Pre-Operations Report

Operation Name: Power Bales
County: Tillamook
Management Basin: Trask

Table 1. Operation Areas, Types and Acres

Area	Type of Operation	Gross Acres	Net Acres[1]
1	Partial Cut - Moderate	120	92
2	Modified Clearcut	85	77
3	Partial Cut - Moderate	202	182
Total		407	351

1. The net acres are based on orthophotos and GIS and exclude roads, stream buffers, reserve areas and non-required thinning areas.

I. PHYSICAL DESCRIPTION OF OPERATION AREA:

Slopes have varied aspects and range from 10-60%. Elevations range from 680 feet to 1,680 feet. The major soil type is Killam with minor amounts of Rye.

The sale is located on both sides of the ridgeline between Bales Creek and the South Fork of the Trask River extending into the headwaters of tributaries on the west flank of the South Fork of the Trask River. There are only a few bands of steep and very steep side slopes mostly in Areas 1 and 2. The sale is underlain by sedimentary origin rocks of the Yamhill Formation. There is a "landslide deposit" mapped in the central part of Area 3 (Wells et. al.). Refer to the Overview of Harvest Operations in the Summary document for information.

II. CURRENT STAND CONDITION:

Table 2. Stand Inventory Information[4]

Area	Prescription	Stand ID [1]	Species	Age	DBH	BA	TPA	SDI	Net Acres [2]
1	PC	114	DF/RA	41	14.2	180	164	48	92
		Target [3]	DF/RA		16.2	110	77	28	92
2	MC	115	RA/DF	41	13.0	184	200	51	77
3	PC	116	DF/RA	41	15.5	180	137	46	182
		Target [3]	DF/RA		17.5	110	66	26	182

1. The source of stand inventory information is from field reconnaissance plots in 2006 and SLI in 2004.
2. The net acres are based on orthophotos and GIS and exclude roads, and stream buffers, reserve area and non-required thinning areas. Modified clear cut acres are not contiguous and do not exceed 120 acres.

3. The Target identifies expected stand characteristics (DBH, BA, TPA and SDI) after harvesting has been completed.
4. These numbers are based on plot data taken to this point and final numbers may differ significantly. The directive for minor and major modifications will be followed for further review.

Area 1 and the east portion of Area 2 burned in the 1933 (Tillamook) fire. The entire sale area burned in the 1939 (Saddle Mountain) and 1951 (North Fork/Elkhorn) fires. Area 1 was seeded in 1960 and replanted in 1965. Area 2 and 3 were planted in 1965. Portions of the east side of Area 1 were pre-commercially thinned in 1992 (Bushong Road PCT). Portions of Area 3 were pre-commercially thinned in 1986 (Bales Creek Lottery #2 PCT) and 1990 (Many Bucks PCT). Portions of the eastern side of Area 3 were pruned in 1991 (Bales Creek Pruning). Small portions of Area 1 were commercially helicopter thinned with Bushong Thin. The remainder of the sale acres has had no prior stand management.

Stand Level Inventory (SLI) has not been completed on the sale areas but they are classified as 100% Closed Single Canopy (CSC) according to the district stand summary information (1999). Area 2 will be further evaluated (as defined by the July 2004 guidance, "*Planned Sale Inventory Requirements – Alternative to Full Stand Level Inventory*"). See Table 2 for specific stand data.

Area 1 and Area 3 are Douglas-fir plantations that have alder dominated draws and small pockets of alder (less than 1 acre) scattered throughout.

Area 2 is mix of alder and Douglas-fir. These species are arranged at various densities throughout the sale area. There is alder mixed in with the Douglas-fir pockets and Douglas-fir mixed in the alder pockets. There are also two large areas of vine maple within this area.

The Douglas-fir in all of these areas show symptoms of Swiss Needle Cast but have good live crown ratios (greater than 40%). The Douglas-fir is becoming overstocked resulting in the loss of live crown ratios and slowed diameter growth. Due to stand age and site quality, the alder in these stands have poor height and diameter growth. The alder was aerially sprayed in the 1970's to release the planted conifer, resulting in alder trees with short boles and many tops. No other significant insect or disease problems have been discovered at this time. The brush component in all the sale areas is comprised primarily of vine maple, huckleberry and sword fern. The vine maple and huckleberry occur primarily in gaps.

There are some large snags in various states of decay and some hard snags created from natural causes. Down wood consists of scattered large old logs (36"+) in Class 3 and 4 stages of decay and some windthrow in decay classes 1 and 2. Stand Level Inventory in the vicinity of the sale areas shows 1.89 snags per acre 24"+ in diameter and 4.41 snags per acre 12"+ diameter. Down wood in

decay classes 1 and 2 is 23.49 cubic feet and the total per acre is 3483 cubic feet.

III. DESIRED STAND CONDITION AND VISION:

Table 3. Stand Structure Information

Area	Stand ID	Current	Post Harvest [1]	Desired Future	Net Acres
1	114	CSC	UDS	GEN	44
1	114	CSC	UDS	LYR	48
2	115	CSC	REG	GEN	14
2	115	CSC	REG	LYR	63
3	116	CSC	UDS	GEN	11
3	116	CSC	UDS	LYR	100
3	116	CSC	UDS	OFS	72

1. The stand is expected to develop into this condition in the five to ten years after this operation is completed except in REG stands which occur after harvest.

See Section IV: Proposed Management Prescription for more information on Green Tree, Down Wood, and Snag Strategies during operation. Also refer to Landscape Design in the Summary document for more information on strategies to move the district toward Desired Future Condition (DFC) goals.

Area 1: The DFC for this stand is Layered (LYR) and General (GEN). The vision for this stand is to have a mixed species stand, including Douglas-fir, western hemlock, and hardwoods. The vision for this stand is to have a mixed species stand, including Douglas-fir, western hemlock, and hardwoods. The area after harvesting will be a Douglas-fir stand that averages approximately 77 trees per acre and be about 16 inches in DBH. Another entry is expected in bout 10-15 years. At this time a prescription will be developed to stimulate understory growth. Other conifer species may need to be introduced into the stand at this time in order to increase species diversity.

Area 2 - The DFC for this stand is LYR structure. Due to the sprayed alder and Douglas-fir with small live crown ratios and poor growth; the present stand is not a good candidate for establishing a pathway that maintains productivity and reach the DFC in a reasonable amount of time.

After the regeneration harvest the stand will be composed of legacy structures retained from the present stand and a young cohort of Douglas-fir, western hemlock and Douglas-fir trees. The green trees, including some hardwoods, retained on the site, provide a scattered overstory and also contribute to the down wood and snag recruitment as mortality occurs. In approximately 60 years the combination of residual trees, multiple species and trees size will provide a Layered stand.

Area 1: The DFC for this stand is LYR, Older Forest Structure (OFS), and GEN. The vision for this stand is to have a mixed species stand, including Douglas-fir, western hemlock, and hardwoods. The vision for this stand is to have a mixed species stand, including Douglas-fir, western hemlock, and hardwoods. The area after harvesting will be a Douglas-fir stand that averages approximately 66 trees per acre and be about 17 inches in DBH. Another entry is expected in bout 10-15 years. At this time a prescription will be developed to stimulate understory growth. Other conifer species may need to be introduced into the stand at this time in order to increase species diversity.

IV. PROPOSED MANAGEMENT PRESCRIPTION AND PATHWAY:

The prescriptions described below are based on the current stand condition such as overall tree and stand growth, species mix, stand density, and stand health. **See table 2 for prescription targets**.

Area 1 and 3: Merchantable Douglas-fir will be thinned to a basal area range of 100-120 square feet. All other species will be reserved.

This partial cut prescription will reduce the amount of overstocking and remove the Douglas-fir that has poor crown ratios. The resulting stands will have a stand density index of 25-30% which will maintain the crown ratios, stand vigor, and develop healthier and larger trees in the residual stand. This thinning will continue to move the stand along the pathway to more complex structure. Openings and gaps will allow for understory reinitiation of shrubs and tree species creating increased horizontal and vertical diversity. Another thinning will likely be needed in 10 to 15 years to keep this stand on a trajectory to complex stand structure. At this time managers will review density stand health, and landscape goals to decide future management prescriptions

Area 2: Merchantable Douglas-fir and alder will be removed. A diameter limit will be used to reserve an average of 7-9 conifer trees per acre. These residual trees will provide a future down wood and/or snags. All other species will be reserved.

This harvest will remove the slow growing sprayed alder and the Douglas-fir that have poor crown ratios and slow growth. The residual trees will be distributed both in groups and scattered across the area. A component of alder and other conifer will be retained in the sale areas and stream buffers. The area will be reforested with a mixture of conifer species: western hemlock, SNC tolerant Douglas-fir, western red cedar and/or noble fir. A pre-commercial thinning is anticipated at 12 to 17 years when the crowns begin to close. A commercial thinning at age 40 will produce a stand that has an average diameter of about 16 inches and 125 trees per acre. This will keep the stand on the desired trajectory, and produce revenue. Other treatments, such as the creation of small gaps, may be considered at this time to increase diversity. At about 60 years the stand will

have an average diameter of 20 inches. At this time it will be evaluated for Layered characteristics and another thinning will likely be prescribed.

Green Tree, Down Wood and Snag Strategies

A variety of methods will be used to achieve green tree retention requirements in Area 2. The residual green trees will supplement the future stand by promoting growth of dominant/co-dominant leave trees. Small non-merchantable hardwood and conifer will also be retained where possible. These leave trees function as a future source of snags and down wood recruitment across the landscape. Green trees will be left on precipitous slopes, headwalls, and those areas not reached by conventional logging methods. Stream buffers adjacent to small perennials and the outer Riparian Management Area (RMA) of the Type F stream will also contribute additional green trees. Many of these areas will be posted so they are outside of the timber sale boundary.

Existing down wood will be left in the sale areas. Down wood recruitment is expected through mortality and windthrow of residual or leave trees, felled snags and tops left during harvest. Obvious defect in conifer logs will be bucked out in all harvest areas to enhance down wood levels. Small non-merchantable hardwood and conifer will be retained where possible in harvest units with the expectation they will become short term snags and down wood. Tops resulting from ground yarding will also be left in the unit.

Existing snags not determined to be a safety hazard will be retained and any felled snags will be left for down wood. Creation of snags is expected during harvest activities (rub trees, lift trees, or tail trees) and over time by natural processes. Snags will be created in Areas 1 and 3. A prescription will be developed after the cruise has been completed.

Due to the size of the trees in Area 2 it is unrealistic to expect that the snag and down wood targets in the FMP will be met with this operation. During sale layout an assessment will be done to help determine the best green tree retention prescription to help meet these goals in the future.

V. ESTIMATED TIMBER AND REVENUE INFORMATION:

Table 4. Timber and Revenue

Ownership		Sale Type	
BOF	CSL	Cash	Recovery
100%	0%		x
Planned Quarter:		1	

	Conifer	Hardwood	Total
Net Volume (MBF)	2001	445	2446
Stumpage Value ($/MBF)*	$197	$250	
Estimated Gross Value	$394,197	$111,250	$505,447
		Project Costs:	$144,950
		Estimated Net Value:	$360,497

Combined Douglas-fir stumpage values based on harvest type.

VI. HARVESTING AND ACCESS CONSIDERATIONS:

The sale areas are accessed via Bushong, Bales Creek and the South Fork Trask roads. These are currently all weather, crushed rock roads.
See maps for specific road locations and conditions. The Trask Road Use fee will apply to this sale. The Trask Road Use fee will be applied to this sale.

Approximately 0.6 miles of existing legacy road will be improved which includes grading, rocking, widening, culvert replacement, spot rocking, sidecast pullback, and adding new culverts. This work will bring all roads up to standards described in *the Forest Roads Manual*.

Approximately 1.2 miles of road will be constructed to provide access to cable yarding areas. An additional 0.37 miles of dirt road will be constructed to shorten ground yarding distances. It is anticipated that the new construction will be closed after harvest. Following reforestation the remaining roads within the sale areas will be reviewed for closure. Ground yarding roads will be closed and water-barred following harvest. See summary document for more information on road closure.
No other project work is currently planned with this sale.

The operation will be 25% ground yarded and 75% cable yarded.

Table 5. Transportation Planning Summary (Miles)[4]

Activity	Mainline	Collector	Rocked Spur[1]	Dirt Spur[1]
Construct			1.2	0.37
Improve			0.6	

Maintain[2]	3.5	3.3		
Close/Block[3]			1.2	0.37
Vacate[3]				

1. *Additional roads may be built by the operator at the time of harvest and will be approved by the State through the Operations Plan. These will be short dead end spurs and closed or blocked after harvest*
2. *All roads accessing the sale area will be maintained during the life of the timber sale contract. Maintenance miles in the table are those roads not being constructed or improved.*
3. *Roads not closed/blocked or vacated at the end of the sale will be reviewed for closure after reforestation is established.*
4. *The numbers in this table reflect planned Project Work associated with the sale.*

VII. AQUATIC RESOURCES AND WATER QUALITY:

A watershed analysis has been completed for the Trask basin. Recommendations within the analysis will be applied to the sale where possible.

The South Fork Trask River is a large Type F stream adjacent to the sale. There are assumed small Type F streams within and adjacent to the sale. There are additional unnamed small perennial and seasonal Type N streams within the sale areas. These streams will be reviewed and protected appropriately during sale layout based on flow, topography, and terrain. The inner and outer riparian zones of these Type N streams will be managed towards mature forest condition in Areas 1 and 3.

The Oregon Department of Fish and Wildlife (ODFW) will be requested to complete stream surveys prior to sale layout. Streams of unknown status or assumed fish status will be treated as Type F until surveys are completed to verify fish use.

Stream buffers within or adjacent to harvest unit boundaries will be managed according to *Forest Management Plan* Riparian Strategies. The riparian areas will be reviewed during sale layout for current stand conditions and/or operational constraints for implementing FMP strategies.

Approximately 35 net acres of Area 3 are within the East Fork of the South Fork Trask sub-basin. This sub-basin has been identified as a Salmon Anchor Habitat (SAH) Basin. The SAH Basin Strategies will be used in addition to the FMP Riparian Strategies at the time of sale layout and contract development. See the Salmon Anchor Summary Table for tracking of acres managed in each basin.

Refer to Aquatic Resource Protection Strategies in the Summary document for information on in the “in stream work period’ road work and stream improvement projects.

VIII. T&E SPECIES CONSIDERATIONS:

The sale areas have been reviewed with the ODF Northwest Oregon Area Biologist. Surveys for marbled murrelets and northern spotted owls are not required due to the absence of potentially suitable habitat.

T & E Plant species: The sale areas were checked against the Oregon Natural Heritage Program (ONHP) database of known threatened or endangered listed plant locations as well as local records in the Land Management Classification System (LMCS). No listed plants were identified within or adjacent to the sale areas.

IX. SLOPE STABILITY AND GEOTECHNICAL ISSUES:

There are a few bands of steep to very steep side slopes located mostly in Areas 1 and 2. The initial risk assessment by the geotechnical specialist for the sale is moderate. If these steep slopes remain in the sale, the geotechnical specialist will be consulted during sale layout field work to determine if a field visit is necessary. The landslide deposit mapped in Area 3 is not expected to present any additional risk to the sale due to the deep-seated nature of the deposit however, if during field layout any indication of active movement is observed, the geotechnical specialist will be consulted.

A portion of Area 3 is located within a SAH Basin and the most current SAH Strategies will be used at the time of contract development. See the Summary Document for more information.

X. RECREATION RESOURCES:

The sale areas are designated as Motorized in the *Tillamook State Forest Comprehensive Recreation Plan* (1993). This sale has been reviewed by the District Recreation Coordinator.

Salamander and two other unnamed trails are OHV trails that are within the sale area. Powerline is a 4WD trail that is also within the sale area. Short term closure of these trails will occur to facilitate logging and public safety. Portions of theses trails will be improved for logging access. A plan will be developed in conjunction with the District Recreation Coordinator to address these situations. Slash will be removed from the trails upon completion of the operation. Recreational use common to this area includes hunting, 4WD, and OHV use.

XI. CULTURAL RESOURCES:

The *Tillamook State Cultural Assessment* does list a cultural site within or adjacent to the proposed sale boundary. This resource is described as a historic shop site. The cultural resource classification for this site is Class III – No protection required. No signs of this site have been located. The district will

consult the Public Use Coordinator for appropriate protection measures if any indicators of this site are found or if any new sites are identified.

XII. SCENIC RESOURCES:

The sale areas have a visual classification of Level 2, moderate sensitivity and Level 3, low sensitivity. No scenic impact is expected. The portion of the west side of Area 1 within 300 to 400 feet of the South Fork Trask Road is also designated as county resolution land, landscape management area. The planned partial cut prescription should retain the scenic value of this area.

XIII. OTHER RESOURCE CONSIDERATIONS:

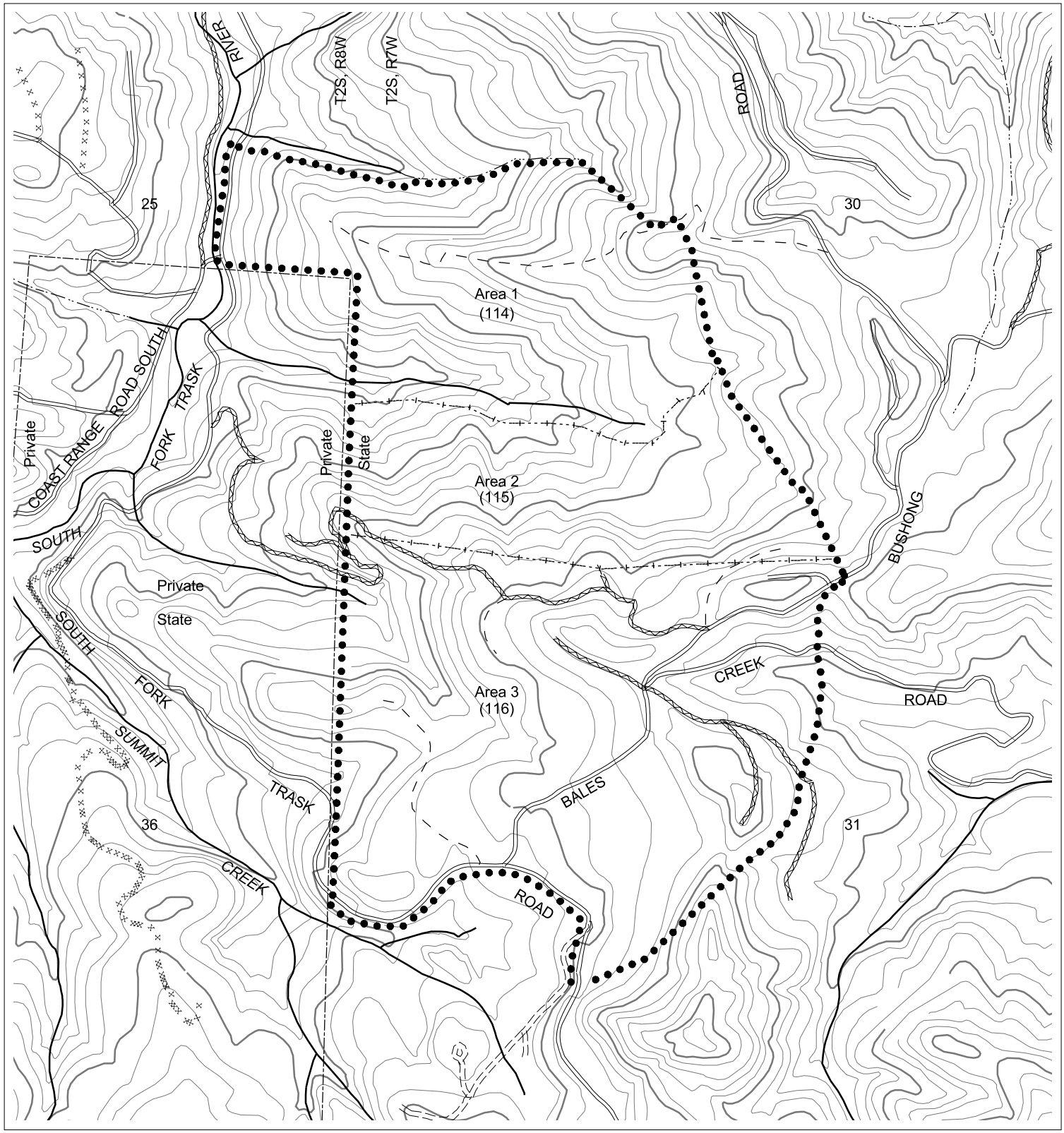
There is a permanent inventory plot just to the east of the Area 3 boundary and reference points may be encountered during boundary layout. Permanent plot markings will be protected according to guidelines.

Bonneville Power Administration (BPA transmission lines run through the sale, dividing Areas 2 and 3. Spur roads to access the sale will go under these lines. The BPA should be contacted during sale prep to review logging safety and access issues when working in proximity to transmission lines.

The property line between the state and private property is posted and blazed. A permit will need to be obtained if tailholds will be on private property.

XIV. LAND MANAGEMENT CLASSIFICATION SUMMARY:

The sale areas contain Focused and Special Stewardship, Aquatic and Riparian Habitat. Area 3 also contains Focused, Wildlife for the portion within the East Fork of the South Fork Trask Salmon Anchor Habitat basin. See Section VII, Aquatic Resources and Water Quality, for the management guidelines to be utilized. Area 1 has Focused Stewardship, Recreation. See X, Recreation Resources. Area 1 also has Focused Stewardship, Deeds. See XII, Scenic Resources. Area 2 and 3 are divided by a Special Stewardship, Transmission buffer. See XIII, Other Resource considerations. Boundary lines depicted on Attachment C are approximate; exact locations and site specific management activities will be determined during the sale preparation process.



Contour Interval 40'

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream *
- Perennial Type-N stream *
- Unsurfaced road
- Surfaced road
- State/Federal highway
- Legacy road
- Blocked road
- Road construction
- County road
- Transmission line

Power Bales
-- Topography --
2008 SALE PLAN
TILLAMOOK DISTRICT

Portions of Section 25, T2S, R8W,
and Sections 30 and 31, T2S, R7W, W. M.
Tillamook County, Oregon

1000 0 1000 Feet

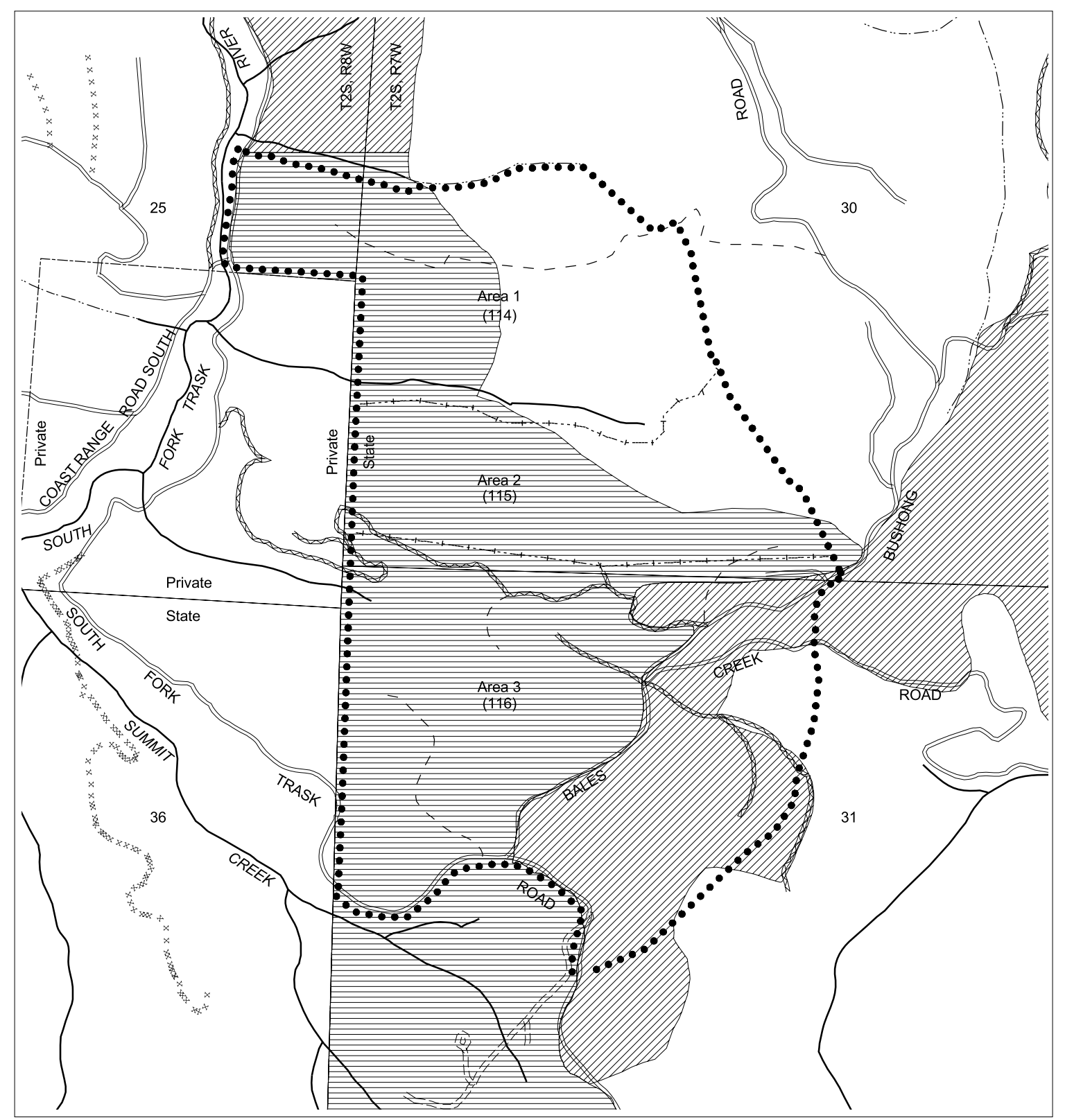
N

Tillamook District GIS
02/06/2007
This product is for informational use and
may not have been prepared for, or suitable
for legal, engineering, or surveying purposes.

Area	Type of Operation
1	Partial cut
2	Modified clearcut
3	Partial cut

* Streams of unknown fish presence are not shown but will be surveyed prior to the sale

Attachment A



Desired future condition
- Layered
- Older forest

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream *
- Perennial Type-N stream *
- Unsurfaced road
- Surfaced road
- State/Federal highway
- Legacy road
- Blocked road
- Road construction
- County road
- Transmission line

Power Bales
-- Current and Future Condition --
2008 SALE PLAN
TILLAMOOK DISTRICT

Portions of Section 25, T2S, R8W,
and Sections 30 and 31, T2S, R7W, W. M.
Tillamook County, Oregon

Area	Type of Operation
1	Partial cut
2	Modified clearcut
3	Partial cut

1000 0 1000 Feet

N

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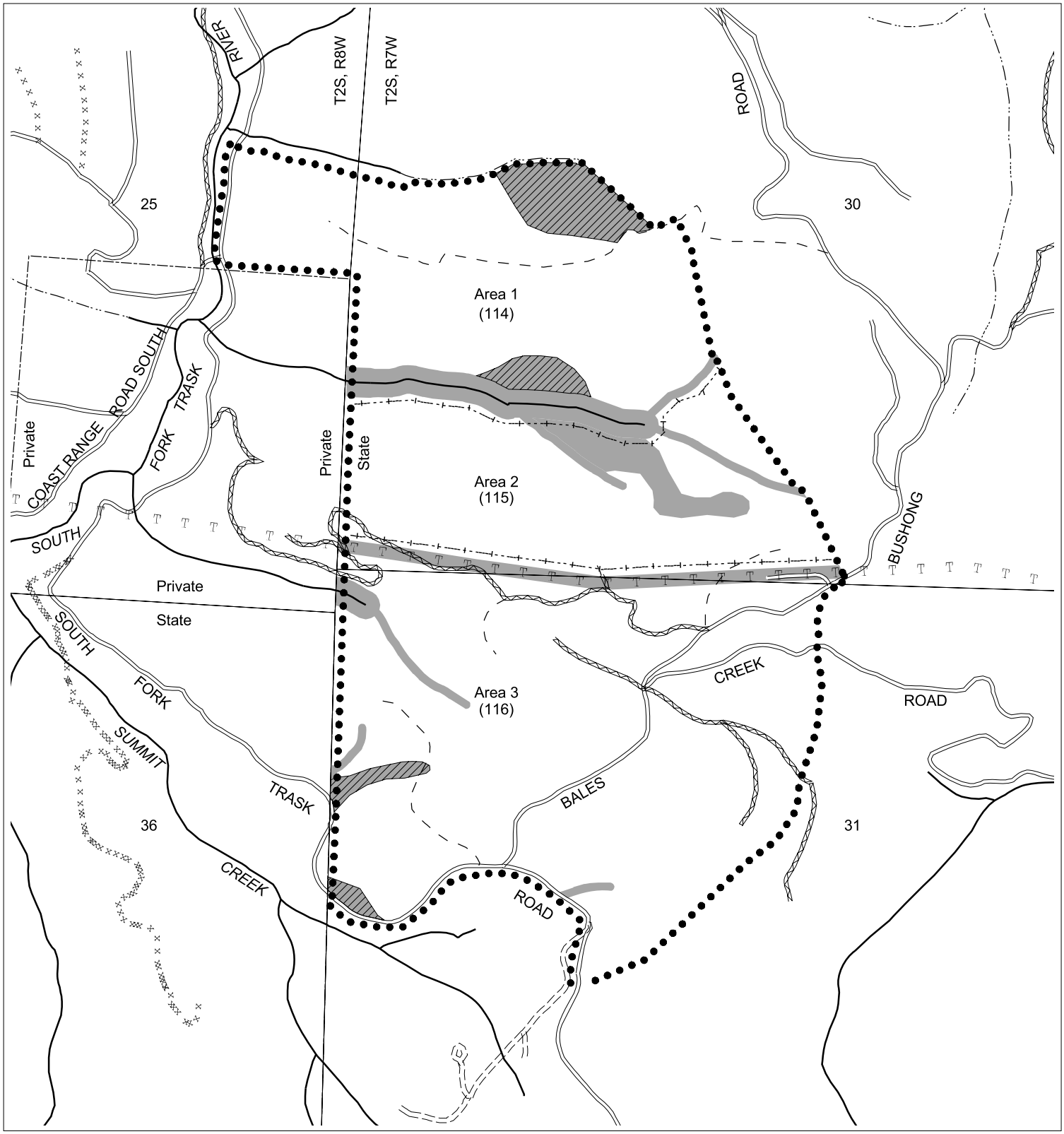
Attachment B



Buffer

Non-required thinning

Area boundary

Sale boundary

Ownership boundary

Perennial Type-F stream *

Perennial Type-N stream *

Unsurfaced road

Surfaced road

State/Federal highway

Legacy road

Blocked road

Road construction

County road

Transmission line

N

Power Bales
-- Key Resources --
2008 SALE PLAN
TILLAMOOK DISTRICT

Portions of Section 25, T2S, R8W,
and Sections 30 and 31, T2S, R7W, W. M.
Tillamook County, Oregon

1000 0 1000 Feet

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Area	Type of Operation
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2	Modified clearcut
3	Partial cut

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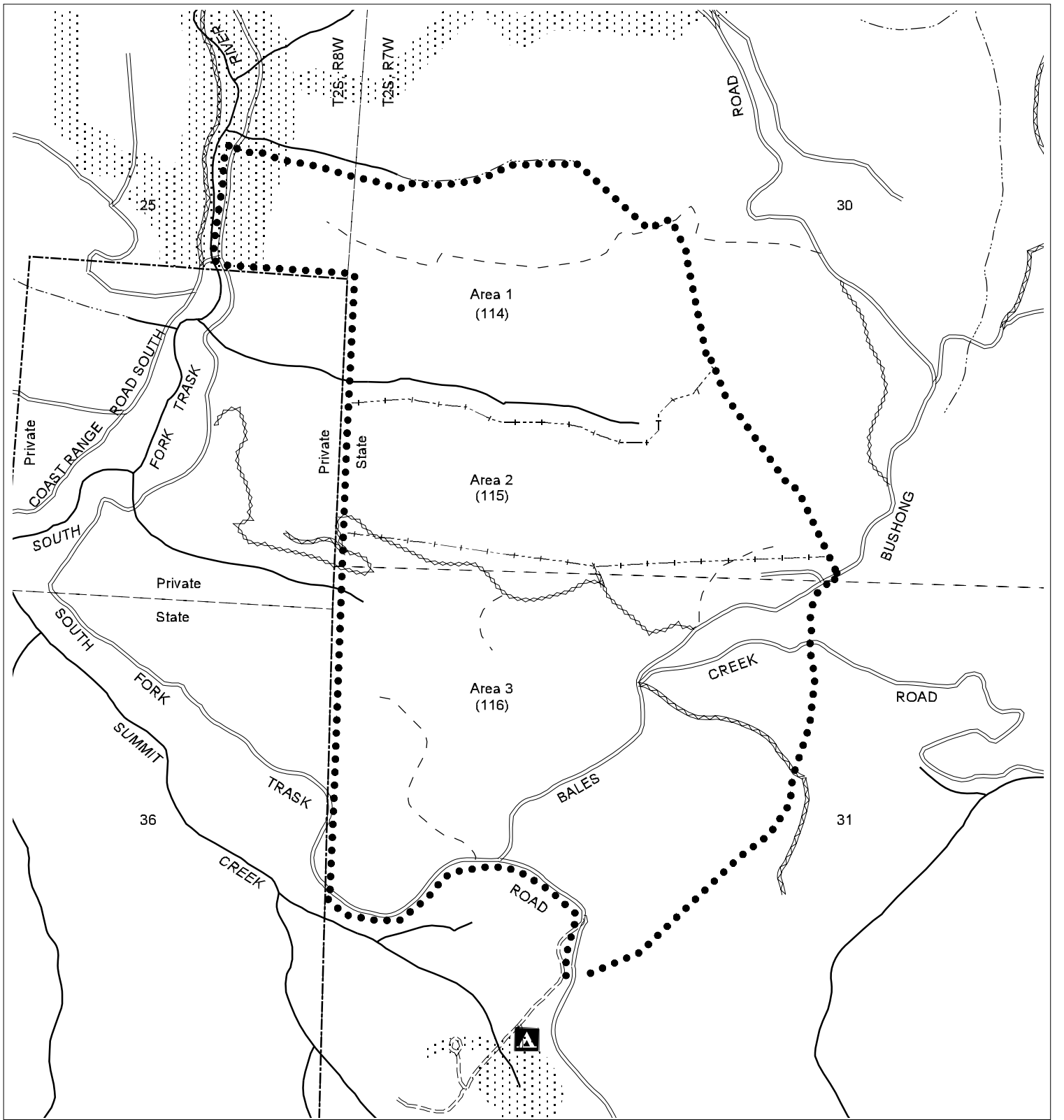
Attachment C



Campground
Day Use Site
OHV Staging Area
Trail Head
Boat Launch
Interpretive or Administrative Site

Stewardship
Focused
Special
OHV trail
Non-motorized trail

Area boundary
Sale boundary
Ownership boundary
Perennial Type-F stream *
Perennial Type-N stream *
Unsurfaced road
Surfaced road
State/Federal highway
Legacy road
Blocked road
Road construction
County road
Transmission line

Power Bales

--Key Resources/Recreation --

2008 SALE PLAN

TILLAMOOK DISTRICT

Portions of Section 25, T2S, R8W, and Sections 30 and 31, T2S, R7W, W. M.
Tillamook County, Oregon

Area	Type of Operation
1	Partial cut
2	Modified clearcut
3	Partial cut

1000 0 1000 Feet

N

Tillamook District GIS
02/06/2007
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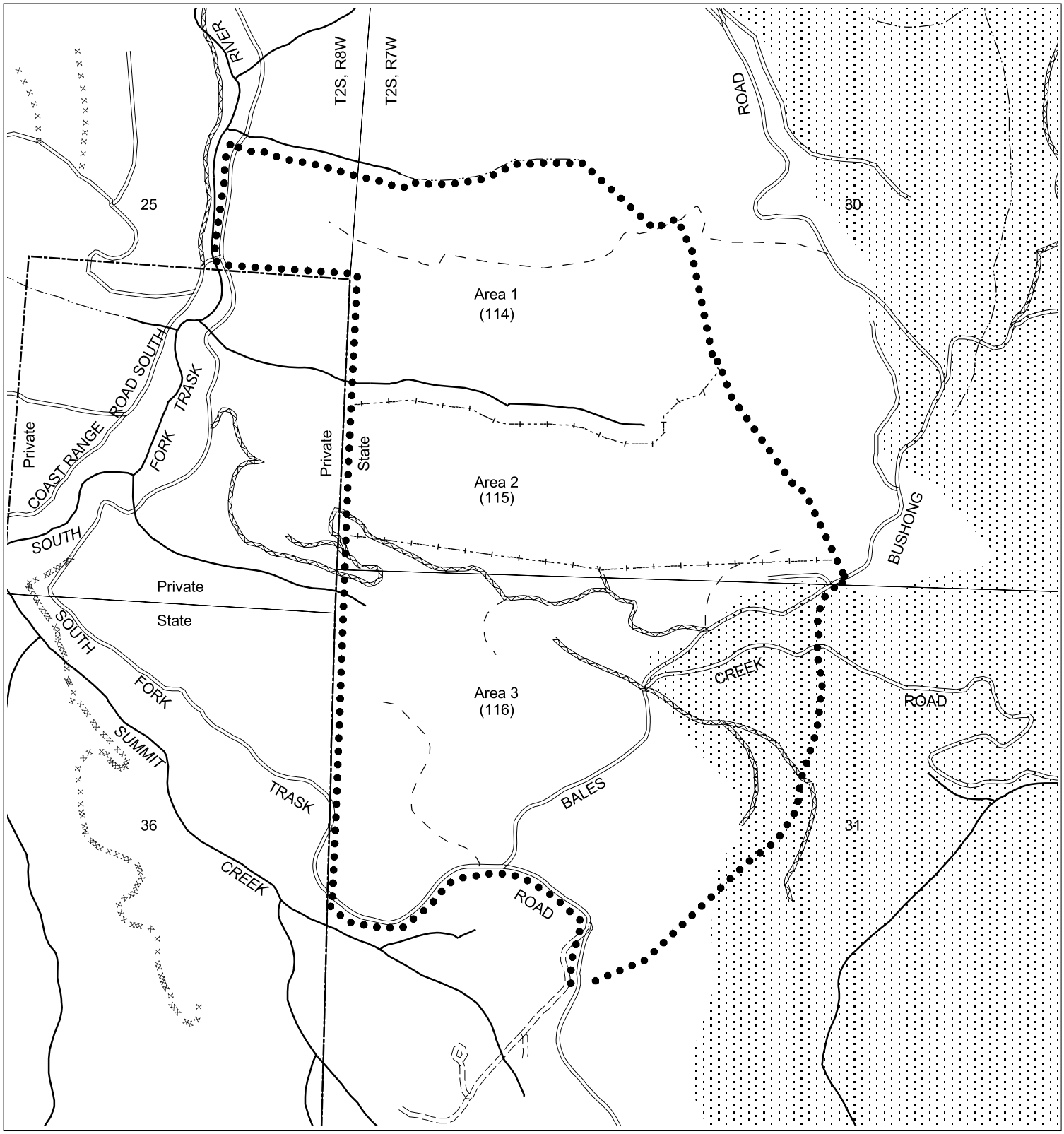
Attachment C2



Stewardship
- Focused
- Special

- Area boundary
- Sale boundary
- Ownership boundary
- Perennial Type-F stream *
- Perennial Type-N stream *
- Unsurfaced road
- Surfaced road
- State/Federal highway
- Legacy road
- Blocked road
- Road construction
- County road
- Transmission line

Power Bales

-- Key Resources/Wildlife Habitat --
2008 SALE PLAN
TILLAMOOK DISTRICT

Portions of Section 25, T2S, R8W,
and Sections 30 and 31, T2S, R7W, W. M.
Tillamook County, Oregon

Area	Type of Operation
1	Partial cut
2	Modified clearcut
3	Partial cut

1000 0 1000 Feet

N

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Attachment C3