

Gross Area: 40.0 Ha

HU1 - Ground-Based Harvest - 34.9 Ha NET

WTRA - 3.1 Ha

PAS - 1.9 Ha

Harvest Plan Map

A93872-2

Ryder Creek

Note: Areas do not add up, due to rounding in LRM.

FOREST SERVICE
BRITISH COLUMBIA

BCTS

BC Timber Sales

Kootenay

Date: 3/19/2019	Drawn By: AT	Elevation (min / max): 1630-1850m	SU Boundary	Lat/Long: 50°05'09" / 118°14'46"	Rock #		
Mapsheet: 82L009	Cable	Ridge	Cliff	Slope Break	Reach Break	Wet Area	Fish Barrier
Existing Cutblock		Existing Road	Proposed Road		Seep	SP Plot	Perm. Landing
Wildlife Tree Retention Area		Existing Trail	Backspar Trail		Steep Slopes >35%	Temp. Landing	
OGMA	Non-Merch	Proposed Skid Trail	Yarder Trail		Yarder Direction	Cabin	
Cutblock Boundary		MFZ	RMZ	Skid Direction	Creek	Intermittent Creek	
Bench	Gully	Draw		Permanent Access Licensee Construct	Slope and Direction	Prop. Skid Bridge	
Station	Falling Corner	FC2	Temporary Access Licensee Construct		Path: G:\PROJECT\15008_BCTS\A93872_Ryder\Maps\HP Maps\A93872_i4_Map_HP_Bk2.mxd		

1.5 RIPARIAN ASSESSMENT						
Block	Riparian I.D. and Class	RMA	SU	Width (m)	SPH Retained	Comments (Indicate if in a Community Watershed)
2	S5-2-1	RMZ	1	30	See Table1	This S5 is located within the harvest area. A 5m MFZ and a 30m RMZ has been ribbonned around the stream in the field. Merchantable and non-merchantable reserve will be retained within the RMZ of the stream. See Table 1 and 2 below for information on merchantable and non-merchantable reserve. / Not within a Community Watershed.
2	S6-2-1 to S6-2-6	RMZ	1	20	See Table1	All are located within the harvest area. A 5m MFZ and a 20m RMZ has been ribbonned around the streams in the field. Merchantable and non-merchantable reserve will be retained within the RMZ of the streams. See Table 1 and 2 below for information on merchantable and non-merchantable reserve. / Not within a Community Watershed.
2	NCD-2-1 to NCD-2-5 ; NCD-2-10	N/A	1	N/A	-	All NCDs except for NCD-2-1 are located within the block. A 5m MFZ has been ribbonned around the NCDs in the field in the ground-based portion of the block. See Table 2 Below for non-merchantable reserve information. Not within a Community Watershed.
Management Strategies: See Non-Merchantable Section and the Harvest /Operational Constraints Section Below						

Safety Highlights:

In addition to the standard safety hazards and risks associated with all aspects of forest management, the following safety hazard(s) apply to this block and must be enforced and practiced:

1. Public Traffic on mainlines from hunters, campers, other recreationalists and local residents.
2. Steep slopes >35% are present in a few areas.

Remedial Action

1. Personnel will be informed of this hazard and signage will be posted near the proposed development when harvesting and road-building activities are being conducted.
2. Personnel will be informed of this hazard.

Leave Tree Specifications:

Table 1. - Layer 1 Reserved Timber ¹											
Block	HU	Selection Priority	Species	Size	Stems per Hectare			Distribution ²			
					Target	Minimum	Maximum	S	G	I	R
2	1	<ul style="list-style-type: none">Most WindfirmBl	Bl, Se	Bl, Se >= 55cm dbh	5	2	10	√	√	√	
2	(S5 RMZ)	<ul style="list-style-type: none">Variable Size ClassesBl	Bl, Se	All	65	61	10	√	√	√	
2	(S6 RMZ)	<ul style="list-style-type: none">Variable Size ClassesBl	Bl, Se	All	8	6	10	√	√	√	

Additional Requirements/Notes:

¹ Refer to *Appendix I* for *Table of Reserve Timber Abbreviations and Definitions* ² *Distribution Types: S: Single Trees, G: Groups of Trees, I: Irregularly Distributed, R: Regularly Distributed*

Note: Safety is a priority when conducting operations near reserved timber. Refer to TSL Schedule “A”, Section 2.00 regarding Dangerous Trees.

Table2. – Other Reserved Timber¹

Non-Merchantable						
Block	HU	Location(s)	Species	Size	Stems per Hectare	
					Target	Minimum
2	1	MFZ of NCDs and Streams	All + Brush Species	<12.5cm dbh	All, where present and where operationally feasible.	All, where present and where operationally feasible.
2	1	RMZs	All	<12.5cm dbh	All, where present and where operationally feasible.	All, where present and where operationally feasible.

Dead Trees to be Stubbed (where Mechanical Falling is utilized)

Block	HU	Species	Size	Stubbing Height	Stems per Hectare			Distribution ²			
					Target	Minimum	Maximum	S	G	I	R
2	1	All	>/=35cmdbh	3-5m	7	5	10	√	√	√	

Additional Requirements: 1. Stub trees must not pose a hazard to worker safety. 2. In selecting dead trees for stubbing, give selection priority to trees with signs of wildlife use (e.g. cavity nests, holes, and dens).

Coarse Woody Debris

Block	HU	Species	Size	M ³ per Hectare		Distribution ²			
				Target	Minimum	S	G	I	R
2	1	All	Retain CWD and wildlife trees that are representative (spp, age and size) of pre-harvest levels/conditions.	15	10	√	√	√	

¹ Refer to *Appendix I* for *Table of Reserve Timber Abbreviations and Definitions* ² *Distribution Types: S: Single Stems/Logs, G: Groups of Stems/Logs, I: Irregularly Distributed, R: Regularly Distributed*

Note: Manage CWD levels to pre-harvest levels, except in areas where concentrations are too high for effective planting and/or successful regeneration. Safety is a priority when conducting operations near reserved timber. Refer to TSL Schedule “A”, Section 2.00 regarding Dangerous Trees.

Harvest / Operational Constraints:

1. All temporary access structures must be fully rehabilitated upon the completion of harvesting.
2. Bladed or Excavated trails may be required for safety in areas that may require adverse skidding and in areas with steep slopes.
3. Harvesting and road building activities should be modified or suspended when there is abundant hill slope runoff occurring at the site, which is likely to occur during times such as spring break-up or from prolonged heavy precipitation. This is intended to reduce the likelihood of concentrated or redirected drainage as well as erosion and sediment delivery.
4. All proposed and existing road and trail drainage systems should be maintained and kept clear of debris during and subsequent to harvesting operations, including at and downslope of culvert discharge locations.
5. Excavated or bladed trail construction should be minimized as practical, and avoided in areas of seepage or where shallow subsurface runoff is likely to be intercepted. Where imperfectly drained or poorly drained areas cannot be avoided, effective drainage control should be installed and puncheon can be used to reduce impact.
5. All trails should be fully rehabilitated upon completion of use and concurrent with operations, prior to the next spring freshet. If any trails are to remain in place for an extended period of time prior to rehabilitation, then additional precautions should be taken including pulling back all watercourse crossings and any potentially unstable fill slopes, and installing frequent cross-ditches in order to limit the potential for redirected runoff.
6. Machine use should be limited to areas where excessive scour, rutting, or compaction is avoidable. This would generally restrict machine use from areas of moderately steep or steeper slopes as well as any localized areas of wet, soft, or very loose soils. Some modified machine use (e.g. hoe-chucking) may be possible in these areas if excessive disturbance is avoidable.
7. All natural drainage patterns (including all NCDs and S6 streams as well as dry swales and gullies) should be maintained and left free of excess debris (slash or soil) that could result in a redirection of seasonal surface runoff. Temporary skid bridges are recommended for all watercourse crossings.
8. Seasonal deactivation should be installed on all roads in the development area following operations or during shutdown periods in order to control erosion and sediment delivery to fish habitat, as well as to back-up road drainage systems at watercourse crossings and reduce the potential for redirected runoff.

Kootenay Business Area Field Marking Standards

	Ribbon	Paint
Harvest Boundary	BCTS Block Boundary	
Falling Corners		FC#
WTRA Boundary	Reserve	
Reserve Boundary	Reserve	
Riparian Reserve Zone	Reserve	
Riparian Management Zone	Riparian Mgmt. Zone	
Management Zone	Management Zone	
Treatment Unit Boundary	Treatment Unit Boundary	
Reserve Trees		
Machine Free Zone	//// Machine Free Zone ////	
Cruising	Cruise Line	Plot Trees
Traverse Stations		
SP Plot Location		

	Ribbon	Paint
NCD & Stream Centers	Water Course	
Road P-Line		
Road Center Line	Road Centerline	
Landings	Landing	
Road Right of Way	R/W Boundary	
Road RP		
Culverts	Culvert	
Designated Crossing	Crossing	
Culvert RP Outside Right of Way		
Tail Holds / Guyline / Intermediate Supports		
Skid Trail / Back Spar Trail / Forwarding Trail	///// Trail/////	
Recce Ribbon / D-Line / Skyline Roads	////////////////	

I certify that the work described herein fulfills standards expected of a member of the Association of British Columbia Forest Professionals, and that I did personally supervise the work.

RPF’S SIGNATURE and SEAL

RPF PRINTED NAME

Stefano De Vuono

DATE SIGNED

April 15, 2019