362000 362200 362400 362600 362800 363000 363200

118°54'0"W 118°53'30"W

5472400 5472100 5471800 5471500 5471200

49°23'0"N 49°22'30"N

WTRA-1 WTRA-2 TA0487-4 TA0487-5 TA0487-6 TA0487-7

400X9 500X9 1000X12

RP11 RP12 RP15 RP22 RP50 RP51 RP52 RP55 RP56 RP60

NCD-1 NCD-2 NCD-3 NCD-4 NCD-5 NCD-6

BDTA0487BLK7SPUR3 BDTA0487BLK6SPUR1 BDR22497Sec1 BDR11932SecB BDR11932SecA BD9778.01Osborne

0 50 100 200 300 Meters

Scale: 1:5,000

BC Timber Sales - Kootenay Business Area

HARVEST PLAN MAP

Cabin Forestry

TSL: TA0487 **Pre Number:** Kettle 25

BLOCK: 7 **UBI:** BF6CE

Generated On: 4/19/2021 Generated By: LBULMER

Location: Lost Horse Crouse Cr
Mapsheet: 082E036
Latitude: 49° 23' 5.433" N
Longitude: 118° 53' 33.842" W
Maximun Elevation: 1040
Minimun Elevation: 840

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
- LiDAR > 35% Steep Slope
- Proposed Temporary 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
- Stream
- Intermittent Stream
- Contours
- Cruise Slope
- Existing Trails
- Fence Line
- Gully, Draw
- Seepage
- Potential Skid Direction, Fav
- Potential Skid Direction, Ad
- Existing Skid Trails
- Proposed Skid Trails
- 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	Strategy
1	Ground	25.2	Standard Practice
MFZ		0.5	Machine Free Zone
RMZ		1.5	Riparian Management Zone
		27.2	

Table 1. - Layer 1 Reserved Timber[1]											
Block	TU / HU	Selection Priority	Species	Size	Stems per Hectare			Distribution[2]			
					Target	Minimum	Maximum	S	G	I	R
7	1		Fdi and Lw	>/=57.5cm dbh	12	3	17	X	X	X	X
7	1		Py	>/= 47.5cm dbh	1	0	2	X	X	X	X
7	1		Deciduous	All	95%	N/A	N/A	X	X	X	X

Additional Requirements:

1. Reserve trees may be felled for construction of roads, landings, trails or for worker safety.
2. Reserve trees that need to be felled harvested for safety, access or silviculture will be left on site for CWD.
3. The distribution of the retention is not expected to be even throughout the block as there are > 1ha areas that may not have any of the species prescribed for retention.
4. Reserve trees will be focused on trees that are of poor form (wolfy), have broken tops and/or trees that would otherwise be left on site as CWD and or put in the debris pile

[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	TU / HU	Location(s)	Species	Size	SPH or BAPH (m2)	
					Target	Minimum
7	1	RMZ of S6-1	All except for Pli	Non-Pl >/= 17.5cm dbh	>/= 80 SPH	>/= 1 SPH
7	1	RMZ of S6-1	All except for Pli	Non-Pl </= 17.5cm dbh	All where practicable	N/A

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

Block	TU / HU	Species	Size	Stubbing Height	Stems per Hectare			Distribution[2]			
					Target	Minimum	Maximum	S	G	I	R
7	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Additional Requirements:

Coarse Woody Debris

Block	TU / HU	Species	Size	Number per Hectare		Distribution[2]			
				Target	Minimum	S	G	I	R
7	1	All except Fd and Sx	2 m long and 7.5 cm diameter	4	4	X	X	X	X
7	1	All except Fd and Sx	2-5m long and 20cm diameter	4	4 = 1.24m3/ha	X	X	X	X

[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

As per FPPR Section 68, a minimum of 4 logs per hectare, each being a minimum of 2 m in length and 7.5 cm in diameter at one end must be retained in the block. As this block is located in the IDF, a minimum of 1.24m3/ha of CWD from a minimum of 4 logs per hectare, each being a minimum of 2 meters in length, but not greater than 5m in length with a minimum of 20 cm in diameter at one end in addition to the minimum 4 logs required for FPPR Section 68. To reduce Douglas-fir and spruce bark beetle susceptibility and spread, CWD is to be selected from dead/dry material and from species other than Douglas-fir or spruce, and stumps must be cut as low to the ground as possible.

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

RIPARIAN ASSESSMENT

Block	Riparian I.D. and Class	RMA	SU	Width (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
7	S6-1	RMZ	1	20	>/= 1 SPH	The RMZ is located inside the harvest area of this block. This block is not located within a Community Watershed.

Management Strategies:

There is one stream (S6-1) and five NCDs (NCD-2, NCD-3, NCD-4 and NCD-5) within and adjacent to the harvest area of this block. Appropriate Machine Free Zones (MFZs) and Riparian Management Zones (RMZs) have been identified on the SP and HP maps for these features as per the FPPR Section 47 (4). Where the RMZ of this stream overlaps the harvest area it is flagged in the field with blue "Riparian Management Zone" ribbon. Where the MFZ of this stream overlaps the harvest area it is flagged with blue "Machine Free Zone" ribbon a minimum of 5m on either side of the stream. WTRA-1 provides stream bank protection and cover for S6-1. A designated skid crossing will be required on S6-1 near B2. The management objectives in this Site Plan will comply with the practice requirements for riparian classes as listed in Section 5.3.1.5 of the FSP and RMZ Retention requirements specified in the associated table.

Retain >/= 1 SPH of merchantable non-pine timber in addition to all non-pine non-merchantable stems and understory (</= 17.5 cm dbh) where practicable within the RMZ of S6-1 where the RMZ is within the harvest area of this block. NCD-5 is located outside of the harvest area of the block.

The following recommendations should be followed, where practicable, when harvesting around the NCDs (NCD-2, 3 and 4):
- limit the number of crossings and maintain natural drainage post-harvest/site prep.,
- do not skid down the identified NCDs;
- retain stubs along all NCDs for future reference;
- fall away/yard away from the identified NCDs where safe to do so;
- do not pile slash or site prep over the identified NCDs;
- crossing rehabilitation is to include: scattering large CWD to minimize potential for cattle congregating and/or off-road vehicle damage.

Safety Highlights:

Steep slopes (35-49% exist in places), some boulders and exposed surface rock exists throughout this block. Overhead hazards exist from snags and newly dead and dying beetle damaged lodgepole pine.

Harvest / Operational Constraints:

It is recommended that this block be scheduled for Winter Harvest on frozen ground or on deep snowpack in order to minimize damage to the integrity of the soils in this block.

Steep slopes (35-49% exist in places), some boulders and exposed surface rock exists throughout this block. Bladed/excavated trails and/or hoe chucking may be required to harvest the steeper (> 35%) slopes. Due to rock and large NP Areas, skidding in the center of the block may be challenging. A designated skid trail has been hung to access wood in the southwestern portion of the block. It is recommended that a forwarder is used along this trail due to the 800m skid distance. There are two temporary landings along the skid trail for processing and a designated skid crossing on S6-1.

Due to the stacked nature of the roads associated with Block 7, proper drainage control is imperative to maintaining natural drainage patterns and avoiding concentrated or redirected drainage (especially in the southern half of the block where multiple watercourses and seep sites are present). Existing roads and trails should be checked for their current drainage control, to ensure all mapped watercourses have culverts at alignment crossings and are not causing concentrated or redirected drainage.

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.

Linden Priest, RPF

RPF PRINTED NAME

April 29, 2021

DATE SIGNED

RPF'S SIGNATURE and SEAL

S6-1 crossing at Hub R54 on existing road BDR22497SecB: although outside of the block, a functioning and adequately sized drainage feature should be in place (reportedly a cross-ditch exists), to maintain natural drainage and avoid concentrated or redirected runoff. This is due to the two proposed 1,000 mm culverts directly upslope along the same watercourse at the crossings of the new road to be constructed for access to upper Block 7.

In order to minimize the risk of Lodgepole Pine Dwarf Mistletoe infection to the new regenerating Lodgepole pine within this block post harvest, the Licensee must cut all standing Lodgepole pine trees that are over 50 cm in height, during the harvest and/or post harvest operations.

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	
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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	/ / / / / / / / / / / / / /	

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