Gross Area: 13.2 ha

HU 1: Ground-Based Harvest - 12.0 ha NET

WTRA - 1.2 ha NET

PAS - 0.0 ha

Harvest Plan Map

A95559-4

Pup Rail

1:5,000

BCTS
BC Timber Sales
Kootenay

Culvert Location

Existing	Proposed	Size
		400mm
		450mm
		500mm
		600mm
		800mm
		1000mm
		1200mm
		1400mm

W1
1.2ha

Bulldog 9000

Spirit of 2010 Trail

N
W E
S
Declination: 15.2° E
1:5,000
UTM - Datum NAD83
0 100 m

Nelson, BC

timberland consultants

Date: 3/15/2021 Drawn By: AT	Elevation (min / max): 780-890m	Lat/Long: 49° 22' 36" / 118° 01' 02" Boulder
Mapsheet: 82E 040	Ridge Cliff Slope Break Rock #	Reach Break Wet Area Fish Barrier
Existing Cutblock	Existing Road Proposed Road	Existing Landing Perm. Landing
Wildlife Tree Retention Area	Existing Trail Proposed Skid Trail	Steep Slopes >35% Temp. Landing
OGMA Non-Merch	Prop. Backspar Trail Prop. Yarder Trail	SP Plot Cable Stick Nest
Cutblock Boundary	MFZ RMZ Skid Direction	Creek Intermittent Creek
Bench Draw	Yarding Direction Intermediate Structure	Slope and Direction 25% Prop. Skid Crossing
Station +12 Falling Corner FC2	Perm./Temp Access Licensee Construct /	Path: G:\PROJ\T16011_BCTS\A95559_PupRail\Maps\HP\A95559_i4_Map_HP_BK4.mxd

1.5 RIPARIAN ASSESSMENT

Block	Riparian I.D. and Class	RMA	SU	Width (m)	SPH Retained	Comments (Indicate if in a Community Watershed)
4	N/A	-	-	-	-	This development is not located in a Community Watershed.

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. Exposed cobbles and boulders.
3. Steep slopes in ground-based harvest 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.
3. Personnel will be informed of this hazard. These areas are displayed on the HP map.

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
4	1	• Fd, Lw, Cw • Largest diameter stems	Fd, Lw, Cw, At, Ep	Fd, Cw >/=50cm dbh Lw >/= 45cm dbh At, Ep >/=20cm dbh	5	Where present and practicable.	10	√	√	√	

Additional Requirements/Notes: **Note: Some areas of HU1 may have little or no potential reserve trees. The target value should be an average over the HU area.**

[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 Timber[1]

Non-Merchantable

Block	HU	Location(s)	Species	Size	Stems per Hectare	
					Target	Minimum
4	1	-	-	-	-	-

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
4	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). *Avoid Douglas-fir and Spruce, where practicable.

Coarse Woody Debris

Block	HU	Species	Size	M³ per Hectare		Distribution[2]			
				Target	Minimum	S	G	I	R
4	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. As a reference 1 large telephone pole roughly equals 1m3. **Select dead and dry material over green material; Retain material from species other than Douglas-fir and spruce; and Leave Douglas-fir and spruce stump heights as low to the ground as possible.

Harvest / Operational Constraints:

-Ground skidding across natural drainage paths should be avoided where practical. If this cannot be avoided, harvesting should be conducted during the drier months of the year, on a compressed snowpack, or effort made to ensure timber is skidded butt-first to minimize potential ground disturbance within such drainage features.

-Bladed or Excavated trails may be required, for safety, in areas with steep slopes and in areas that may require adverse skidding.

- 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.

- 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 cross-drain discharge locations.

- 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.

- All trails should be fully rehabilitated upon completion of use and concurrent with operations, ideally prior to the next spring freshet. If any trails are to overwinter then additional precautions should be taken including pulling back all watercourse crossings and any potentially unstable fill slopes, and installing frequent waterbars in order to limit the potential for redirected runoff.

- 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.

- All natural drainage patterns (including all NCDs 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.

-**Fall and skid away from the Spirit of 2010 Trail. Ensure the trail is kept free of harvest debris at all times.**

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 PRINTED NAME

Stefano De Vuono

DATE SIGNED

March 19, 2021

RPF'S SIGNATURE and SEAL