Request for Proposals
Liberty Utilities Resilience Corridor – Phase 1: 625 Line Project

Background and Statement of Work:

The National Forest Foundation (NFF) and the USDA Forest Service are working together to protect and restore the Lake Tahoe Basin Management Unit through targeted efforts in NFF’s Tahoe Headwaters Treasured Landscape site. Since 2020, the NFF and Lake Tahoe Basin Management Unit (LTBMU) have collaborated with Liberty Utilities on a number of powerline resilience corridors projects including the Liberty Utilities Resilience Corridor – Phase 1: 625 Line Project. The project will improve wildfire resiliency on forests adjacent to Liberty Utilities infrastructure by reducing overstocked vegetation along the utility corridor.

The Liberty Utilities Resilience Corridor – Phase 1: 625 Line Project is located in the Lake Tahoe Basin Management Unit between Highway 89 and Highway 267, approximately 3 miles to the northwest of Tahoe City, CA. Project work will occur in Zones 1 and 2 (extending up to 175’ on each side of the power line) of Liberty Utility infrastructure. Technical felling in Zone 1 and 2 will be performed by Liberty Utilities. The project will improve stand conditions by thinning and removal of conifers on up to 186.7 acres. Additional service work includes fuel treatments, removal of slash, removal of material from felled hazard trees during the 2020 and 2021 field seasons, and road maintenance activities.

General Specifications:

(1) Description of Work – This Request for Proposals is for conifer removal operations and additional project related service work in Zones 1 and 2 of Liberty Utilities Infrastructure. The specific work activities are identified in the Schedule of Items table. Additional information, requirements, and specifications are provided in the attached appendices.

a. Whole tree removal and borate stump treatment on trees up to 30 inches DBH on up to 208.1 acres.
b. Mechanical fuels treatment on up to 208.1 acres.
c. Removal of 755 tons of cull material from 208.1 acres to landings.
d. Removal of approximately 7,175 tons of slash and cull material from landing.
e. Road Maintenance and Erosion Control on up to 22.2 miles of road.

All work items will be awarded at the discretion of the NFF, as budgetary obligations allow.

The NFF will entertain alternate methods of treating biomass and cull material should the Contractor propose a method which satisfies all project specifications and requirements and meets the USFS desired condition once implemented.
The Contractor shall supply materials, labor, equipment, supplies, supervision, quality control, and incidental services required to complete the work described. The Contractor shall perform all work in a safe and conscientious manner. Orientation to the project site to support initiation of the work, project administration and oversight will be done by a NFF Forester, with support from Forest Service staff.

(2) Project Location – The project site ranges from roughly 6,400 to 8,000-feet in elevation. The project area lies within the Lake Tahoe Basin Management Unit T. 16N, R. 17 E S. 3, 9, 17, 18; T. 16N, R 16E, S. 13, 23, 26, 35, 36; T. 15N, R. 16E, S. 1 and 12; T. 15N, R. 17E, S. 6 MDM, in Nevada County, California. APPENDIX C includes maps of the project displaying the entire project area within which treatments may occur. The map displays: contract area boundaries, treatment unit boundaries, existing road system, road reconstruction locations, temporary roads, stream courses, preferred landings, and additional items. The treatment boundaries will be marked on-the-ground with pink and blue flagging, orange paint delineating unit boundaries, and/or placards. Additional units may be identified prior to and during project implementation.

Work Schedule

Limiting Operating Periods (LOPs) for California spotted owl (CASPO) and Northern goshawk (NOGO) will be observed in unit 1040. The LOP will extend March 1 – September 15 to account for CASPO and NOGO nesting activity. Reference APPENDIX C for maps of LOPs.

LTBMU’s normal operating season exists between June 1 and October 15 and can extend longer as conditions allow. Contractors should anticipate delays each summer and fall for Project Activity Level (PAL) days where limited work is allowed. All project work shall be completed no later than December 31, 2025. The NFF and Contractor will negotiate a schedule of operations upon award. Contract completion date can be negotiated upon agreement of both parties.

Pricing Schedule

1. Conifer Removal – Please provide a bid to purchase the following products:

<table>
<thead>
<tr>
<th>Cutting Unit Number</th>
<th>Species</th>
<th>Product</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Rate of Payment $/UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Units</td>
<td>Combined Softwood (JP/IC/WF/RF, LP)</td>
<td>Sawtimber</td>
<td>8,342</td>
<td>TON</td>
<td></td>
</tr>
<tr>
<td>All Units</td>
<td>Biomass/Cull</td>
<td>Non-Saw</td>
<td>7,175</td>
<td>TON</td>
<td></td>
</tr>
</tbody>
</table>

For timber removal specifications, please see Appendix F. Minimum rates for Sawtimber are: $1.00/TON; minimum rates for Non-saw are $0.10/TON

2
2. Service Work Items – Please provide a price to perform the following service work:

Table 2A.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Unit of Measure</th>
<th>Quantity</th>
<th>Unit Price ($)</th>
<th>Total Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 A</td>
<td>Mechanical Thinning Treatment (Zone 2) - Whole Tree Removal of sawlog and biomass material, log branding, log haul, and borate stump treatment</td>
<td>Acre</td>
<td>186.7</td>
<td>186.7</td>
<td></td>
</tr>
<tr>
<td>01 B</td>
<td>Mechanical Thinning Treatment (Zone 1) - Whole Tree Removal of sawlog and biomass material, log branding, log haul, and borate stump treatment</td>
<td>Acre</td>
<td>21.4</td>
<td>21.4</td>
<td></td>
</tr>
<tr>
<td>02 A</td>
<td>Fuels Treatment (Zone 2) - Whole Tree removal. Cutting snags and removal, piling, or lopping and scattering of activity slash and concentrations of existing and downed fuels</td>
<td>Acre</td>
<td>186.7</td>
<td>186.7</td>
<td></td>
</tr>
<tr>
<td>02 B</td>
<td>Fuels Treatment (Zone 1) - Whole Tree removal. Cutting snags and removal, piling, or lopping and scattering of activity slash and concentrations of existing and downed fuels</td>
<td>Acre</td>
<td>21.4</td>
<td>21.4</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Removal of Slash at Landings</td>
<td>Ton</td>
<td>7,175</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Road Maintenance and Erosion Control</td>
<td>See Table Below</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**

*For service in Table 2A. work specifications, please see Appendix E.*
Table 2B.

<table>
<thead>
<tr>
<th>Road Segment</th>
<th>Approximate Distance (Miles)</th>
<th>Segment Price ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16N73.1</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>16N71</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>16N71I</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>16N76A</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>16N76</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>16N75</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>16N77</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>16N74</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>14.4</td>
<td></td>
</tr>
<tr>
<td>All Temp</td>
<td>1.66</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>22.2</strong></td>
<td></td>
</tr>
</tbody>
</table>

*For service in Table 2B work specifications, please see Appendix F.*

*For additional information, please request a Roads Package from the NFF Contact listed below.*

**Other Project Requirements and Specifications**

(a) **Utilities** – A NFF Forester will assist the contractor in identifying a camping area near the project site if spiking is the desired option for the crew. The contractor shall contact the NFF Forester for assistance and then make its own arrangements for temporary facilities if needed.

(b) **Specifications** – Project work shall be accomplished in accordance with the specifications and management requirements listed in the attached appendices, as follows:
   - APPENDIX A – Omitted
   - APPENDIX B – Omitted
   - APPENDIX C – Map pf Stewardship Project Area/ Contract Area
   - APPENDIX D – Omitted
   - APPENDIX E – Schedule of Items and Specifications
   - APPENDIX F – Timber Removal Specifications
   - APPENDIX G – Guidelines for Operations
   - APPENDIX H – Mechanical Work/Fire Plan
Contractor Qualifications

(a) **References** – Please provide three references.

(b) **Past Experience** – Please provide a brief explanation of previous work experience with land management agencies and meadow restoration.

Proposal Requested

If interested in this project, please provide a bid for the above statement of work. Please provide a general work plan and description of how the work will be accomplished (i.e., type of equipment to be used, number of crew members, names of subcontractors etc.), and a timeline of how work will progress and be completed. Operations are suggested to begin at the western-most units of the project area and move east as the project progresses.

For questions about the project specifications and details of producing a bid, please contact Mila Bock (mbock@nationalforests.org and 530.341.6082). This is a request for proposals only and quotations furnished are not offers. This request does not commit the National Forest Foundation to pay any costs incurred in the preparation of submission of the quotation or to contract for supplies or services.

Equal Opportunity Provider

In accordance with Federal law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, religion, political beliefs, or disability.

Contractor Selection Process

Pre-Bid Tour will be held **10am – 3pm August 8, 2022**. Bids will be due no later than 5pm August 19, 2022. The NFF will select a contractor after reviewing received bids. Once a contractor is selected, we will prepare a separate contract document. The NFF anticipates selection of contractors within 10 business days. Work may begin upon final signature of the contract and when ground conditions allow.

**Your bid should be emailed by 5:00 PM Friday, August 19, 2022**

Please e-mail bids to:
   Mila Bock
   National Forest Foundation
   mbock@nationalforests.org
Liberty 625 Whole Tree Stewardship Agreement
Lake Tahoe Basin Management Unit
Map 2 of 4

Legend

Cutting Unit Boundary F.7, F.8 Zone:
1  15' from utility center line
2  15'-175' from utility center line

Contract Area Boundary

Virtual Discernable Boundaries F.7

Protection of improvements, Transmission Lines, G.24

Preposed Landings, G.30

Proposed Temp Roads, G.28

Trail G. 25.4

Protect Streamcourse, Peren, G. 22

Protect Streamcourse Intermit, G. 22

Protect Streamcourse Ephem, G.22

Other Ownership

USDA Forest Service

Install Rock/Chip Apron, E.4

Payment unit

PAL 530-295-5699
Weather station TRTC1
Contours are at 40' Intervals
Landlines are Approximate

Requirements

Contract Area
Streamcourses, Private Property, Paved Roads, Controlled Areas, Improvements
Special Erosion Prevention Measures
Contract Area - Hours of operation 8am to 6pm
Protected Activity Center

Applicable to

WT, DxP, TS, ENDL, DF, SEPM, LDP, PAC

Unit 4039 - 37 Acres
zone 1 acres: 3.5 zone 2 acres: 33.8

1:12,000

0 250 500 1,000 1,500 2,000
Feet

N
### APPENDIX E

**SCHEDULE OF ITEMS AND SPECIFICATIONS**

**Schedule of Items-Phase 1 Mechanical Thinning/Biomass Removal**  
*(Complete table to include the project items.)*

#### SCHEDULE OF ITEMS:

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Unit of Measure</th>
<th>Quantity</th>
<th>Unit Price $</th>
<th>Total $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Mechanical Thinning Treatment (Zone 2) - Whole Tree Removal of sawlog and biomass material, log branding, log haul, and borate stump treatment</td>
<td>acres</td>
<td>186.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1B</td>
<td>Mechanical Thinning Treatment (Zone 1) - Whole Tree Removal of sawlog and biomass material, log branding, log haul, and borate stump treatment</td>
<td>acres</td>
<td>21.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2A</td>
<td>Fuels Treatment (Zone 2) - Whole Tree removal. Cutting snags and removal, masticate, chipping, piling, or lopping and scattering of activity slash and concentrations of existing and downed fuels.</td>
<td>acres</td>
<td>186.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fuels Treatment (Zone 1) - Whole Tree removal. Cutting</td>
<td>acres</td>
<td>21.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SPECIFICATIONS.  [By item number, describe the type of work, i.e., slash treatment, weed treatments, etc. and the corresponding specifications.]:

Unit Boundary Designation. The boundaries of units are designated as shown in the following table. The trees used for boundary designation are not to be cut. Zone 1 is identified to include up to 15 feet on either side utility infrastructure. Zone 2 starts at edge of Zone 1 and extends a maximum of 160’ from starting edge, or 175’ from center line of utility infrastructure.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Paint Color</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>Orange</td>
<td>Pink and Blue Flagging Tape</td>
</tr>
</tbody>
</table>

SPECIFICATIONS.  All tasks below will be following the management requirements listed in the Liberty Resilience Corridor Project sub-folder.

General Description of the work to be completed by Contractor under this Agreement:
Work will be accomplished under this Contract utilizing Whole Tree ground-based mechanical operation systems.

Under this agreement, the Contractor will coordinate with NFF designated representative (NFF Representative) to protect all utility infrastructure.

**Liberty Utilities Resilience Corridor – Phase 1: 625 WT Project**

**Item 1: Liberty 625 Whole Tree Units** (38, 39, 4039, 40, 1040, 4040, and 5040)
Thinning Treatment – Whole Tree - Removal of sawlog and biomass material, log
branding, log haul, and borate stump treatment

Whole Tree Specifications: Work activities shall be accomplished utilizing hand falling or mechanical harvesting and whole tree removal, operating over dry ground or over-the-snow. Technical felling in Zone 1 and 2 will be performed by Liberty Utilities. Trees designated for removal shall be skidded/yarded to agreed landing locations prior to limbing, bucking, and lopping. Trees larger than or equal to 24 inches DBH shall be bucked into two or more pieces with the butt portion being no longer than 41 feet prior to skidding/yarding. Skid road pattern shall be agreed in advance of felling and main skid roads shall be flagged on the ground in advance of felling. Products shall be skidded with leading end clear of ground. Products shall be end-lined as needed to protect resources or residual timber from unnecessary damage. In Whole Tree stands, whole tree removal of sawlog and small trees to the landing will be required, with some lopping and scattering or piling of slash allowed with approval by contract administrator or NFF Representative.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Zone 2 Acres</th>
<th>Zone 1 Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>9.3</td>
<td>1.7</td>
</tr>
<tr>
<td>39</td>
<td>45.4</td>
<td>5.0</td>
</tr>
<tr>
<td>4039</td>
<td>33.8</td>
<td>3.5</td>
</tr>
<tr>
<td>40</td>
<td>36.0</td>
<td>4.2</td>
</tr>
<tr>
<td>1040</td>
<td>10.2</td>
<td>1.1</td>
</tr>
<tr>
<td>4040</td>
<td>42.5</td>
<td>4.8</td>
</tr>
<tr>
<td>5040</td>
<td>9.5</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>186.7</strong></td>
<td><strong>21.4</strong></td>
</tr>
</tbody>
</table>

Small tree thinning is defined by the diameter of trees that are to be cut by designation by description as stewardship work items. Small trees thinned under this work item shall be removed or treated according to the specifications in Table 2a. below.

**Item 2: Liberty 625 Whole Tree Units (38, 39, 4039, 40, 1040, 4040, 5040)**

**Fuels Treatment – Whole Tree - Cutting snags and removal, lopping & scattering of activity and concentrations of existing and downed fuels**

Fuels treatment includes the treatment of existing and contractor generated slash and biomass material. This includes the cutting of snags and treatment of concentrations of existing and down fuels and other contractor generated slash including felled hazard tree material. Existing and generated slash and biomass will be removed to landings or treated according to the specifications. Post treatment residual fuel loads should be less than 10 tons per acre averaged across Zones 1 and 2.
It is the intent of this project to remove as much slash generated from operations as possible to limit the amount of post contract government slash burning. Primary treatment for all slash types is remove to landing. Where appropriate and with approval by NFF Representative or contract administrator, lop & scatter slash and biomass to reduce slash concentrations with slash laying no higher than 16 inches above the ground may be permissible. Material shall be scattered away from Zone 1, into openings away from and without unnecessary damage to residual trees. All scattered logs shall be limbed, placed away from trees and positioned so they will not roll.

Material of any kind will not be placed or left in the watercourse or left in a manner that it could access the watercourse, meadow, or wetland.

**Table 2a. Individual Unit Thinning Specifications:** The table below sets the parameters for live tree thinning in each unit.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Designation by Description &lt;10” DBH</th>
<th>Individual Sawlog Cut Tree Mark BLUE PAINT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>Leave 15 TPA (approx. 50’-55’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
<tr>
<td>39</td>
<td>Leave 15 TPA (approx. 50’-55’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
<tr>
<td>4039</td>
<td>Leave 15 TPA (approx. 50’-55’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
<tr>
<td>40</td>
<td>Leave 15 TPA (approx. 50’-55’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
<tr>
<td>1040 PAC</td>
<td>Leave 25 TPA (approx. 40’-45’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
<tr>
<td>4040</td>
<td>Leave 15 TPA (approx. 50’-55’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
<tr>
<td>5040</td>
<td>Leave 15 TPA (approx. 50’-55’ spacing)</td>
<td>10.0” to 29.9” dbh</td>
</tr>
</tbody>
</table>

All units may have hazard trees >30” DBH designated for removal.

**Leave Tree Specifications:**

The column headed **Designation by Description** in table 2a. indicates the diameter range of trees within each unit that will require cutting as specified by description only.

**Selection Criteria for < 10” DBH Leave Trees:**

1. Select leave trees from healthy conifers that are free from disease and damage.
2. Select trees which have a 30% or greater live vigorous crown free from bole or crown damage and no visible mistletoe infections or other insects/diseases.
3. Select trees with good form (e.g. no two-way sweep, no spiral grain, etc.) while maintaining species distribution.
4. Select trees with the best recent height growth
5. Do not cut Whitebark Pine, Giant Sequoia, or Sierra Juniper unless agreed to by contract administrator.
6. Select leave trees based on the following species preference:
   
   1. Any hardwood
   2. WBP, Juniper or Sequoia
   3. Sugar or western white pine
   4. Jeffrey pine
   5. Incense Cedar
   6. Red fir
   7. White fir
   8. Lodgepole pine

**Item 3: Liberty 625 Whole Tree Units (38, 39, 4039, 40, 1040, 4040, 5040)**

**Removal of Slash at Landings**

It is the intent of this project to remove as much slash generated from operations as possible to limit the amount of post contract government slash burning. Slash that is yarded to landings (small trees, limbs, tops, dead and down, cull) shall be removed or, by approval of NFF Representative or Sale Administrator, chipped (leaving a maximum of 6” depth). Landing slash disposal will be the responsibility of the Contractor and is a separate bid item.

Where appropriate and with approval by NFF Representative, lop & scatter of slash and biomass may be permitted to reduce slash concentrations with slash laying no higher than 16 inches above the ground. Material shall be scattered outside of Zone 1 and into openings away from and without unnecessary damage to residual trees. All scattered logs shall be limbed, placed away from trees and positioned so they will not roll. No lopping & scattering shall be performed within Controlled Areas, stream zone buffers, stream channels, on roads, trails, or private property. Material of any kind would not be placed or left in the watercourse or left in a manner that it could access the watercourse, meadow, or wetland.

Logs of larger character with habitat benefits shall be selected for retention to meet residual log targets as listed in table 3a. below.
Table 3a. Individual Unit Slash Treatment Specifications

<table>
<thead>
<tr>
<th>Unit</th>
<th>Residual Snags/Acre</th>
<th>Residual Logs/Acre</th>
<th>Primary Slash Treatment</th>
<th>Secondary Slash Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>38, 39, 40, 4040, 5040</td>
<td>6</td>
<td>3</td>
<td>Remove activity fuels down to 4 inches DBH <strong>then</strong> Masticate/Chip or Lop/scatter</td>
<td>Hand/Machine piling of material by NFF Representative or Sale Admin approval only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remove existing fuels down to 1 inches DBH and greater than 3 feet in length</td>
<td>No mechanical/hand piles or cull decks shall be left in unit</td>
</tr>
<tr>
<td>4039</td>
<td>3</td>
<td>3</td>
<td>Remove activity fuels down to 4 inches diameter <strong>then</strong> Masticate/Chip or Lop/scatter</td>
<td>Hand/Machine piling of material by NFF Representative or Sale Admin approval only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remove existing fuels down to 1 inches in diameter and greater than 3 feet in length</td>
<td>No mechanical/hand piles or cull decks shall be left in unit</td>
</tr>
<tr>
<td>1040</td>
<td>6-8</td>
<td>3</td>
<td>Remove activity fuels down to 4 inches diameter <strong>then</strong> Masticate/Chip or Lop/scatter</td>
<td>Hand/Machine piling of material by NFF Representative or Sale Admin approval only</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Remove existing fuels down to 1 inches in diameter and greater than 3 feet in length</td>
<td>No mechanical/hand piles or cull decks shall be left in unit</td>
</tr>
</tbody>
</table>

**Item 4: Liberty 625 Whole Tree Units (38, 39, 4039, 40, 1040, 4040, 5040)**

**Road Maintenance and Erosion Control**

**Road Maintenance and Erosion Control:** The following is intended as a set of operating conditions and erosion control needs for the use of roads, landings, and forwarding trails within summer or winter operating seasons. Included in this Item is equipment mobilization, and the costs associated with seasonal move-in and move-out requirements. Ground disturbing work cannot begin in any unit FS personnel have determined operable soil conditions exist. Work must be in compliance with all applicable Best Management Practices (BMPs), applicable water quality Resource Protection Measures from the Timber Waiver Permit, and the LTMBU Agreement for Wet Weather Operations and Operations Outside Normal Operating Season.
Contractor shall perform specified road maintenance and erosion control activities as specified in T-Specs, which includes but not limited to road blading, drainage maintenance, preventative maintenance, and dust abatement on designated Forest Roads, and any unnumbered newly constructed roads, channel crossings, landings, forwarder trails, existing non-system roads and existing and new temporary roads.

Water for performing road maintenance may be obtained from hydrants in the project vicinity. The contractor is responsible for obtaining a water use permit and encroachment permit and permission for use of county/city/state/private roads. Specific road maintenance and erosion control requirements for temp roads/landings are listed below. Ripping of landings and temporary roads is not permitted in known noxious weed sites and in rocky soils. A slash mat or construction of temporary crossings will be required when crossing areas of wet soils or stream courses in Stream Environment Zones. Equipment will not be required to operate over a slash mat outside of wet Stream Environment Zones, but where a slash mat is not present on equipment trails, water bars shall be installed upon completion of use of each equipment trail.

Applicable BMP’s and Specific Road details, Road Maintenance T-Specs and requirements are to be determined pre, during, and after project layout work is completed by Contractor.

**R P F - Registered Professional Forester for Project Implementation and Administration**

**Registered Professional Forester:** NFF will supply a Registered Professional Forester (RPF) by the State of California to supply the quality control for the implementation and administration of the project. The RPF duties will include, but are not limited to; conducting quality control for service work being implemented by NFF contractors, act as NFF Project Representative during operations, work with Forest Service Sale Administration staff to take corrective actions as needed to ensure projects are completed to an acceptable standard and that resource protection measures are implemented as designed.

The Forest Service Sale Administrators reserves the right to suspend operations for imminent natural resources damage or safety.

**RPF Specific Duties**

**Quality Control of Projects:** RPF functions as inspection and quality control on a daily basis for all service items and product removal items within the agreement.

RPF will review the contract and related pre-sale data such as preliminary logging plan, environment assessment, appraisal, etc. Determines that all prerequisites to contract work are taken care of such as, but not limited to, advance deposits, delegations of authority, road construction and timber cutting coordination, improvement locations, operating schedules, logging plan preparations, scaling arrangements, and environmental protection measures. Reviews plans and schedules with contractors to assure common understanding of conditions and responsibilities.

Throughout the life of the project, the RPF is responsible for continuing field inspection and control of contractor’s operations such as falling, skidding and yarding, loading,
haling, and all log accountability requirements. Determines whether utilization, slash disposal, and erosion control are adequate. Documents all findings for the project record. Takes appropriate action to correct deficiencies and assesses penalties when needed. Ensures that stream courses and other land features are protected.

Advises contractor’s field representative of adequacy or inadequacy of operations and achieves compliance with contract terms, including safety and employment requirements.

Determines when log hauling may be allowed on system roads under construction, makes agreements, and weekly reports of progress with Forest Service.

Ensures that all contractual obligations are met before making final inspection in coordination with Forest Service.

**Acceptable Quality Level**

A. NFF Representative shall maintain a plot system that provides an unbiased sample of thinning quality, and which represents the entire area treated. At least 1 percent of the treated area shall be sampled. The Forest Service may observe or re-inspect NFF Representative plots at any time. Plots shall be marked and identifiable on the ground.

B. NFF shall provide written inspection data by unit in a format that meets the agreement requirements and a sketch map with plot locations. NFF may choose to use the Government Inspection Sheet (FS-6300-20) and/or (FS-2400-181) which would be provided by the Forest Service. The Forest Service may observe or re-inspect NFF’s plots at any time.

C. NFF’s inspection records shall be provided to the Forest Service based on the schedule proposed by NFF and agreed to by the Forest Service for quality assurance assessment.

D. Slash treatment quality shall reflect compliance with requirements.

E. NFF’s quality control inspections for thinning shall meet Forest Service quality assurance to be considered acceptable.

F. When NFF inspection results are below the expected quality based on NFF’s quality control inspection and verified by the Forest Service monitoring, and excess trees or slash contribute to the deficiency, acceptance will not be made until the deficiency has been corrected unless the Forest Service determines the deficiency to be minor or an isolated situation that will not result in any material differences in meeting the objectives for the unit. NFF may request Contractor to improve quality by re-working an area if they desire. However, NFF shall not modify the quality of an area for the purpose of improving an area identified or anticipated as an inspection plot.
EXHIBIT B: LIBERTY RESILIANCE CORRIDOR PROJECT

Timber Waiver Application List of Mitigations/Resource Protection Measures

Resource Protection Measures

Resource protection measures are intended to avoid, eliminate, or reduce unintended and undesirable effects of the proposed activities. The following headings display the resource protection measures categorized by resource area and in some cases include the unit location for where the measure is applied.

The resource protection measures for terrestrial and aquatic wildlife habitat, sensitive plants and habitat, and invasive plants are based largely on previous determinations desktop evaluation of species occurrences and habitat conditions. They will be refined once on-the-ground assessments are conducted and current information for these resources are obtained. On the Tahoe National Forest, additional resource protection measures will be incorporated where needed to protect sensitive biological resources. These measures, not included in the list below, will come from the 1990 Tahoe National Forest Land and Resource Management Plan and the Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement Record of Decision (2004).

In accordance with the LTBMU Forest Leadership’s intent, the LTBMU Land Management Plan, and agency direction, the application of these resource protection measures during project implementation will be coordinated by the Project Interdisciplinary Team (IDT). The IDT will use on-the-ground assessments and current resource information at the time of implementation to determine which RPMs will be applied to meet the needs of this project as well as the specific resource considerations described below. Some resource protection measures will require increased interdisciplinary coordination, and these are specifically indicated below.

Air Quality

1. Prescribed burning activities would comply with air quality standards and restrictions.
2. A burn plan would be prepared prior to implementation. This burn plan includes a Smoke Management Plan which is the basis for obtaining a burn permit from El Dorado Air Quality Management Districts. The plan includes measures for smoke mitigation and public notification of prescribed fire activities.

Pest Management

3. Stumps created by the cutting of live fir and pine trees 14 inches diameter and greater would be treated with an EPA registered borate compound.

Terrestrial Wildlife Habitat

4. Maintain Limited Operating Periods (LOPs) for TECPS terrestrial wildlife species. The current LOPs for wildlife species are described in the table below. These LOPs may be updated prior to implementation once more specific on-the-ground wildlife conditions are understood.
5. Immediately report TECPS terrestrial wildlife individuals, dens, or nests identified during project activities to the project wildlife biologist. Move or pause activities in the immediate area until the project biologist can respond. The project biologist would determine if an LOP or other actions are necessary.

6. Where ground disturbing activities would occur within areas with historical nesting by willow flycatcher, and the habitat is considered suitable by the project biologist, conduct surveys for willow flycatcher or apply the LOP as described in the table below.

7. In forested habitat in all three zones, prioritize retaining tall, large diameter (≥30 inches diameter-at-breast-height [dbh]) live trees. If a large diameter tree must be removed, notify the project wildlife biologist. The biologist may want to consider topping the tree (as opposed to whole felling) and/or leaving a felled tree as coarse woody debris.

8. Retain and/or create snags where consistent with project objectives. Follow these guidelines from the Forest Plan (for PAC snag guidelines see PAC section below):
   a. Retain medium- and large-diameter snags that exhibit form and/or decay characteristics regarded as important wildlife habitat.
   b. In Jeffrey pine, retain an average of three of the largest snags/acre.
   c. In red fir or white fir-mixed conifer, retain an average of six of the largest snags/acre.
   d. Where feasible, snags would be clumped and distributed irregularly.

9. Where creation/retention of coarse woody debris is consistent with project objectives, retain or leave an average of three large diameter logs (>15 inches diameter) per acre more than 300 feet from private property. Avoid bucking.

10. Conduct pedestrian surveys in the treatment area on the east side of Fallen Leaf Lake (near the known marten den), where the project overlaps the Heavenly permit boundary area, and in suitable habitat in the small portion of overlap on the Tahoe National Forest during the marten breeding season. If the habitat is deemed suitable by the project biologist and potential den sites are identified, consider conducting follow up camera surveys to confirm if the site is being used by marten for denning or implement the LOP around den sites as described in the table below. If marten are confirmed denning, implement the LOP.

Protected Activity Centers (PACs) and Home Range Core Areas (HRCAs)

What to retain in each zone that overlaps PACs

11. All Zones
   a. Retain all known nest trees. Retain tall, large diameter (≥30 inches dbh) trees and structurally complex trees unless a tree poses a strike risk to power lines.
   b. Prescriptions promote heterogeneous forest structure such that large trees would be clumped, and snags and coarse woody debris would be irregularly distributed throughout the unit rather than evenly spaced (homogeneous).
   c. Avoid creating open gap conditions near known nest sites.
12. Zones 2 and 3
   a. When developing prescriptions, consider factors such as owl/goshawk productivity, current stand structure and risks, future potential for tree growth and snag recruitment, and site conditions (e.g., water capacity of site, aspect, topography, existing canopy cover).
   b. Emphasize removing ladder and surface fuels and retaining a high density of tall, large diameter trees and high canopy cover.
   c. Retain approximately 6-8 snags/acre where snags would not pose a strike risk to power lines.
   d. Retain/create >3 downed logs/acre.

Where and how to operate in PACs
13. Coordinate with other nearby projects the time and placement of treatments in PACs.
14. The portions of the PACs that overlap treatment units are for the most part in the WUI defense and WUI threat zones. Therefore, mechanical vegetation treatments can be used where prescribed fire is not feasible.
   a. For PACs treated with mechanical equipment, add acreage to the PAC equivalent to the treated acres using adjacent acres of comparable quality habitat wherever possible.
   b. Mechanical treatment is prohibited within a 500-foot radius buffer around an activity center (or nest) within a PAC. Prescribed burning is allowed within this buffer. Hand treatments, including handline construction, tree pruning, and cutting of small trees (less than 6 inches dbh), may be conducted prior to burning as needed to protect important elements of owl habitat.
   c. Design mechanical treatments to maintain habitat structure and function of the PAC. Focus on the removal of ladder and surface fuels and retention of tall, large diameter trees.
   d. For those PACs with proposed treatments in the WUI threat zone, mechanical equipment would remove only material needed to meet project fuels objectives.
   e. For HRCAs with proposed treatments in the WUI threat zone, mechanical equipment would retain at least 50% canopy cover (averaged within the treatment unit) where vegetation conditions permit. If 50% cannot be retained because doing so would not: adequately reduce ladder fuels, provide sufficient access for equipment, or minimize the need for re-entry, retain an average of 40% canopy cover.

15. Where hand tool vegetation treatments are conducted in PACs, focus on the removal of ladder and surface fuels and retention of tall, large diameter trees. Within the 500-foot radius buffer around a nest or activity center within a PAC, hand treatments would be focused on pruning or cutting small trees (less than 6 inches dbh).
16. Only a small portion of proposed treatments in PACs overlaps the General Forest (outside the WUI). In these areas use only prescribed fire to restore habitat in PACs.
Hand thinning may be used to prune or cut small diameter trees (less than 6 inches dbh).

**Aquatic Wildlife Habitat**

17. Suitable habitat for the Sierra Nevada yellow-legged in the project area (as defined in the Programmatic Biological Opinion (FF08ESMF00-2014-F-0557)) will be reviewed in a desktop (GIS) and, if needed, a field evaluation to determine suitability. Habitat that is determined to be suitable and has not already been surveyed within the last 10 years will be surveyed three times to determine occupancy. The results of the suitability evaluation and surveys will be communicated to the USFWS. Occupied habitat (and a buffer that would be determined by the project aquatic biologist in coordination with the USFWS) would be avoided.

Three surveys within the last 10 years where the surveys are either staggered during one season from 14 calendar days after the date snowmelt begins through September 15 (early, mid, late season) or conducted during three separate consecutive years. At least one of the surveys will be conducted during a calendar year where snowpack is 80 percent or greater than normal.

18. In perennial and intermittent streams, leave existing downed trees and large woody debris in place unless removal would enhance or maintain channel stability, as determined by the aquatic biologist or watershed specialist or prohibits achieving project objectives.

19. In perennial and intermittent streams and lakes or ponds, do not remove or alter bank stabilizing riparian vegetation within 5 feet of the bank edge unless the action is needed to meet project objectives. Consult with an aquatic biologist or watershed specialist before removing riparian vegetation to determine if additional mitigation measures need to be taken to maintain stream shade.

20. In Lahontan cutthroat trout-occupied or potentially occupied habitat (Truckee River, Tallac Ck, Glen Alpine Ck, Taylor Ck, Angora Ck, Upper Truckee River, or Fallen Leaf Lake within the proposed project area):

   a. Do not conduct in-stream work: no temporary stream crossings or diversions and no fish salvage operations.

   b. Do not conduct water drafting unless needed for emergency fire suppression activities. If water drafting is needed in an occupied stream, an aquatic biologist will be notified as soon as fire suppression activities are under control.

   c. Limit activity disturbance on or near banks of occupied streams between February and July (spawning and egg incubation period for the Lahontan cutthroat trout).

   d. Do not create slash piles or ignite prescribed fire within 50 feet of an occupied stream.

   e. Design under-story burning prescriptions such that flame heights would not exceed two feet within 50 feet of stream courses or on wetlands unless higher intensities are required to achieve specific objectives.

   f. No ignitions of prescribed fire will take place within 50 feet of streams.
21. Where temporary stream crossings are constructed, reconstructed, or permanently removed, provide for aquatic organism passage.

22. Temporary crossings on flowing channels that are not occupied by Lahontan cutthroat trout, will be designed and implemented with the approval of a transportation specialist or watershed specialist AND aquatic biologist to determine if fish salvage is need prior to any dewatering.

23. When fish salvage is necessary (outside Lahontan cutthroat trout-occupied streams), fish would be moved approximately 500 -700 feet upstream or downstream of project activities. Block nets would be installed to ensure fish do not move back into the project area. Nets would be cleaned as needed to ensure the nets are functioning.

24. When water drafting is necessary for implementation (e.g., crossing construction, dust abatement, prescribed fire activities away from municipal or engine water supplies) outside of a Lahontan cutthroat trout-occupied stream, water levels would be maintained to support aquatic dependent species and associated habitat, and to provide adequate outflow for downstream water uses. Contract Administrator, aquatic biologist and/or watershed specialist will periodically check to ensure appropriate drafting procedures are being followed.

25. When water drafting is necessary for implementation (e.g., crossing construction, dust abatement, prescribed fire activities away from municipal or engine water supplies) outside of a Lahontan cutthroat trout-occupied stream, use screening devices for water drafting pumps (fire suppression activities are exempt during initial attack.) Use pumps with low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses and tadpoles, from aquatic habitats.

26. Avoid installing temporary crossings, diverting flows or dewatering streams in occupied western pearlshell (Margaritifera falcate) habitat. If these activities cannot be avoided to meet project objectives, mussels will be relocated to suitable habitat 500 – 700 feet upstream of project activities prior to implementation. Suitable relocation sites will be determined in the field by Forest Service aquatic biologist and will take into consideration mussel population within and outside of the project area.

27. No temporary roads will be constructed or re-constructed in Designated Critical Habitat for Sierra Nevada yellow-legged frog.

28. Any Contractor would be solely responsible for ensuring that all equipment, boats, and other aquatic equipment meet the Lake Tahoe Aquatic Invasive Species (AIS) Watercraft Inspection Program before working in any waterbody.

29. Field gear and equipment used in aquatic habitat would be cleaned, decontaminated, and/or fully dried prior to entering or moving to another aquatic habitats per the Batrachochytrium dendrobatidis (Bd) Disinfection Protocol.

30. Staging areas would not be created in sensitive areas (e.g., wet meadow, lakes, ponds, or any waterway).

31. Retain/add downed wood in the open meadow areas for native amphibian species where feasible and project objectives can still be met. Density would be
approximately three logs of > 12 inches (30 cm) diameter at midpoint per acre (0.4 ha).

**Sensitive Plants and Habitats**

32. Prior to implementation, if surveys have not been conducted in the last five years, conduct surveys in suitable habitats for TEPCS and watch list botanical species in the project boundary (includes landings, roads, staging areas, etc.) and a 0.1-mile buffer.

33. Any TEPCS and watch list botanical species identified before or during project implementation would be flagged and avoided with a buffer appropriate for that species and habitat type. Avoidance buffers for known species and sensitive habitats in the project area (and a 0.25 mile buffer) are described below. All of these buffers are maximum extent and may be refined after surveys are conducted in the project. Buffers apply to all project activities (e.g., tree removal areas, water drafting areas, staging areas, landings, temporary roads).

a. Rock Cress (*Arabis rectissima var. simulans*), Bolander’s candle moss (*Bruchia bolanderi*), Tahoe yellow cress (*Rorippa subumbellata*), Tahoe draba (*Draba asterophora var. asterophora*) – Flag with a 100-ft buffer, identify on project and contract maps, and avoid during project activities.

b. Moonworts (*Botrychium spp.*). Flag with a 100-ft buffer, identify on project and contract maps, and avoid during project activities. Since the species does not emerge every year, known occurrences would be flagged and avoided even if plants are not detected before implementation.

c. Whitebark pine (*Pinus albicaulis*)

i. Avoid disturbance to whitebark pine individual trees and stands including 25-foot buffer around WBP tree/stand. Avoid building/burning slash piles within 25 feet of whitebark pine trees and stands to allow for natural regeneration through Clark’s nutracker seed dispersal (seed caching) and whitebark pine seedling emergence in open, low canopy-cover areas.

ii. Whitebark pine limbs or trees may be pruned/removed if:

1. the tree is a threat to the power line in zone 1,
2. safety is compromised for crews in zone 1. (Outside of zone 1 – consult with Forest botanist to determine if whitebark pine can be avoided),
3. limbs/trees are determined by botanist or forester to be unhealthy and have whitebark blister rust cankers on branches within 6” of the stem.

   d. Fens. No ground disturbance would occur within 25 feet of a fen unless there is approval from the project botanist.

34. Verify with the project botanist proposed locations for water drafting locations and forest openings.

**Invasive Plants – Before Project Implementation**
35. Survey the project area (including access roads, staging areas, landings) for invasive plants the year before project implementation. Report invasive plant detections to the project botanist to determine if the infestation can be treated (e.g., direct removal) or should be flagged and avoided during implementation. Treatment would be consistent with the LTBMU 2010 Terrestrial Invasive Plant Species Treatment Project Environmental Assessment (USDA Forest Service 2010).

**Invasive Plants – During Project Implementation**

36. Report invasive plants discovered during project implementation to the project botanist. If an infestation is not treated, exclude equipment traffic and soil-disturbing project activities from this infestation and a buffer area to the extent feasible. Buffer size will be determined by project botanist and based on the species and/or proposed activity type. Infestations and buffers will be identified on project maps and delineated in the field with flagging. If an infestation cannot be excluded, then all vehicles must be washed before leaving the site.

37. Stage equipment, materials, or crews in paved areas whenever feasible. If natural substrate areas must be used, minimize the amount of ground and vegetation disturbance in staging, construction, and landing areas.

38. Use onsite materials (e.g., cobble, sand, gravel, rock, organic matter, mulch and/or topsoil) whenever possible, unless contaminated by invasive species. Any on-site materials used as part of project activities would be surveyed for invasive species before use. Materials brought in from off site and used as part of project activities must be purchased from a certified weed-free vendor.

39. Wash all equipment and vehicles (USFS and contracted) before moving into the project area to ensure that the equipment is free of soil, seeds, vegetative material, or other debris that could contain or hold seeds of invasive plant species. Equipment is considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris. Equipment and vehicles include all logging and construction equipment, “brushing equipment” such as brush hogs, masticators, and chippers, log trucks, chip vans, service vehicles, water trucks, pickup trucks, and similar vehicles that are used off-road. When working in known invasive plant-infested areas, equipment would be cleaned before moving to other areas, including other units within the project boundaries. These areas will be identified on project maps. Cleaning would occur at a vehicle washing station or steam-cleaning facility.

**Invasive Plants – After Project Implementation**

40. Conduct post-project implementation monitoring for priority invasive plant species in zones 1 and 2 that were treated mechanically.

41. Where feasible, reestablish vegetation on disturbed bare ground (e.g., staging areas, landings) and decommission roads in their entirety to reduce invasive species establishment; revegetation is especially important in staging areas.

42. For re-vegetation, coordinate with the project botanist for appropriate seed source for reseeding. Seed and plant material will be from native, high-elevation sources as much as possible. Plant and seed material should be collected from as close to the
project area as possible, from within the same watershed, and at a similar elevation whenever possible.

**Hydrology/Water Quality/Soils Resource Protection Measures and Best Management Practices**

43. Normal operating period is generally considered to be from May 1 through October 15 each year. However, operable conditions may be present outside of that time period and inoperable conditions may be present within that period. RPMs may apply to one or more of the following conditions: dry soils, wet soils, frozen or snow-covered soils. (Note: the normal operating period headings may include RPMs that apply in wet conditions).

**All Project Phases**

44. Watershed or transportation specialist will review project Best Management Practices (BMPs) prior to a large storm event (1 inch or greater) that may exceed BMP capacity and will notify the contract administrator if additional BMP’s are recommended to disconnect runoff from surface water features.

45. To minimize compaction, gullying, and rutting, ground based operations would be conducted only when soils are operable at the 4-8 inch depth. This determination would be made by a LTBMU watershed specialist or contract administrator. The determination will be performance based, using the rutting and sediment delivery standards from the 2014 Lahontan Regional Water Quality Control Board (LRWQCB) Timber Waiver Performance measures for rutting and sediment delivery described in the below sections under Hydrology, Water Quality and Soils and Transportation will still be met.

46. Flag and avoid equipment use in and adjacent to special aquatic features (springs, seeps, fens, marshes); use hand treatments in these areas.

**Fuels/Vegetation treatments in uplands (during normal operating period)**

47. Use hand treatments, end-lining, cable yarding systems, or equipment reach to reduce hazardous fuels on slopes greater than 30%.

48. Where end-lining or cable yarding occurs on slopes above 10% and the contract administrator determines that there is potential for sediment delivery, berms from ruts created by end-lining would be raked in.

49. Design under-story burning prescriptions to avoid adverse effects on soil and water resources by planning prescribed fire to ensure that fire intensity and duration do not result in severely burned soils.

50. Limit depth of masticated or chipped slash an average of 6 inches. Use grapple or hand piling or other methods to dispose of excess slash.

51. For Whole Tree (WT) operations, equipment exclusion buffers for perennial channels, lakes and ponds will be determined by whichever is more restrictive of either the LRWQCB Timber Waiver, or the following table:
Slope | Soil Cover
--- | ---
Less than 20% | Less than 75% 75 feet Greater than 75% 50 feet
Greater than 20% | 100 feet 75 feet

a) A minimum 50 ft. buffer would still apply in WT treatments units for intermittent channels.

b) A minimum 10 ft. buffer from the top of steep slopes (>30%) that are connected to an SEZ would also apply for WT equipment exclusion.

Fuels/Vegetation treatments in SEZs (during and outside normal operating period)

52. Where cable line crosses a stream or waterbody full suspension will be employed to prevent ground disturbance within SEZs.

53. Prohibit masticated or chipped material in the SEZ, unless necessary for erosion control.

54. Use directional falling to keep felled trees out of intermittent and perennial streams unless the channel reach is identified as deficient in coarse woody debris or placement of wood would enhance stream bed and bank stability or stream shading as identified and directed by a watershed or aquatics specialist. Any wood placement in stream channels will be at the direction of a watershed or aquatics specialist.

55. Temporary crossings on ephemeral drainages would be constructed and removed when the channels are dry. If channel is not dry at the time needed for removal (e.g. end season winterization), implement dewatering BMPs prior to crossing removal.

56. Temporary crossings on intermittent drainages would be constructed and removed when the channels are not flowing and installed such that water flow and fish passage are not obstructed. If channel is not dry at the time needed for removal (e.g. end season winterization), implement dewatering BMPs prior to crossing removal.

57. Temporary crossings on flowing channels will be designed and implemented with the approval of a transportation specialist or watershed specialist.

58. All Temporary crossings would be designed (e.g. pipe size) to accommodate a 1” or greater precipitation event and would be removed before the winter season begins.

59. Design under-story burning prescriptions such that flame heights would not exceed two feet within 50 feet of stream courses or on wetlands unless higher intensities are required to achieve specific objectives. Do not conduct burning operations within 50 feet of Truckee River, Tallac Ck, Glen Alpine Ck, Taylor Ck, Angora Ck, Upper Truckee River.

60. Where it is necessary to cross an SEZ area with inoperable soil moisture conditions, equipment would operate over a slash mat, or other protective material to minimize soil compaction. If slash is used, uncompacted slash would be removed when
operations in the area are concluded. The Contract Administrator will determine the crossing location and method.

61. Prohibit equipment operations in ephemeral channels, except at crossings. Ephemeral crossings would be avoided where feasible, and where necessary, would be limited to 1 crossing every 800 feet of channel, as determined by the contract administrator.

62. The contract administrator would consult with LTBMU watershed specialist to determine additional needed buffer widths, based on proximity to perennial channels, slope steepness (greater than 20 percent), and amount of existing ground cover (less than 30 percent).

63. Limit mechanical equipment operations in SEZs to CTL operations or operations using equipment that has low ground pressure like rubber-tired equipment, equipment that operates on a bed of slash, or other innovative technologies that reduce impacts to soils. Use the SEZ risk rating system to determine operability in part or all of the SEZ.

64. For CTL operations, use a minimum 25-foot equipment exclusion buffer adjacent to perennial and intermittent streams, lakes and ponds when the SEZ rating system and stream channel condition surveys determines appropriate. For stream reaches where degraded channel conditions have been documented, a minimum 50-foot equipment exclusion buffer will be used. If buffers within the LRWQCB Timber Waiver are more restrictive, they will be followed instead.

65. Ground based equipment in WT treatment stands would not operate in SEZs. To achieve desired fuel loading in SEZs within WT units, trees may be end-lined out of the SEZ after increased IDT coordination.

66. Where implementation monitoring finds potential for sediment delivery, contractor would rake in the berms from ruts created by end-lining or cable yarding.

67. Prohibit tree removal methods that disturb the ground surface within 25 ft. of a perennial or intermittent stream channel or other water body (e.g. lakes, ponds).

**Hand piling and pile burning in SEZs**

68. Prohibit piling of slash within 25 feet of perennial or intermittent streams, and lakes. Slash will not be piled in springs and seeps. If buffers within the LRWQCB Timber Waiver are more restrictive, they will be followed instead.

69. Permit piling and burning up to the edge of ephemeral channels, but not in channels. If buffers within the LRWQCB Timber Waiver are more restrictive, they will be followed instead.

70. Where it is safe to do so, and desired fire intensity can be maintained, allow fire to creep between piles and into SEZ buffers, maintaining a burn intensity that would protect soil and water resources.

71. Up to 30% of the SEZ may be covered in piles, but no more than 15 percent of any SEZ acre may have unvegetated burn scars at any time.

72. After initial ignition of piles, but while still burning, allow each pile to be re-piled once (i.e., place unburned pieces back into the burning pile). Additional re-piling will be
allowed, if necessary, to achieve 80 percent consumption of the piled material, except for piles adjacent or in aspen SEZ areas.

73. Hot piling of burn piles is prohibited within SEZs (i.e. don’t feed one pile with the material from other piles or ground material).

74. Avoid building fire line in or around riparian areas, wetlands, marshes, fens or other sensitive water-dependent sites unless needed to protect life, property or wetlands. If needed, use alternatives to ground disturbing fire line construction such as wet lines, rock outcrops or other suitable features where feasible. If hand line is necessary in these sensitive areas, increased IDT coordination will be necessary.

Fuels / Vegetation treatments in uplands (outside of normal operating period or wet conditions)

75. When working outside of the normal operating period, conditions must be adequate to prevent erosion, sediment delivery to water bodies, and soil compaction that would impact soil productivity or soil hydrologic function. Equipment operations would take place on portions of the treatment unit where adequate snow or frozen ground conditions are present while considering the above desired outcome. The following criteria will be applied in determining equipment operations:

76. Frozen soil operations are permitted where operated vehicles, tractors and equipment can travel without sinking into soil or landing surfaces to a depth of more than 2 inches for more than 25 feet. Temperatures must also remain low enough to preclude thawing of the soil surface.

77. For over-snow operations, maintain approximately 12 inches of compacted snow/ice on undisturbed ground, and 6 inches of compacted snow/ice on existing disturbed surfaces.

78. If operable soil moisture conditions, as determined by a Forest Service watershed specialist or contract administrator, are present beneath a lesser snow depth (i.e., soils are dry and there is less than 6 inches of snow), operations may continue until soil moisture conditions become inoperable. Monitor conditions closely and stop operations when surface soil (2-4”) disturbance is greater than what would be expected during normal season operations.

79. For over-the-snow and frozen soil operations in SEZs, exclude ground-based equipment from the 25 foot buffer around perennial and intermittent channels.

80. When adequate snow or frozen soil conditions are not present, temporary crossings on intermittent or ephemeral channels may be approved on a case by case basis through agreement between the Contract Administrator and a watershed specialist. These crossings shall not result in bank damage, water quality impairment, or obstructed flows.

Landings

81. Prohibit landings, fuel storage, and refueling, in SEZs. Procedures and spill prevention control measures for hazardous materials of any amount are included in project contract clauses.
82. Proper drainage from landings will be provided during use; ditching, sloping, and water bars or other BMPs may be used where needed as recommended by watershed specialist to disconnect runoff from surface water features.

83. Restore landings after operations are complete using the following methods, as determined by the LTBMU Watershed Specialist:
   a. Providing ground cover, such as slash, wood chips or masticated material.
   b. Ditching, sloping, and water bars may be used where needed as recommended by watershed specialist to disconnect runoff from surface water features.
   c. Landings will be ripped to approximately a 12-inch depth after ground cover has been spread. Ripping is not permitted in known infestations of noxious weeds and may not be possible in rocky soils; this determination may be made by the Contract Administrator.

Transportation and Access

Roads (during all phases)

84. All native surface Forest Service roads that intersect with Forest Service paved or chip sealed roads would be stabilized through the use of aggregate base material or wood chips to minimize tracking soils onto the pavement. Soil type, grade, and alignment are factors that would determine the extent of this stabilization.

85. Obtain encroachment permits to access city or county roads from NFS lands. Consult with city or county engineers to determine any needed measures to minimize tracking of debris and soil onto pavement and ensure clean-up when operations are complete.

86. If a native surface road becomes rutted, the road would be closed. If it is determined that stabilization of the road way can be accomplished by spot-rocking or other mitigation of rutted areas, road use may continue. Rutting is defined as two-inch deep depressions greater than 25 ft. in length.

87. During winter operations, paved surfaced roads may be plowed, including turnouts, if the action will not cause damage to the road surface and associated drainage structures.

88. On native surface roads, maintain adequate snow or frozen ground to prevent rutting. Ensure that plowing does not damage drainage structures or road surface.

89. Road alignments within the contract area that require snow removal would be visibly marked on both sides along the entire alignment to facilitate plowing. Excess snow removed during plowing would not be placed into drainages or riparian areas.

90. Before over-the-snow operations begin, mark existing culvert locations. During and after operations, ensure that all culverts and ditches are open and functional.

91. When roads are plowed, snow berms must be breached to allow drainage during snowmelt. Space outlets so as not to concentrate road surface flows (usually spaced at a minimum of every 300 feet).

92. On native surface roads, retain a minimum of 6 inches of compacted snow on 85% or more of the road surface after plowing to facilitate freezing. During road use, a
minimum of 6 inches of compacted snow must be present on 85% or more of the road surface, unless the road surface is frozen adequately to prevent rutting. Ensure that plowing does not damage drainage structures or road surface.

Temporary Roads/Crossings (during all phases)

93. Temporary roads would be out-sloped to ensure that effective drainage is maintained. BMPs would be installed as recommended by watershed or transportation specialist to ensure that temporary roads are hydrologically disconnected from intermittent and perennial stream channels. These BMPs could include lead-off ditches, water bars, rolling dips, etc.

94. At the conclusion of use, the road would be returned to the use designated in the applicable Road Management Objective (RMO). Designated Forest Service trails would be returned to their previous width. Temporary roads that are needed for more than one season of use would be stabilized with appropriate drainage and erosion control BMPs.

95. After mechanical operations and use are complete, and where feasible based on soil type, temporary roads on relic road prisms would be restored by using the following methods:

   a. Providing ground cover such as slash, wood chips, or masticated material adequate to prevent erosion.

   b. Removing all temporary crossings and installing drainage structures (such as water bars, dips, and leadoff ditches) as appropriate to prevent water accumulation on the decommissioned road surfaces as per FSH 2409.15.

   c. Installing natural barriers such as large logs and rocks where necessary at road entrance points to prevent continued use of decommissioned road alignments.

   d. Ripping where the rock content of the soil allows (generally <30-40% cobbles by volume), where noxious weeds are absent, and when soils are moist or dry. The Contract Administrator would determine whether ripping is feasible.

96. After mechanical operations and use are complete, new temporary roads constructed for this project would be restored to their original condition. Any prism made for access will be re-contoured to the surrounding landscape, de-compacted to a depth of 6-12 inches, and provided ground cover such as slash, wood chips, or masticated material adequate to prevent erosion.

97. Barriers would be strategically established along open areas adjacent to roads or trails (boulders, split rail fence, and barriers/signs) to discourage post-treatment establishment of user-created routes.

98. No road construction or re-construction will occur in Inventoried Roadless Areas.

Cultural Resources Protection Measures

99. In general, sites would be avoided and protected during thinning treatments, slash piling and burning. All sites within areas of proposed project actions will be flagged to facilitate avoidance or treatment measures. Existing breaches that lack integrity along long, linear sites would be identified during flagging and clearly marked to
provide locations for equipment to cross these resources. The following measures would be taken to ensure the protection of cultural resources:

a. No vegetation piling within site boundaries
b. No burning within site boundaries
c. No mechanical equipment within site boundaries except as designated (use of existing roads or trails)
d. Evaluate linear features to establish possible crossing areas
e. Protect arborglyphs during prescribed fire

Scenic and Recreation Resources and Improvements

100. For the safety of the public where treatment is implemented, a temporary Forest Closure Order could be used.

101. Minimize the extent and duration of temporary Forest Closure Orders associated with mechanical treatments. Provide signage during closures informing the public of the reasons for the closure and alternative options for recreation access during the closure.

102. Post signs and temporary closures advising when project activities are going to take place, as well as posting interpretative signs to educate the public of fuels management and forest health objectives of the project.

103. Locate mechanical treatment landings beyond foreground views (generally 100 feet) from Pioneer Trail and Highway 89 where feasible. Within the Pioneer Trail and Highway 89 corridors, do not locate landings perpendicular to the roadway when possible, to eliminate direct views into landings from the roadway.

104. Repair and rehabilitate any incidental damage caused to recreational improvement or facilities.

105. Where feasible, within the immediate foreground up to 25 feet of recreation improvements and facilities, classified roads and trails remove slash and do not pile.

106. Cut stumps within a maximum height of approximately 6 inches measured from the uphill side of the stump where practicable. Where feasible, within 25 feet of recreation improvements, facilities, and NFS system roads and trails flush-cut stumps level with the ground.

107. After first meeting fuel reductions objectives, leave shrub islands of various shapes and sizes in an irregular distribution to provide a natural appearance within 200 feet of developed private lands or recreation improvements and facilities.

108. The location of temporary roads shall fit the landscape with a minimum degree of landform alteration limiting the amount of earthwork. Avoid excessive cut and fill slopes for temporary road construction.

109. Where skid trails or cable corridors are readily visible, use natural features (e.g. trees, shrubs, logs, rocks, etc.) to help block access to these areas and prevent unauthorized vehicular or trail use following project activity.
110. Where the project area crosses the Tahoe Rim Trail (TRT), Forest Service staff will notify TRT staff prior to implementation, work to establish an alternate route during the time of impact, and ensure temporary roads are restored after use so as to reduce the risk of non-authorized uses.

111. Where the project area intersects with the Heavenly Mountain Resort Special Use Permit Area, Forest Service staff will consult with Heavenly staff prior to developing treatments.

112. Paint or mark only trees, including understory trees, to be taken within developed recreation sites, campgrounds, and recreation residence tracts.

113. Where the project area intersects with developed recreation sites and scenic resources, the Interdisciplinary Team will coordinate prior to implementation during project design to achieve the purpose and need of the project and recreation/scenic objectives.
APPENDIX F
Timber Removal Specifications

F.1 – Location and Area –

| This Stewardship Project Area between Tahoe City, CA and Kings Beach, CA | 208 acres | Acres, more or less, are located in: Liberty Utilities Resilience Corridors Project Area | [insert exact location of project, i.e., township, range, section T. 16N, R. 17 E S. 3, 9, 17, 18; T. 16N, R 16E, S. 13, 23, 26, 35, 36; T. 15N, R. 16E, S. 1 and 12; T. 15N, R. 17E, S. 6 MDM |

F.2 -Volume Estimate and Utilization Standards.

<table>
<thead>
<tr>
<th>Species</th>
<th>Product</th>
<th>Estimated Quantity</th>
<th>Unit of Measure</th>
<th>Minimum Specifications</th>
<th>Piece Required to be Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Diameter Breast High (dbh) (inches)</td>
<td>Number of Minimum Pieces per Tree</td>
</tr>
<tr>
<td>Combined Softwoods</td>
<td>Sawtimber</td>
<td>8,342</td>
<td>Tons</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Combined Softwoods</td>
<td>Biomass</td>
<td>6,420</td>
<td>Tons</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Combined Cull (Felled Hazard Trees)</td>
<td>Biomass</td>
<td>755</td>
<td>Tons</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Total Quantity</td>
<td></td>
<td>15,517</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1/ Enter Merchantability Factor (Merch. Factor) or Net Scale in % of Gross Scale, whichever is appropriate.

F.3- High Stumps.

<table>
<thead>
<tr>
<th>Species</th>
<th>Product</th>
<th>Maximum Stump Height (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All species</td>
<td>Sawtimber</td>
<td>Maximum 6 inches or 4 inches above natural obstacles (e.g. Rocks).</td>
</tr>
<tr>
<td></td>
<td>Biomass</td>
<td>Maximum 6 inches or 4 inches above natural obstacles (e.g. Rocks).</td>
</tr>
</tbody>
</table>
F.4– Timber Rates. *(Scaled)*

<table>
<thead>
<tr>
<th>Cutting Unit Number</th>
<th>Approx. Acres</th>
<th>Species</th>
<th>Product</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Rate of Payment $/UOM</th>
<th>Required Deposit per unit of measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>All 208</td>
<td>All</td>
<td>01</td>
<td>8,342</td>
<td>Tons</td>
<td>$1.00/Ton</td>
<td>$8,342.00</td>
<td></td>
</tr>
<tr>
<td>All 208</td>
<td>All</td>
<td>20</td>
<td>7,175</td>
<td>Tons</td>
<td>$0.10/Ton</td>
<td>$717.50</td>
<td></td>
</tr>
</tbody>
</table>

**F.6 - Timber Designations.** Timber designated for cutting shall be confined to the Stewardship Contract Area. No undesignated timber shall be cut without prior notification to and approval of the Forest Service. Prescriptions/timber designations are included later in this subsection.

<table>
<thead>
<tr>
<th>Number</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearcutting Units</td>
<td></td>
</tr>
<tr>
<td>Specified Road Clearing</td>
<td></td>
</tr>
<tr>
<td>Overstory Removal Units</td>
<td></td>
</tr>
<tr>
<td>Understory Removal Units</td>
<td></td>
</tr>
<tr>
<td>Individual Trees</td>
<td>208</td>
</tr>
<tr>
<td>Designation by Description</td>
<td></td>
</tr>
</tbody>
</table>

**F.7 - Cutting Unit Boundary Designation.** The boundaries of cutting units are designated as shown in the following table. The trees used for boundary designation are not to be cut.

**RO-C2.3011# - Cutting Unit Boundary Designations.** The boundaries of cutting units are designated using one, or more, of the three methods described herein. Notwithstanding B1.1, “Marked” boundaries are identified on the ground by trees that have been painted above and below stump height as specifically described in Table 1, as applicable. “Discernable” boundaries are identifiable on the ground by conspicuous natural or constructed features including, but not limited to, roads, meadows, natural stand delineations, and rock outcrops. “Geo-fence” are digital boundaries shown on the Sale Area Map and on the digital file listed below and will need to be relocated by the Contractor either before or during harvesting.

<table>
<thead>
<tr>
<th>Cutting Unit</th>
<th>Paint Color</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>38, 39, 4039, 40, 1040, 4040, 5040</td>
<td>Orange</td>
<td>A single orange painted dot on each side of the tree along the boundary, with two orange painted dots facing into the unit (one dot above boundary dot level and one dot below boundary dot level, creating a diamond shape of dots), and an orange butt mark below stump height.</td>
</tr>
<tr>
<td>38, 39, 4039, 40, 1040, 4040, 5040</td>
<td>Discernable Boundary</td>
<td>Boundaries are not marked on the ground and locations are identifiable from the Sale Area Map alone. Yellow boundary posters with Sale Name and Cutting Unit Number are stapled to cutting unit boundary trees at road intersections as shown on the Sale Area Map. Posters face area to be cut. Discernable Virtual Boundaries - between zones 1 and 2, and along zone 2 boundaries on areas specified on the map.</td>
</tr>
</tbody>
</table>
### F.8 Tree Designation/Prescriptions.

<table>
<thead>
<tr>
<th>Unit/Subdivision/Area/Payment Unit</th>
<th>Tree Paint Color</th>
<th>Designation or specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract Area</td>
<td>Blue</td>
<td><strong>Hazard Tree.</strong> All dead and unstable live trees which are leaning towards a road or are otherwise hazardous to a road and are sufficiently tall to reach Contractor's landings or the roadbed of National Forest System roads within Contract Area, shall be felled by Contractor when marked in the specified paint color above and below stump height by Forest Service in advance of felling any other timber in the vicinity. Tree pieces meeting utilization standards from such dead and unstable live trees shall be removed unless Contractor is notified in writing that removal would cause unacceptable damage to areas requiring special protection such as residual timber, roads, administrative sites, streamside management zones, and areas identified on contract area map or on the ground.</td>
</tr>
<tr>
<td>38, 39, 4039, 40, 1040, 4040, 5040</td>
<td>Blue</td>
<td><strong>Individual Tree Mark.</strong> Individual trees are designated for cutting only if marked above and below stump height with Blue paint. Thin trees from 10.0 inches – 29.9 inches DBH</td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td><strong>Leave Tree Mark.</strong> All live trees are designated for cutting unless marked as leave trees. Leave trees are Marked above and below stump height with the specified paint color. Contract Area Map indicates areas plainly identified on the ground where leave trees are marked to be left uncut.</td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td><strong>Wildlife Trees.</strong> Not withstanding the designation for cutting under C.3.1, C.3.3, C.3.4, or C.3.5, trees which are identified by standard Forest Service metal wildlife tree sign or painted with the specified paint color on the uphill and downhill side, shall be left uncut. In event such trees are destroyed in contractor's operations, Forest Service may designate alternate trees to be saved.</td>
</tr>
<tr>
<td>Contract Area or All Units</td>
<td>Black</td>
<td><strong>Marked Out Trees.</strong> When it is necessary to delete previously marked trees, a unique tree marking paint color will be marked over or adjacent to the original mark, but will not obscure the original marking. Trees marked with the original marking paint color and the unique tree marking paint color are not Included Timber.</td>
</tr>
<tr>
<td>38, 39, 1039, 40, 1040, 4040, 5040</td>
<td>No paint color</td>
<td><strong>Designation by Description</strong> Remove trees from 24 inches tall - 9.9 inches DBH to reduce conifer stocking as low as possible. Trees greater than 24 inches tall and less than 10.0 inches DBH will be thinned to 15-25 TPA. Within Zone 1, there are no tree spacing specifications, or retention species in order of preference for this treatment.</td>
</tr>
</tbody>
</table>
Maximum Stump Diameter by Species

<table>
<thead>
<tr>
<th>Species</th>
<th>Maximum Stump Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Fir, White Fir, and Incense Cedar</td>
<td>36 inches</td>
</tr>
<tr>
<td>Jeffrey Pine, Sugar Pine, and Lodgepole Pine</td>
<td>33 inches</td>
</tr>
</tbody>
</table>

F.8a (Acceptance of Work) provision in accordance with F.8 above (Designation by Description)

1. Cutting units will be inspected concurrently as operations proceed, using a combination of formal plots and “walk-thru” reviews. Plots will be located and measured once forwarding has occurred.

2. The following Designation by Description elements will be the inspections criteria:

General Thinning
   a. Retention of specified, average Basal Area of conifers in accordance with specifications with F.8 above.

   b. Proper selection of cut trees and residual leave trees by species, size, and condition.

   c. Retention of conifers greater than 30 inches at DBH outside of bark and all hardwoods where practical. Stump diameters will be used to determine if any conifer 30 inches DBH or greater have been removed. Stumps of all conifer species will be measured at, or if stump is cut lower, estimated at 10-12 inches above ground on the high side using a diameter tape to ascertain diameter.

F.9- Control of Operations.
Under this agreement, the “Contractor’s operations” shall include activities of, or use of equipment of, Contractor, Contractor’s employees, agents, subcontractors, or their employees or agents, acting in the course of their employment in operations hereunder on national forest lands or within Forest Service protection boundary (unless acting under the immediate supervision of Forest Service).

Contractor’s operations shall be conducted in a workmanlike and orderly manner. The timing of any required Forest Service designation of work on the ground and the performance of other Forest Service work shall not be such as to cause unnecessary delay to Contractor.

F.9-a - Obliteration of Temporary Roads, Skid Trails and Landings

Unless otherwise agreed in writing, temporary roads, skid trails and landings associated with the
cutting unit(s) listed in the following table shall be obliterated using the method described.

**Temporary Road, Skid Trail and Landing Obliteration Method Table**

<table>
<thead>
<tr>
<th>Cutting Unit(s)</th>
<th>Type of Facility</th>
<th>Closure Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Skid Trails</td>
<td>Waterbarred, Slashed</td>
</tr>
<tr>
<td>All</td>
<td>Landings</td>
<td>Ripped, Chipped</td>
</tr>
<tr>
<td>All</td>
<td>Temporary Roads</td>
<td>Ripped</td>
</tr>
<tr>
<td></td>
<td>Decommission</td>
<td>Recontoured to match slope</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Install barriers as necessary to prevent normal vehicular access</td>
</tr>
</tbody>
</table>

**F.9-b - Erosion Control Maintenance**

During the period of this agreement, the Contractor shall provide maintenance of soil erosion control structures constructed by sub-contractor until they become stabilized, but not for more than 1 year after their construction. Contractors shall not be responsible for repair of such structures damaged by other National Forest users whose activities are not a part of the Contractor’s Operations.

**F.9-c - Skidding And Yarding**

Skidding and Yarding Table 1a.

<table>
<thead>
<tr>
<th>Map Symbol</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRAC</strong></td>
<td>Skid road pattern shall be agreed in advance of felling and main skid roads shall be flagged on the ground in advance of felling. Contractor shall stage-log by felling and skidding Included Timber in two or more separate operations when necessary to prevent undue damage to the resources or residual stand. Needed tractor trails shall be constructed in advance of skidding. Products shall be end-lined as needed to protect resources or residual timber from unnecessary damage. The number of chokers shall be limited as necessary to avoid unnecessary damage to resources or residual timber. By agreement, tractors may be used to separate products to prevent stain.</td>
</tr>
<tr>
<td><strong>SUSP</strong></td>
<td>Products shall be skidded with leading end clear of ground.</td>
</tr>
<tr>
<td><strong>SPACE</strong></td>
<td>Skid roads will average 100 feet from center to center, except where converging.</td>
</tr>
<tr>
<td><strong>ENDL</strong></td>
<td>Endlining shall not be required for distances in excess of 60 feet uphill, and 120 feet</td>
</tr>
<tr>
<td>Map Symbol</td>
<td>Requirements</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>MAX</strong></td>
<td>Tractors used for skidding outside Clearcutting Units, regeneration units or other authorized clearings, shall be of the type (rubber-tired or track-laying) shown on the Contract Area Map and shall not exceed the overall width designated on Contract Area Map.</td>
</tr>
<tr>
<td><strong>MH</strong></td>
<td>Contractor shall cut Included Timber and move it to designated skid trails using equipment with a boom having an operating radius of at least 20 feet for bunching trees, capable of severing, lowering and placing trees up to 24 inches diameter at stump height on the ground prior to skidding. Such equipment must be capable of operating on slopes up to 35%. Notwithstanding above, hand felling using chainsaws may be required in or adjacent to sensitive areas to protect resources from unnecessary damage. Trees which exceed capability of specified equipment may be felled, bucked and skidded in a manner consistent with requirements of Felling, Bucking, and Limbing Table and the above “TRAC”, “SUSP”, “SPACE”, “ENDL”, and “MAX” requirements.</td>
</tr>
<tr>
<td><strong>CTL</strong></td>
<td>Included Timber shall be felled, limbed and bucked by a self-propelled mechanical harvester capable of producing finished sawlogs or chippable boles. Limbs of Included Timber shall be placed evenly in the machinery skid trail prior to product removal. The harvester shall be an all-wheel drive machine with at least 3 axles and a processing head mounted on a boom having a minimum-operating radius of 20 feet. Notwithstanding above, hand felling using chainsaws may be required in or adjacent to sensitive areas to protect resources or residual timber from unnecessary damage. All Products shall be removed by an all-wheel drive forwarder with at least 3 axles capable of self-loading and unloading. The forwarder shall carry all products free of the ground during removal. The loading crane shall have a minimum-operating radius of 15 feet. Log landings and transfer points shall be agreed in advance of harvesting. Included Timber exceeding the harvester's capability may be felled by conventional chainsaw methods, forwarded to nearest skid trail and processed into a finished Product with harvester or chainsaw, consistent with the requirements in the Felling, Bucking, and Limbing Table and the above “TRAC”, “SUSP”, “SPACE”, “ENDL”, and “MAX” requirements.</td>
</tr>
</tbody>
</table>

Skidding and Yarding Table 1b.

<table>
<thead>
<tr>
<th>Cutting Unit</th>
<th>Special Objectives</th>
</tr>
</thead>
</table>
| **All**      | To prevent damage to soil and hydrology resources:  
  a. Ground based skidding equipment will be restricted to slopes less than 30 percent.  
  b. Skid trail crossings along stream corridors will be kept to a minimum and will be designated by Forest Service sale administrator with consultation from district hydrologist and NFF. |
All  Cutting is a minimum of 75 feet away from perennial and 50 feet away intermittent streams and special aquatic features and 25 feet from ephemeral streams, unless otherwise approved by a hydrologist and/or soil scientist.

All  To reduce residual stand damage where excessive downed material is present in partial cut units bucking of windfall and down material across skid road locations is required in advance of construction.

All  Whole Tree Yarding: To prevent surface fuel buildup from harvest operations. Contractor shall leave the tops of felled trees attached to top log and yard them to the landing for processing.

All  Cultural sites are flagged with blue and black candy-striped flagging. These sites will be avoided and protected during thinning treatments and no mechanical equipment is allowed within the site boundaries except as designated.

F.9-d - Felling, Bucking, and Limbing

Felling, Bucking, and Limbing Table

<table>
<thead>
<tr>
<th>Treatment Method</th>
<th>Felling, Bucking and Limbing Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Tree Yarding</td>
<td><strong>WT</strong> Notwithstanding the requirements above, within units or subdivisions designated “WT” on Contract Area Map, trees smaller than 24 inches DBH shall be skidded/yarded to agreed landing locations prior to limbing, bucking, and lopping. Trees larger than or equal to 24 inches DBH shall be bucked into two or more pieces with the butt portion being no longer than 41 feet prior to skidding/yarding. The butt log shall be limbed prior to skidding/yarding.</td>
</tr>
<tr>
<td>Directional Felling</td>
<td><strong>DF</strong> Within areas designated “DF” on contract area map, included timber shall be directionally felled away from private land, property lines, protected streamcourses, retention areas, controlled areas, gates, powerlines, other improvements, and land survey monuments with the use of specialized equipment. Such directional felling shall not be required when in the faller’s judgment it is unsafe to do so, and shall be left standing.</td>
</tr>
<tr>
<td>Treatment of Stumps</td>
<td><strong>TS</strong> Within all areas shown on Contract Area Map, Contractor shall treat stumps of all live Jeffery Pine, Lodgepole Pine, White Fir/Red Fir, Western White Pine, and Sugar Pine trees equal to or greater than 12 inches stump diameter, (measured inside bark) unless otherwise agreed in writing. Treatment shall be with a borate compound registered by EPA in the State of California for prevention of annous root disease. Treatment shall consist of removal of sawdust and other loose debris from the cut surface of the stump and application of a thin layer of the borate compound uniformly over the entire cut surface, including exposed wood surfaces on the stump sides, at the rate specified on the product label. Any surface irregularities on the stump preventing application of a uniform layer of borate compound shall be cut level prior to treatment. Unless waived in writing, Contractor shall also apply an approved colorant mixed with the borate compound to insure complete coverage. Treatment should be done as soon as possible but shall be completed no later than 24 hours after felling, otherwise stumps shall be re-cut and treated.</td>
</tr>
<tr>
<td>Treatment Method</td>
<td>Felling, Bucking and Limbing Specifications</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Contractor shall not apply borate compound during heavy rain fall or when such precipitation rate is predicted within 24 hours of application to cause borate compound to be flushed off the stump and become ineffective, in that case treatment shall be reapplied. Application shall be completed within 24 hours of the precipitation having ceased. Borate compound also shall not be applied to stumps located within N/A feet of live stream courses and meadows/wetlands shown on Sale Area Map and/or N/A feet of sensitive plant location boundaries as flagged on the ground.</td>
</tr>
<tr>
<td></td>
<td>Contractor shall provide the borate compound and colorant and apply it in compliance with the State of California laws and regulations pertaining to pesticides and pest control operations. Borate compound storage shall be located such that any spillage will not contaminate water. All spills shall be promptly cleaned up and spilled material disposed of according to the product label. All spills occurring in water or over 1 pound shall be reported to Forest Service within 8 hours.</td>
</tr>
<tr>
<td></td>
<td>Contractor shall submit at the end of each month a “Monthly Summary of Pesticide Use Reports” to the appropriate County Agricultural Commissioner with a copy to the Forest Service Representative</td>
</tr>
</tbody>
</table>

**F.9-e - Slash Treatment**

The Contractor’s Slash Responsibility Table

<table>
<thead>
<tr>
<th>Cutting Unit(s)</th>
<th>Type of Slash Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>All units</td>
<td>Refer to Appendix E, Schedule of Items 2, 3</td>
</tr>
</tbody>
</table>

**Landing Cleanup**

A landing is considered a place where any logs or products are gathered for loading. Logs not meeting utilization standards accumulated at landings shall be decked as agreed to in writing by the Forest Service. All slash accumulated at landings shall be piled. Piles shall be reasonably compact and free of soil to facilitate burning. Piles will not be greater than 20 feet in height. Piles shall be of a size and location which will not impair road use or result in damage to residual timber. Piles shall be located at least 80 feet from residual timber. Piles shall not be more than 60 feet long.

All objects which extend more than 5 feet in any direction from the windrow or pile profile will be cut off and returned to the windrow or pile.

**Lopping**

All material left in the units shall not exceed depths over 16 inches in height above the ground.

**Fell Damaged Residual**

The contractor shall fell all species over 5 feet in height not meeting minimum
diameter specifications for Included Timber that are damaged beyond recovery by Contractor Operations. Such trees shall be limbed to a stem diameter of approximately 2 inches, at which point the top shall be cut from the remainder of the stem.

**F.9-f - Wildlife Restrictions and Other Limited Operating Periods**

<table>
<thead>
<tr>
<th>Subdivision/Area/Unit</th>
<th>Conditions of Operation</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>All or portions of units</td>
<td>No equipment use or harvesting activities permitted from June 1 – August 31 inclusive, in areas designated as LOP (Limited Operating Period) on Contract Area map. Road use and maintenance is permitted.</td>
<td>Wildlife Species Protection</td>
</tr>
<tr>
<td>Retention Areas</td>
<td>No operations permitted within areas posted on the ground with yellow and white stripe flagging and designated as retention on Contract Area Map.</td>
<td>Maintain Structural Diversity</td>
</tr>
<tr>
<td>All Water Supply Locations</td>
<td>Sites used to draft water shall be approved by Forest Service prior to use. A Forest Service approved screen covered drafting box or other device shall be used to create low entry velocity.</td>
<td>Aquatic Species Protection</td>
</tr>
<tr>
<td>All or Portions of Units</td>
<td>Sites protected due to cultural concerns. Operators must stay out of flagged areas. Flagging is blue and black candy striped.</td>
<td>Cultural Resource Protection</td>
</tr>
<tr>
<td>All Stream Crossings</td>
<td>Wheeled or track-laying equipment shall not be operated in streamcourses, except at crossings designated by the Forest Service or as essential to construction or removal of culverts and bridges.</td>
<td>Streamcourse Protection</td>
</tr>
<tr>
<td>All units</td>
<td>Tahoe Regional Planning Agency noise ordinance. Operations are to occur only between 8:00 am and 6:00 pm. No operations to occur on federal holidays.</td>
<td></td>
</tr>
</tbody>
</table>

**F.10 - Roads.** Contractor is authorized to construct and maintain roads, bridges, and other transportation facilities, as needed for conducting treatments on National Forest and other lands
where Forest Service has such authority. As used in this Agreement, “construct” includes “reconstruct.”

### F.10-a Specified Roads.
Name and Date of Governing Road Specifications:

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Name</th>
<th>Design Class</th>
<th>Approx. Length (mi./km.)</th>
<th>Sheet Numbers and Approval Date</th>
<th>Performance Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### F.10-b Road Maintenance Requirements.
Contractor shall maintain roads in accordance with the following Road Maintenance Requirements

#### Road Maintenance Requirements Summary

<table>
<thead>
<tr>
<th>Road</th>
<th>Termini</th>
<th>Applicable Pre-haul Road Maintenance Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From, To, Miles</td>
<td>801 802 803 804 805 806 807 808 809 810</td>
</tr>
<tr>
<td>16N73.1</td>
<td>Landing 73</td>
<td>P P P P P P P P P P P P P P P P P P</td>
</tr>
<tr>
<td>16N76A</td>
<td>Landing 16N76</td>
<td>.9 P P P P P P P P P P P P P P P P P P</td>
</tr>
<tr>
<td>16N76</td>
<td>Landing 73</td>
<td>.4 P P P P P P P P P P P P P P P P P P</td>
</tr>
</tbody>
</table>

P = Partner Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

#### Applicable During Haul Road Maintenance Specifications

<table>
<thead>
<tr>
<th>Road</th>
<th>Termini</th>
<th>Applicable During Haul Road Maintenance Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From, To, Miles</td>
<td>801 802 803 804 805 806 807 808 809 810</td>
</tr>
<tr>
<td>16N73.1</td>
<td>Landing 73</td>
<td>P P P P P P P P P P P P P P P P P P</td>
</tr>
<tr>
<td>16N76A</td>
<td>Landing 16N76</td>
<td>.9 P P P P P P P P P P P P P P P P P P</td>
</tr>
<tr>
<td>16N76</td>
<td>Landing 73</td>
<td>.4 P P P P P P P P P P P P P P P P P P</td>
</tr>
<tr>
<td>73</td>
<td>Landing Hwy 267</td>
<td>14.4 P P P P P P</td>
</tr>
</tbody>
</table>
### Road Maintenance T-Specifications

**Dust abatement material will be limited to water only**

<table>
<thead>
<tr>
<th>No.</th>
<th>Specification Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-800</td>
<td>Definitions</td>
</tr>
<tr>
<td>T-801</td>
<td>Slide and Slump Repair</td>
</tr>
<tr>
<td>T-802</td>
<td>Ditch Cleaning</td>
</tr>
<tr>
<td>T-803</td>
<td>Surface Blading</td>
</tr>
</tbody>
</table>
T-804  Surfacing Repair
T-805  Drainage Structures
T-806  Dust Abatement**
T-807  Roadway Vegetation
T-808  Miscellaneous Structures
T-809  Waterbars
T-810  Barriers

SPECIFICATION T-800 DEFINITIONS

Wherever the following terms or pronouns are used in Specifications T-801 through T-810, the intent and meaning shall be interpreted as follows:

800-1.1 - Agreement. Maintenance projects require a mutually acceptable method to resolve the problems which arise when incompatible situations arise between drawings and specifications and actual conditions on the ground to allow orderly and satisfactory progress of the maintenance.

These specifications have been developed in anticipation of those problem areas and have provided that such changes will be by agreement.

It is intended that drawings and specifications will govern unless "on-the-ground" conditions warrant otherwise, when specifications call for "agreement", "agreed", or "approval" such agreement or approval shall be promptly confirmed in writing.

800-1.2 - Annual Road Maintenance Plan. A plan prepared by various users of one or several roads. The plan is an Agreement on maintenance responsibilities to be performed for the coming year.

800-1.3 - Base Course. Material used to reinforce subgrade or, as shown on drawings, placed on subgrade to distribute wheel loads.

800-1.4 - Berm. Curb or dike constructed to prevent roadway runoff water from discharging onto embankment slope.

800-1.5 - Borrow. Select material taken from designated borrow sites.

800-1.6 - Crown, Inslope, and Outslope. The cross slope of the traveled way to aid in drainage and traffic maneuverability.

800-1.7 - Culverts. A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that it is usually entirely below the elevation of the traveled way.

800-1.8 - Drainage Dip. A dip in the traveled way which intercepts surface runoff and diverts the water off the traveled way. A drainage dip does not block the movement of traffic.
800-1.9 - **Drainage Structures.** Manufactured structures which control the runoff of water from the Roadway including Inslope, overside drains, aprons, flumes, downdrains, downpipes, and the like.

800-1.10 - **Dust Abatement Plan.** A table which lists the road, dust palliative, application rates, and estimated number of subsequent applications.

800-1.11 - **Lead-off Ditches.** A ditch used to transmit water from a drainage structure or drainage dip outlet to the natural drainage area.

800-1.12 - **Material.** Any substances specified for use in the performance of the work.

800-1.13 - **Prehaul Maintenance.** Road maintenance work which must be accomplished to maintain the roads to a satisfactory condition commensurate with the partner's use, provided the partner's operations do not damage improvements under G.2.2 or National Forest resources and hauling can be done safely. This work will be shown in the Annual Road Maintenance Plan.

Prehaul Maintenance work the partner elects to perform will be in compliance with the Road Maintenance T-Specifications.

800-1.14 - **Roadbed.** The portion of a road between the intersection of Subgrade and sideslopes, excluding that portion of the ditch below Subgrade.

800-1.15 - **Road Maintenance Plan.** A table which shows applicable road maintenance specifications to be performed by partner on specific roads.

800-1.16 - **Roadside.** A general term denoting the area adjoining the outer edge of the roadway.

800-1.17 - **Roadway.** The portion of a road within the limits of excavation and embankment.

800-1.18 - **Shoulder.** That portion of roadway contiguous with traveled way for accommodation of stopped vehicles, for emergency use, and lateral support of base and surface course, if any.

800-1.19 - **Slide.** A concentrated deposit of materials from above or on backslope extending onto the traveled way or shoulders, whether caused by mass land movements or accumulated ravelling.

800-1.20 - **Slough.** Material eroded from the backslope which partially or completely blocks the ditch, but does not encroach on the traveled way so as to block passage of traffic.

800-1.21 - **Slump.** A localized portion of the roadbed which has slipped or otherwise become lower than that of the adjacent roadbed and constitutes a hazard to traffic.

800-1.22 - **Special Project Specifications.** Specifications which detail conditions and requirements peculiar to the individual project.
800-1.23 - Subgrade. Top surface of roadbed upon which base course or surface course is constructed. For roads without base course or surface course, that portion of roadbed prepared as the finished wearing surface.

800-1.24 - Surface Course. The material placed on base course or subgrade primarily to resist abrasion and the effects of climate. Surface course may be referred to as surfacing.

800-1.25 - Surface Treatment Plan. A table which lists the roads and surface treatments to be applied.

800-1.26 - Traveled Way. That portion of roadway, excluding shoulders, used for the movement of vehicles.

800-1.27 - Turnouts. That portion of the traveled way constructed as additional width on single lane roads to allow for safe passing of vehicles.

800-1.28 - Water Source. A place designated on the road maintenance map for acquiring water for road maintenance purposes.

800-1.29 - Waterbar. A dip in the roadbed which intercepts surface runoff and diverts the water off the roadway. A waterbar is not designed to be traversable by logging trucks.

SPECIFICATION T-801 SLIDE AND SLUMP REPAIR

DESCRIPTION

1.1 Slide removal is the removal from roadway and disposal of any material, such as soil, rock, and vegetation that cannot be routinely handled by a motorgrader during Ditch Cleaning, T-802, and Surface Blading, T-803 Operations.

Slump repair is the filling of depressions or washouts in roadway which cannot be routinely filled by a motor grader during Surface Blading, T-803 Operations.

Slide removal and Slump repair includes excavation, loading, hauling, placing, and compacting of waste or replacement Material and the development of disposal or borrow areas.

REQUIREMENTS

3.1 Slide Material, including soil, rock and vegetative matter which encroaches into the Roadway, shall be removed. The slope which generated the Slide Material shall be reshaped during the removal of the Slide Material with the excavation and loading equipment. Slide Material deposited on the fillslope and below the Traveled Way will not be removed unless needed for slope stability or to protect adjacent resources.
Surface and Base Courses shall not be excavated during Slide removal operations.

Slide Material which cannot be used for other beneficial purposes shall be disposed of at disposal sites shown on Stewardship Project Area Map/Contract Area Map. Material placed in disposal sites will not require compaction unless compaction is shown on Road Maintenance Plan.

3.2 When filling Slumps or washouts, Material shall be moved from agreed locations or borrow sites, placed in layers, and compacted by operating the hauling and spreading equipment uniformly over the full width of each layer.

Existing aggregate surfacing shall be salvaged when practical and relaid after depressions have been filled.

Damaged aggregate base, aggregate surfacing, and bituminous pavement shall be repaired under Specification T-804 Surfacing Repair.

The repaired areas of the Slump shall conform to the cross-section which existed prior to the Slump and shall blend with the adjacent undisturbed Traveled Way.

3.3 The maximum volume of Partner responsibility for Slide and Slump repair is shown on Road Maintenance Plan. Greater volumes of Slide and Slump repair not qualifying as Catastrophic Damage are Forest Service responsibility.

SPECIFICATION T-802 DITCH CLEANING

DESCRIPTION

1.1 Ditch cleaning is removing and disposing of all Slough Material from Roadway ditches to provide a free-draining waterway.

REQUIREMENTS

3.1 Ditch cleaning shall be repeated during the year as often as necessary to facilitate proper drainage.

3.2 All Slough Material or other debris which might obstruct water flow in the Roadway ditch shall be removed. Material removed from the ditch, if suitable, may be blended into existing native road surface or Shoulder or placed in designated Berms in conjunction with Surface Blading T-803 operations.

Material removed from ditches that is not by Agreement blended into existing roads or placed in Berms shall be loaded and hauled to the disposal site designated by the Forest Service.

3.3 Roadway backslope or Berm shall not be undercut.

SPECIFICATION T-803 SURFACE BLADING
DESCRIPTION

1.1 Surface blading is keeping a native or aggregate Roadbed in a condition to facilitate traffic and provide proper drainage. It includes maintaining the Crown, Inslope or Outslope of the Traveled Way, Turnouts, and Shoulder; repairing Berms; blending approach road intersections; and cleaning bridge decks, Drainage Dips, and Lead-off Ditches.

REQUIREMENTS

3.1 Surface blading shall be performed before, during, and after Partner’s use as often as necessary to facilitate traffic and proper drainage.

3.2 The surface blading shall preserve the existing cross-section. Surface irregularities shall be eliminated and the surface left in a free-draining state and to a smoothness needed to facilitate traffic. Surface Material which has been displaced to the Shoulders or Turnouts shall be returned to the Traveled Way. The blading operation shall be conducted to prevent the loss of surface Material and to provide for a thorough mixing of the Material being worked.

3.3 Water, taken from Water Sources designated on Contract Area Map, shall be applied during blading if sufficient moisture is not present to cut, mix, or compact the surface Material.

3.4 On native surfaced roads, Material generated from backslope Sloughing, and ditch cleaning may be blended with the surface Material being worked. On aggregate surfaced roads this Material shall not be blended with Surface or Base Course Material unless agreed otherwise.

3.5 Roadway backslopes or Berms shall not be undercut, nor shall new Berms be established unless agreed otherwise.

Berms shall be repaired by placing Material, as needed to restore the Berm, to reasonably blend with existing line, grade, and cross-section.

3.6 Drainage Dips and Lead-off Ditches shall be cleaned and maintained to reasonably blend with existing line, grade, and cross-section.

3.7 Intersecting roads shall be bladed for a distance of 50 feet to assure proper blending of the two riding surfaces.

3.8 Rocks or other Material remaining on the Traveled Way after the final pass that are larger than 4 inches in diameter or are larger than the maximum size of imported surfacing shall be removed from the Traveled Way. Unless otherwise designated by the Forest Service, the oversized Material shall be disposed of by sidecasting. Sidecasting into streams, lakes, or water courses will not be permitted.

3.9 Material resulting from work under this specification shall not remain on or in structures, such as Culverts, overside drains, cattleguards, ditches, Drainage Dips, and the like.
3.10 Material resulting from work under this specification, plus any accumulated debris, shall be removed from bridge decks and the deck drains opened.

3.11 At the intersection of roads where native surface material and pavement meet- Install rock or chip apron at intersection of paved road. If rock is used, rock shall be 3+ inches in size and placed to 4-inch depth 25 feet from paved road. Upon agreement with the contract administrator wood chip may be used in lieu of rock to a depth of 4 inches for 25 feet from paved road.

SPECIFICATION T-804 SURFACING REPAIR

DESCRIPTION

1.1 Surfacing repair is repairing potholes or small soft areas in the Traveled Way. It includes area preparation and furnishing and placing all necessary Materials, and other work necessary to repair the surface.

MATERIALS

2.1 Material used in the repair of soft areas on aggregate or native surfaced roads may be acquired from approved commercial sources, designated Forest Service Borrow areas, or Borrow sources agreed to. The quality and quantity of the imported Material used in the repair will be limited to that needed to provide a stable Traveled Way for hauling and to minimize damage to the road and adjacent resources. The quantity of imported surface repair Material used in the appraisal estimate will be shown on Road Maintenance Plan. However, the magnitude of the work may vary depending on Partner's hauling schedule and ground conditions.

2.2 Material used in the repair of bituminous pavements may be acquired from local commercial sources. If a mixing table is required, the location shall be approved by the Forest Service. The bituminous mixture to be used by the Partner shall be approved by the Forest Service. The Partner's share of the quantity of bituminous mixture used in the appraisal estimate will be shown on Road Maintenance Plan. However, Partner's share of the work may vary depending on Partner's hauling schedule, ground conditions, other traffic, etc.

REQUIREMENTS

3.1 Work under this specification shall be performed in a timely manner to reduce further deterioration of the Traveled Way.

3.2 Soft spots on aggregate or native surfaces shall be repaired by placing the imported Surface Course on top of the soft spot. Layers of imported Material shall be placed until a firm surface is produced.

3.3 Bituminous Pavement Repairs. The areas to receive bituminous pavement repairs will be
marked on the road surface by the Forest Service just prior to Partner performing the work.

3.4 **Potholes (deep patch).** Surface Course and Base Course Materials shall be excavated to a depth necessary to reach firm, suitable Material. The minimum depth of excavation shall be 2 inches and the maximum depth of excavation shall be to the top of the Subgrade.

The edges of the prepared hole shall be extended to form a vertical face in unfractured asphalt surfacing. The prepared hole shall generally be circular or rectangular in shape, dry, and cleaned of all loose Material.

Prepared potholes shall be patched or barricaded immediately.

The faces of the prepared hole shall be tacked with a slow-setting emulsified asphalt.

The bituminous mixture shall be placed in layers not exceeding a compacted depth of 2 inches. Each layer shall be compacted thoroughly with hand or mechanical tampers or rollers. Compaction shall not be done with equipment wheels.

Upon completion, the compacted patch in the pothole shall be flush, with a tolerance or approximately ¼ inch to ½ inch above the level of the adjacent pavement.

3.5 **Skin Patches.** Bituminous mixture shall be distributed uniformly with feathered edges in layers not to exceed 2 inches compacted depth. When multiple layers are ordered, joints shall be offset at least 6 inches between layers.

Each layer shall be compacted by two passes with a 7-10 ton steel roller or comparable vibratory roller.

3.6 **Asphalt Berm.** Damaged segments of Berm shall be removed and the exposed ends beveled at approximately 45 degrees from vertical. The Berm foundation shall be cleaned and patched as necessary. The foundation and joining surfaces shall be coated with a slow-setting emulsified asphalt. Asphalt mix shall be placed and compacted to conform with the shape and alignment of the undamaged segment.

3.7 **Disposal.** All Materials removed from potholes, patches, and Berms shall be disposed of at disposal sites designated by the Forest Service.

**SPECIFICATION T-805 DRAINAGE STRUCTURES**

**DESCRIPTION**

1.1 This work consists of maintaining Drainage Structures and related items such as inlet and outlet channels, existing riprap, trash racks, and dropinlets.

**MATERIALS**

2.1 All Materials used in the maintenance of Drainage Structures shall conform by type and
specification to the Material in the structure being maintained.

REQUIREMENTS

3.1 Drainage Structures and related items shall be cleared of all foreign Material which has been deposited above the bottom of the structure and all vegetative growth which interferes with the flow pattern. Material removed that cannot be incorporated into maintenance work shall be hauled to a disposal site designated by the Forest Service.

3.2 If outlet or inlet riprap was installed by Partner as a construction item or existed prior to Partner’s haul, it shall be maintained in good condition including the replacement of riprap if necessary to previous line, grade, and cross-section.

3.3 Perform maintenance to insure the proper functioning of the head walls, aprons, inlet assemblies, overside drains, riprap, trash racks, and other facilities related to the Drainage Structure.

SPECIFICATION T-806 DUST ABATEMENT

DESCRIPTION

This work shall consist of preparing Traveled Way and furnishing and applying materials to abate dust. The roads requiring dust abatement, type of dust abatement material to be used, the rates of application, and frequency of applications will be shown in the ROAD MAINTENANCE REQUIREMENT SUMMARY may be changed by written agreement.

MATERIALS

a. Water (H2O) for dust abatement will be incidental to hauling under this contract and shall be obtained from sources shown on the SALE AREA MAP OR CONTRACT MAP, unless otherwise agreed.

WEATHER LIMITATIONS

a. Water applications are not limited by weather forecast or temperature.

EQUIPMENT

a. Equipment shall meet the requirements in Section 891 WATER SUPPLY AND WATERING.

MAINTENANCE REQUIREMENTS

a. Water applications shall be limited to abatement for hauling vehicles under this contract and shall be provided at a frequency and rate which controls dust such that vehicle taillights and turn signals remain visible. Rates of application shall be varied as needed
but shall be low enough to avoid forming rivulets. Frequency of application shall be sufficient to accomplish the abatement without saturating and softening the traveled way. Compacted or glazed road surface or wheel tracks may be loosened as needed for water penetration.  

b. Prior to initial application, when needed the road will be ordered bladed and shaped under Section 803, Blading.  
c. Required subsequent applications may be applied to the existing road surface without blading unless it is ordered.  
d. Dust abatement material shall be discharged only on roads approved by the Government.

SPECIFICATION T-807 ROADWAY VEGETATION

DESCRIPTION

1.1 This work consists of cutting and disposing of all vegetative growth, including trees on roadway surfaces and roadsides that reduce sight distance and operational capability of the road within the clearing limits as described in the Road Maintenance Plan.

REQUIREMENTS

3.1 Cut brush, trees and other vegetative matter within the clearing limits to a maximum height of 6 inches above the ground surface or obstruction such as rocks or existing stumps which reduces sight distance, impedes vehicular travel or interferes with road maintenance operations, such as surface blading and ditch and culvert cleaning shall be removed. Timber meeting utilization standards shall be cut in appropriate lengths and decked along the Roadside in locations where the Traveled Way or sight distances will not be impaired.

3.2 Any items to remain will be Designated by the Forest Service.

3.3 Trim tree branches that extend over the road surface and shoulders to attain a clear height of 14 feet. When trees are limbed, cut limbs within 4 inches or less of the trunk. If required, remove other branches to present a balanced appearance.

3.4 Work may be performed either by hand or mechanically unless specifically shown in the Road Maintenance Plan. Self-propelled equipment is not allowed on cut and fill slopes or in ditches.

3.5 Vegetative matter and nonmerchantable timber cut from the Clearing Limits shall be treated by the specified method as required by F.8-e- Slash Treatment.
T-807 DIAGRAMS AND SPECIFICATIONS FOR ROADWAY VEGETATION

CLEARING LIMITS

TYPICAL OUTSLOPE

FINISHED DITCH
DEPTH 1'

INSLOPE 3-5%

TYPICAL INSLOPE W/DITCH
SPECIFICATION T-808 MISCELLANEOUS STRUCTURES

DESCRIPTION

1.1 Maintenance of miscellaneous structures includes cattleguards, gates, and other similar structures that have been previously installed to insure safe and efficient operation of the road.

MATERIALS

2.1 Any Materials needed in the maintenance of miscellaneous structures shall be similar in type and quality to the Material in the structure being maintained.

REQUIREMENTS

3.1 Cattleguards. Loose rails shall be welded or bolted back in place.

Excess Material carried into the cattleguard shall be removed when drainage is blocked or when it reaches 6 inches from the bottom of the cattleguard frame. Drainage into and from the cattleguard shall be kept open.

3.2 Gates. Gates shall be kept in good repair and made to swing easily. Hinges or latches shall be repaired if not operating properly.

Brush and debris shall be removed from within the swinging radius.

SPECIFICATION T-809 WATERBARS

DESCRIPTION

1.1 This work consists of installing or removing Waterbars in the Roadbed.

REQUIREMENTS

3.1 Waterbars shall be installed on roads shown on Road Maintenance Plan in accordance with the attached drawings and at locations designated or staked on the ground.

All Material excavated shall be used in the installation of the Waterbar. Bermed Material shall be compacted by operating heavy equipment over the length and width of the Berm.

3.2 Waterbars shall be removed on roads shown on Road Maintenance Plan by blading the Berm into the adjacent depression to form a smooth transition along the Traveled Way. The length and width of the fill Material shall be compacted by the equipment performing the work.
3.3 Waterbars may be required to be installed between seasons of use and then removed when haul is resumed. Waterbar installation may also be required when use of a road has been completed.

SPECIFICATION T-810 BARRIERS

DESCRIPTION

1.1 This work shall consist of furnishing, installing, or removing barriers. Gates are not included.

MATERIALS

2.1 Materials for barriers shall meet the requirements as shown on attached drawings.

REQUIREMENTS

3.1 Barriers shall be installed in accordance with the attached drawings.

The location of barriers to be removed or installed is shown on Sale Area Map. Installation or removal may occur as often as road use is terminated and resumed.
NOTES:

1. Set fractured or solid side of rocks into earth at a depth of 12" or more below grade. Weathertite side should face up.

2. Place barrier rocks so they appear as natural. Avoid placing in rows with equal spacing.

3. Select barrier rocks that are at least 32" when measured in smallest section.

4. Final locations will be staked in the field by the contractor.
**F.10-c - Use of Roads By the Partner**

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

Contractors’ use of existing roads identified on Stewardship Project Area Map/ Contract Area Map by the following codes is prohibited or subject to restrictive limitations, unless agreed to otherwise:

Approximately 21 acres of Inventoried Roadless Area (IRA) occurs adjacent to the project boundary. No implementation activities will occur in the IRA.

### Restricted Road List

<table>
<thead>
<tr>
<th>Road Number</th>
<th>Road Name</th>
<th>Termini</th>
<th>Map</th>
<th>Description of Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**F.11- Scaling Instructions and Specifications.**

Name and Date of Governing Instructions: FSH 2409.11a, National Forest Cubic Log Scaling Handbook, as amended and supplemented. Governing instructions for products contained in E.2.

**F.12- Scaling Services.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Product</th>
<th>Unit of Measure</th>
<th>Site and Geographic Location</th>
<th>Method</th>
<th>Standard Estimated Cost per Unit $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Softwoods</td>
<td>Saw-timber</td>
<td>Ton</td>
<td></td>
<td>100% Weight</td>
<td></td>
</tr>
</tbody>
</table>

**F.13 - Advance Deposits.** Error! Reference source not found. required, Contractor agree(s) to make advanced deposits in advance of cutting. These deposits may be in the form of cash, acceptable payment bond, earned stewardship credit or any combination thereof. Advanced deposits will be in such amounts as to maintain an unobligated balance sufficient enough to cover the value of timber to be cut. Forest Service/ Error! Reference source not found. and Contractor will agree on a systematic approach to provide sufficient advanced deposits.

If the credit balance in the IRSA is less than the amount due for timber, the Forest Service will suspend all or any part of Contractor’s operations until payment or acceptable payment guarantee
is received.

**F.14- Title Passage.**

Scaled. All right, title, and interest in and to any included timber shall remain with the Forest Service until it has been cut, scaled, and removed from the Contract Area or other authorized cutting area, and paid for, at which time title shall then vest with Contractor. Timber cut under cash deposit or acceptable payment guarantee shall be considered to have been paid for. Title to any included timber that has been cut, scaled and paid for, but not removed from the Contract Area or other authorized cutting area by the Contractor on or prior to the termination date, shall remain with the Forest Service.

Tree Measurement. All right, title, and interest in and to any included timber shall remain with the Forest Service until it has been measured, paid for, and removed from the Contract Area or other authorized cutting area, at which time title shall then vest with Contractor. Timber cut under cash deposit or acceptable payment guarantee shall be considered to have been paid for. Title to any included timber that has been measured and paid for, but not removed from the Contract Area or other authorized cutting area by Contractor on or prior to the termination date, shall remain with the Forest Service.

**F.15– Liability.**

**Liability for Loss.** If Included Timber is destroyed or damaged by an unexpected event that significantly changes the nature of Included Timber, such as fire, wind, flood, insects, disease, or similar cause, the party holding title shall bear the timber value loss resulting from such destruction or damage; except that such losses after removal of timber from the Contract Area, but before scaling, shall be borne by Contractor at current Rates and Required Deposits. Deterioration or loss of value of salvage timber is not an unexpected event.

In the event Included Timber to which Forest Service holds title is destroyed, Contractor will not be obligated to remove and pay for such timber. In the event Included Timber to which Forest Service holds title is damaged, the Forest Service shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber immediately prior to the value loss and the appraised unit value of timber after the loss. Current Rates in effect at the time of the value loss shall be adjusted by differences to become the redetermined rates. There shall be no obligation for the Forest Service to supply, or for Contractor to accept and pay for, other timber in lieu of that destroyed or damaged. This Subsection shall not be construed to relieve either party of liability for negligence.

**Limited Liability for Operations Fires.**

Maximum Amount of Contractor's Obligation per Operation's Fire. Entry should be determined as follows and rounded up to the nearest $100. The minimum amount will be $1,000.00. If State statute or law defines limited liability, use that determination (e.g. Oregon), otherwise calculate the amount using the following formula:
[(1) x (2) + (3) x (4)] x (5) = Maximum Amount of Cooperator’s Obligation per Operations Fire. Round up to the next $100.

(1) Equals the number of workers normally required to operate the size of proposed project.
   _____4_____ Workers

(2) Equals the daily (12 hour) wage rate for semi-skilled (AD-1) firefighter.
   $___15____/Hr. x 12 hours = $180________

(3) Equals the number of pieces of equipment normally required to operate the size of proposed project that can effectively cut and clear fire lines.
   _____4____ Pieces of equipment

(4) Average daily rate for each piece of equipment, including cost of operator, from current local engineering cost guide.
   $__100_____/Hr. x 12 hours = $1,200________/12hr.

(5) Equals the number of days normally required to control and mop up such fires to a point where control lines can reasonably be expected to hold under foreseeable conditions. Minimum is one day, and maximum is 10.
   _____3_____ days

Cooperator’s Obligation per Operations Fire,
   Maximum 27,600
   Amount: $__________________________
APPENDIX G
GUIDELINES FOR OPERATIONS

The following Guidelines for Operations apply to activities under this Agreement, when relevant to the project. These guidelines are intended to clarify the expectations of the parties related to these specific areas of operations.

1. **Contract Area Map (Map).** This is the boundary of the Contract Area as shown in Appendix C and designated on the ground by the Forest Service to meet the anticipated needs of the parties. The following are identified on the Map:

   a) Identified patented claims.
   b) Boundaries of all harvest and stewardship treatment units.
   c) Diameter limits for overstory and understory removal units.
   d) Areas where leave trees are marked to be left uncut.
   e) Specified roads.
   f) Sources of base course, surface rock, and rock riprap listed in the Schedule of Items.
   g) Roads where log hauling or use is prohibited or restricted.
   h) Roads and trails to be kept open.
   i) Improvements to be protected.
   j) Locations of known wildlife or plant habitat and cave resources to be protected.
   k) Locations of areas known to be infested with specific invasive species of concern.
   l) Maximum stump heights when more than one height is listed by areas.
   m) Skidding or yarding methods.
   n) Streamcourses to be protected.
   o) Locations of meadows requiring protection.
   p) Locations of wetlands requiring protection.
   q) Locations of temporary roads to be kept open.
   r) Payment units, if required.

2. **Use of Roads by the Contractor.** Contractor is authorized to use existing National Forest system roads and specified roads. The Parties will determine that such use will not cause damage to the roads or National Forest resources.

3. **Plan of Operations for Roads.** Annually, prior to start of operations, Contractor will prepare a supplement to the Technical Proposal that shall include a schedule of proposed maintenance and construction progress and a description of planned measures to be taken to provide erosion control for work in progress, including special measures to be taken on any segments of construction not substantially completed prior to periods of seasonal precipitation or runoff. Contractor shall submit a revised schedule when they propose a significant deviation from the progress schedule. Prior to beginning construction on any portion of specified roads identified as sensitive on plans, the parties shall agree on the proposed method of construction and maintenance.

4. **Protection of Residual Trees.** Contractor’s operations shall not unnecessarily damage young growth or other trees to be reserved.
5. **Safety.** Contractor’s operations shall facilitate the NFF’s and Forest Service’s safe and practical inspection of Contractor’s operations and conduct of other official duties on the Contract Area. Contractor has/have all responsibility for compliance with safety requirements for Contractor’s employees.

When operations are in progress adjacent or on Forest Service controlled roads and trails open to public travel, Contractor shall furnish, install, and maintain all temporary traffic controls that provide the user with adequate warning of hazardous or potentially hazardous conditions associated with operations occurring in the area. The parties shall agree to a specific traffic control plan prior to commencement of work. Devices shall be appropriate to current conditions and shall be covered or removed when not needed.

During periods of general recreation activity within Contract Area or vicinity, the NFF and Forest Service may restrict road construction, timber cutting, yarding, and other harvesting operations to days other than Saturdays, Sundays, and holidays.

**LOGGING AND MAINTENANCE OPERATIONS SIGNING STANDARDS**

All signs must be manufactured & installed as specified in the FHWA "Manual on Uniform Traffic Control Devices" (MUTCD) & FS publication "Standards for Forest Service Signs & Posters" (EM 7100-15).

**SIGN STANDARDS**

**SHAPE & COLOR:** Generally, signs for logging and maintenance operations are either diamond-shaped or rectangular. All signs are *reflective orange background with black legend and border* unless shown otherwise. Handpainted, homemade signs are not legal. Fluorescent paint is not reflectorized.

**SUBSTRATE:** Sign substrate material may be High Density Overlay (HDO) Plywood, Aluminum, Fiberglass Reinforced Plastic, Corrugated Plastic or Roll-up Fabrics.

**SIGN SIZE:** Sign size is a factor of speed and MUTCD & FS standards. Where conditions of speed, volume, or special hazard require greater visibility or emphasis, larger signs should be used. Minimum sizes for the most common signs can be found in Figure 4. Refer to the EM-7100-15 for additional sign sizes.

**LEGEND:** All lettering shall be Series "C" alphabet, conforming to Standard Alphabets for Highway Signs. Letter size is also a function of speed - use letter size and word messages as specified in MUTCD and EM-7100-15.

**SIGN PLACEMENT**

Signs are to be installed in locations as agreed to in the traffic control plan. All signs are to be removed, covered, or folded when operations are not in progress or the sign message is
not applicable. Signs should generally be located on the right-hand side of the roadway. When special emphasis is needed, signs may be placed on both the left and right sides of the road. Sign message shall be clearly visible to road users, mounted on posts or portable sign stands.

**LATERAL CLEARANCE**
From the edge of the road - 2 foot minimum, where slope limits to less than 6 feet. 6-12 foot preferred.

**HEIGHT**
Minimum of 7 feet, measured from the bottom of the sign to the near edge of the travelway. The height to the bottom of a supplemental sign mounted below the primary sign will be 6 feet.

![Figure 1: Sign Placement](image)

**PLACEMENT DISTANCE**
Signs must be located 100-500 feet prior to the activity, (both ends if a through road) and maintained at that distance. This distance is based on speed. Refer to Figure 2, Table II-1, MUTCD, a portion of which is reproduced here, to determine correct placement distance.

![Figure 2: A Portion of MUTCD TABLE II-1](image)

**SIGN SUPPORTS**

**POSTS:** Signs are to be mounted on separate posts. Supplemental signs such as Speed Advisory plates are to be mounted on the same post as the primary sign. *Do not mount signs on trees or other signs.* Posts may be wood, metal, carsonite or similar material. Where sign supports cannot be sufficiently offset from the road edge, supports will meet breakaway standards. Single wood posts with less than 24 square inches do not require breakaway design.

**TEMPORARY/PORTABLE SUPPORTS:** Portable supports may be used for short-term, short-duration, and mobile conditions. MUTCD defines this time period as one work shift, 12 hours or less. All portable supports must meet MUTCD standards, including breakaway. These must be a minimum of 1 foot above the road surface or more if visibility requires it.
SIGNSSigns

The following signs meet the intent of the Safety standard. *This is not a complete listing of signs that may be needed.*

- **ROAD CONSTRUCTION NEXT 5 MILES**
  - FG20-1-48*
- **END CONSTRUCTION**
  - FG20-2-48
- **LOGGING OPERATIONS NEXT 5 MILES**
  - FG20-3-42*
- **END LOGGING OPERATIONS**
  - FG20-3a-42
- **END BLASTING ZONE**
  - FW22-3-30
- **ROAD CONSTRUCTION 500 FEET**
  - FW20-1-30*
- **ROAD MACHINERY 500 FEET**
  - W21-3-30*
- **LOGGING OPERATIONS**
  - FW21-4a-30
- **LOG TRUCKS**
  - FW11-7-24
- **BLASTING ZONE 1000 FT**
  - W22-1-36*
- **TRUCK CROSSING**
  - FW8-6-24
- **HEAVY TRUCK TRAFFIC**
  - FW11-9a-24
- **NEXT 7 MILES**
  - W7-3a-24*
- **35 M.P.H.**
  - W13-1-18**
- **500 FEET**
  - W20-7aP-24*

* Specify Distance

** Specify Speed

Barricade Markers (See MUTCD for length and stripe size)

6. **Safety (Timber Hauling).** Contractor shall secure all products transported by truck with at least two chain or cable wrappers over the load, such wrappers being securely fastened to effectively contain every bolt or log in at least two places.

7. **Accident and Injury Notification.** Contractor shall notify NFF and Forest Service of any lost time personal injury accident or any accident or vandalism resulting in personal property
damage over $400 in value that occurs as a result of or is associated with Contractor’s Operations.

Contractor shall notify NFF and Forest Service within 8 hours of any personal injury accident. For vandalism and personal property accidents, Contractor shall notify NFF and Forest Service at the same time notification is given to the state and local law enforcement authorities.

Contractor shall take all reasonable measures after an accident or vandalism event to preserve the scene of the incident and provide information to facilitate a Forest Service investigation.

8. **Sanitation and Servicing.** Contractor shall take all reasonable precautions to prevent pollution of air, soil, and water by CONTRACTOR’s operations. Precautions shall include if facilities for employees are established on the Contract Area, they shall be operated in a sanitary manner. The parties shall agree to the cleanup and restoration of a polluted site. CONTRACTOR shall maintain all equipment operating on Contract Area in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid. CONTRACTOR shall not service tractors, trucks, or other equipment on National Forest lands where servicing is likely to result in pollution to soil or water. CONTRACTOR shall furnish oil-absorbing mats for use under all stationary equipment or equipment being serviced to prevent leaking or spilled petroleum-based products from contaminating soil and water resources. CONTRACTOR shall remove from National Forest lands all contaminated soil, vegetation, debris, vehicle oil filters (drained of free-flowing oil), batteries, oily rags, and waste oil resulting from use, servicing, repair, or abandonment of equipment.

9. **Prevention of Oil Spills.** If CONTRACTOR maintain(s) storage facilities for oil or oil products on the Contract Area, CONTRACTOR shall take appropriate preventive measures to ensure that any spill of such oil or oil products does not enter any stream or other waters of the United States or any of the individual States. If the total oil or oil products storage exceeds 1,320 gallons in containers of 55 gallons or greater, CONTRACTOR shall prepare a Spill Prevention Control and Countermeasures Plan. Such plan shall meet applicable EPA requirements (40 CFR 112), including certification by a registered professional engineer. CONTRACTOR shall notify NFF and the Forest Service and appropriate agencies of all reportable (40 CFR 110) spills of oil or oil products on or in the vicinity of the Contract Area that are caused by CONTRACTOR’s employees, agents, contractors or their employees or agents, directly or indirectly, as a result of CONTRACTOR’s operations. CONTRACTOR will take whatever initial action may be safely accomplished to contain all spills.

10. **Hazardous Substances.** CONTRACTOR shall notify the National Response Center, NFF, and Forest Service principal contact of all releases of reportable quantities of hazardous substances on or in the vicinity of the Contract Area that are caused by CONTRACTOR’s employees, agents, contractors or their employees or agents, directly or indirectly, as a result of CONTRACTOR’s operations, in accordance with 40 CFR 302.
11. **Washing Equipment.** In order to prevent the spread of noxious weeds into the Contract Area, CONTRACTOR shall be required to clean all off-road logging and construction equipment *prior* to entry on to the Contract Area. This cleaning shall remove all soil, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds. Only logging and construction equipment so cleaned and inspected by the CONTRACTOR will be allowed to operate within the Contract Area. All subsequent move-ins of equipment to the Contract Area shall be treated in the same manner as the initial move in. “Off-road equipment” includes all logging and construction machinery, except for log trucks, chip vans, service vehicles, water trucks, pickup trucks, cars, and similar vehicles.

CONTRACTOR shall employ whatever cleaning methods are necessary to ensure that off-road equipment is free of noxious weeds. Equipment shall be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required.

As agreed upon, CONTRACTOR shall inspect equipment at cleaning location, and provide documentation of inspection to the NFF and Forest Service.

New infestations of noxious weeds, of concern to Forest Service and identified by Contractor, NFF or Forest Service, on the Contract Area or on the haul route, shall be promptly reported to the other party. CONTRACTOR and NFF shall agree on treatment methods to reduce or stop the spread of noxious weeds when new infestations are found. A current list of noxious weeds of concern to Forest Service is available at each Forest Service office.

12. **Conduct of Logging.** Unless otherwise specifically provided herein, CONTRACTOR shall fell trees designated for cutting and shall remove the portions that meet Utilization Standards, prior to acceptance of work for completion of logging and stewardship projects. NFF or Forest Service may make exceptions for occasional trees inadvertently not cut or trees or pieces not removed for good reason, including possible damage to forest resources or gross economic impracticability at the time of removal of other timber.

13. **Felling and Bucking.** Felling shall be done to minimize breakage of included timber and damage to residual timber or utility infrastructure. Unless agreed otherwise, felling shall be done by saws or shears. Bucking shall be done to permit removal of all minimum pieces. 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 scale in percentage of gross scale, or based on the merchantability factor. If necessary to assess extent of defect, CONTRACTOR shall make sample saw cuts or wedges.

14. **Felling in Clearings.** Insofar as ground conditions, tree lean, and shape of clearings permit, trees shall be felled so that their tops do not extend outside clearcutting units, construction clearings, and areas of regeneration cutting.
15. **Stump Heights.** Stumps shall not exceed, on the side adjacent to the highest ground, the maximum heights set forth in Appendix E except that occasional stumps of greater heights are acceptable when CONTRACTOR determine(s) 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 heights specified in F-14 and shall dispose of severed portions in the same manner as other logging debris. The stump heights shown in Appendix F were selected with the objective of maximum reasonable utilization of the timber, unless the Map shows special areas where stump heights are lower for aesthetic, land treatment, or silvicultural reasons.

16. **Bucking Lengths.** Trees shall be bucked in various lengths to obtain the greatest utilization of material meeting utilization standards.

17. **Limbing.** CONTRACTOR shall cut exposed limbs from products prior to skidding, as necessary to minimize damage to the residual stand during skidding. CONTRACTOR may leave uncut those limbs that cannot be cut with reasonable safety.

18. **Skidding and Yarding.** Methods of skidding or yarding specified for particular areas, if any, are indicated on the Map. Outside clearcutting units and construction clearings, insofar as ground conditions permit, products shall not be skidded against reserve trees or groups of reproduction and tractors shall be equipped with a winch to facilitate skidding.

19. **Rigging.** Insofar as practicable, needed rigging shall be slung on stumps or trees designated for cutting.

20. **Landings and Skid Trails.** Location of all landings, tractor roads, and skid trails shall be agreed upon prior to their construction. The cleared or excavated size of landings shall not exceed that needed for efficient skidding and loading operations.

21. **Arches and Dozer Blades.** Skidding tractors equipped with pull-type arches or dozer blades wider than tractor width or C-frame width, whichever is greater, shall not be used in residual timber outside clearcutting units and other authorized clearings, except on constructed tractor roads or landings, unless there is written agreement that residual timber will not be damaged materially by such use.

22. **Protection of Streamcourses and Waterbodies.** CONTRACTOR’s operations shall be conducted to prevent debris from entering streamcourses, except as may be authorized under paragraph (d). In event CONTRACTOR cause(s) debris to enter streamcourses in amounts that may adversely affect the natural flow of the stream, water quality, or fishery resource, CONTRACTOR shall remove such debris as soon as practicable, but not to exceed 2 days, and in an agreed manner that will cause the least disturbance to streamcourses.

   a) Culverts or bridges shall be required on Temporary Roads at all points where it is necessary to cross Streamcourses. Such facilities shall be of sufficient size and design and installed in a manner to provide unobstructed flow of water and to minimize damage to streamcourses. Trees or products shall not be otherwise hauled or yarded across
streamcourses unless fully suspended.
b) Wheeled or track-laying equipment shall not be operated in streamcourses, except at crossings agreed to by CONTRACTOR and the NFF or as essential to construction or removal of culverts and bridges.
c) Flow in streamcourses may be temporarily diverted only if such diversion is necessary for CONTRACTOR’s planned construction and Forest Service gives written authorization. Such flow shall be restored to the natural course as soon as practicable and, in any event, prior to a major storm runoff period or runoff season.

23. Erosion Prevention and Control. CONTRACTOR’s operations shall be conducted reasonably to minimize soil erosion. Equipment shall not be operated when ground conditions are such that excessive damage will result. CONTRACTOR shall adjust the kinds and intensity of erosion control work done, to ground conditions and weather conditions and the need for controlling runoff. Erosion control work shall be kept current immediately preceding expected seasonal periods of precipitation or runoff.

Prior to periods of accelerated water runoff, especially during the spring runoff and periods of heavy rainfall, CONTRACTOR shall inspect and open culverts and drainage structures, construct special cross ditches for road runoff, and take other reasonable measures needed to prevent soil erosion and siltation of streams.

Unless otherwise agreed in writing, CONTRACTOR shall complete erosion prevention and control work, including streamcourse protection, within 15 calendar days after completion of skidding and/or yarding operations for each landing.

Designation of on the ground work shall be done as promptly as feasible unless it is agreed that the location of such work can be established without marking on the ground.

During periods of accelerated water runoff, especially during the spring runoff and periods of heavy rainfall, CONTRACTOR shall inspect and open culverts and drainage structures, construct special cross ditches for road runoff, and take other reasonable measures needed to prevent soil erosion and siltation of streams.

When operations are active, erosion control work will be kept current and will be completed as soon as practicable.

24. Protection of Improvements. So far as practicable, CONTRACTOR shall protect specified roads and other improvements (such as roads, trails, telephone lines, ditches, and fences):
   a) Existing in the operating area,
   b) Determined to have a continuing need or use, and
   c) Designated on the Map.

CONTRACTOR shall keep roads and trails needed for fire protection or other purposes and designated on the Map reasonably free of equipment and products, slash, and debris resulting from CONTRACTOR’s operations. CONTRACTOR shall make timely restoration of any such improvements damaged by CONTRACTOR’s operations and, when necessary because
of such operations, shall move such improvements.

25. **Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources**

1. Areas, known by Forest Service prior to contract solicitation, needing special measures for the protection of plants, animals, cultural resources, and/or cave resources are shown on Stewardship Agreement/Contract Area Map and/or identified on the ground, and shall be treated as follows:
   a. Unless agreed otherwise, wheeled or track laying equipment shall not be operated in areas identified as needing special measures except on roads, landings, tractor roads, or skid trails. Contractor may be required to backblade skid trails and other ground disturbed by Contractor’s Operations within such areas in lieu of cross ditching.
   b. Unless agreed otherwise, trees will not be felled into areas identified as needing special measures.
   c. Contractor shall conduct operations in a manner that does not damage or disturb identified areas. In the event that protective measures identified by the Forest Service are for any reason inadequate, Contracting Officer may delay or interrupt Contractor’s operations, under this Agreement, and/or modify this Agreement.
   d. Contractor shall immediately notify the Forest Service if its operations disturb or damage any area identified as needing special protection, and shall immediately halt its operations in the vicinity of such area until the Forest Service authorizes continued operations. In the event that Contractor's operations disturb or damage an area identified as needing special protection, then Contractor shall reimburse the Forest Service for the full cost and expense of any evaluative and remedial measures undertaken by the Forest Service in connection with such disturbance or damage. Such payment shall not relieve Contractor from civil or criminal liability under applicable law.

2. Nothing contained in this clause shall establish, or be deemed to establish any express or implied warranty on the part of the Forest Service that the Forest Service has identified all areas within the Contract Area requiring special protection, or that measures prescribed by the Forest Service for protection of such areas are adequate.

3. Following contract solicitation, additional areas needing special measures for protection may be discovered or identified; protective measures may be revised or newly prescribed; and, additional species of plants and/or animals may be added to federal lists of protected species. In such event, Contracting Officer may delay or interrupt Contractor’s operations, under this Contract, and/or modify this Contract.

4. Discovery, by NFF, the Contractor or the Forest Service, of additional areas, resources, species, or members of species needing special protection shall be promptly reported to the other party.

<table>
<thead>
<tr>
<th>Liberty 625 Whole Tree Special Measure Areas</th>
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<tbody>
<tr>
<td><strong>Unit Number</strong></td>
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<td>----------------</td>
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</tbody>
</table>
| 38             | Recreation/VQOs: Tahoe Rim Trail (TRT)  
|                | June 17-21 & 25, July 16-17, and August 27, 2022 |
|   | Recreation/VQOs: Tahoe Rim Trail (TRT) and 16N71, 16N73, 17E44, 17E14, 17E16, and 17E17  
June 17-21 & 25, July 16-17, August 27, September 17 and October 1-2, 2022 |
|---|---|
| 39 | Recreation/VQOs: Tahoe Rim Trail (TRT) and 16N75  
June 17-21, October 1-2, 2022 |
| 40, 1040, 4040, 5040 | Recreation/VQOs: Tahoe Rim Trail (TRT) and 16N53, 17E14, 17E16, 17E17, 17E44  
June 17-21 & 25, July 16-17, August 27, September 17, October 1-2, 2022 |
| 4039 | Heritage: Linear features and Sites – Work with USFS Sale Administrator or NFF Representative for approved crossings, including any newly discovered heritage sites |
| 38, 40, 1040, 4040, 5040 | Hydrology: |
| N/A | Botany: Avoid invasive plant disturbance |
| 40, 1040, 4040, 5040 | Utility Infrastructure: Under this Agreement, Contractor will work with NFF Representative to coordinate protection of all utility infrastructure. |

26. **Meadow Protection.** Reasonable care shall be taken to avoid damage to the cover, soil, and water in meadows shown on the Map. Vehicular or skidding equipment shall not be used on meadows, except where roads, landings, and tractor roads are approved. Unless otherwise agreed, trees felled into meadows shall be removed by endlining. Resulting logging slash shall be removed where necessary to protect cover, soil, and water.

27. **Wetlands Protection.** Wetlands requiring protection under Executive Order 11990 are shown on the Map. Vehicular or skidding equipment shall not be used in such wetlands, except where roads, landings, and tractor roads are approved.

28. **Temporary Roads.** As necessary to attain stabilization of roadbed and fill slopes of temporary roads, CONTRACTOR shall employ such measures as outsloping, drainage dips, and water-spreading ditches. After a temporary road has served CONTRACTOR’s purpose, CONTRACTOR shall give notice to the NFF and shall remove bridges and culverts, eliminate ditches, outslope roadbed, remove ruts and berms, effectively block the road to normal vehicular traffic where feasible under existing terrain conditions, and build cross ditches and water bars, as staked or otherwise agreed to. When bridges and culverts are removed, associated fills shall also be removed to the extent necessary to permit normal maximum flow of water.
29. **Temporary Roads to Remain Open.** All bridges and culverts shall remain in place and ditches shall not be eliminated on Temporary Roads, shown as “Remained Open on the Map. All drainage structures shall be left in functional condition.

30. **Landings.** After landings have served CONTRACTOR’s purpose, CONTRACTOR shall ditch and slope them to permit water to drain or spread. Unless agreed to otherwise, cut and fill banks around landings shall be sloped to remove overhangs and otherwise minimize erosion.

31. **Skid Trails and Fire Lines.** CONTRACTOR shall construct cross ditches and water-spreading ditches on tractor roads and skid trails, where needed to prevent erosion. By agreement, CONTRACTOR may use other comparable erosion control measures, such as backblading skid trails, in lieu of cross ditching.

32. **Current Operating Areas.** Where logging, road construction, or other stewardship project work is in progress but not completed, unless agreed to otherwise, CONTRACTOR shall, before operations cease annually, remove all temporary log culverts and construct temporary cross drains, drainage ditches, dips, berms, culverts, or other facilities needed to control erosion. Such protection shall be provided, for all disturbed, unprotected ground that is not to be disturbed further prior to end of operations each year, including roads and associated fills, tractor roads, skid trails, and fire lines. When weather permits operations, CONTRACTOR shall keep such work on any additional disturbed areas as up to date as practicable.

33. **Erosion Control Structure Maintenance.** During the period of this Agreement, Contractor shall provide maintenance of soil erosion control structures constructed by Contractor until they become stabilized, but not for more than one year after their construction.

34. **Slash Disposal.** CONTRACTOR’s timing of product removal and preparatory work shall not unnecessarily delay slash disposal. Specific slash disposal measures to be employed by CONTRACTOR are stated in Appendix E.

35. **Scaling.** Scaling includes:
   a) Various volume determination methods, such as log rule, sampling, measuring, linear measuring, counting, weighing, or another method or combination of methods;
   b) Various sites, such as truck Scaling stations, rollways, weighing stations, woods landings, water Scaling stations, or other sites.
   c) Various geographic locations.

36. **Scaling Services.** Scaling services shall be performed by Forest Service personnel or parties under contract to Forest Service, except that weighing services may be performed by personnel or parties approved by the Forest Service. Scaling shall be provided in accordance with the instructions and specifications in Appendix F. Scalers shall be currently certified to perform accurate Scaling services. The scaling services provided shall be selected exclusively by the Forest Service. Scaling services may be continuous, intermittent, or extended.
a) Continuous scaling services is scaling at one site five (5) 8-hour shifts a week, exclusive of Sundays and Federal holidays.

b) Intermittent scaling services are non-continuous scaling services.

c) Extended scaling services are scaling services exceeding continuous scaling services and may include Sundays and designated Federal holidays.

As mutually agreed to by the parties, the Forest Service may provide other services, such as but not limited to grading, tagging, or marking of Scaled logs.

37. **Scaling Location.** The Forest Service shall provide scaling services at the scaling site(s) shown in Appendix F. The Scaling site(s) shown in Appendix F normally will be a non-exclusive site where more than one National Forest CONTRACTOR may be served. CONTRACTOR may request, in writing, an alternate scaling site, such as at a private mill yard, private truck ramp, or a privately operated log transfer facility. The Forest Service may approve an alternate scaling site, when the Forest Service determines that scaling conditions at an alternate site are acceptable. Such conditions shall include at a minimum:

a) Scaler safety and comfort,

b) Product accountability and security,

c) Facilities and practices conducive to accurate and independent Scaling, and

d) The ability to provide for remote check Scaling.

Upon approval of an alternate scaling site, the Forest Service and CONTRACTOR shall enter into a written memorandum of agreement governing Scaling at that alternate location. CONTRACTOR agree(s) that Forest Service personnel or persons under contract with the Forest Service shall perform scaling services at an alternative scaling site. In no instance shall CONTRACTOR perform scaling services.

37. **Scaling Adjustments.** The Forest Service shall check the accuracy of the scaling performed on National Forest logs. Scaling will be satisfactory if performed within the accuracy standards in governing instructions identified in Appendix F. In the event the Forest Service check scale(s) shows a variance in net scale in excess of the allowable variance, an adjustment to volume reported scaled may be made by the Forest Service. Such adjustment will be based on the difference between Forest Service check Scale(s) and original Scale for CONTRACT volume Scaled within the adjustment period. The volume to which this difference will be applied will be:

a) One-half of the volume Scaled between the last satisfactory check Scale and the first unsatisfactory check Scale or, if a period of 120 days or more occurs without Scaling National Forest timber for stumpage, the adjustment will be applied to 100 percent of the volume Scaled after this period and

b) 100 percent of the volume Scaled between unsatisfactory check Scales and

c) One-half of the volume Scaled between the last unsatisfactory check Scale and the next satisfactory check Scale, or if no satisfactory check Scale is completed and a period of 120 days or more occurs without Scaling of National Forest timber for stumpage, the adjustment will be applied to 100 percent of the volume Scaled since the last unsatisfactory check Scale.
Adjustments may increase or decrease the original Scaled volume. Adjustments will be applied to Integrated Resource Account to correct charges for Included Timber, plus deposits, Scaled during the adjustment period.

38. **Weighing Services.** Weighing services for stumpage payment purposes may be provided by either public or privately owned and operated weighing facilities. A “Weighing Services Agreement,” approved by the Forest Supervisor, must be executed at each weighing facility providing weighing services.

Scales used to weigh National Forest products for payment purposes must be a currently certified scale in accordance with State law and be capable of weighing the entire load of logs in a single operation. The weighing of less than the entire load or weighing two loads at once is prohibited. Unless otherwise agreed, the minimum sized weighing facility shall be a 60-ton capacity scale with a 10 foot by 70 foot platform or larger. The weighmaster must work in a position where it is possible to verify that the truck wheels are on or off the scales. Weighing facilities shall meet the following minimum requirements:

a) Be an electronic design,

b) Use electronic load cells or have a fully enclosed and sealed weigh-beam,

c) Have digital weight meters sealed with a seal approved by the State,

d) Have a zero interlocking device on the printer,

e) Have an automatic zero-setting mechanism,

f) Have an automatic motion-detecting device,

g) Be shielded against radio or electromagnetic interference, and

h) Have a date and time stamp and gross and tare weights that print electronically with each weighing. The Forest Service may waive electronic printing for public or third party weighing facilities. CONTRACTOR shall bear all charges or fees for weighing services.

39. **Presentation for Scaling.** CONTRACTOR shall present products so that they may be Scaled in an eco-nomical and safe manner.

40. **Accountability.** When Scaling is performed away from Contract Area, products shall be accounted for in accordance with Forest Service written instructions, as follows:

a) CONTRACTOR shall plainly mark or otherwise identify products prior to hauling;

b) Forest Service shall issue removal receipts to CONTRACTOR;

c) CONTRACTOR shall assign a competent individual at the landing to complete removal receipts and attach them to each load of products removed from Contract Area;

d) Removal receipts shall be returned to Forest Service at periodic intervals;

e) When products are in transit, the truck driver shall possess or display removal receipt and show it upon request as evidence of authority to move products;

f) The scaler’s portion of removal receipt shall be surrendered at point of Scaling, the unloading point, or as requested by Forest Service; and

g) CONTRACTOR shall notify NFF and Forest Service of lost or off-loaded logs and their location within 12 hours of such loss. CONTRACTOR shall not place products in storage for deferred Scaling until an accountability system has been agreed to in writing for a stated period.
41. **Route of Haul.** As part of the annual Operating Schedule, CONTRACTOR shall furnish a map showing the route of haul over which unscaled products will be transported from the Contract Area to the approved Scaling location. Such route of haul shall be the shortest, most economical haul route available between the points.

Upon advance written agreement, other routes may be approved. All unscaled products removed from Contract Area shall be transported over the designated routes of haul. CONTRACTOR shall notify NFF and Forest Service when a load of products, after leaving Contract Area, will be delayed for more than 12 hours in reaching Scaling location. CONTRACTOR shall require truck drivers to stop, if requested by Forest Service, for the following reasons:

a) For accountability checks when products are in transit from Contract Area to the designated Scaling location or
b) For a remote check Scale when products are in transit after being truck Scaled at the designated Scaling location.

CONTRACTOR and Forest Service shall agree to locations for accountability checks and remote check Scales in advance of haul. Such locations shall be established only in areas where it is safe to stop trucks. The Forest Service shall notify CONTRACTOR of the methods to be used to alert truck drivers of an impending stop.

42. **Product Identification.** Before removal from the Contract Area, unless the Forest Service determines that circumstances warrant a written waiver or adjustment, CONTRACTOR shall:

a) Hammer brand all products that are eight (8) feet or more in length and one-third (1/3) or more sound, on each end that is seven (7) inches or more in diameter.

b) West of the 100th meridian, paint with a spot of highway-yellow paint all domestic processing products that are eight (8) feet or more in length and one-third (1/3) or more sound, on each end that is seven (7) inches or more in diameter. Each paint spot must be not less than three (3) square inches in size.

The Forest Service shall assign brands and, if the Contract Area is within a State that maintains a log brand register, brands shall be registered with the State. CONTRACTOR shall use assigned brand exclusively on logs under this Contract until Forest Service releases brand. CONTRACTOR will furnish and apply highway-yellow paint of a lasting quality (oil-base or equivalent).

All hammer brands and/or highway-yellow paint must remain on logs until they are domestically processed. CONTRACTOR shall replace identifying marks if they are lost, removed, or become unreadable. CONTRACTOR may remanufacture products into different log lengths. Except for logs remanufactured as part of the mill infeed process immediately before processing, remanufactured products must be rebranded with the assigned Contract brand and repainted with highway-yellow paint, unless otherwise agreed to in writing by the Forest Service Representative. For such remanufactured products, Forest Service may approve use of a brand to be used exclusively as a catch brand, in lieu of the assigned Contract brand.
43. **Scaling Lost Products.** The volume of lost products shall be determined by the best methods currently available, using data from the records for the period in which the loss occurred or the most applicable period if loss should occur substantially after cutting. In the absence of specific information indicating size or species of lost products, species distribution and volume for entire truckloads shall be assumed to be the same as the average volume Scaled per truck during the report period, and for individual products it shall be assumed that the volume and species were the average volume of the highest priced species Scaled during the report period.

44. **Scaling Lost Sample Loads.** If Scaling is being done by sampling loads of logs, CONTRACTOR shall present such sample loads for Scaling by Forest Service. If loads of logs selected to be sample Scaled are placed in the decks before they are Scaled, they will be considered as lost sample loads. It will be difficult, if not impossible, to determine the volume and species contained in such loads for payment purposes. Therefore, lost sample loads will be deemed to have a Scale volume and species composition equal to that of the highest value load Scaled during the sampling period, as established by Forest Service. If no sample loads were Scaled during the period, the Scale data for the high valued load will be taken from the most current preceding sampling period with Scale. Sample loads lost as a result of NFF or Forest Service actions shall be treated as non-Scaled loads.

45. **Scale Reports.** The Forest Service shall provide CONTRACTOR a copy of Forest Service scaler’s record, if requested in writing.

46. **Fire Precautions and Control.**
   a) **Plans.** Prior to initiating CONTRACTOR’s operations during Fire Precautionary Period, CONTRACTOR shall file with the Forest Service a Fire Prevention and Control Plan providing for the prevention and control of fires on the Contract Area and other areas of CONTRACTOR’s Operations. Such plan shall include a detailed list of personnel and equipment at CONTRACTOR disposal for implementing the plan. This requirement may be met by preparing a single plan for more than one Contract.

   b) **Fire Precautions.** Specific fire precautionary measures listed in this Appendix shall be applicable during CONTRACTOR’s Operations in “Fire Precautionary Period” described. The dates of Fire Precautionary Period may be changed by agreement, if justified by unusual weather or other conditions. Required tools and equipment shall be kept in serviceable condition and immediately available for fire fighting at all times during CONTRACTOR’s operations in Fire Precautionary Period.

   c) **Substitute Precautions.** The Forest Service may authorize substitute measures or equipment, or waive specific requirements by written notice, if substitute measures or equipment will afford equal protection or some of the required measures and equipment are unnecessary.

   d) **Emergency Precautions.** The Forest Service or NFF may require the necessary shutting down of equipment on portions of CONTRACTOR’s Operations, as specified by the emergency fire precautions schedule. Under such conditions, after
CONTRACTOR cease(s) active operations, CONTRACTOR shall release for hire by Forest Service, if needed, CONTRACTOR’s shutdown equipment for fire standby on the Contract Area or other areas of CONTRACTOR’s Operations and personnel for fire standby or fire patrol, when such personnel and equipment are not needed by CONTRACTOR for other fire fighting or protection from fire. Equipment shall be paid for at fire fighting equipment rates common in the area or at prior agreed rates and, if CONTRACTOR request(s), shall be operated only by personnel approved by the CONTRACTOR. Personnel so hired shall be subject to direction and control by Forest Service and shall be paid by Forest Service at fire fighting rates common in the area or at prior agreed rates.

e) Fire Precautionary Period and Fire Precautions. Specific fire precautionary measures are set forth below. Upon request of Forest Service or NFF, CONTRACTOR shall permit and provide an individual to assist in periodic testing and inspection of required fire equipment. CONTRACTOR shall promptly remedy deficiencies found through such inspecting and testing.

1. The following requirements shall apply during the period (May 1-December 1) and during other such periods as specified by NFF or Forest Service.

2. (Include Regional fire precautionary requirements, below.)

47. Fire Control. CONTRACTOR shall, both independently and in cooperation with Forest Service, take all reasonable and practicable action to prevent and suppress fires resulting from CONTRACTOR’s Operations and to suppress any forest fire on Contract Area. CONTRACTOR’s independent initial fire suppression action on such fires shall be immediate and shall include the use of all necessary personnel and equipment at CONTRACTOR’s disposal on Contract Area or within the distance of Contract Area: Initial fire supression within 25 road miles and fire suppression re-inforcement within 100 miles).

a) The Contractor’s Reinforcement Obligations. Whenever an Operations Fire or Negligent Fire, whether on or off Contract Area or any other forest fire on Contract Area, has not been suppressed by initial action and appreciable reinforcement strength is required, Forest Service may require further actions by CONTRACTOR until such fire is controlled and mopped up to a point of safety. Such actions may include any or all of the following as necessary to fight such fire:

b) Suspend Operations. To suspend any or all of CONTRACTOR’s Operations.

c) Personnel. To release for employment by Forest Service any or all of CONTRACTOR’s personnel engaged in CONTRACTOR’s Operations or timber processing within the distance of Contract Area: (25 Road miles). Any organized crew so hired shall include CONTRACTOR’s supervisor, if any. Personnel so employed shall be paid at Forest Service standard emergency fire fighting rates.
d) **Equipment.** To make available for Forest Service rental at fire fighting equipment rates common in the area or at prior agreed rates any or all of CONTRACTOR’s equipment suitable for fire fighting and currently engaged in CONTRACTOR’s Operations within the distance of Contract Area: **(100 Road miles)**. Equipment shall be operated only by personnel approved by CONTRACTOR, if so requested by CONTRACTOR.

48. **Temporary Roads and Skid Trails.** CONTRACTOR shall locate Temporary Roads and Skid Trails on locations approved by NFF or the Forest Service. Such location shall include the marking of road centerline or grade-line and the setting of such construction stakes as are necessary to provide a suitable basis for economical construction and the protection of National Forest lands.

Temporary road surface width shall be limited to truck bunk width plus four (4) feet, except for needed turnouts which shall not exceed two (2) times the bunk width plus four (4) feet. If shovels or cranes with revolving carriage are used to skid or load, temporary road surface width equal to track width plus tail swing shall be permitted.

As necessary to attain stabilization of roadbed and fill slopes of Temporary Roads, CONTRACTOR shall employ such measures as outsloping, drainage dips, and water-spreading ditches.
Appendix H

MECHANICAL WORK / FIRE PLAN
Liberty Utilities Resilience Corridors Project

1. SCOPE:

This project involves reducing hazardous fuels and forest thinning utilizing ground-based Whole Tree (WT) Harvesting and Forwarding equipment to achieve desired fuels and forest stocking levels. The project will include removal of timber and biomass from landings and treatment of residual fuels. Conifers under 30” diameter will be cut mechanically, or hand felled and yarded to landings for removal. The work will be conducted during the Summer Operating season, generally between May 1 and October 30 and will continue for up to 3 years until all treatments have been completed.

NFF will issue 1 or more RFPs for the harvesting and fuels treatment services outlined in this Supplemental Project Agreement. The contactor(s) hired will be required to follow this FIRE PLAN during all operations on National Forest System lands, this/these contractors are hereinafter referred to as “Contractor”.

The provisions set forth below outline the responsibility for fire prevention and suppression activities and establish a suppression plan for fires within the contract area. The contract area is delineated by a map included in the contract. The provisions set forth below also specify conditions under which contract activities will be curtailed or shut down.

2. RESPONSIBILITIES:

A. Contractor

(1) Shall abide by the requirements of this Fire Plan.

(2) Shall take all steps necessary to prevent his/her employees, subcontractors and their employees from setting fires not required in completion of the contract, shall be responsible for preventing the escape of fires set directly or indirectly because of contract operations, and shall extinguish all such fires which may escape.

(3) Shall permit and assist in periodic testing and inspection of required fire equipment. Contractor shall certify compliance with specific fire precautionary measures in the fire plan, before beginning operations during Fire Precautionary Period and shall update such certification when operations change.

(4) Shall designate in the Fire Plan and furnish on Contract Area, during operating hours, a qualified fire supervisor authorized to act on behalf of Contractor in fire prevention and suppression matters.
B. Forest Service

The Forest Service may conduct one or more inspections for compliance with the Fire Plan. The number, timing, and scope of such inspections will be at the discretion of agency employees responsible for contract administration. Such inspections do not relieve the Contractor of responsibility for correcting violations of the fire plan or for fire safety in general, as outlined in paragraph 2.A above.

3. DEFINITIONS:

The following definitions shall apply:

Active Landing: A location the contractor may be skidding logs into, or performing other operations such as delimbing, log manufacturing, and chipping logs. Except for EV and E days, loading logs or stockpiling chips only, on a cleared landing, does not constitute an Active Landing.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head, i.e., full rotation lateral tilt head.

Mechanical Operations: The process of felling, skidding, chipping, shredding, masticating, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimiters, skidders, dozers etc.

4. TOOLS AND EQUIPMENT:

The Contractor shall comply with the following requirements during the fire precautionary period, as defined by unit administering contracts:

The Fire Precautionary Period is set by the State of California which is April 1 through December 1 of any year.

- This contract □ requires, ☒ does not require, a Fire Box and associated Fire Tools according to CPRC Section 4428.

A. Fire Tools and Equipment: Contractor shall meet minimum requirements of Section 4428 of the California Public Resources Code (C.P.R.C.). Fire tools kept at each operating landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping, and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in Contractor's Operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. All required fire tools shall be maintained in suitable and serviceable condition for firefighting purposes.

Trucks, tractors, skidders, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2 and a 1/2-pound axe or larger with an overall length of not less than 28 inches.
Where cable yarding is used, Contractor shall provide a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump within 25 feet of each tail and corner block.

**B. Fire Extinguishers:** Contractor shall equip each internal combustion yarder, fuel truck, and loader with a fire extinguisher for oil and grease fires (4-A:60-B:C). Skidders and tractors shall be equipped with a minimum 5-BC fire extinguisher.

All Fire Extinguishers shall be mounted, readily accessible, properly maintained and fully charged.

Contractor shall equip each mechanized harvesting machine with hydraulic systems, powered by an internal combustion engine (chipper, feller/buncher, harvester, forwarder, hot saws, stroke delimiters, etc.), except tractors and skidders, with at least two 4-A:60-B:C fire extinguishers or equivalent.

**C. Spark Arresters and Mufflers:** Contractor shall equip each operating tractor and any other internal combustion engine with a spark arrester, except for motor vehicles equipped with a maintained muffler as defined in C.P.R.C. Section 4442 or tractors with exhaust-operated turbochargers. Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1 as shown in the National Wildlife Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be maintained in good operating condition. Every motor vehicle subject to registration shall always be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.

**D. Power Saws:** Each power saw shall be equipped with a spark arrester approved according to C.P.R.C. Section 4442 or 4443 and shall be maintained in effective working order. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating power saw. In addition, a size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can but not more than 300 feet from each power saw when used off cleared landing areas.

- This contract **requires, □ does not require, Section 4E of the Fire Plan.**

**E. Tank Truck or Trailer:** Contractor shall provide a water tank truck or trailer on or in proximity to Contract Area during Contractor's Operations hereunder during Fire Precautionary Period. When Project Activity Level B or higher is in effect, a tank truck or trailer shall be on or immediately adjacent to each active landing, unless otherwise excepted when Hot Saws or Masticators are being used. See Section 6 for specific contract requirements.

The tank shall contain at least 300 gallons of water available for fire suppression. Ample power and hitch shall be readily available for promptly and safely moving tank over roads serving Contract Area. Tank truck or trailer shall be equipped with the following:

(1) Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Contract Area
using a 5/16-inch orifice in the Forester One Inch In-Line Gauge test kit. Pump shall meet or exceed the pressure value in the following table for nearest temperature and elevation:

<table>
<thead>
<tr>
<th>Temp (°F)</th>
<th>Sea Level</th>
<th>1000 Feet</th>
<th>2000 Feet</th>
<th>3000 Feet</th>
<th>4000 Feet</th>
<th>5000 Feet</th>
<th>6000 Feet</th>
<th>7000 Feet</th>
<th>8000 Feet</th>
<th>9000 Feet</th>
<th>10000 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td>179</td>
<td>23</td>
<td>174</td>
<td>23</td>
<td>16</td>
<td>16</td>
<td>23</td>
<td>165</td>
<td>22</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>70</td>
<td>175</td>
<td>23</td>
<td>171</td>
<td>23</td>
<td>16</td>
<td>16</td>
<td>23</td>
<td>162</td>
<td>22</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>85</td>
<td>171</td>
<td>23</td>
<td>168</td>
<td>23</td>
<td>16</td>
<td>16</td>
<td>23</td>
<td>159</td>
<td>22</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>100</td>
<td>168</td>
<td>23</td>
<td>164</td>
<td>23</td>
<td>15</td>
<td>15</td>
<td>22</td>
<td>155</td>
<td>22</td>
<td>15</td>
<td>22</td>
</tr>
</tbody>
</table>

The pump outlet shall be equipped with 1-1/2-inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

(2) 300 feet of 3/4-inch inside diameter rubber-covered high-pressure hose mounted on live reel attached to pump with no segments longer than approximately 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.

(3) A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

<table>
<thead>
<tr>
<th></th>
<th>G.P.M.</th>
<th>Horizontal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straight Stream</td>
<td>10</td>
<td>38 feet</td>
</tr>
<tr>
<td>Fog Spray</td>
<td>6-20</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(4) Sufficient fuel to run the pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

When Contractor is using Hot Saws or Masticators, an additional 250 feet of light weight hose, approved by the Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurtenances in (2) and (3) above.
This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in Section 6.

F. Compressed Air Foam System: A Compressed Air Foam System (CAFS) is a fire suppression system where compressed air is added to water and a foaming agent. By agreement, Contractor may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer, or fire extinguishers, provided it meets or exceeds the following specifications and requirements:

2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellant.
4. The unit shall be capable of being completely recharged within 10 minutes.
5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section 4 B. above may be substituted with a 3-gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in Section 6.

5. GENERAL

A. State Law: In addition to the requirements in this Fire Plan, the Contractor shall comply with all applicable laws of the State of California. In particular, see California Public Resource Codes.

B. Permits Required: The Contractor must secure a special written permit from the District Ranger or designated representative before burning, welding, or cutting metal or starting any warming fires. If contract requires Blasting and Storing of Explosives and Detonators, an Explosives Permit may be required pursuant to the California Health and Safety Code, Section 12101.

C. Blasting: Contractor shall use electric caps only unless otherwise agreed in writing. When blasting is necessary in slash areas, a Fire Patrolperson equipped with a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump shall remain in the immediate area for an hour after blasting has been completed.

D. Smoking: Smoking shall not be permitted during fire season, except in a barren area
or in an area cleared to mineral soil at least three feet in diameter. In areas closed to
smoking, the CO may approve special areas to be used for smoking. The Contractor
shall sign designated smoking areas. Contractor shall post signs regarding smoking
and fire rules in conspicuous places for all employees to see. Contractor's
supervisory personnel shall require compliance with these rules. Under no
circumstances shall smoking be permitted during fire season while employees are
operating light or heavy equipment or walking or working in grass and woodlands.

E. Storage and Parking Areas. Equipment service areas, parking areas, and gas and oil
storage areas shall be cleared of all flammable material for a radius of at least 10 feet
unless otherwise specified by local administrative unit. Small mobile or stationary
internal combustion engine sites shall be cleared of flammable material for a slope
distance of at least 10 feet from such engine. The COR shall approve such sites in
writing.

F. Reporting Fires: As soon as feasible but no later than 15 minutes after initial
discovery, Contractor shall notify Forest Service of any fires on Contract Area or
along roads used by Contractor. Contractor's employees shall report all fires as soon
as possible to any of the following Forest Service facilities and/or personnel listed
below, but not necessarily in the order shown:

<table>
<thead>
<tr>
<th>Name</th>
<th>Office Address</th>
<th>Office telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispatch Center</td>
<td>Dispatcher</td>
<td>Camino ECC</td>
</tr>
<tr>
<td>Nearest FS Station</td>
<td>Meeks Bay Fire</td>
<td>Meeks Bay</td>
</tr>
<tr>
<td>Inspector</td>
<td>TBD</td>
<td>LTBMU Supervisors Office</td>
</tr>
<tr>
<td>COR</td>
<td>Daniel Smith</td>
<td>ENF Supervisor’s Office</td>
</tr>
<tr>
<td>Forest Supervisor</td>
<td>Erick Walker</td>
<td>LTBMU Supervisors Office</td>
</tr>
</tbody>
</table>

When reporting a fire, provide the following information:

- Your Name
- Call back telephone number
- Project Name
- Location: Legal description (Township, Range, Section); and Descriptive
  location (Reference point)
- Fire Information: Including Acres, Rate of Spread and Wind Conditions.

G. Communications: Contractor shall furnish a serviceable telephone, radio-telephone
or radio system connecting each operating side with Contractor's headquarters. When
such headquarters is at a location which makes communication to it clearly
impractical, Forest Service may accept a reasonable alternative location. The
communication system shall provide prompt and reliable communications between
Contractor's headquarters (or agreed to alternative) and Forest Service via commercial or Forest Service telephone.

- **This contract ✗ requires, ☐ does not require, Section 5H of the Fire Plan.**

H. **Fire Patrolperson:** Contractor shall furnish a qualified fire patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, sole responsibility of patrolperson shall be to patrol the operation for prevention and detection of fires, take suppression action where necessary and notify the Forest Service as required. This Fire patrol is required on foot, unless otherwise agreed. By agreement, one patrolperson may provide patrol on this and adjacent projects. No patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.

The Contractor shall, prior to commencing work, furnish the following information relating to key personnel:

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Patrolperson</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I. **Clearing of Fuels:** Contractor shall clear away, and keep clear, fuels and logging debris as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welding equipment and stationary log loaders, yarders and other equipment</td>
<td>10 feet slope radius</td>
</tr>
<tr>
<td>listed in California State Law</td>
<td></td>
</tr>
<tr>
<td>Tail or corner haulback blocks:</td>
<td>All running blocks shall be in the center of an area cleared to mineral soil at least 15 feet in diameter.</td>
</tr>
<tr>
<td>Lines near, between or above blocks:</td>
<td>Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.</td>
</tr>
</tbody>
</table>

6. **EMERGENCY PRECAUTIONS**

Contractor's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Project Activity Levels applicable to this project shall be the predicted activity levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Contract Area Map Legend on Integrated Resource Service Contracts (IRSC’s), and other contracts where applicable.

<table>
<thead>
<tr>
<th>Fire Danger Rating Area/Fire Weather Station for Project</th>
<th>Meyers, CA</th>
</tr>
</thead>
</table>
The Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day’s activity level by 6:00 PM. Contractor shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

**Phone Number or Website to obtain Predicted Activity Levels:** 530-295-5699

The Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Contractor is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

<table>
<thead>
<tr>
<th>Level</th>
<th>Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Minimum requirements noted above in Sections 4 and 5.</td>
</tr>
<tr>
<td>B</td>
<td>1. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.</td>
</tr>
<tr>
<td>C</td>
<td>1. When Hot Saws or Masticators are operating, a tank truck, trailer, or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing.</td>
</tr>
<tr>
<td></td>
<td>2. Immediately after Mechanical Operations cease, Fire patrol is required for two hours.</td>
</tr>
<tr>
<td>D</td>
<td>1. Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours.</td>
</tr>
<tr>
<td></td>
<td>2. No Dead Tree felling after 1:00 PM, except recently dead.</td>
</tr>
<tr>
<td></td>
<td>3. No burning, blasting, welding, or cutting of metal after 1:00 PM, except by special permit.</td>
</tr>
</tbody>
</table>
Level | Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
--- | ---
Ev | 1. The following activities may operate all day:
   a) Loading and hauling logs decked at approved landings.
   b) Loading and hauling chips stockpiled at approved landings.
   c) Servicing equipment at approved sites.
   d) Dust abatement, road maintenance (chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development).
   e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings.
2. Hot Saws or Masticators may operate until 1:00 PM; provided that:
   a) A tractor with a blade or other equipment capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator.
   b) Any additional restrictions specified by the Forest.
3. All other conventional Mechanical Operations are permitted until 1:00 PM.
4. Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:
   - Rubber Tire Skidding
   - Chipping on Landings
   - Helicopter Yarding
   - Fire Salvage

   When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Contracting Officer for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of the Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Contractor’s equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).

E | The following activities may operate all day:
   1. Loading and hauling logs decked at approved landings.
   2. Loading and hauling chips stockpiled at approved landings.
   3. Servicing Equipment at approved sites.
   4. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development).
   5. Chainsaw operation associated with loading at approved landings.

All other activities are prohibited.
This Project utilizes “The Project Activity Level” (PAL), an industrial operation’s fire precaution system. The following Climatology Chart indicates the Historic Activity Levels for the Project Fire Danger Rating Area or Fire Weather Station utilized on this Project. This is only a historical average of the Activity Levels for the identified Fire Danger Rating Area or Weather Station.

<table>
<thead>
<tr>
<th>Month</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Ev</th>
<th>E</th>
<th>Days Analyzed</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>19.3</td>
<td>6.2</td>
<td>4.7</td>
<td>0.4</td>
<td>0.0</td>
<td>0.3</td>
<td>209</td>
<td></td>
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<td>June</td>
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<td>July</td>
<td>0.6</td>
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<td>14.5</td>
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<td>October</td>
<td>3.3</td>
<td>8.2</td>
<td>16.5</td>
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<td>0.0</td>
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<tr>
<td>November</td>
<td>11.6</td>
<td>7.9</td>
<td>10.9</td>
<td>0.3</td>
<td>0.0</td>
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<tr>
<td>Total Per Season</td>
<td>43.7</td>
<td>41.9</td>
<td>100.8</td>
<td>22.7</td>
<td>0.3</td>
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PAL Climatology 2013-2019

- A
- B
- C
- D
- Ev
- E

May June July August September October November
Region 5 Project Activity Level (PAL) Ev Variance Application/Agreement

Project Name: __________________________________________
Contract Number: _______________________________________
Contractor Name: _______________________________
Request #__, for period: __________________________________
Units/Subdivisions Affected: _______________________________

<table>
<thead>
<tr>
<th>Location of operation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slope</td>
</tr>
<tr>
<td>Aspect</td>
</tr>
<tr>
<td>Elevation</td>
</tr>
<tr>
<td>Fuels on site</td>
</tr>
<tr>
<td>Fuels in surrounding area</td>
</tr>
<tr>
<td>7 Day PAL Outlook</td>
</tr>
<tr>
<td>Short range predictions (Red Flags)</td>
</tr>
<tr>
<td><strong>Fuel Moistures</strong></td>
</tr>
<tr>
<td>Response time of suppression resources</td>
</tr>
<tr>
<td>Potential for ignition</td>
</tr>
<tr>
<td>RAWS location</td>
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</table>

<table>
<thead>
<tr>
<th>Current Fire Situation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw down information</td>
</tr>
<tr>
<td>National Readiness Level</td>
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<table>
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<tr>
<th>Contractual considerations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Operating Season</td>
</tr>
<tr>
<td>Frequency of recent contract fires in area</td>
</tr>
<tr>
<td>Type of operation</td>
</tr>
<tr>
<td>Contractors past/current performance &amp; equipment readiness</td>
</tr>
<tr>
<td>Other site specific mitigation or precaution (i.e. Contractors proposals)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Social &amp; Community Considerations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity of high value resources</td>
</tr>
<tr>
<td>Sensitivity of location</td>
</tr>
</tbody>
</table>
Proposed Actions:

Description of Mitigation Measures:

Remarks:

<table>
<thead>
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<th>Fire Management Officer Concurrence</th>
<th>Date</th>
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</thead>
<tbody>
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<table>
<thead>
<tr>
<th>Line Officer Approval</th>
<th>Date</th>
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</table>

I have considered the above request and determined the specified mitigation measures or actions must be implemented to continue operations in Project Activity Level Ev. Unless extended, the approval remains in effect for ten (10) calendar days unless cancelled sooner or extended by the Forest Service for an additional ten (10) days. At the sole discretion of the Forest Service, this variance can be modified and/or cancelled at no cost to the government.

<table>
<thead>
<tr>
<th>Contracting Officer</th>
<th>Date</th>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Contractor Representative</th>
<th>Date</th>
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</table>