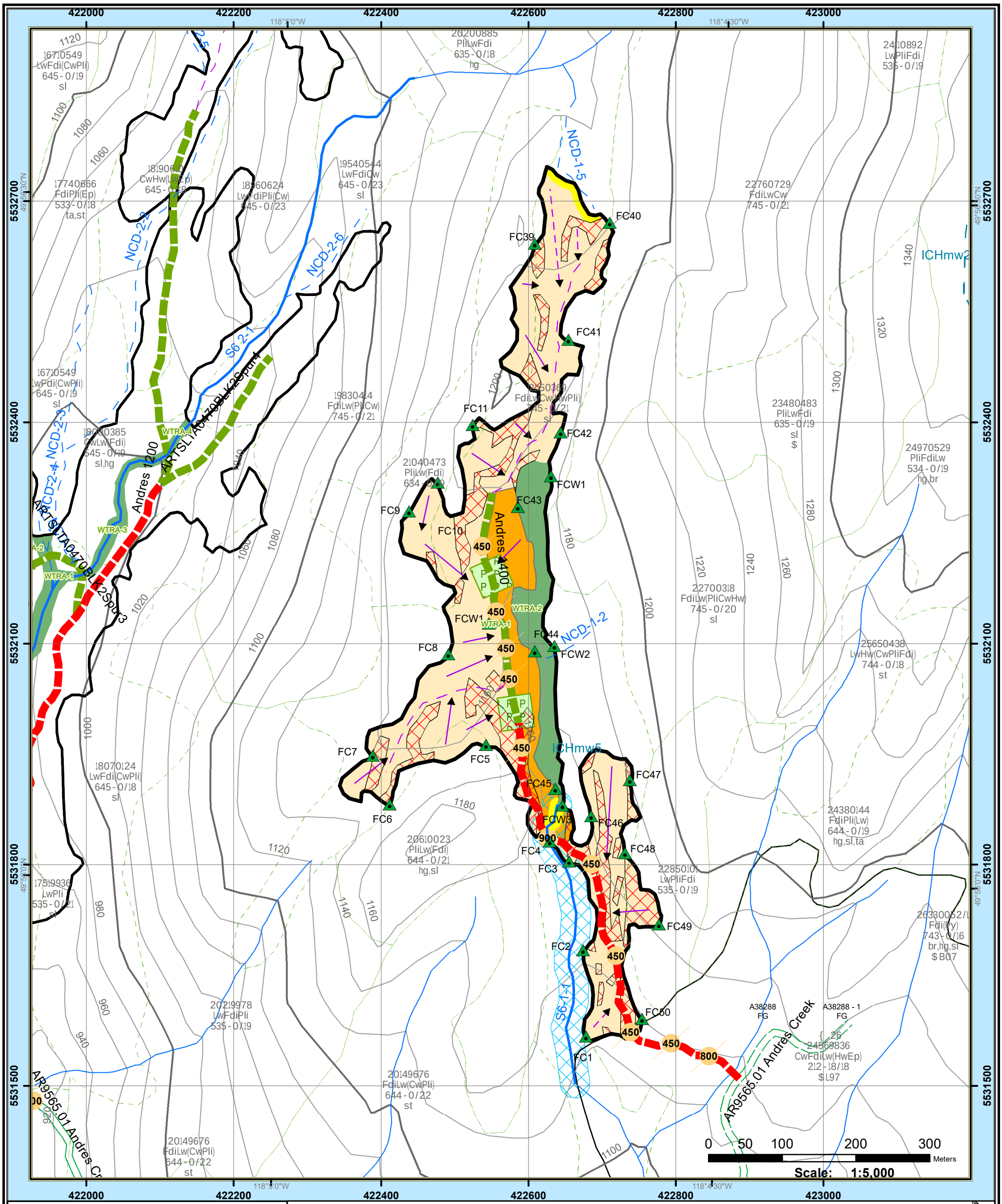


BC Timber Sales - Kootenay Business Area

HARVEST PLAN MAP

CABIN RESOURCE MANAGEMENT

TSL: TA0470 **Pre Number: SWL-056**
BLOCK: 1 **UBI: BF6KW**
Generated On: 2020-12-31 Generated By: CFLINDT

Location: Andreas Rd/Whatshan
Mapsheet: 082E.100
Latitude: 49° 56' 11.751" N **Maximum Elevation:** 1190
Longitude: 118° 4' 43.374" W **Minimum Elevation:** 1120
Projection: UTM Datum: NAD 83

- Blk_Contractor
- Reserve
- WTRA
- Non Productive
- NP Wet/ Water
- Recreation Sites and Reserves
- OGMA
- Wetlands

Harvest Strategies

- Special Management Area
- Machine Free Zone
- Riparian Reserve Zone
- Riparian Management Zone
- Proposed Temporary Landing
- ExistingTemporary Landing
- Existing Permanent Landing
- Proposed Permanent Landing

- Proposed Permanent Roads
- Proposed Temporary Roads
- Existing Roads
- Electrical Substation
- Mines; Pit; Abandoned Pit or Mine
- Campsite
- Golf Course
- Park or Field
- Cemetary
- Dump/Sewage;
- Fence
- Transmission Lines
- Pipeline

Harvest Method

- GROUND
- CABLE
- Steep Slopes >35%

- Stream
- Intermittent Stream
- Contours
- Existing Trails
- Fence Line
- Embankment, Cliff
- Gully, Draw
- Slope Break
- Seepage
- Potential Skid Direction, Fav
- Potential Skid Direction, Ad
- Existing Skid Trails
- Proposed Skid Trails
- Forwarding Trail
- Yarding Direction
- Falling Corner
- Proposed Culvert
- Existing Culvert

- Common Junction
- CRS
- Designated Skid Crossing
- Ecology Plot
- Gravel Pit
- Leave Tree
- Mine Shaft
- Survey Pin
- Reach Break
- Rock
- Seepage
- Slide
- Cabin
- Wildlife Feature

Harvest Plan Area Summary (ha)

Harvest Unit	Method	Area	Silviculture System
1 - TU1	Ground	10.2	Clearcut with reserves
1 - TU2	Ground	1.6	Clearcut with reserves
		11.8	Total Harvest Area
Road R/W		0.4	Excluded from Harvest Area
WTRA		1.4	Excluded from Harvest Area
		13.6	Total Block Area

1.5 RIPARIAN ASSESSMENT

Block	Riparian I.D. and Class	RMA	SU	Width (m)	SPH Retained	Comments (Indicate if in a Community Watershed)
01	S6-1-1	RMZ	2	20	~2%	S6-1-1 is primarily located outside the harvest area and originates within WTRA-2 before flowing south across the proposed Andres 1400 road and exiting the block. Where within the block, MFZ's have been established 10m away from S6-1-1 along either side. Stems that cannot safely be felled away from the stream should be left standing if it is operationally feasible. Leave trees have been marked in the field. This stream is not located in a community watershed.
01	NCD-1-2, NCD-1-5	-	N/A	-	-	NCD-1-2 and NCD-1-5 are located outside the harvest area. The features are not located in a community watershed. MFZ has been marked 10m away from NCD-1-5 along the northern block boundary.

Management Strategies:

See non-merchantable Section below.

Safety Highlights:

Safe work procedures, as per Work Safe BC regulations, must be available on site. 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 consisting of hunters, campers, other recreationalists, and local residents is present on mainlines and Forest Service Roads.

2. Steep Slope areas from 35% to >60% and rock outcrops exist throughout the block.

Remedial Actions

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. Steep slopes and rocky areas are delineated on the HP map and personnel will be made aware of this hazard. Caution is recommended when operating on these slopes.

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
1	1	• Most Windfirm • All Size Classes • Lw, Cw preferred	• Lw, Cw, Hw, Pl, Ep retention has been painted in the field with 2 orange bands • Retain 90% of At where encountered. At retention has not been marked in the field.	Lw, Cw, Hw, Pl, Ep >30cm dbh	8	5	10	√	√	√	

Additional Requirements/Notes:

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
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
1	1	MFZ of NCD-1-5 and S6-1-1	All non merch and brush spp.	<12.5cm dbh	All, where operationally feasible	All, 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
1	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
1	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. The licensee must retain a minimum of 4 full length logs per hectare. However, levels in some areas may be be higher due to non-merchantable log grades (firmwood rejects and some dry grade 4), as well as timber that is unsalvagable due to forest health. Efforts will be made to ensure these logs are not broken at time of harvesting. Logs may consist of a variety of species and shall be evenly distributed across the cutblock. Safety is a priority when conducting operations near reserved timber. Refer to TSL Schedule "A", Section 2.00 regarding Dangerous Trees. *** 1m3 represents approximately one large telephone pole.**

Harvest / Operational Constraints:

Roads

- Appropriate drainage control measures should be implemented during road construction to ensure all natural drainage paths are maintained. Designated watercourse crossings should be established particularly where watercourses are poorly confined and susceptible to redirection. A post harvest field review by a qualified person of the block roads is required to ensure natural drainage patterns are maintained.
- Seasonal deactivation measures are recommended for all permanent roads associated with this development during pe
- riods of non-industrial use. Appropriate measures include backing up culverts with cross-ditches, and installing intermediate cross-ditches and waterbars as appropriate based on road drainage, grade, and material properties.
- All temporary access structures must be fully rehabilitated upon the completion of harvesting.

TSFA – Specific Recommendations

- N/A

Timber Harvesting

- The licensee is responsible for ensuring the maximum soil disturbance limits (5% of the NAR in TU2, 10% in TU1) are not exceeded.
- It is recommended that this block be harvested in the summer with low moisture and/or during the winter with frozen ground and/or adequate snowpack due to sensitive soils.
- Timber harvesting should not be conducted under excessively wet site conditions, such as during spring snow melt or periods of heavy and prolonged rainfall to reduce the risk of post-harvest events. Ground skidding across natural drainage paths should be avoided to the extent practicable.
- A post-harvest inspection of the block should be completed to asses logging debris accumulations in the wetted perimeter of all watercourses and subtle drainage features to ensure an accumulation of coarse woody debris does not result in a drainage diversion.
- Areas within the block assigned to roadside work areas will not exceed 25% site disturbance.
- Bladed or Excavated trails may be required for safety in areas that may require adverse skidding and in areas with steep slopes. Trails should be deactivated as soon as practicable after harvest to reduce the risk of of post harvest erosion events. No trails are planned on potentially unstable slopes, slopes >60%, or areas where there is a risk to one or more FRPA values or other high value elements. Where additional excavated or bladed trails, or roads are planned to be constructed on slopes exceeding 60%, or there is a risk to one or more FRPA values or other high value elements , a qualified professional is required to conduct an initial evaluation that determines if a site review, terrain stability assessment, or other related assessments are required prior to construction.
- If harvesting is to be conducted during winter months, temporary access structures must be seasonally deactivated prior to the freshet by out- sloping where practical and installing cross ditches or waterbars to maintain natural drainage patterns. Rehabilitation should occur as soon as soil conditions allow after snow melt, prior to the spring freshet.
- Maximize slash and utilize coarse woody debris for coverage of the soil to provide mulching and sediment trapping. Promptly reforest to insure restoration of root strength to the area.

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		

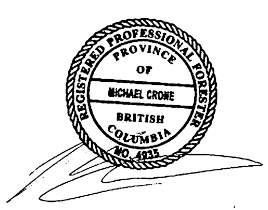
	Ribbon	Paint
NCD & Stream Centers	Water Course	
Road P-Line		
Road Center Line	Road Centerline	
Landings	Landing	
Road Right of Way	R/W Boundary	
Road RP		
Culverts	Culvert	
Designated Crossing	Crossing	
Culvert RP Outside Right of Way		
Tail Holds / Guyline / Intermediate Supports		
Skid Trail / Back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

I certify that I have reviewed this document and, while I did not personally supervise the work described, I have determined that this work has been done to standards acceptable of a Registered Professional Forester.

Mike Crone

RPF PRINTED NAME

December 31, 2020

DATE SIGNED

RPF'S SIGNATURE and SEAL