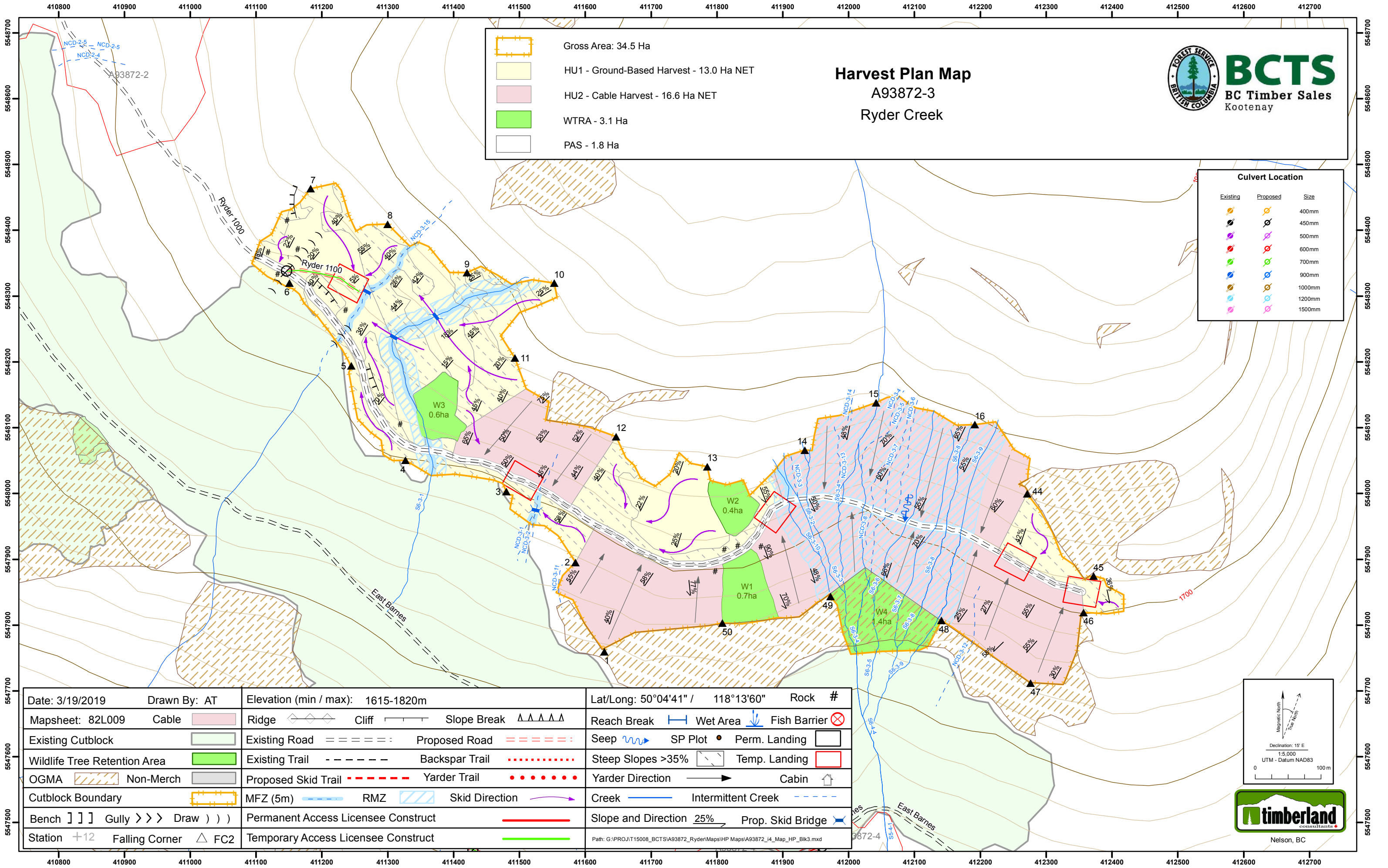




1.5 RIPARIAN ASSESSMENT					
Block	Riparian I.D. and Class	RMA	SU	Width (m)	SPH Retained
3	S6-3-1 to S6-3-10	RMZ	1&2	20	See Table1
3	NCD-3-1 to NCD-3-15	N/A	1&2	N/A	-
Management Strategies: See Non-Merchantable Section and the Harvest /Operational Constraints Section Below					

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:

- Public Traffic on mainlines from hunters, campers, other recreationalists and local residents.
- Steep slopes >35% are present in a few areas.
- Downhill cable harvest areas occur within the block.

Remedial Action

- 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.
- Personnel will be informed of this hazard.
- Personnel will be informed of this hazard.

Leave Tree Specifications:					
Block	HU	Selection Priority	Species	Size	Stems per Hectare
					<div>Target</div> <div>Minimum</div> <div>Maximum</div> <div>S</div> <div>G</div> <div>I</div> <div>R</div>
3	1	<div><div>•</div>Most Windfirm</div> <div><div>•</div>BI</div>	BI, Se	BI, Se >= 55cm dbh	<div></div> <div>2</div> <div>10</div> <div></div> <div>V</div> <div>V</div> <div>V</div> <div></div>
3	1 (RMZ)	<div><div>•</div>Variable Size Classes</div> <div><div>•</div>BI</div>	BI, Se	All	<div></div> <div>4</div> <div>10</div> <div></div> <div>V</div> <div>V</div> <div>V</div> <div></div>
Additional Requirements/Notes:					
¹ Refer to <i>Appendix I</i> for <i>Table of Reserve Timber Abbreviations and Definitions</i> ² <i>Distribution Types: S: Single Trees, G: Groups of Trees, I: Irregularly Distributed, R: Regularly Distributed</i>					
Note: Safety is a priority when conducting operations near reserved timber. Refer to TSL Schedule “A”, Section 2.00 regarding Dangerous Trees.					

Harvest / Operational Constraints:

- All temporary access structures must be fully rehabilitated upon the completion of harvesting.
- Bladed or Excavated trails may be required for safety in areas that may require adverse skidding and in areas with steep slopes.

TSA Recommendations

General Operational Recommendations:

- Harvesting and road building activities should be modified or suspended when there is a 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.
- In general, the following cut slope angles are recommended:
 - 0.25H:1V for competent bedrock
 - 0.5H:1V for highly fractured bedrock, and as a cut off for the upper 0.5 m of soil where side slopes exceed 50%
 - 1H:1V for compact to dense till and loose to compact colluvial and glaciofluvial materials on slopes less than 50% gradient
- In general, fill slope angles are recommended at 1.5H:1V, with allowance for steeper fills where specific materials and methods are used:
 - General Rock Fills: maximum 1.25H:1V
 - Wood-support Fills: maximum 1.25H:1V
 - Keyed Rock Fills: maximum 1.1H:1V
 - Placed Rock Fills: maximum 1H:1V
- Cross-drain and stream culverts have been identified in the proposed culvert summary tables on Figures 3, 4 and 5. Additional cross-drain culverts and changes to planned locations may be warranted based on conditions encountered during construction. Final cross-drain culvert requirements are to be confirmed by the BCTS Road Construction Supervisor at the time of construction based on conditions encountered.
- All proposed and existing road and trail drainage systems should be maintained and kept clear of debris (slash or soil) that could result in a redirection of seasonal surface runoff. Temporary skid bridges are recommended for all watercourse crossings.
- 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.
- All trails/2 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.
- 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 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.

Specific Recommendations:

Winter harvesting on an adequate snowpack is recommended as an option to facilitate yarder and backspar trail construction in rocky terrain and/or imperfectly drained to poorly drained areas. Winter harvesting would also reduce site disturbance including sedimentation within watercourses with connectivity to downstream fish habitat, as well as reduce the likelihood of redirected and/or concentrated runoff which could result in a landslide.

- Ensure that General Recommendation #8 is implemented particularly in the broad catchment area with numerous watercourses in the east portion of the block. Hand-falling timber in this area will likely be required to maintain natural drainage and reduce sedimentation within Stream S6-4-4/S5-4-1, a tributary to Bear Hill Creek (S2/3 fishbearing).

See TSA for Field Review Recommendations.

Kootenay Business Area Field Marking Standards									
Harvest Boundary	Ribbon	Paint	NCD & Stream Centers	Ribbon	Paint	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.			
Falling Corners	BCT's Block Boundary	FCU	Road P-Line	Water Course					
WTRA Boundary	Reserve		Road Center Line	Road Centerline					
Reserve Boundary	Reserve		Landings	Landing					
Riparian Reserve Zone	Reserve		Road Right of Way	R/W Boundary		RPF PRINTED NAME Stefano De Vuono DATE SIGNED April 15, 2019			
Riparian Management Zone	Riparian Mgmt Zone		Culverts	Culvert					
Management Zone	Management Zone		Designated Crossing	Crossing					
Treatment Unit Boundary	Treatment Unit Boundary		Culvert RP Outside Right of Way						
Reserve Trees			Tail Holds / Guyline / Intermediate Supports			RPF'S SIGNATURE and SEAL			
Machine Free Zone	//// Machine Free Zone ////		Skid Trail / Back Spar Trail / Forwarding Trail	///// Trail /////					
Cruising	Cruise Line	Plot Trees	Rece Ribbon / D-Line / Skyline Roads	//////////					
Traverse Stations									
SP Plot Location									