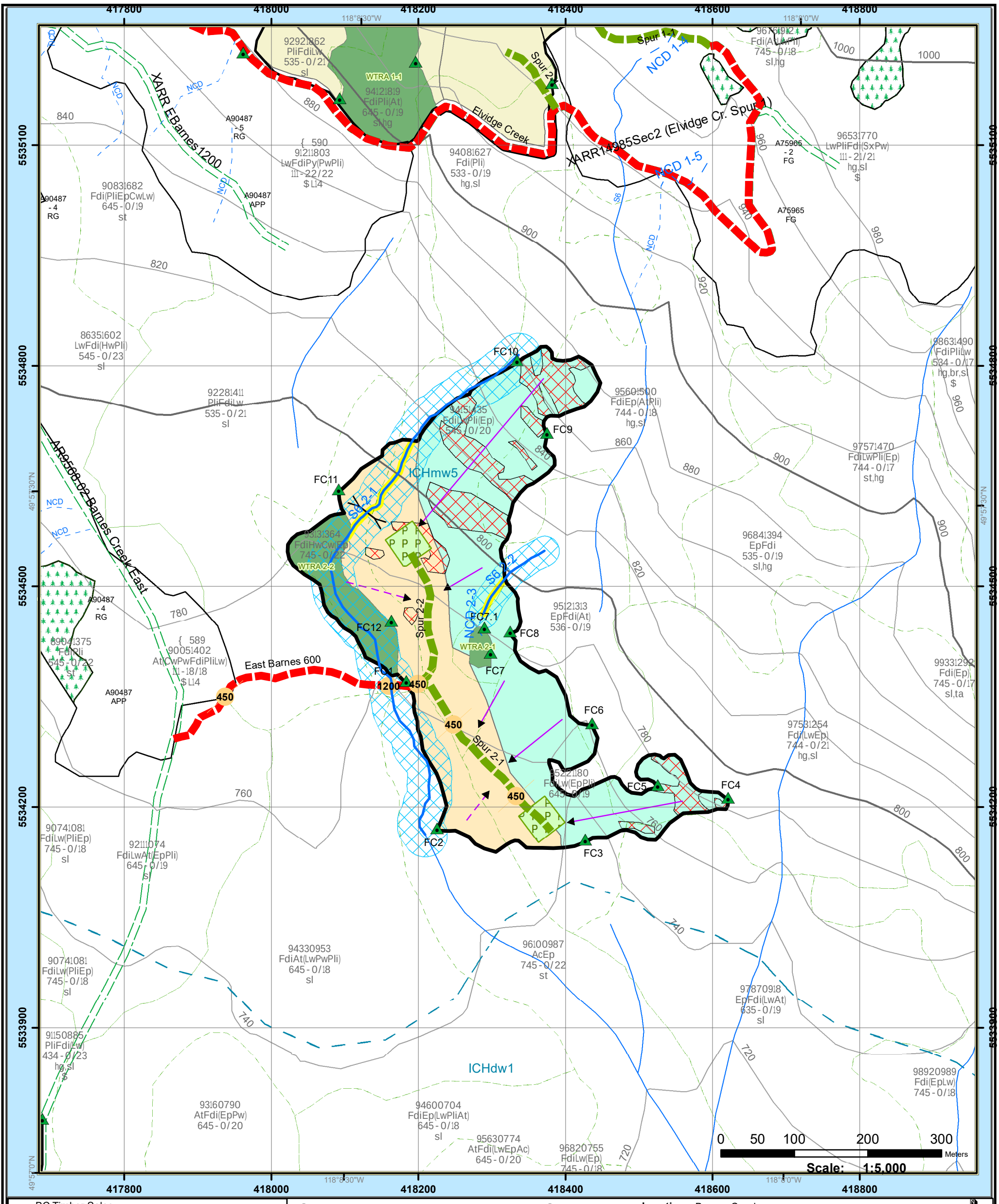

BC Timber Sales - Kootenay Business Area

HARVEST PLAN MAP

CABIN RESOURCE MANAGEMENT

TSL: TA0713 **Pre Number: SWL-061**
BLOCK: 2 **UBI: BF6Z6**
Generated On: 2021-03-17 Generated By: CFLINDT

Location: Barnes Creek
Mapsheet: 082E.100
Latitude: 49° 57' 24.646" N **Maximum Elevation:** 880
Longitude: 118° 8' 20.557" W **Minimum Elevation:** 750

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
- Park or Field
- Cemetary
- Dump/Sewage;
- Fence
- Transmission Lines
- Pipeline
- Crown
- Private

Harvest Method

- GROUND
- CABLE
- 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
- Slopes >35%

Harvest Plan Area Summary (ha)

Harvest Unit	Method	Area	Silviculture System
1	Ground	8.5	Clearcut w ith reserves
2	Ground	5.8	Clearcut w ith reserves
		14.3	Total Harvest Area
Road R/W			Excluded from Harvest Area
WTRA		1.3	Excluded from Harvest Area
		15.6	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)
1	S6-1 (Elvidge CK.)	RMZ	1	30	~35%	Stream S6-1 (Elvidge Creek) is not located in a Community Watershed but is located in the Elvidge Creek domestic watershed. S6-1 is in the western and northwestern areas of block 2. The stream is a comsumptive use stream with a point of diversion (POD) domestic water intake located approximately 2.2 km downstream. Approximately 35% of the RMZ within the gross block area has been included in a WTRA. Within the block harvest area, the stream has been flagged with purple watercourse ribbon. The RMZ has not been marked in the field. Additional trees have been retained in the RMZ outside the WTRA. A 5m (0.14 ha) machine free zone (MFZ) has been marked in the field with blue MFZ flagging ribbon on each side of the stream. Where the stream is within the block harvest area, a designated crossing of the stream has been marked in the field with pink skid trail flagging ribbon.
1	S6-2	RMZ	2	20	~2%	Stream 6-2 is not located in a Community Watershed but is also located in the Elvidge Creek domestic watershed. S6-2 is not a consumtive use stream. S6-2 enters the block on the eastern boundary of the block approximately 70m north of falling corner FC8 and flows southwest terminating by becoming NCD-3. The stream has been flagged with purple watercourse ribbon. The RMZ has not been marked in the field. Leave trees retained in the RMZ are marked in the field with two rings of orange paint. A 5m (0.07 ha) machine free zone (MFZ) has been marked in the field with blue MFZ flagging ribbon on each side of the stream.
1	NCD-3	-	2	N/A	N/A	NCD-3 is not located in a community watershed. NCD-3 starts at the terminus of stream S6-2 and terminates by flowing into an area of wet soils contained in WTRA-1.

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 45% exist in the northeast section of the block with short sections (<= 1 tree length) of slopes > 60%.

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
2	1	• Most Windfirm • Variety of Size Classes • Lw, Pw & Cw preferred	• Fdi, Pw, Cw and Lw retention has been marked in the field with 2 painted orange bands • Retain 95% of At and Ac where encountered • Aspen has not been included in the target stems/ha	Fd > 65cm dbh Pw > 40cm dbh Cw > 25cm dbh Lw > 40 cm dbh At, Ac > 17.5cm dbh	3	2	10	√	√	√	
2	2	• Most Windfirm • Variety of Size Classes • Lw, Pw & Cw preferred	• Fdi, Pw, Cw and Lw retention has been marked in the field with 2 painted orange bands • Retain 95% of At and Ac where encountered • Aspen has not been included in the target stems/ha	Fd > 65cm dbh Pw > 40cm dbh Cw > 25cm dbh Lw > 40 cm dbh At, Ac > 17.5cm dbh	7	5	10	√	√	√	

Additional Requirements/Notes: - **Leave trees except At and Ac, are marked in the field with two rings of orange paint.**

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+2	RMZ and MFZs of streams S6-1 & S6-2	All Non merch &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+2	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	M³ per Hectare		Distribution[2]			
				Target	Minimum	S	G	I	R
1	1+2	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 periods 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.

Timber Harvesting

- The licensee is responsible for ensuring the maximum soil disturbance limits (10%) are not exceeded..
- There is no seasonal timing restriction on this block. However, 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.
- Trees must be felled and skidded away from riparian features where practicable. Do not skid up and down or adjacent to RMZs or NCDs. Where falling away is not practicable, directional bridging will be utilized. Any introduced slash and debris will be removed from the wetted perimeter of the stream concurrent with harvesting. Where operationally feasible, within MFZs and RMZs retain all non-merchantable stems <12.5cm dbh with good form, health, and vigor, as well as any brush species.
- 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.

Jack Toma, RPF

RPF PRINTED NAME

March 18, 2021

DATE SIGNED

RPF'S SIGNATURE and SEAL

REGISTERED PROFESSIONAL FORESTER PROVINCE OF BRITISH COLUMBIA JACK TOMA NO. 5143