractor shall remove all herbicide containers from national forest land and dispose of them in accordance with all local, state, and federal requirements
18. Applicators will complete a daily pesticide application reports as required by the **Montana Department of Agriculture**. Applicators will use the daily pesticide application report form provided by the Forest Service. Daily application reports shall be submitted to the Forest Service within 10 days of application.
19. Applicators will collect and include GIS data for all applications along with the daily pesticide reports. Attributes to be collected are specified in Exhibit A.
20. Spraying shall occur as specified in Table 1 above after reconstruction work has been completed on each idividual road segment, and again after the road maintenance following all timber product removal.
21. The wilting, curling, discoloration or killing of target plants shall be used as a measure of application effectiveness and performance acceptability.

Item 9a: Mandatory – Noxious Weed Treatment: Right-of-Way (ROW) Applications

This work will occur on right-of-way (ROW), road and roadside, within the project area for haul routes managed by the Forest Service. ROW spraying should combine roadbeds and bank, fill slope, cut slope, pullouts, and ditches. No work shall occur in areas within 10 days of herbicide application to allow maximum efficacy. Such applications may be accomplished using truck or UTV mounted application equipment.

Spray coverage should include 30 feet from center of roadbed to encompass the road surface and include up to 15 feet beyond the road edge for all established roads.

Application equipment will be inspected for sound operating condition.

Inspections should include:

- Physical and visual examination of spray apparatus and related equipment.
- Ensure spray pattern and coverage is adequate for the desired results.
- Confirm correct mixing/cleaning/maintenance procedures are in place.

Item 9b: Mandatory - Noxious Weed Treatment: Front Country Applications with Backpack Equipment

This work will occur within areas such as landings and decommissioned temporary roads not to exceed 1/2 mile in length may need to be accessed by foot travel.

Item 9c: Optional - Noxious Weed Treatment: Back Country Applications with Backpack Equipment

This work may occur within an Inventoried Roadless Area (IRA) on the project. Much of the IRA has slopes greater than 40%. An indeterminate number of acres will be treated.

Workers will cover all areas within boundaries that are established during operations covered in item 8d and treat all noxious and invasive weeds listed on the Montana Noxious Weeds list (see Attachment 4 for complete list).

Item 10: Optional – Removal (Hauling) of Non-Sawtimber material created during timber harvesting activities.

Removal of non-sawtimber material from the project area as agreed upon by the Forest Service.

There is an estimated 2,993 CCF/6,002 tons of combined softwood non-sawtimber material within the project area. Approximately one third of this volume is primary product with the balance being top wood and material defected out of sawlogs.

SECTION III – INSPECTION AND ACCEPTANCE

For All Work Items:

At any point during the project, the Contractor and/or Project Manager may request (documented through email, text, or hand-written request) an in-the-field consultation with the Forest Service to inspect work progress, review contract specifications, or clarify issues. The Forest Service shall respond to Contractor's request within 5 working days, excluding weekends and federal holidays. The Contractor shall perform Quality Control in accordance with the work item specific Contractor Quality Control plan(s).

QUALITY CONTROL

The Contractor, not the Government, is responsible for management and quality control actions to meet the terms of the contract. The role of the Government is quality assurance to ensure contract standards are met. The Contractor shall provide a Quality Control Plan (QCP) with the technical proposal.

The general QCP must demonstrate how the Contractor will assure quality meets the requirements and specifications of each work item, mandatory and optional items, included in this contract. It shall specify how quality will be monitored to ensure the performance standards are met; the supervision of crew and work; and the personnel that will be performing the quality control. Quality control includes monitoring of quality while work is progressing. The Contractor may utilize a range of methods to determine the Contractor's compliance with the contract specifications. During the issuance of certain work items, the Contractor may propose or the Government may require the use of a plot-based quality control to determine the actual quality percentage. In addition to the description of how quality will be monitored to assure that performance standards are met, the plan shall also include: (1) corrective or preventive actions that will be taken to meet quality standards; (2) control procedures for security of Government-provided items such as keys, and lock combinations; and (3) location of the inspection documents and other quality control records.

Records of quality inspections shall be kept and made available to the Government throughout the performance period and for the period after contract completion until final settlement of any claims under this contract.

GOVERNMENT QUALITY ASSURANCE SURVEILLANCE PLAN - QASP

Quality assurance will be performed by the Government during the contract at regular intervals. Methods may include random sampling, 100% inspection of the work, and/or visual survey and review of contractor quality control documents. Unacceptable work shall require rework at no cost to the Government. All work shall meet all the standards listed in above sections.

Quality assurance will ensure proposed activity in the Project Implementation Plan adhere to the purpose and need, project objectives and site-specific silviculture, fuels reduction, harvest plan and resource protection requirements as stated within the Non-Time-Critical Removal Action at the Mitchell Jackson Project Area, and other attached project design criteria.

Government Inspection Procedures - The COR, or a designated inspector (GTM) for each work item, will make periodic inspections while work is in progress as needed to ensure work is proceeding satisfactorily. The Contractor shall notify the COR when units are started, when problems are encountered, and when contract work needs government oversight.

1. Each unit will be inspected as a separate unit. Units will not be averaged with other units for acceptance or payment.

2. When units are completed and ready for government inspection, Contractor's designated Project manager shall request unit inspection in writing, prior to moving out of the general area.
3. The COR, or designated inspector, will determine compliance with contract specifications through informal visual inspections. In the event visual inspection indicates work to be in non-compliance with specifications, prompt corrective action and/or rework shall be required.

UNSATISFACTORY PERFORMANCE

1. If the work quality falls below AQL shown in table 1 below, the COR will immediately notify the Contractor, in writing, and order him to improve the quality of subsequent work. If the quality of subsequent work is not raised to the AQL standard within 24 business hours after receipt of such written notice, the Contractor's right to proceed may be terminated and the contract considered in default.
2. When the work quality falls below AQL, the Government may elect to do one of the following:
   (a) Order rework to be performed and withhold payment until the results of a post-rework Government inspection shows quality to be at AQL or more. No rework shall be performed unless ordered or authorized by the COR.
   (b) Order that no rework be performed and payment will either be made at a reduced rate, or not at all, as determined from the Inspection Report.
3. Repeated failure to produce work quality at or above the AQL standard will be considered reason for contract termination and default action.

REINSPECTION UPON CONTRACTOR REQUEST

1. If Government inspection results are unacceptable to the Contractor, a reinspection may be requested, in writing, within 5 business days after receipt of notice of said inspection results. The same inspection procedure will be used; however, the inspection pattern will be shifted so that new inspection plots will not overlap previously inspected plots.
2. If reinspection results – rounded up to the nearest whole percent – indicate a variance of more than 5 percent from the first inspection, the results of the second inspection will be used to calculate work quality and payment, and the Government will bear the cost of reinspection.
3. If reinspection results – rounded up to the nearest whole percent – are within 5 percent of the first inspection, plots from the initial inspection and the reinspection will be combined and used to calculate work quality and payment, and the Contractor shall bear the cost of reinspection.

GOVERNMENT INSPECTION PROCEDURES

Item 1. Cut and Remove Included Timber Products (Timber Harvest): Refer to Appendix B, Divisions A, B, and C for specific inspection and acceptance language.

Items 2 and 3. Road Construction and Reconstruction: Refer to Appendix D Road Construction and Reconstruction Package for specific inspection and acceptance language.

Item 4a – 4g. Road Maintenance associated with Commercial Timber Harvesting: Visual inspections will be accomplished by the Government comparing the individual maintenance specifications to the product achieved on the ground by the contractor.

Items 5- Timber Stand Improvement, 7 Site Preparation and 8 Fuels Treatment

For all associated work, the COR or Government Technical Monitor will conduct periodic visual inspections of each work item to assure full compliance.

Work Activity	Acceptable Quality Level (AQL)	Government Method of Assessment	Incentive/Deduction
Fireline / Fuelbreak Construction Slashing in Commercial Units Slashing in Non-Commercial Units Machine Piling in Commercial Units Piling in Non-Commercial Units Mastication – Roadsides Mastication – Non-Commercial Units Hand Piling – Non-Commercial Units Air Curtain Burning	100% of the unit of measure is treated 90% Meets work activity specifications & requirements. 90% Meets Prescription/Work Description requirements	COR or Government Technical Monitor conduct periodic monitoring Visual Inspections Formal Plots	• Rework is required if Contractor fails to meet standard. • If quality does not meet standard, pay deduction as stated in calculating Payment Section and/or additional costs to the Government will be assessed. • If the Contractor fails or refuses to repair any damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor. • The Contractor's quality will be reflected in the performance assessment either positive or negative.

Items 6a – 6d. **Reforestation** (Planting and ADC)

Quality Control and Quality Assurance is explained in detail in Section 8 of the Reforestation PWS, and the planting inspection method is found in Exhibit 11. The planting inspection plot sheet is found in Exhibit 9 and 10. The contractor will follow all these guidelines when conducting the quality control inspection. A 1% sample, 5 plot minimum is required for all sub-items.

- For Item 6a (plant spacing of 15 feet), a 1/50th acre (16.7-foot radius) plot will be used for the inspection.
- For Item 6b (plant spacing of 17 feet), a 1/20th acre (26.4-foot radius) plot size will be used for the inspection.
- For Item 6c (planting spacing of 20 feet), a 1/20th acre (26.4-foot radius) plot size will be used for the inspection.

Use the charts in the Exhibit 10 for plantable spots, maximum plantable spots, and number of trees to inspect underground. The same number of plots and plot size that was used in the planting will be used for the installation of the Animal Damage Control (ADC) material. Use Exhibit 15, Inspection Plot Sheet for ADC. The Government and Contractor will be consistent in plot inspection, plot size, and number of plots.

Work Activity	Acceptable Quality Level (AQL)	Government Method of Assessment	Incentive/Deduction
Tree Handling and Care Planting Operations Shade/ADC Installation	100% Meets contract handling and care specifications 90% Meets planting quality standards as evaluated in inspection plots 90% Meets shade/ADC treatment specifications	Continuous visual surveillance of handling, storage, and care procedures Use of Inspection Sheets and Government-selected plot densities and locations	**Meeting or Exceeding AQL:** • Payment made at the full quoted task order price. • Good Past Performance ratings. • Options exercised (if work is needed & have budget). **Failure to meet AQL:** • Rework at contractor's expense. • Re-inspection charges are deducted from payment. • Total payment reduced by AQL deduction % if cannot meet AQL.

Item 9 Noxious Weeds Treatment

Work Activity	Acceptable Quality Level (AQL)	Government Method of Assessment	Incentive/Deduction
Noxious Weed Treatment	85% mortality of target species. 100% compliance manufacture label direction Less than 20% loss of non-target species. No more than one warning to fix any equipment leaks or clean-up drafting or mixing sites.	100% visual inspection of reporting sheets. Random Visual Field Inspections Random plot sampling. Random compliance checks of contractor inspection plots. 100% inspection of equipment	**Meeting or Exceeding AQL:** • Payment made at the full quoted task order price. • Good Past Performance ratings. • Options exercised (if work is needed & have budget).

Work Activity	Acceptable Quality Level (AQL)	Government Method of Assessment	Incentive/Deduction
	One warning for lack of proper identification of area treated	Random field inspection of drafting and mixing site(s)	**Failure to meet AQL:** • Rework at contractor's expense. • Re-inspection charges are deducted from payment. • Total payment reduced by AQL deduction % if cannot meet AQL.
Data Submittal for Herbicide Applications	Records submitted within timeframe stated in Description of work. 95% of spray records will have no missing data values. Applicator spray records shall conform to Montana State standards. Applicator spray records will state equipment calibration for gallon/acres. GIS data for all treatments to be included with application records	Visual Inspection of application records 100% of GIS data complies with required Geospatial Attribute Standards	

The contractor will immediately notify the COR when treatments are complete each year and ready for inspection. The contractor is required to collect geospatial data for **all** weed treatments and collect a separate geospatial file for all Class A and B priority species found to exist within infestations of non-priority species. Geospatial data will include attributes listed in Attachment 6 and be compatible with ESRI software. All geospatial data will be provided as polygons. Small and linear treatments may be recorded as a point or line with correct dimensions provided. During yearly treatments, geospatial data and attributes will be submitted to the COR weekly, unless otherwise directed by the COR. All reports must be submitted by October 1st each year.

Acceptance of Work specific to Noxious Weeds Treatment.

Upon Contractor's written request and assurance that work has been completed, Forest Service shall perform an inspection within 5 days, excluding weekends and Federal holidays, so as not to delay unnecessarily the progress of Contractor's Operations. Such a request may be for acceptance of:

(a) Any reasonable portion of Specified Road listed in the Description of Work;

(b) Specific requirements on a subdivision of Contract Area (such as logging, stewardship project operations, slash disposal, erosion control, or snag felling); or

(c) All contract requirements on a subdivision of Contract Area. Forest Service may perform such inspections without request from Contractor.

Within 2 days of inspection, excluding weekends and Federal holidays, Forest Service shall furnish Contractor with written notice either of acceptance or of work remaining to be done.

In the event that Forest Service is unable to make such inspection within 5 days of Contractor's request, Contractor shall be notified in writing of necessity for postponement and time when inspection can be made. The same final approval procedure shall be used at the end of Contractor's construction period on any completed portion of road.

When all contractual work of the Contractor has been accepted for any subdivision of Contract Area or cutting unit or stewardship project area identified on Contract Area Map, such area shall be eliminated from Contract Area on written notice of either party to this contract, unless such area is a portion of a larger work area. In the latter circumstance such area may be eliminated only by agreement.

SECTION IV – PAYMENT METHODS

Method of Measurement for Acreages

Acreages provided were determined by using Global Positioning Systems (GPS).

- Commercial unit boundaries are marked with Orange paint.
- Fuels treatment unit boundaries are marked with Pink and Black candy stripe flagging.
- Planting unit boundaries are marked with Yellow flagging.
- PCT unit boundaries are marked with Pink flagging.

Discernable Boundaries are locations that are readily identifiable features on the ground (such as portions of existing roads or powerline corridors etc.) in locations shown on the Contract Area Map.

The acreage for each work item will be rounded to the nearest acre and is final unless:

a. The contract is modified or,
b. The Government makes a determination to remeasure or,
c. The Contractor exercises his/her option under the following Remeasurement provisions:

Remeasurement

1. The Contractor may request, in writing, remeasurement of any units under this contract if he/she feels that acreage stated on the project maps is incorrect. The remeasurement must be within the existing perimeter of the respective unit. No variance of the unit perimeters as laid out on the ground for this contract will be allowed. All requests for remeasurement must be made prior to payment for each completed unit. Remeasurement will be performed by the Government.
2. If remeasurement indicates that a variance of ten percent (10%) or less exists on units of 1 to 5 acres, five percent (5%) or less exists on units of more than five but less than 20 acres, or if three percent (3%) or less exists on units of 20 acres or larger, the Contractor shall pay for the actual costs of the remeasurement. Under this condition, payment will be made on the acreage stated on the project maps. If the remeasurement indicates the actual acreage varies by more than the above factors from that stated on the project maps, the payment will be made on the remeasured acreage, and the Forest Service will pay for the cost of the remeasurement.

ACCEPTANCE AND PAYMENT

Items 2, 3 and 4

1. Full payment will be issued once the Government verifies that all work has been completed in accordance with contract specifications and required performance standards. Partial payments may be authorized at the Contracting Officer's discretion. Work that is incomplete or non-compliant must be corrected before final approval and may be rejected for payment or subject to deduction.

Items 5-8 and all included Subitems

1. If informal visual inspection indicates acceptable work quality, the Contractor will be paid 100 percent of their bid rate.

2. In the event that formal inspections are used, the rate of payment to the Contractor will be calculated as follows:
   (a) For work quality of 90 percent or higher, the Contractor will be paid 100 percent of their bid rate.
   (b) For work quality from 85 to 89 percent after rework, the Contractor will be paid the total multiplied by the bid rate.
   (c) For work quality 84 percent and less after rework, no payment made to the Contractor.

Item 9

1. If informal visual inspection verified through field inspections and spray sheet checks indicate acceptable work quality, the Contractor will be paid 100 percent of their bid rate.
2. Only "wet" acres treated counts towards target noxious weeds acres accomplished. Wet acres are determined by equipment calibration records for gallons/acres.
3. Only one rework opportunity will be allowed for these items.

Item 10

Full payment shall be made for the actual quantity of product removed upon receipt of acceptable proof of removal/transport for quantities invoiced. The number of tons awarded represents the ceiling amount for which a contractor could be paid without modification but is not a guarantee. Funds not utilized to pay for removal shall be de-obligated at the end of the contract or utilized for other supplemental agreement(s) if it is in the best interest of the government.

SECTION V – TECHNICAL DEFINITIONS

BOLE SPACING: The horizontal distance in feet from the edge of one leave tree bole to another leave tree bole, measured from the outside bark of each tree.

BROWNS TRANSECT: A line intercept method for measuring the amount of fuel on the ground.

BRUSH: Vegetation consisting of shrub species with single or multi-stems originating at or near ground level not normally reaching more than 15 feet in height.

CIRCULAR PLOT: A sample plot within a thinning unit that is used to determine the number of desirable trees and other contract specifications.

COARSE WOODY DEBRIS: Woody material left on the ground to meet wildlife habitat requirements.

COMMERCIAL UNIT (or TREATMENT): A silvicultural treatment which results in the removal of a product of commercial value from a particular site, or unit. See also Non-Commercial Unit.

CLEARCUT: A cutting prescription in which all trees within a boundary are designated to be cut.

CROWN RATIO: The ratio of live crown length (tip of leader to base of the crown) to total tree length/height.

CROWN SPACING: The horizontal distance in feet between the dripline of a live crown to another live crown.

CUT TREES: Trees that do not possess the characteristics of desirable leave trees and are required to be cut. As described by the contract or otherwise marked to be cut.

CUTTING UNIT: See Unit definition

DAMAGED TREES: Trees damaged beyond recovery. A tree that is larger than 2 feet in height, and has the top knocked out, is leaning more than 10 degrees, has less than one half of its original limbs, or has approximately 50% of bark removed from the circumference of the bole.

DBH: Diameter at Breast Height, The diameter of a tree bole measured at a point of 4.5 feet above the ground level on the uphill side of the tree.

DECKING: Stockpiling of trees in a designated area.

DEAD/DYING TREES: Trees with the crown foliage changing from green to red, yellow, or needleless. Any tree that has pitch tubes indicating Mountain Pine Beetle infestation.

DECOMMISSION: Referring to roads. The act of removing a road from the national forest road system.

Road Decommissioning activities can vary, depending on the needs of the road and watershed. Levels of decommissioning are described below but not all the activities may occur for each level:

- Level 1: Blocking the entrance and restoring vegetation. Culverts, if existing, remain in place.
- Level 2: Blocking the entrance, restoring vegetation, scarifying, installing water bars. Culverts, if existing, remain in place.
- Level 3: Reestablishing drainage-ways, installing water bars, shallow ripping, removing unstable fills, pulling back road shoulders, scattering slash on roadbed, partial recontouring, culverts removed.
- Level 4: Reestablishing drainage-ways, installing water bars, deep ripping, removing unstable fills, pulling back road shoulders, scattering slash on roadbed, partial recontouring, culverts removed.
- Level 5: Completely eliminate the roadbed by restoring natural condition and slopes, culverts removed.

At a minimum, the entrance would be blocked to prevent motorized access, and the road surface would be made hydrologically stable.

DESIGNATION BY PRESCRIPTION (DxP): A cutting prescription in which a specified silvicultural prescription is used to determine which trees will be left and which will be cut.

DIB: Diameter Inside Bark.

HANG-UP TREE: Any cut tree suspended above ground level.

HEALTHY REGENERATION: Young, healthy, dwarf mistletoe free conifers, less than 4.9 inches in diameter, free of defect.

IRA: Inventoried Roadless Area. Area that has been designated as roadless according to the 2001 Roadless Rule (36 CFR 274.13(b)(1)(ii))

LEAVE TREE: Trees that possess desirable characteristics and that serve to create the basis for designated spacing requirements or are otherwise designated to be left.

LOPPING AND/OR SCATTERING: Cutting limbs from the bole of cut trees, bucking, and moving and rearranging of slash concentrations to reduce the fuel bed height as specified.

NON-COMMERCIAL UNIT (or TREATMENT): A silvicultural treatment which no product of commercial value is removed from a particular site, or unit. See also Commercial Unit.

NON-SAWTIMBER (NON-SAW) TREE: For all conifer species, trees greater than 2 feet in height and meeting non-sawlog size specifications as defined in Appendix B, Division A.2.

OVERSTORY REMOVAL: A cutting prescription where all trees greater than a specified size are cut. Trees that are less than the specified size are protected from cutting.

PAYMENT UNIT: See Unit definition.

PILING: The act of gathering and stacking of downed wood and activity slash by hand or mechanical methods into piles constructed and located as indicated by technical specification and project maps.

PROGRESSION OF WORK: Work conducted in a progressive, workmanlike and orderly manner by the Contractor.

RESERVE CLUMPS: Trees or groups of trees within an area that are protected from cutting, may also include Individual Reserve trees.

SAWTIMBER TREE: For all conifer species; included timber meeting sawlog size specifications as defined in Appendix B, Division A.2.

SLASH: Woody material existing or created that has accumulated on the forest floor. Woody material includes logs, pieces of logs, tops, and branches greater than 3 inches in diameter. See piling technical specifications for further detail.

UNIT: An individual area on the ground in which activities will be performed, and which may appear as a separate pay item in the Schedule of Items.

TEMPORARY ROADS: Non-permanent roads that are constructed by Contractor for the purpose of access to a particular unit. Such roads shall be decommissioned after use.

UNSATISFACTORY WORK: If work quality falls below the AQL, the COR will issue a work order or notice of noncompliance to the Contractor in writing. Untreated or unsatisfactory treated areas shall be reworked to obtain satisfactory work quality.

WHOLE TREE YARDING: Once a tree is cut during logging operations, removal of the entire tree, including tops and branches, to the landing.

WILDLIFE TREE: Standing tree marked to be reserved as a wildlife tree. Used by birds and small mammals for shelter, nesting, perching, etc.

Exhibit A

Attribute Fields for Invasive Species GIS data
Data in Projected Coordinate System NAD 1983 UTM Zone 11N

Name	Alias	Type	Nullable	Precision	Scale	Length	Editable	Comment
SITE_ID_FS	SITE_ID_FS	String	TRUE	0	0	30	TRUE	011405(followed by unique identifyer for each mapped area)
NRCS_PLANT_CODE	NRCS_PLANT_CODE	String	TRUE	0	0	10	TRUE	Alpha-numeric code from the NRCS PLANTS database
SCIENTIFIC_NAME	SCIENTIFIC_NAME	String	TRUE	0	0	150	TRUE	From NRCS PLANTS database
COMMON_NAME	COMMON_NAME	String	TRUE	0	0	60	TRUE	
LIFEFORM_DOMINANT	LIFEFORM_DOMINANT	String	TRUE	0	0	50	TRUE	
DATE_COLLECTED	DATE_COLLECTED	Date	TRUE	0	0	8	TRUE	MMDDYYYY format
TOTAL_AREA	TOTAL_AREA	Double	TRUE	38	8	8	TRUE	
INFESTED_AREA	INFESTED_AREA	Double	TRUE	38	8	8	TRUE	
INFESTED_PERCENT	INFESTED_PERCENT	Double	TRUE	38	8	8	TRUE	
PLANT_STATUS_SET	PLANT_STATUS_SET	String	TRUE	0	0	60	TRUE	
COVER_PCT	COVER_PCT	Double	TRUE	38	8	8	TRUE	
DISTANCE_TO_WATER_HORIZONTAL	DISTANCE_TO_WATER_HORIZONTAL	Double	TRUE	38	8	8	TRUE	
DISTANCE_TO_WATER_VERTICAL	DISTANCE_TO_WATER_VERTICAL	Double	TRUE	38	8	8	TRUE	
OWNER_NAME	OWNER_NAME	String	TRUE	0	0	50	TRUE	
GIS_ACRES	GIS_ACRES	Double	TRUE	38	8	8	TRUE	
EXAMINERS	EXAMINERS	String	TRUE	0	0	255	TRUE	
PLANT_STATUS	PLANT_STATUS	String	TRUE	0	0	255	TRUE	
REMARKS	REMARKS	String	TRUE	0	0	255	TRUE	

NRCS PLANT Guide - https://plants.usda.gov/

Exhibit B

Montana Noxious Weed List
Effective: June 21, 2019

PRIORITY 1A These weeds are not present or have a very limited presence in Montana. Management criteria will require eradication if detected, education, and prevention:

(a) Yellow starthistle (*Centaurea solstitialis*)

(b) Dyer's woad *(Isatis tinctoria*)

(c) Common reed *(Phragmites australis ssp. australis)*

(d) Medusahead *(Taeniatherum caput-medusae)*

PRIORITY 1B These weeds have limited presence in Montana. Management criteria will require eradication or containment and education:

(a) Knotweed complex (*Polygonum cuspidatum, P. sachalinense, P. × bohemicum, Fallopia japonica, F. sachalinensis, F. × bohemica, Reynoutria japonica, R. sachalinensis, and R.× bohemica*)

(b) Purple loosestrife (*Lythrum salicaria*)

(c) Rush skeletonweed (*Chondrilla juncea*)

(d) Scotch broom (*Cytisus scoparius*)

(e) Blueweed (*Echium vulgare*)

PRIORITY 2A These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts:

(a) Tansy ragwort (*Senecio jacobaea, Jacobaea vulgaris*)

(b) Meadow hawkweed complex (*Hieracium caespitosum, H. praealturm, H. floridundum, and Pilosella caespitosa*)

(c) Orange hawkweed (*Hieracium aurantiacum, Pilosella aurantiaca*)

(d) Tall buttercup (*Ranunculus acris*)

(e) Perennial pepperweed (*Lepidium latifolium*)

(f) Yellowflag iris (*Iris pseudacorus*)

(g) Eurasian watermilfoil (*Myriophyllum spicatum, Myriophyllum spicatum x Myriophyllum sibiricum***)**

(h) Flowering rush (*Butomus umbellatus*)

(i) Common buckthorn *(Rhamnus cathartica L.)*

(j) Ventenata *(Ventenata dubia)*

PRIORITY 2B These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts:

(a) Canada thistle (*Cirsium arvense*)

(b) Field bindweed (*Convolvulus arvensis*)

(c) Leafy spurge (*Euphorbia esula*)

(d) Whitetop (*Cardaria draba, Lepidium draba*)

(e) Russian knapweed (*Acroptilon repens, Rhaponticum repens*)

(f) Spotted knapweed (*Centaurea stoebe, C.maculosa*)

(g) Diffuse knapweed (*Centaurea diffusa*)

(h) Dalmatian toadflax (*Linaria dalmatica*)

(i) St. Johnswort (*Hypericum perforatum*)

(j) Sulfur cinquefoil (*Potentilla recta*)

(k) Common tansy (*Tanacetum vulgare*)

(l) Oxeye daisy (*Leucanthemum vulgare*)

(m) Houndstongue (*Cynoglossum officinale*)

(n) Yellow toadflax (*Linaria vulgaris*)

(o) Saltcedar (*Tamarix spp*.)

(p) Curlyleaf pondweed (*Potamogeton crispus*)

(q) Hoary alyssum (*Berteroa incana*)

PRIORITY 3 Regulated Plants: (NOT MONTANA LISTED NOXIOUS WEEDS)

These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.

(a) Cheatgrass (*Bromus tectorum*)

(b) Hydrilla (*Hydrilla verticillata*)

(c) Russian olive (*Elaeagnus angustifolia*)

(d) Brazilian waterweed (*Egeria densa*)

(e) Parrot feather watermilfoil (*Myriophyllum aquaticum or M. brasiliense*)