Sir Galahad Commercial Thinning and Density Management
Decision Document

Sir Galahad Commercial Thinning and Density Management
Environmental Assessment

DOI-BLM-OR-R050-2010-0008-EA

Bureau of Land Management
South River Field Office, Roseburg District Office

Background:

The Sir Galahad Commercial Thinning and Density Management Environmental Assessment (EA) proposed 522 acres of commercial thinning in the Matrix land use allocations with density management in associated Riparian Reserves, and in Late-Successional Reserves. The analysis was conducted in conformance with management direction in the 1995 Roseburg District *Record of Decision and Resource Management Plan* (ROD/RMP) as amended prior to December 30, 2008.

Additional Information:

In ruling on Conservation Northwest et al. v. Mark E. Rey et al. on December 12, 2009, Judge Coughenour in the U.S. District Court for Western Washington set aside the 2007 Record of Decision eliminating the Survey and Manage mitigation measures, but deferred issuing a remedy until further proceedings. The judge did not set aside the Pechman exemptions, or enjoin the BLM from proceeding with projects.

The plaintiffs and Federal Agencies entered into settlement negotiations in April 2010, and the Court filed approval of the resulting Settlement Agreement on July 6, 2011. The 2011 Settlement Agreement makes four modifications to the 2001 ROD: (A) acknowledges existing exemption categories (2006 Pechman Exemptions); (B) updates the 2001 Survey and Manage species list; (C) establishes a transition period for application of the species list; and (D) establishes new exemption categories (2011 Exemptions).

The forest stands selected for treatment are between 36 and 65 years-of-age. The treatments are commercial thinning and density management. None of the road construction is in stands greater than 80 years old. Consequently, this project complies with Pechman exemption "a."

On March 31, 2011 a decision by the United States District Court for the District of Columbia in Douglas Timber Operators et al. v. Salazar, vacated and remanded the administrative withdrawal of the Roseburg District 2008 ROD/RMP.

The Sir Galahad Commercial Thinning and Density Management project was reexamined, in light of the court's decision, in order to determine if the project design was also consistent with management direction from the reinstated 2008 ROD/RMP. One inconsistency was identified regarding the management of Riparian Reserves vs. Riparian Management Areas.

Management direction from the 2008 ROD/RMP (p. 35) specifies application of thinning and other silvicultural treatments in Riparian Management Areas to speed development of large trees to provide an eventual source of large wood for stream channels. Riparian Management Areas are to be one-half a site-potential tree height in width, slope distance, measured from the ordinary high water line on intermittent non-fish-bearing streams, and one site-potential tree height in width on all other streams.

On intermittent non-fish-bearing streams, no thinning or silvicultural treatments are to be applied within 35 feet, slope distance, of stream edges as measured from the ordinary high water line. For all other streams, no thinning or silvicultural treatments are to be applied within 60 feet, slope distance, of stream edges as measured from the ordinary high water line, and a minimum of 50 percent canopy closure will be maintained in the balance of the Riparian Management Area.

The Sir Galahad Commercial Thinning and Density Management EA employed Riparian Reserve widths of one and two site-potential tree heights as specified by the 1995 Roseburg District ROD/RMP (EA, p. 6). The analysis incorporated new information from the 2008 Final Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management (2008 FEIS) and established "no-treatment areas" adjacent to streams that are consistent with the 35 and 60-foot no treatment areas prescribed in the 2008 ROD/RMP (EA, p. 6). The marking prescription to be applied in Riparian Reserves would maintain a minimum of 50 percent canopy cover outside of "no-treatment areas (EA, p. 6).

Although Riparian Reserves are wider under the 1995 ROD/RMP than Riparian Management Area in the 2008 ROD/RMP, there are no inconsistencies of project design compared to the 2008 ROD/RMP and there would be no effects exceeding those described in the 2008 FEIS.

Surveys for the Federally-threatened Kincaid's lupine and Bureau Sensitive botanical species were conducted. Surveys did not identify any species requiring special protection.

In May of 2011, a study on the effects of thinning and biomass utilization on carbon release and storage was published by Oregon State University.[1] The conclusions of the Sir Galahad Commercial Thinning and Density Management EA were reviewed against the findings of the study. Among the findings of the study were:

- Forest carbon pools always immediately decreased as a result of thinning, with reductions increasing as a function of heavier thinning.
- After thinning, carbon pools remain lower throughout a 50-year period.
- Carbon pool estimates for thinned stands remained lower even after accounting for carbon transferred to wood products.

None of these findings are inconsistent with the findings of the carbon release and sequestration analysis contained in the Sir Galahad Commercial Thinning and Density Management EA.

[1] Clark, J., J. Sessions, O. Krankina, T. Maness. 2011. Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis. College of Forestry, Oregon State University. Corvallis, OR.

In the Sir Galahad Commercial Thinning and Density Management EA (p. 72), Table 3-7 identifies that carbon stores in standing live trees would be reduced by thinning from a current level of 45, 258 tonnes to 29,631 tonnes under Alternative Two, and to 28,210 tonnes under Alternative Three.

The findings of the Sir Galahad Commercial Thinning and Density Management EA (Table 3-7) are also consistent with the published findings that carbon pools remain lower after 50 years. Under No Action, the carbon pool in standing live trees grows from the aforementioned 45, 258 tonnes to 167,179 tonnes. By comparison, carbon in standing live trees after 50 years is 127,972 tonnes under Alternative Two, and 123,861 tonnes under Alternative Three.

On the third point, the EA (pp. 70 and 71) notes that Smith et al. (2006)[2] calculated that 13.5 percent of gross saw log carbon and 14.8 percent of gross pulpwood carbon would be immediately released into the atmosphere at harvest. This is not inconsistent with the finding that not all carbon from the harvested timber is transferred into wood and paper products.

Decision:

It is my decision to authorize the Sir Galahad Commercial Thinning and Density Management project, treating approximately 328 acres in the Matrix, Riparian Reserve and Late-Successional Reserve land use allocations. The project will implement Alternative Two described in the Sir Galahad Commercial Thinning and Density Management EA (pp. 4-11). This alternative will manage Matrix stands allocated to the General Forest Management Area for full site occupancy to maximize future timber volume by thinning on a generally even-spacing. The project area is located in Section 3, T. 24 S., R. 6 W.; Sections 25 and 35, T. 23 S., R. 6 W.; and Section 19, T. 23 S., R. 5, Willamette Meridian.

The Sir Galahad Commercial Thinning and Density Management EA originally proposed treatment of 522 acres. Reductions in the initial acreage to be treated were made for a number of reasons. Unit 23-6-35E was dropped in its entirety because it would have involved thinning within the 70-acre nest patch of a reproducing northern spotted owl pair (Marsh Trib) and would have resulted in incidental take of the pair.

Unit 24-6-3E was dropped in its entirety because of the cost and difficulty associated with accessing the unit. Units 24-6-3B, C, D, and F were reduced in area by a combined 63 acres through exclusion of areas with marbled murrelet platform trees, poor timber volume, and areas where the extent of the stream network would make thinning operationally impractical. Similar adjustments were made on all remaining units, but on a generally smaller scale.

[2] Smith, J.E., L.S. Heath, K.E. Skog, and R.A. Birdsey. 2006. Methods for calculating forest ecosystem and harvested carbon with standard estimates for forest types of the United States. Gen. Tech. Rep. NE-343. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 216 p

A total of ten (10) units will be treated. Approximately two (2) acres will be cut for road rights-of-way, to be located entirely within the boundaries of Units 2, 9 and 10. Total harvest volume is estimated at 6,824 thousand board feet. Approximately 2,278 thousand board feet derived from thinning in the General Forest Management Area and Connectivity/Diversity Block land use allocations is chargeable to the Roseburg District annual allowable sale quantity.

Sale unit numbers and their corresponding EA designations are as follows.

Sale Unit	Unit Acres	EA Unit Designation
Unit 1	29	23-5-19A
Unit 2	52	23-6-25A and C
Unit 3	29	23-6-25B
Unit 4	8	23-6-25D
Unit 5	20	23-6-35A
Unit 6	52	23-6-35B
Unit 7	4	23-6-35C
Unit 8	15	23-6-35D
Unit 9	40	24-6-3C and D
Unit 10	79	24-6-3B, D and F

Operations on Unit 4 will be accomplished exclusively by cable yarding. Operations on Units 3 and 7 will be accomplished exclusively with ground-based equipment. Operations on all remaining units will employ a combination of cable and ground-based yarding.

Cable yarding will employ skyline systems capable of maintaining a minimum of one-end log suspension to reduce soil disturbance, displacement, and compaction within yarding corridors. A minimum of 100-feet of lateral yarding capacity is required and landings will be spaced at 200-foot intervals, where practicable, to minimize the number of landings required, and to reduce the area subjected to soil disturbance and displacement. Cable yarding will be restricted to the dry season, typically mid-May through mid-October, when operating on unsurfaced roads.

Ground-based yarding will be conducted on designated skid trails, using pre-existing trails to the greatest extent practicable. Operations will be limited to the dry season when soils are at their driest and least susceptible to compaction. Operations are generally restricted to slopes of 35 percent or less, but may be authorized on steeper inclusions and steeper pitches between gentler benches where appropriate. Following ground-based operations, primary skid trails will be designated for sub-soiling and slash mulching.

Access will be primarily provided by existing roads, supplemented by the following:

- Construction of Spurs 1 (1,175 feet) and 2 (410 feet). Spur 1 will be surfaced with aggregate, while Spur 2 will be native surface.
- Renovation of Roads 23-6-35.0, Segment A1; 24-6-3.0. Segment A (portion); and 24-6-3.5, Segment A.
- Construction of Spur 3 (1,200 feet) as an extension of Road No. 26-4-3.5. This spur will be native surface.

Spurs 2 and 3, and the three renovated road segments identified above will be decommissioned in the same operating season in which they are utilized for harvest operations. Spur 3 will be waterbarred, sub-soiled, covered with logging slash, and blocked. Spur 2 and the three renovated road segments will be waterbarred, covered with slash, and blocked. Spur 1 will be waterbarred and blocked at the completion of harvest operations.

Public Involvement & Response to Comment:

On November 2, 2010, the South River Field Office electronically transmitted a notice of availability beginning a 30-day period for public review and comment on the Sir Galahad Commercial Thinning and Density Management EA and "Draft" Finding of No Significant Impact through "close of business (4:30 PM, PST) on December 2, 2010."

Comments on the EA were received from two organizations. These comments tended to be philosophical in nature and did not provide any new information or identify any relevant issues the BLM should have considered in the project analysis.

Rationale for the Decision:

The Sir Galahad Commercial Thinning and Density Management EA analyzed three alternatives in detail, consisting of: Alternative One – No Action (EA, p. 4); Alternative Two – Even-spaced Thinning in the General Forest Management Area (EA, p. 11); and Alternative Three – Variable-Spaced Thinning of Stands in the General Forest Management Area Located in Spotted Owl Critical Habitat (EA, p. 12). Project design features common to both Alternatives Two and Three are described at pages 4 through 11.

Alternative One will not achieve the objectives enumerated in the EA (p. 1) of:

- Managing lands in the Matrix allocations to promote tree survival and growth to achieve a balance between wood volume production, quality of wood, and timber value at harvest; and provide a sustainable supply of timber and other forest products.
- Thinning in forest stands in Late-Successional Reserves less than 80 years of age to promote development of late-successional forest.
- Thinning in Riparian Reserves to control stocking levels, establish and manage non-conifer vegetation; and restoring and maintaining the species composition and structural diversity of plant communities in riparian zones and wetlands; and maintain and restore habitat to support well distributed populations of native plant, invertebrate, and vertebrate riparian dependent species.

Alternatives Two and Three will both achieve these objectives. Alternative Two is selected, however, because it better meets management objectives for a high level of sustained timber production on lands in the General Forest Management Area (ROD/RMP, p. 150), and the lands are not designated as critical habitat for the northern spotted owl under the 2008 designation.

Wildlife

As originally proposed, the Sir Galahad project was found by the U.S. Fish and Wildlife Service (TAILS # 13420-2011-F-0012) to affect the **northern spotted owl** in the following ways. Commercial thinning/density management would occur in three nest patches. The Marsh Trib home range (4682O) is occupied by a regularly reproducing pair. The Upper Yellow Creek home range (1924B) has been sporadically occupied since 2005 and no young have been documented from 2000 to the present. In the Yellow Trib (4659O) home range no occupancy has been documented since 2005.

Commercial thinning/density management in core areas currently below suitable habitat thresholds was identified as an effect on the three previously identified home ranges as well as the Blackberry Canyon home range (1916D).

Because of the longstanding reproductive success of the Marsh Trib northern spotted owl pair (4682O), a decision was made not to thin Unit 23-6-35E. Unit 24-6-35E was dropped because of low stand volume, eliminating density management in the Upper Yellow Creek (1924B) nest patch.

Road construction, as originally proposed, would affect four home ranges. Road construction would not remove any suitable nesting, roosting and foraging habitat from the Rice Flat home range (1987B). It would have resulted in the removal of less than one acre of suitable nesting, roosting and foraging habitat in each of the Yellow Butte (1992O), Yellow Trib (4659O) and Marsh Trib (4682O) home ranges.

In the final project design, proposed road construction has been eliminated within the Blackberry Canyon home range (1916D), Marsh Trib nest patch (4682O), and Yellow Trib nest patch (4659O). Road construction will still occur in the Rice Flat home range (1987C) but will remove less than one acre of dispersal only habitat.

With these changes, incidental take in Marsh Trib (4682O) and Upper Yellow Creek (1924B) would be eliminated. Residual effects of the project on the northern spotted owl would still include removal of less than one acre of dispersal-only habitat from within the Rice Flat home range (1987C) in association with road construction, and thinning within the nest patch of the unoccupied Yellow Trib. (4659O) home range. Habitat removal associated with the road construction occurs outside of critical habitat designated in 2008.

No effects to the northern spotted owl from noise disruption are expected because all harvest operations will meet the minimum disruption threshold distances, as established by the U.S. Fish and Wildlife Service (chainsaw: 65 yards, heavy equipment: 35 yards), from any known northern spotted owl site, estimated site, or unsurveyed suitable nesting habitat. Otherwise; operations would be seasonally restricted from March 1 to July 15, unless surveys indicate owls are not present, have not attempted to nest, or have failed in nesting attempts, in which case early waiver of the seasonal restrictions may be granted. This would ensure that noise disruption would not cause spotted owls to abandon nests or fledge prematurely.

Because the project will thin in a nest patch, it is considered likely to adversely affect the northern spotted owl. The action is not, however, likely to jeopardize the continued existence of the northern spotted owl, affect the ability of critical habitat to fulfill its role at the stands scale (TAILS # 13420-2011-F-0012).

The project area is in **marbled murrelet** management Zone 2, outside of the restriction corridor. No effects from noise disruption is expected because all harvest activities within 100 yards of any occupied marbled murrelet site or unsurveyed suitable nesting habitat would be subject to daily operating restrictions from April 1 to August 5, both days inclusive. Daily Operating Restrictions prohibit commencement of operations until two hours after sunrise and require operations to cease two hours before sunset. This will assure that marbled murrelets that may be in proximity to project units would not flush and abandon young.

The project will not remove any suitable marbled murrelet nesting habitat, as suitable platform trees have been excluded from the commercial thinning and density management units. The project is not likely to adversely affect the marbled murrelet and would not result in the adverse modification of designated critical habitat for the marbled murrelet (TAILS # 13420-2011-F-0012).

Botany

As discussed in the EA (p. 58), the project area is within the range of **Kincaid's lupine** (*Lupinus sulphureus* ssp. *kincaidii*), a Federally-threatened herbaceous perennial plant. There will be no effects to Kincaid's lupine as no populations were found during surveys in the project area.

Aquatic Habitat, Fish, and Essential Fish Habitat

As described in the EA (p. 53), no effects to any fish species inhabiting stream reaches downstream of the project area are anticipated. The nearest thinning unit is approximately 0.2 miles from the nearest occupied fish habitat in Yellow Creek. Retention of 35 and 60 foot "no-treatment" areas adjacent to streams would retain stream bank stability, provide for future large wood contributions and maintain shade and stream temperature. Any potential sediment resulting from thinning operations will be intercepted by the vegetated "no-treatment" areas and precipitate out rather than reach stream channels.

Direct effects to fish from timber harvest and log hauling can result from the addition of fine sediment to streams resulting in a temporary increase in turbidity. All stream crossings along the existing haul route are greater than one-half mile above the nearest fish-bearing reaches. At this distance, turbidity would be indistinguishable against background levels and any small increase in turbidity would have a negligible effect on fish survival or foraging ability.

Additional Project Design Features described in the EA (p. 56) to address sediment were intended for implementation on the Yellow Creek haul route (Road No. 24-7-13.0), not the Cabin Creek haul route (Road No. 23-6-24.0). Consequently, the application of these measures is not required.

It is acknowledged in the EA (p. 56) that thinning will remove trees within a one-half site-potential tree height (90 feet) of streams, which could result in a short-term reduction in available pool-forming wood. There are no fish-bearing streams that would be affected by the thinning or removal of small trees outside of the "no-treatment" areas.

Given the distance downstream to the nearest fish-bearing reaches, there would be no mechanism to affect habitat in those fish-bearing reaches. Current down wood will be reserved to provide for the short term, while density management will accelerate the growth of large diameter trees to provide long-term sources of large wood for in-stream habitat.

For the aforementioned reasons, Sir Galahad Commercial Thinning and Density Management project will not affect Oregon Coast coho salmon, critical habitat for the Oregon Coast coho salmon, or Essential Fish Habitat for Chinook salmon and Oregon Coast coho salmon.

Water Quality and Quantity

As described in the EA (p. 57), vegetation that provides primary shading for stream channels that have the potential for summer flow (i.e. perennial streams) would be protected by 60-foot "no-treatment" areas. Maintaining a minimum average canopy closure outside of the "no treatment" of 50 percent canopy cover would maintain secondary shade and stream temperatures would not be affected.

No measurable change in stream flows is expected because it involves only partial removal of vegetation on an area constituting only one-tenth of one percent of the total watershed area. The project area is located below the Rain-on-Snow Hydroregion in the rain-dominated zone, so no peak flow effects associated with timber harvest and warm rain-on-snow events are expected.

The risk of new road construction influencing flows is also very low. Roads presently occupy 1.6 percent of the watershed area. Construction of 0.53 miles of new road will not measurably change road density, and risk of peak flow enhancement has not been demonstrated where road areas occupy less than 12 percent of the catchment area.

Aquatic Conservation Strategy

Riparian Reserves were established. The 1995 ROD/RMP (p. 24) specifies Riparian Reserve widths equal to the height of two site potential trees on each side of fish-bearing streams and one site-potential tree on each side of perennial or intermittent non-fish bearing streams, wetlands greater than an acre, and constructed ponds and reservoirs. The height of a site-potential tree for the Calapooya Creek and Upper Umpqua River Watersheds has been determined to be the equivalent of 180 feet (USDI BLM 1999, 2002a). Approximately 60 acres of this treatment are within Riparian Reserves. Treatments within these Riparian Management Areas are designed to accelerate the development of late-seral characteristics.

Key Watersheds were established "as refugia . . . for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species (ROD/RMP, p. 20)." There are no key watersheds within the Calapooya Creek and Upper Umpqua River Watersheds.

In developing the project, the Calapooya Creek and Upper Umpqua River **Watershed Analyses** were used to evaluate existing conditions, establish desired future conditions, and assist in the formulation of appropriate alternatives.

One of the primary purposes of this project is to accelerate tree growth in Riparian Management Areas, and speed attainment of late seral stand conditions. The thinning prescriptions are considered to be a **watershed restoration** project and are therefore consistent with the Watershed Restoration component of the ACS.

Cultural/Historical Resources

As discussed in the EA (p. 14), all units proposed for commercial thinning have been surveyed. No resources of significant cultural or historical value were identified which could potentially be affected.

Noxious Weeds

All logging equipment, excluding log trucks and crew transport, will be pressure washed or steam cleaned prior to mobilization in and out of the project area to minimize the risk of introducing soil from outside the project area that may be contaminated with noxious weed seed or other propagative materials. Any equipment removed during the life of the contract must be cleaned before being returned to the project area.

Monitoring:

Monitoring of the effects of the project will be done in accordance with provisions contained in the ROD/RMP, Appendix I (p. 84-86 and 190-199), focusing on the effects of thinning on: Riparian Reserves; Late-Successional Reserves; Air Quality; Water and Soils; Wildlife Habitat; Fish Habitat; and Special Status Species Habitat.

Protest Procedures:

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR Subpart 5003 Administrative Remedies, protests of this decision may be filed with the authorized officer, Steven Lydick, within 15 days of the publication of the notice of decision/timber sale advertisement on November 22, 2011, in *The News-Review*, Roseburg, Oregon.

43 CFR § 5003.3 subsection (b) states: "Protests shall be filed with the authorized officer and shall contain a written statement of reasons for protesting the decision." This precludes the acceptance of electronic mail (email) or facsimile (fax) protests. Only written and signed hard copies of protests that are delivered to the Roseburg District Office will be accepted. The protest must clearly and concisely state which portion or element of the decision is being protested and the reasons why the decision is believed to be in error.

43 CFR § 5003.3 subsection (c) states: "Protests received more than 15 days after the publication of the notice of decision or the notice of sale are not timely filed and shall not be considered." Upon timely filing of a protest, the authorized officer shall reconsider the project decision to be implemented in light of the statement of reasons for the protest and other pertinent information available.

The authorized officer shall, at the conclusion of the review, serve the protest decision in writing to the party or parties. Upon denial of protest, the authorized officer may proceed with the implementation of the decision as permitted by regulations at 43 CFR § 5003.3 subsection (f).

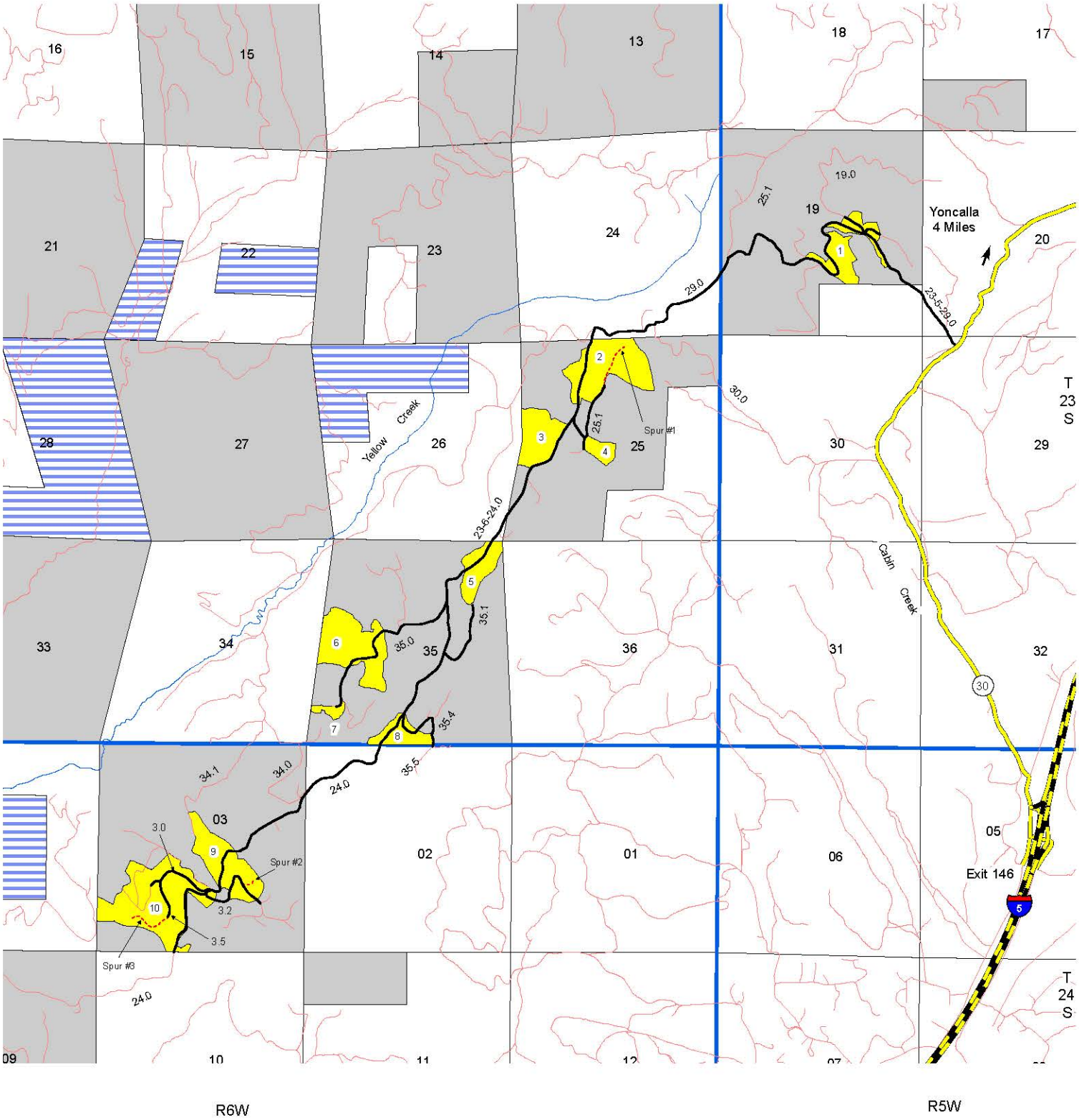
If no protest is received by close of business (4:30 P.M., PST) within 15 days after publication of the decision notice, this decision will become final. If a timely protest is received, the project decision will be reconsidered in light of the statement of reasons for the protest and other pertinent information available, and the South River Field Office will issue a protest decision.

Steven Lydick
Field Manager
South River Field Office
(541) 464-3211

11/21/2011
Date

SIR GALAHAD

Commercial Thinning and Density Management



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T23,24S R5,6W

Willamette Meridian, Douglas Co., OR.

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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources and may be updated without notification.

Paved County Road
Existing Road
Access/Haul Route
Road to be Constructed

Thinning Area
BLM (PD) Land
BLM (O&C) Land
Non-BLM Land

9-27-2011

SIR GALAHAD

Commercial Thinning and Density Management

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T24S R6W

Willamette Meridian, Douglas Co., OR.

0 1,000 Feet

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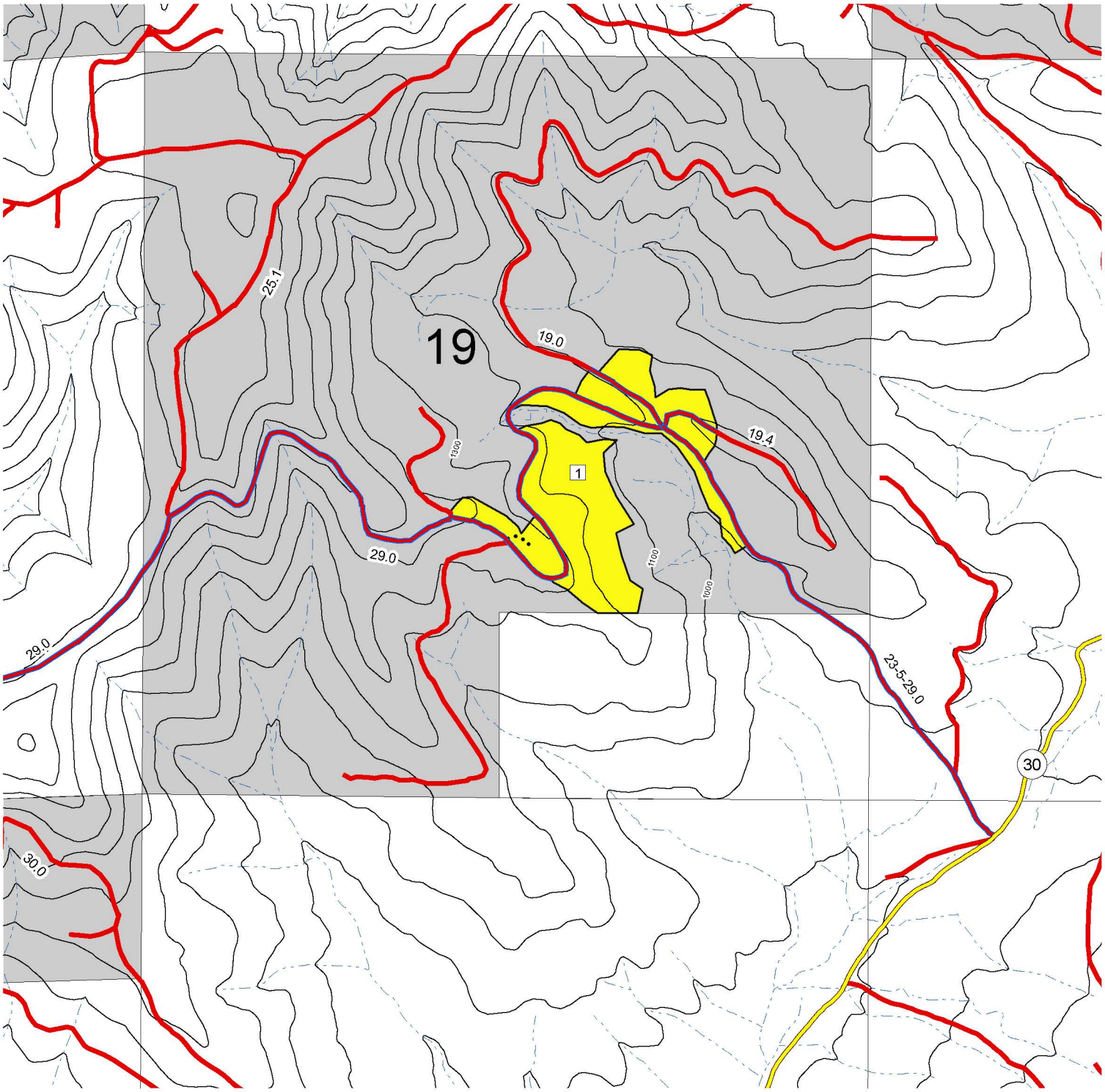
Existing Road
Access/Haul Route
Optional Forwarder Trail
Road to Construct, Decommission
Road to Renovate, Decommission
100 Ft. Contour
Stream

Thinning Area
35' No Treatment Riparian Area
BLM (O&C) Land
Non-BLM Land

9-27-2011

SIR GALAHAD

Commercial Thinning and Density Management



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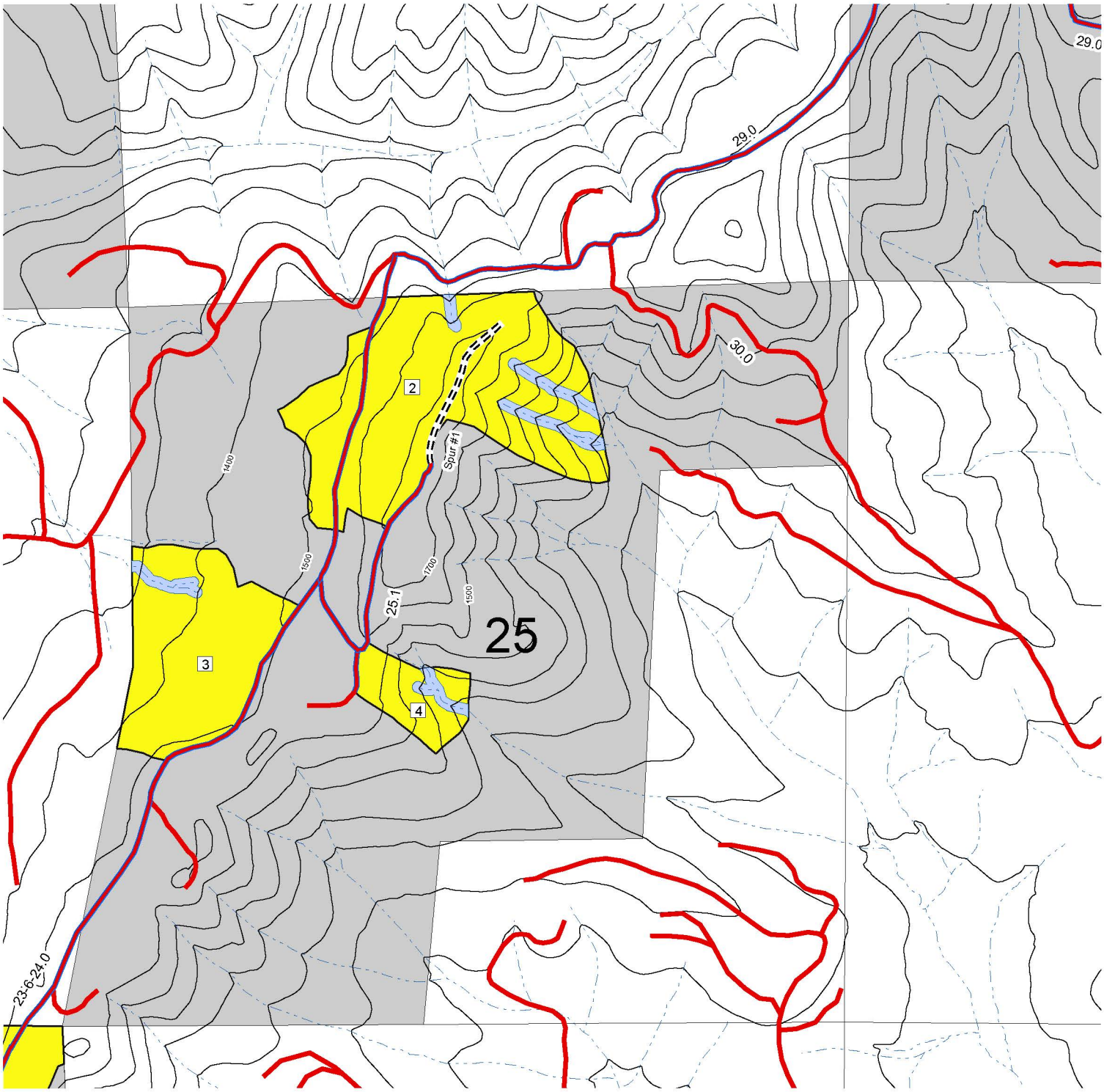
Existing Road
Access/Haul Route
Optional Operator Spur
100 Ft. Contour
Stream

Thinning Area
BLM (O&C) Land
Non-BLM Land

1-24-2011

SIR GALAHAD

Commercial Thinning and Density Management



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Willamette Meridian, Douglas Co., OR.

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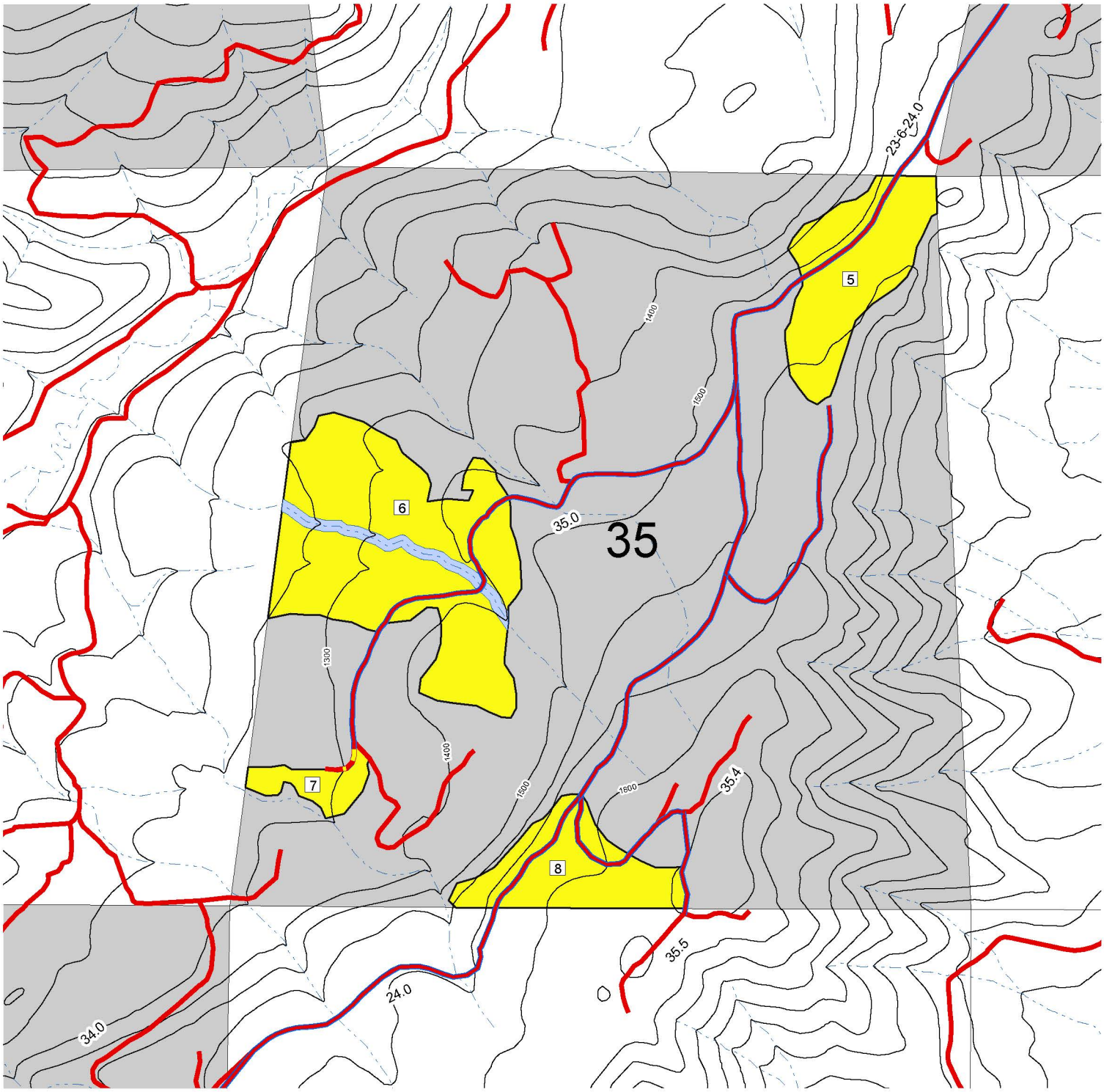
Existing Road
Access/Haul Route
Road to Construct, Rock
100 Ft. Contour
Stream

Thinning Area
35' No Treatment Riparian Area
BLM (O&C) Land
Non-BLM Land

9-27-2011

SIR GALAHAD

Commercial Thinning and Density Management



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Willamette Meridian, Douglas Co., OR.

0 1,000 Feet

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Existing Road
Access/Haul Route
Road to Renovate, Decommission
100 Ft. Contour
Stream

Thinning Area
35' No Treatment Riparian Area
BLM (O&C) Land
Non-BLM Land

9-27-2011