BCTS
BC Timber Sales
Strait of Georgia

SITE PLAN
STRAIT OF GEORGIA
BC TIMBER SALES

Report Date 2009/02/06

ORIGINAL

TENURE IDENTIFICATION

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A84393	-	873212	40BC3MP	92C087-111		Flora Lake	48 51 30 / 124 44 54

AREA UNDER THE PLAN

GROSS AREA (TAUP)	PAS	NP	WTP	RESERVES	OTHER	NAR
119.0	4.3	0.0	14.2	48.3	0.0	52.2

ADDITIONAL COMMENTS

SOIL DISTURBANCE

SU	Max. Allowable Soil Disturbance (%)	Max. Amount TAS May Exceed MASD Prior To Rehab (%)	Max. Allowable Soil Disturbance For Roadside Work Areas (%)	Maximum Permanent Access Structures (%)
A	5.0		25.0	7.0
B	5.0			
C	5.0			

SU	CRITICAL SITE CONDITIONS THAT AFFECT THE TIMING OF OPERATIONS, AND HOW THEY AFFECT THE TIMING
A	For all SUs: BCTS Wet Weather Shutdown Guidelines will be adhered to. Contact with retention trees during harvesting operations will be avoided. Stems are most susceptible during the "bark peeling" stage of growth, which is generally between April 1st and June 15th. Group/dispersed retention and single leave trees may have no more than 10% of total dispersed or total aggregate retention with significant damage. Significant damage to Hw, Fd and Cw is defined as a tree with: - Wounds that girdle more than 1/3 the circumference of the stem - Any wounds on a supporting root within one metre of the stem - A gouge - a wound that penetrates (splintered) into the sapwood or deeper. Additionally for Hw, Cw and Ba only: - A wound >400cm2 on the stem. - Contact with retained trees during the harvesting or site preparation operations should be avoided between April 1 and June 15th. Loam soils have a high compaction hazard and a high surface erosion hazard. Ground protection measures will be utilized as required, to ensure that no detrimental impacts occur. Harvesting and site preparation operations will cease immediately should observable compaction and/or rutting occur. If required rehabilitation will be scheduled once the soils are sufficiently well drained. To avoid rutting and understory disturbance, cease road building and yarding activities during and immediately following periods of heavy rainfall. Avoid ground based systems when wet soil conditions exist. Halt harvesting activities should wet ground conditions lead to any soil degradation.
B	Clay Loam soils have a very high compaction hazard and a moderate surface erosion hazard. Ground protection measures will be utilized as required, to ensure that no detrimental impacts occur. Harvesting and site preparation operations will cease immediately should observable compaction and/or rutting occur. If required rehabilitation will be scheduled once the soils are sufficiently well drained. To avoid rutting and understory disturbance, cease road building and yarding activities during and immediately following periods of heavy rainfall. Avoid ground based systems when wet soil conditions exist. Halt harvesting activities should wet ground conditions lead to any soil degradation.
C	Silty Clay Loam soils have a very high compaction hazard and a high surface erosion hazard. Ground protection measures will be utilized as required, to ensure that no detrimental impacts occur. Harvesting and site preparation operations will cease immediately should observable compaction and/or rutting occur. If required rehabilitation will be scheduled once the soils are sufficiently well drained. To avoid rutting and understory disturbance, cease road building and yarding activities during and immediately following periods of heavy rainfall. Avoid ground based systems when wet soil conditions exist. Halt harvesting activities should wet ground conditions lead to any soil degradation. Hoe forwarding trails must be rehabilitated to plantable condition once harvestng is completed.

RESULT OR STRATEGY		HOW THE STRATEGY OR RESULT APPLIES TO THE SITE or RATIONALE (IF NOT APPLIED)
EC 5.1.1 Prov. Non-spatial Old Growth Objectives		None of the established Old Growth Management Areas (OGMAs) fall within the boundaries of the FDUs within the BC Timber sales 2008-2013 South Island Forest District TFL 44 Alberni East Forest Stewardship Plan. Therefore there is no opportunity to carry out any activities within the established OGMAs and no results and strategies related to OGMAs are required. The objectives for wildlife retention do apply and they are set out in the FSP. These results and strategies apply to the Nitinat portion of cutblock 873212 for wildlife tree retention. Practice requirements in the FPPR: s66 to s70 will be followed. Biological diversity is enhanced by the retention surrounding the harvest area and the WTP located below Flora Main. The WTP encloses significant sections of streams 1 and 13 as well as wetland sections of streams 1 and 2 and the W4 wetland is also surrounded by the WTP. The 12% WTP retained complies with section 66(1) of the FPPR and it shall comply with the FSP when it is approved. As a rsult, the WTPs and the CWD retention values prescribed in this Site Plan conform to the objectives set out for the Klanawa and Nitinat Landscape Units. The majority of this cutblock is in the Klanawa Landscape Unit but a portion is also within the Nitinat Landscape Unit.

EC 5.1.2(1a) VILUP Higher Level Plan		This cutblock is not within a Special management Zone (SMZ). It is part of the Nitinat General Forestry Zone and the Klanawa Enhanced Forestry Zone (#44), in the VILUP.
EC 5.1.2(1b) VILUP Higher Level Plan		The cutblock is not within an applicable SMZ area.
EC 5.1.2(1c) VILUP Higher Level Plan		The cutblock is not within a SMZ.
EC 5.1.2(2) VILUP Higher Level Plan		The cutblock is not within a SMZ.
EC 5.1.2(6) VILUP Higher Level Plan		This cutblock does not fall within a visual sensitivity unit, however it does fall into the South Main Road from Franklin River Camp to Caycuse River Junction Travel Corridor. A preliminary impact assessment (VIA) was completed by Hayes Forest Services Limited on June 13, 2005 and it determined that the cutblock will not be visible post harvest.
EC 5.1.2(7) VILUP Higher Level Plan		The cutblock is not within an SMZ, but it is partially within EFZ 44, the maximum cutblock size considering adjacency as specified under the FPPR Section 65 and 66 is 40 ha. The cutblock complies with FRPA defaults for maximum cutblock size outside of those areas subject to the HLP order. This cutblock is part of the Nitinat General Forestry Zone and the Klanawa Enhanced Forestry Zone (#44), respectively, in the VILUP. The closest cutblock that is not greened up is #873116. It is 250m away at its closest point, and therefore it is not considered to be adjacent. It will be managed under the General Zone where maximum cutblock size is 40 ha. The total net harvest area for this cutblock is 51.6 ha. To be consistent with the requirements of the General Forestry Zone, this cutblock has been developed as a partial cut cutblock, therefore more than 40% basal area has been retained.
EC 5.1.2(9/9.1) VILUP Higher Level Plan		Multiple species that are ecologically suited will be used to reforest this cutblock.
EC 5.2.1 Soils		The cutblock complies with soil disturbance limits as outlined in FPPR 35 and 36.
EC 5.2.2 Wildlife/Species at Risk-MAMU		The cutblock does not intersect any Marbled Murrelet Habitat as specified in the Marbled Murrelet notice.
EC 5.2.3 Riparian Areas		The cutblock complies with FRPA defaults with regard to riparian objectives. For each riparian class of stream found in and adjacent to the harvest area, the minimum riparian management area (RMA) width, riparian reserve zone (RRZ) width, and riparian management zone (RMZ) width, on each side of the stream, are per the table in FPPR 47(4). The riparian class is indicted on the attached Site Plan Map. In respect of FPPR Section 8, the timber sales manager will adopt as a result/strategy FPPR Sections 48(3) to (5), 49(2) to (3), 50(1), 51(1), 51(3), 52(2) and 53, as they were on the date of submission except in those circumstances as described below. 1. For areas of primary forest activity authorized or carried out by the timber sales manager, the widths of the riparian management area, riparian reserve zone and riparian management zone will be: (a) As specified in FPPR Sections 47(4) to (6), 48(3) to (5) and 49(2) to (3), or 2. In respect of FPPR Section 51, all roads outside of cutblocks will have riparian reserve zones in accordance with FPPR Sections 47(4), 48(3) and 49(2). 3. In respect of FPPR Section 50, for construction of roads through a stream, wetland or lakeshore Riparian Management Area, the Riparian Management Area will be as specified in FPPR Section 47(4), 48(3) and 49(2).
EC 5.2.4 Fisheries Sensitive Watersheds		This cutblock is located in the Klanawa Fisheries Sensitive Watershed (FSW). Objectives were set by order to establish FSWs for Vancouver Island (effective December 28, 2005). For each of the FSWs identified by this order, the objective is to provide, within the normal forest rotation, special management of the amount, timing and distribution of primary forest activities, in order to: 1) conserve the natural hydrological conditions, natural stream bed dynamics and integrity of stream channels in the FSW, 2) conserve the quality, quantity and timing of water flows required by fish in the FSW, and 3) prevent the cumulative hydrological effects of primary forest activities in the FSW from resulting in a material adverse impact on the fish habitat of the watershed. Fish habitat is adjacent to many of the harvest boundary edges throughout the cutblock. The fish streams, unclassified wetlands and fisheries sensitive zones were buffered from the harvest area and crown treatments were prescribed where necessary, to protect the fisheries habitat
EC 5.2.5 Community Watersheds		The cutblock is not within a community watershed.
EC 5.2.7 Cultural Heritage Resources		This cutblock is located within the Ditidaht and Huu-ay-aht First Nations traditional territories. No culturally modified trees (CMT) were identified during the field review or layout of this second growth stand .

EC 5.2.7 Cultural Heritage Resources		The aforementioned First Nations were contacted by BC Timber Sales Strait of Georgia Business Area personnel for communications as part of the FSP consultation process. The Huu-ay-aht First Nation issued a green letter for this FDU/cutblock dated May 28, 2007. During the previous block design by Hayes Forest Services Limited that is now substantially the same, the Ditidaht First Nation conducted a CMT survey. This CMT survey was done on June 1, 2 and 9, 2005. The Ditidaht report dated June 10, 2005 states that no CMTs or any other archaeological remains were found in this cutblock. Prescribed site conditions: If any cultural heritage objects and/or CMT's are discovered during the harvest or road construction in this block, all activities must cease and BCTS must be informed of the type and location of suspected archaeological resources. Approval from BCTS is required prior to resuming operations. (1) In these results or strategies "special cultural heritage resource" means a cultural heritage resource, other than a resource feature, that is (a) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and (b) not regulated under the Heritage Conservation Act. (c) "western red cedar or cypress for monumental art" refers to western red cedar or cypress used for making paddles, masks, totems, canoes, and similar traditional use items. (d) other tree species as identified during referral process described in sections 2 to 7 (2) The timber sales manager will annually refer to applicable First Nations, specific areas and sites identified for potential timber harvesting and road construction, if any, and request information respecting special cultural heritage resources within the identified areas. (3) The timber sales manager will evaluate the nature and extent of a possible site-specific special cultural heritage resource identified within areas of potential timber harvesting and road construction activities, including making efforts to share relevant and available information or consult and collaborate with the applicable First Nation in respect of the identification, conservation, and protection of the possible special cultural heritage resource. (4) The timber sales manager, when designing a cutblock or road, will prior to harvest or construction, identify (a) the portion of the area occupied by a special cultural heritage resource, (b) the nature of the special cultural heritage resource, (c) whether the special cultural heritage resource is to be protected or conserved, and (d) if the special cultural heritage resource is to be protected or conserved, what protection measures or constraints, if any, are to apply to the forest practices carried out on the area. (5) For each special cultural heritage resource that has been identified under subsection (4) for protection, the timber sales manager will carry out or authorize a person to carry out a forest practice only to the extent that the forest practice does not damage or render ineffective the special cultural heritage resource. (6) For each special cultural heritage resource that has been identified under subsection (4) for being conserved, the timber sales manager will carry out or authorize a person to carry out a forest practice only to the extent that the forest practice is consistent with the constraints, if any, specified in the design for the cutblock or road.
EC 5.2.7 Cultural Heritage Resources cont'd		(7) If, within a cutblock or road where the timber sales manager is carrying out has authorized timber harvesting or road construction, a previously unidentified special cultural heritage resource is encountered, the timber sales manager will (a) require operations within the cutblock or road to cease or be modified to the extent necessary to protect the special cultural heritage resource, (b) determine (I) the nature of the special cultural heritage resource, (II) whether the special cultural heritage resource is to be protected or conserved, and (III) if the special cultural heritage resource is to be protected or conserved, what protection measures or constraints, if any, are to apply to the forest practices carried out on the area, (c) modify the design of the cutblock or road to conform with subsection (7)(b)(III) (d) authorize operations to resume within the cutblock or road to the extent that the operations are consistent with the modified design. (8) BCTS recognizes that mature western red cedar, cypress, and other tree species identified in section (1)(d) located within the identified FDUs may be special cultural heritage resources to the applicable First Nations and will ensure that (a) these First Nations are provided with a copy of the most recent available cedar and cypress inventory for the applicable area completed for the Ministry of Forests and Range as well as any updates to that inventory, and (b) cedar and cypress, where ecologically suited, will be planted on areas referred to in section 29(1) of the Act in accordance with the stocking standards specified in this forest stewardship plant and (c) where requested by a First Nation, BCTS will assist in develop0ing and implementing a strategy in the identification of western red cedar, cypress and other tree species identified in section (1)(d), used for making paddles, masks, totems, canoes, and similar traditional use items including monumental art within their traditional territory.
EC 5.3.1 Ungulate Winter Range #U1-002 Objective		This cutblock is adjacent to an Ungulate Winter Range (UWR) (Ew1) and a potential Marbled Murrelet Option Area (MAMU). A 15 to 25 m buffer of second growth timber has been retained between the harvest area and the UWR/potential MAMU. The timber in the buffer is within an open stand and it is located down slope from the wildlife area, which is a stand of old-growth FdHwBa that has been exposed to winds for over fifty years. The spring forage plan (R.T. McLaughlin, March 2002) for this Ungulate Winter Range (UWR 92C.087-01) was consulted during the cutblock layout. This cutblock is consistent with the recommendations of the spring forage plan and will provide approximately 47.0 ha of spring forage within the 0-400 and 400-1000m range from the UWR.
EC 5.3.1 Ungulate Winter Range #U1-017 Objective		This cutblock is adjacent to an Ungulate Winter Range (UWR) (Ew1) and a potential Marbled Murrelet Option Area (MAMU).
EC 5.4.1 Visual Quality		This cutblock does not fall within a visual sensitivity unit, however it does fall into the South Main Road from Franklin River Camp to Caycuse River Junction Travel Corridor. A preliminary impact assessment (VIA) was completed by Hayes Forest Services Limited on June 13, 2005 and it determined that the cutblock will not be visible post harvest.

EC 7 Invasive Plants		Areas of contiguous exposed soil that exceed 0.1ha in size must have certified seed applied within one year of completing operations to prevent the introduction or spread of prescribed species of Invasive Plants. (2) The timber sales manager will: (a) confirm known locations of priority invasive plants within the plan area using the most current recognized database, (b) distribute information to staff and contractors on priority invasive plants that exist or threaten to establish within the plan area, (c) direct staff to monitor and report new incidences or priority invasive plants and enter them into most current recognized provincial data base, (d) direct the holders of a timber sale licence to inspect logging and road building equipment for invasive vegetation, and remove from equipment prior to transporting equipment from a known occurrence of the invasive plant to a remote or site where the invasive plant is currently not present. (3) If the timber sales manager carries out a forest practice in an applicable area, the timber sales manager will, within one year of completing the activity authorizes in the timber sale licence, will: (a) revegetate all contiguous areas of exposed soils, given preference to preferred seed that is: (I) readily available, (II) comparable in cost to agronomic mixtures, and (III) comparable in effectiveness to agronomic mixtures and (b) revegetate temporary access structures within cutblocks with legumes.
SC 1.5.2.3 Riparian Areas-Retention		Stream ID Class Stream description in relation to the factors Stream Reach outside harvest area, portions of RMA within harvest area Stream ID Class Stream description in relation to the factors East Klanawa 1R1 S2 A 30 m RRZ and a 20 m RMZ have been established 1R2,3R1,7R1,13R1, 36R1 S3 Variable Retention: These S3 streams have 100% retention. 4R1,4A,17R1,19B S4 Variable Retention: These S4 streams have 100% retention. 16R1 S4 Variable Retention: This stream has approximately 25% retention. 15R2 S4 Variable Retention: This stream has 100% retention. Placement of the backline was on one side only and it is such that the 30 m riparian set backs are maintained. 7R2 S5 Variable Retention: This stream has 100% retention. Placement of the backline was on one side only and it is such that the 30 m riparian set backs are maintained. 3A,3B,6,8,9A,10,15R3, 16R2,18,20,26,29,31 S6 Variable Retention: These S6 streams have 100% retention. 13R2,14R1,14A,17R2,19R2 FSZ Variable Retention: These FSZs have 100% retention. (Portions of stream reach and RMA within Harvest area) 3R2, S5 Variable Retention: This stream has approximately 40%-50% retention. 4R2, 9,10, 21, 25, 4B,14R2,14B,22,27,33,35,36R2, S6 & NCDs The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment. These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
SC 1.5.2.3 Riparian Areas-Retention		Objectives set by government for water, fish, wildlife and biodiversity within riparian areas and Riparian Rational for basal area retention in RMZ. (FSP 5.2.3) FPPR S.8 and FPPR S.12(3). The following factors from FPPR need to be considered when determining the level of basal area retention: the type of management regime that is required for a riparian area, having regard to: a) 1) the need to buffer the aquatic ecosystem of a stream, wetland or lake from the introduction of materials that are deleterious to water quality or fish habitat, 2) fish habitat, wildlife habitat and biodiversity, 3) the need to maintain stream bank and stream channel integrity, and 4) the relative importance and sensitivity of different riparian classes of streams, wetlands and lakes in conserving water quality, fish habitat, wildlife habitat and biodiversity; b) the type , timing or intensity of forest practices that can be carried out within the context of a management regime referred to in paragraph (a); c) the role of forest shading in controlling an increase in temperature within a temperature sensitive stream, if the increase might have a deleterious effect on fish or fish habitat The result or strategy that addresses retention of trees in a riparian management zone shall be specified as follows: Strategies for minimizing sedimentation impacts, and providing stream bank or channel stability or both are: Minimize disturbance by not crossing streams and do not scour streambanks, by using FA, YA riparian management strategies and by retaining saplings on streambanks where practicable and safe to do so. Retain all safe non-merchantable and windfirm conifer trees, understorey deciduous trees and shrubs within the RMZ wherever possible. Machine traffic is to be minimized within the RMZ to conduct harvest operations where no other option is practicable. Do not remove any embedded or wind-downed trees or stable natural material that is in the stream or that is embedded in the stream bank, or a root system that contributes to stream bank stability and fish habitat during harvesting or stream cleaning (except when constructing or modifying an authorized stream crossing as shown on maps). Construction of a temporary stream crossing without authorization or failure to remove a temporary stream crossing may be subject to a penalty under the FRPA. Whenever possible avoid depositing woody debris or slash in streams or within a RMZ. No machinery is permitted within 5 m of a stream unless at a designated crossing. Protect as understorey vegetation and non commercial trees within 10 m of a stream channel edge. Do not fuel or service machinery or leave machinery overnight within a RMZ of a stream. The following prescription applies to the streams and stream reaches listed below: Do not fuel or service machinery within the riparian management area of a stream (20 to 70 m distance depending on the stream class) or within 30m of a lake or wetland, except on an approved landing or road. No machinery is permitted within 5 m of any stream bank or floodplain (wetland) unless it is authorized under an approved temporary stream crossing. Do not bunch or pile logs within the Riparian area of a stream, or bunch, land or pile logs within 5 m of a stream channel unless specifically allowed to on the Harvest Plan Map. Do not buck or limb logs within riparian areas (except for approved tree modification activities).

STOCKING REQUIREMENTS

SU	NAR	STANDARDS ID #	OTHER PERFORMANCE STANDARDS
A	35.4		(Fd4); Fd4-Elevated microsites are preferred. (Fd9); Fd9-Restricted to steep slopes. (Fd10); Fd10-Restricted to southerly aspects. (Fd15); Fd15-Restricted to southern portion of biogeoclimatic unit in region. (Ss23); Ss23-Risk of weevil damage.
B	8.3		
C	8.5		

COMMENTS

This planting prescription was done pre harvest by the SP Forester.

When the SOUTH ISLAND FORST DISTRICT, TFL 44 East, 2008, Forest Stewardship Plan is approved the stocking standards ID numbers shall be defined and they will be uploaded.
The planting prescription will convert the pre harvest "off-site" fir species to a (CwHwSs) species mix that is better ecologically suited to the site.
This is a low elevation gentle terrain area which is suited to an early spring plant.
SU A : Plant Cw80 Hw20 412As or equivalent with fertilization required.
SU B: Plant Cw100 412As or equivalent with fertilization required. In the rest of SU B Ecological Unit 2 SU C: (EU3) C3 on the Silviculture Plan Map plant Cw90 Ss10 due to a high salmonberry and red elderberry brush hazard. Weevil resistant Ss shall be planted.
SU C Ecological Unit 4 (EU4) C4 on the Silviculture Plan Map: Plant Cw 100 412As or equivalent with fertilization required.

Additional Standards Comments:

Reduce intertree spacing to 1.5 m to maximize the selection of suitable microsites in any areas of poor plantability due to hygric conditions and bedrock and target Cw here.
Minimum inter-tree spacing within 20 meters of either side of road centerline may be reduced to 1 meter where road construction or harvesting activities have created soil disturbance and reduced plantability.

A low incidence of hemlock dwarf mistletoe (DMH) was noted during the site plan fieldwork.
Possible strategies to reduce the spread of DMH involve regeneration of non-susceptible species along edges where the DMH hazard is high, removing or girdling infected trees, or leaving a vegetative or rock barrier between high hazard trees and susceptible regeneration. Where appropriate, one or more strategies will be implemented before susceptible regeneration is 3 m in height.
A post harvest assessment will confirm boundaries that require planting of a resistant buffer or other special management to mitigate the impact of the DMH in portions of the SUs.

Other Prescribed Treatments (FWP Activity):

Brushing:
Salmonberry is expected to be the main vegetation competitor in all three SUs. Competing brush potential for red alder is rated as high for SU A.Thimbleberry and red elderberry are also expected to be vegetation competitors in SU C. Therefore, prompt planting at (TSS 1200) is required with individual tree fertilization recommended. Brush levels will be monitored in conjunction with stocking surveys and treated where necessary to achieve the prescribed stocking standards.

Site Preparation:
This cutblock will be mechanically piled concurrent with yarding operations by the licensee. A post harvest assessment will determine if additional piling will be required to attain stocking standards. Burning of roadside slash piles should be complete within the first burning season after harvesting is completed.

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2009 01 26	NO

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
PAUL DAGG	
DATE SIGNED	
2009/02/6	

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.

Paul Dagg
2009.02.06 09:52:15
-08'00'

Map attached forms an integral part of the site plan.

THE FOLLOWING INFORMATION IS ATTACHED FOR INFORMATION ONLY AND DOES NOT FORM PART OF THE SITE PLAN

SUPPORT DOCUMENT

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A84393	-	873212	40BC3MP	92C087-111		Flora Lake	48 51 30 / 124 44 54

ASSESSMENTS

VISUAL IMPACT ASSESSMENT INFORMATION

This cutblock does not fall within a visual sensitivity unit, it does however fall into the South Main Road from Franklin River Camp to Caycuse River Junction Travel Corridor. A preliminary impact assessment (VIA) was completed by Hayes Forest Services Limited on June 13, 2005 and it determined that the cutblock will not be visible post harvest.

PEST INCIDENCE SURVEY INFORMATION

Pest Specific Comments

Biotic - Hemlock Dwarf Mistletoe (DMH)

A low incidence of hemlock dwarf mistletoe (DMH) was noted during the site plan fieldwork.
Possible strategies to reduce the spread of DMH involve regeneration of non-susceptible species along edges where the DMH hazard is high, removing or girdling infected trees, or leaving a vegetative or rock barrier between high hazard trees and susceptible regeneration. Where appropriate, one or more strategies will be implemented before susceptible regeneration is 3 m in height.
A post harvest assessment will confirm boundaries that require planting of a resistant buffer or other special management to mitigate the impact of the DMH in portions of the SUs.

Forest Health Comments

Abiotic - wind.
A windthrow assessment has been completed by DRH Consulting using the MoFR Forest Practices Branch "Windthrow Assessment Strategy" and three windthrow field cards were used to assess the boundaries of this cutblock, preharvest June , 2008. A post harvest windthrow treatment is required.

Treatment locations are indicated on the Site Plan Map.
The primary winds are from the southwest and the secondary winds are from the southeast.

A windfirming treatment is prescribed for the following cutblock edges:

The windward edge/boundary segments bounded by: 40 m south of FC 88 to FC 72. This edge/boundary segment requires pruning to reduce the lilkelihood of blowdown events that could cause sediment entering into fisheries habitat located below. Some of the stems requiring the windfirming treatment are on the east side of the Klanawa Mainline, adjacent to the Klanawa River. During hand pruning it is imperative that pruning debris is prevented from entering the stream channel of S2 stream 1 reach 1 (east Klanawa River). Hand clean accumulations of introduced debris that occurs in the stream post harvest.

Treatment will consist of pruning dominant and co-dominant conifers removing 50% of the branches evenly distributed on the top 30-50% of the crown. Timing of the pruning is dependent on when falling commences.

Total length to treat is approximately 534 m by 30 m, which is equal to 1.6 ha as mapped. Based on the stem density of 714.9 conifers/ha from cruise data in the FdHw(CwBa) 341 timber type approximately 324 total stems will require pruning. Timing of the pruning is dependent on when falling commences.

April 1 - September 30: Pruning will be completed prior to October of the same year.
October 1 - March 31:
Option 1: A maximum of two tree lengths may be felled and yarded adjacent to the treatment edge prior to pruning. Once the treatment is complete, the remainder of the standing timber in the cutblock may be felled.
Option 2: A two tree length buffer of standing trees may be left adjacent to the treatment edge until after March 31. After this date, the buffer may be felled and the pruning will be completed prior to October 31 of the same year.
Option 3: Hand prune the treatment edge prior to falling.

Abiotic - Damage
Group/dispersed retention and single leave trees may have no more than 10% of total dispersed or total aggregate retention with significant damage.

Significant damage to Hw, Fd, and Cw is defined as a tree with:
- Wounds that girdle more than 1/3 the circumference of the stem
- Any wounds on a supporting root within one metre of the stem
- A gouge - a wound that penetrates (splintered) into the sapwood or deeper

Additionally for Hw and Cw only:
- A wound >400cm2 on the stem

Contact with retention trees during harvesting operations will be avoided. Stems are most susceptible during the "bark peeling" stage of growth, which is generally between April 1st and June 15th.

ARCHAEOLOGICAL IMPACT ASSESSMENT INFORMATION

An Archaeological Impact Assessment is not required for this cutblock.
This cutblock lies within the Ditidaht and Huu-ay-aht First Nations traditional territories. The aforementioned First Nations were contacted by BC Timber Sales Strait of Georgia Business Area personnel for communications as part of the FSP consultation process. The Huu-ay-aht First Nation issued a green letter for this FDU/cutblock dated May 28, 2007. During the previous block design by Hayes Forest Services Limited that is now substantially the same, the Ditidaht First Nation conducted a CMTsurvey. This CMT survey was done on June 1, 2 and 9, 2005. The Ditidaht report dated June 10, 2005 states that no CMTs or any other archaeological remains were found in this cutblock.

Developers and operators should be aware of the potential of undiscovered archaeological remains in any surveyed or unsurveyed areas which are protected under the Heritage Conservation Act. As well, Section 10 of the Forest and Range Practices Act (FRPA) requires all development activities in the vicinity of archaeological remains to be halted so as not to threaten these remains, and to notify BCTS personnel. In addition the Huu-ay-aht and the Ditidaht First Nations shall be notified of the location(s) and type of findings. The appropiate assessments will then be completed.

TERRAIN STABILITY FIELD AND GULLY ASSESSMENTS INFORMATION

Terrain Stability Comments

A Terrain Stability Report was completed by Sharon Scott, M.S.c., P.Geo, Terrain Specialist, Hayes Forest Services Limited on June 28, 2005.
The report had the following conclusions: Proposed roads within proposed cutblock 873212 are generally well laid out from a terrain stability perspective. The alignments have a low post construction failure potential with a low consequence provided the TSFA report recommendations are followed and appropriate water management techniques are followed. All the proposed new roads are located on terrain which has a low potential instability from fillslopes, cutslopes and road drainage. The alignments can be conventionally constructed. Roads constructed on similar terrain to the south, west and east are stable. With the recommendations adhered to, should a debris slide initiate along the roads it likely would be a shallow seated debris slide with a 5-20 m headscarp and a 40-50 m downslope extent. In general, the consequence of a debris slide along the alignments is low, as material would run out onto benched terrain downslope of the alignments. Should a debris slide enter any streams it may transport longer distances (similar to other failures within a 1 km radius of the area). In general, as recommendations in the report are followed and standard road building practices regarding effective water mmanagement are used, then the potential for downstream impact is low.

Topography within the proposed cutblock 873212 is generally benched to rolling with some moderately rolling benches at higher elevations and a few narrow benches at higher elevations on the portions located north of stream 1. No instability indicators were noted, so the area is rated as having a low failure potential with low consequence. These slopes have been previously harvested and are stable.

Based on the field review the dominant winds are from the southwest and south. With respect to windthrow, there are no areas of concern due to terrain stability issues.
Weather Restrictions: BCTS Wet Weather Shutdown Guidelines must be strictly adhered to.

This site plan is consistent with the recommendations in the TSFA report.

*

Gully Comments

There are no gullies within or adjacent to this cutblock.

RIPARIAN ASSESSMENTS

Management Strategies

Any NCD(s) within the harvest area will be FX, YX and NC. No RMZ is required

Riparian Management Definitions:

FA Fall Away. Timber is to be felled away.

FA/BL Fall Away. Timber is to be felled away. Leaners and danger trees that cannot be safely felled away shall be felled and left bridging the stream.

YA Yard Away. Timber is to be yarded away. In order to improve deflection, cables are allowed to be suspended above the stream. Non-fish streams: merchantable leaners and danger trees that have been felled across the stream will, by necessity, be yarded across the stream.

FX Fall Across.

YX Yard Across. Maximize deflection to minimize stream bank disturbance.

NC No stream cleaning required.

HC Hand Clean introduced transportable debris

HH Harvest 100 % (no retention of saplings).

No basal area is retained in the Riparian Management Zones.

Ground-based machinery is not permitted within 5 m of any streambank. No machine crossings other than the designated crossing/hoe chucking sites at authorized crossing site(s) as indicated on the Site Plan and the Harvest Plan Maps.

Where prescribed, streams will be cleaned when a safe working distance has been established. Fine material will not be removed as part of any debris management strategy unless otherwise specified.

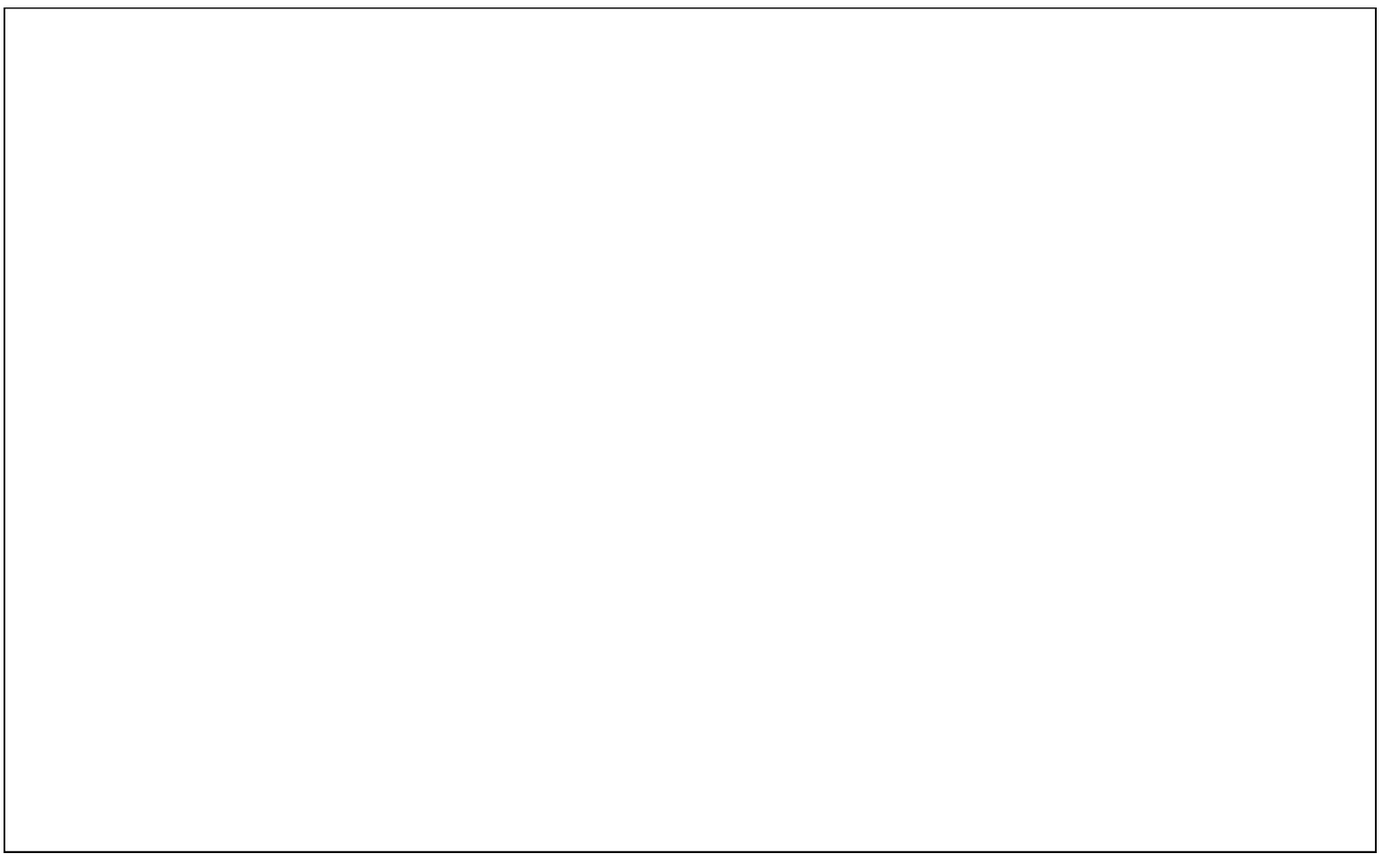
Do not remove stable natural material that is in a stream or that is embedded in a stream bank, or a root system that contributes to stream bank stability and fish habitat during harvesting or stream cleaning (except when constructing or modifying an authorized stream crossing).

Temporary stream crossing sites(s) may be designated and must be identified on the Site Plan and Harvest Plan Maps. Within this designated area, no more than three crossings of the stream may be made at any one location.

Reserve zone and management zone widths are provided as slope distances.

Note: The stream (riparian) prescriptions pertain to the portion of the stream within the harvest area. Where the stream lies outside the harvest area and a portion of the RMA is within the harvest area the prescription will be HH, FA, YA, by necessity.

Where the RMZ falls within retention areas (e.g. TLA, WTP), or is completely outside the harvest area, no harvesting will occur; therefore, 100% of the pre-harvest basal area will be retained. Where partial cutting (e.g. feathering) is prescribed within the RMZ the actual range of residual basal area for that section will be provided. When this document is signed, the signing forester is certifying that the RMP is consistent with the approved FSP and the riparian management strategies contained within.



Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
15R1 S3	RRZ		20.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
38 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
	RRZ		20.0	0- 0 m2/ha; 0 sph	
19A S4	RMZ		30.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3R1 S3	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
7R1 S3	RRZ		20.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
13R1 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
36R1 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
4A S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
15R2 S4	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This stream has 100% retention. Placement of the backline was on one side only and it is such that the 30 m riparian set backs are maintained.
16R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
17R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
19B S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3B S6	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
6 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
8 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
9A S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
10 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
9 S6	RMZ	C	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
4R2 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FA/BL YA NC. NO APPROVED MACHINE CROSSINGS. PORTIONS OF STREAM REACH AND RMA WITHIN HARVEST AREA. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3R2 S5	RMZ		30.0	0- 0 m2/ha; 0 sph	FA/BL YA HC accumulations of introduced debris that occurs in the stream post harvest NO APPROVED MACHINE CROSSINGS. PORTIONS OF STREAM REACH AND RMA WITHIN HARVEST AREA. Variable Retention:This S5 stream has approximately 40%-50% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	

13R2FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3A S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
7R2 S5	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This stream has 100% retention. Placement of the backline was on one side only and it is such that the 30 m riparian set backs are maintained.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
4R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
1R2 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
15R3 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14AFSZ UC	RRZ		0.0	0- 0 m2/ha; 0 sph	
	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
17R2FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
19R2FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3wetlands W4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. The W4 wetlands and RMAs are outside of the harvest area.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
wetland W3	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. The W3 wetland and RMA are outside of the harvest area. It is located approximately 110 m southwest of FC47.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
4B S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14R2 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14B S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%.The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment. These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
22 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
27 S6	RMZ	B	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
33 S6	RMZ	C	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
35 S6	RMZ	C	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	

36R2 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
5R1 S3	RRZ		20.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
19R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
	RRZ		0.0	0- 0 m2/ha; 0 sph	
2R1, 5R2 S5	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		30.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
2R2, 7A S6	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
1R1 S2	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA HC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. A 30 m RRZ and a 20 m RMZ have been established. During hand pruning it is imperative that pruning debris is prevented from entering the stream channel of S2 stream 1 reach 1 (east Klanawa River). Hand clean accumulations of introduced debris form hand pruning that occurs in the stream post harvest.
	RRZ		30.0	0- 0 m2/ha; 0 sph	
16R2 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
18 S6	RMZ			0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
20 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
26 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
29 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
31 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14R1FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
10 in Harv. area S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
21 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
25 S6	RMZ	B	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	

SOIL ASSESSMENT							
HAZARD RATINGS				SOIL CHARACTERISTICS			
SU	Soil Comp	Soil Erosion	Soil Disp	Depth To Unfavourable Subsoil		Type of Unfavourable Subsoil	Sediment Delivery Risk (Community Watersheds)
				Min(cm)	Max(cm)		
A	H	H	M	60.0	100.0	R	
B	VH	M	L	80.0	100.0	R	
C	VH	H	L	50.0	60.0	R	

COMMENTS

Practice requirements in the FPPR: s35 to s40 will be followed.
BC Timber Sales Strait of Georgia Business Unit WET WEATHER SHUTDOWN GUIDELINES must be adhered to.
A conventional harvest system employing Hoe Chuck and Grapple yarding is planned for this cutblock.

Soils have a very high compaction hazard and a moderate to very high soil displacement hazard and a high erosion hazard. Ground protection measures must be utilized to ensure that no detrimental impacts occur. Harvesting and site preparation operations must cease immediately should observable compaction and/or rutting occur. If required, rehabilitation will be scheduled once the soils are sufficiently dry. If rehabilitation is required, the licence holder must
(a) remove or redistribute woody materials that are exposed on the surface of the area and are concentrating subsurface moisture, to the extent necessary to limit the concentration of subsurface moisture on the area,
(b) de-compact compacted soils, and
(c) return displaced surface soils, retrievable side-cast and berm materials.
If rehabilitation of soils may cause sediment to enter a stream the licence holder, must place woody debris on the exposed soils, or revegetate the exposed mineral soils.

WTP INFORMATION

WILDLIFE TREE PATCHES (INSIDE OR ATTRIBUTED TO THE BLOCK)		
I.D.#	Area	WTP Description
WTP	14.2	14.2 ha is 11.9% of the cutblock TAUP. There are two Wildlife Tree Patches (WTPs) associated with this cutblock. One WTP is located below Flora Main within an operationally constrained riparian area associated with streams 1, 13, 19 and 38 and a W4 wetland is also surrounded by the WTP. The other WTP is located west of the FL 910 spur road adjacent to stream 1 reaches 2 and 3. The WTPs contain a component of live and dead trees and they are representative of the forest structure, density, and species composition of the area to be harvested (the second growth FH(CwBa) 341 timber type). It is also representative of the ecology of SUs A and SU B within the cutblock (BEC: CWH vm1 site series 05 with transition to the 01 and 07 site series and CWH vm1 site series 01 with transition to the 05 and 06 site series). The function of the WTPs is to maintain lifeboats and enrich re-established stands with structural features that would otherwise be absent as well as contribute to the forest influence and add to the stand biodiversity. The WTPs provides wildlife values and they are designated as long-term reserves. Wildlife trees may provide habitat for nest cavities, nest platforms, dens, roosts, hunting perches, foraging sites, and display stations during breeding. They may also improve the viewscape, become a future source of coarse woody debris, and provide structural diversity.

OTHER RESERVE AREAS INSIDE THE BLOCK		
I.D.#	Area	WTP Description
TLA	48.3	Timbered Leave Areas - There are fourteen external Timbered Leave Areas (TLAs) surrounding this cutblock and there are two internal TLAs. The TLAs are comprised of a FH(CwBa) 341 second growth timber type that is consistent throughout the cutblock, except in the area bounded by FCs 98 to 105 + 110m which is comprised of scrubby and dense second growth H(Ba). The TLAs contain a component of live and dead wildlife trees that are representative of the forest structure, density and species composition of the area to be harvested. Stand level biodiversity is attained through the retention of the Wildlife Tree Patch (WTP) and the Timbered Leave Areas (TLAs). Coarse woody debris (CWD) will be maintained on site provided it does not impede achieving the free growing stocking standards and does not conflict with coastal utilization standards. The TLAs add up to 48.3 ha, or 90.8% of the net harvest area.

WTP AND SITE DEG. CALCULATION (to be retained on the first block of the Permit only)

Block	Gross Cutblock Area	WTP	WTP %	BEC	Perm Access	%
873212	119.0	14.2	11.9	CWH/vm/1	4.3	3.6
Total # of Blocks: 1	**119.0**	**14.2**	**11.9**		**4.3**	**3.6**

SUPPORTING INFORMATION

HLP/FSP CONSIDERATIONS

Wildlife/Endangered Species Comments

No bear dens were observed during the forest engineering or the site plan fieldwork.

This cutblock is adjacent to an Ungulate Winter Range (UWR) (Ew1) & a potential Marbled Murrelet Option Area (MAMU).
A 15 to 25 m buffer of second growth timber has been retained between the harvest area & the UWR. The timber in the buffer is within an open stand and it is located downslope from the wildlife area, which is a stand of old-growth FDHwBA that has been exposed to winds for over fifty years. The spring forage plan (R.T. McLaughlin, March 2002) for this Ungulate Winter Range (UWR 92C.087-01) was consulted during the cutblock layout. This cutblock is consistent with the recommendations of the spring forage plan and will provide approximately 47.0 ha of spring forage within the 0-400 and 400-1000m range from the UWR.

Scouler's corydalis:

Scouler's Corydalis was looked for during the engineering and site plan fieldwork of this cutblock but none was found.

The BC Timber Sales Strait of Georgia Operating Areas Management Protocol for Red-legged Frogs was followed for the development of this cutblock. The red-legged frog WHA has been surveyed by wildlife biologists three times. Once by Erica McLeod (Ecosystem Biologist BC Ministry of Environment) in 2006 and by Darryn McConkey (Ecosystem Biologist BC Ministry of Environment) in 2007 and 2008. The 2006 and 2007 surveys were likely conducted late in the survey window because the majority of the egg masses were hatched out. The 2008 survey was conducted at a good time and Darryn McConkey found significantly more egg masses in the unclassified wetland. The survey data is included below in which the counts are the number of egg masses of each species.
Species codes RAAU-red-legged frog, HYRE-pacific tree frog, AMGR - northwestern salamander.

Species Count:

05-May-2006 Flora Klanawa Junction A-RAAU 15
05-May-2006 Flora Klanawa Junction A-HYRE 5
25-April-2007 Flora Klanawa Junction A-RAAU 44
25-April-2007 Flora Klanawa Junction A-AMGR 9
30-April-2008 Flora Klanawa Junction A-RAAU 151

Four wetlands are adjacent to the cutblock. Three are W4 & one is a W3 wetland. These wetlands are buffered by a minimum of 30 m from the proposed harvest area. In addition as per the FSP, existing large coarse woody debris (CWD) will be left on-site, undisturbed, where operationally feasible, to provide red-legged frog habitat.
There are two Wildlife Tree Patches (WTPs) associated with this cutblock. One WTP is located below Flora Main within an operationally constrained riparian area associated with streams 1, 13, 19 and 38 and a W4 wetland is also surrounded by the WTP. The other WTP is located west of the FL 910 spur road adjacent to stream 1 reaches 2 and 3. The WTPs contain a component of live and dead trees and they are representative of the forest structure, density, and species composition of the area to be harvested (the second growth FH(Ba) 341 timber type). It is also representative of the ecology of SUs A and SU B within the cutblock (BEC: CWH vm1 site series 05 with transition to the 01 and 07 site series and CWH vm1 site series 01 with transition to the 05 and 06 site series). The function of the WTPs is to maintain lifeboats and enrich re-established stands with structural features that would otherwise be absent as well as contribute to the forest influence and add to the stand biodiversity. The WTPs provides wildlife values and they are designated as long-term reserves. Wildlife trees may provide habitat for nest cavities, nest platforms, dens, roosts, hunting perches, foraging sites, and display stations during breeding.

Range Comments

No concerns identified in the FSP or in the field inspections.

Fisheries Comments

This cutblock is located in the Klanawa Fisheries Sensitive Watershed (FSW). Objectives were set by order to establish FSWs for Vancouver Island (effective December 28, 2005).
For each of the FSWs identified by this order, the objective is to provide, within the normal forest rotation, special management of the amount, timing and distribution of primary forest activities, in order to:

1) conserve the natural hydrological conditions, natural stream bed dynamics and integrity of stream channels in the FSW,
2) conserve the quality, quantity and timing of water flows required by fish in the FSW, and
3) prevent the cumulative hydrological effects of primary forest activities in the FSW from resulting in a material adverse impact on the fish habitat of the watershed.

Fish habitat is adjacent to many of the harvest boundary edges throughout the cutblock. The fish streams, three W4 wetlands and one W3 wetland and fisheries sensitive zones were buffered from the harvest area and crown treatments were prescribed where necessary, to protect the fisheries habitat.

Watersheds/Hydro Assessments Comments

This cutblock is not within a Community Watershed but it is within the Klanawa/Nitinat watersheds. This cutblock is located partially in the Nitinat Watershed, basin 1 sub-basin A (east of a line from FC 16 plus 10 m to the non-classified drainage between FC D1 to FC 15). West of this same line from FC 66 northeast to FC 62 plus 25 m, the cutblock is in the Klanawa Watershed basin 4, sub-basin D. A CWAP was done by Glynnis Horel, May 28, 1999, and updated August 31, 2001 and August 16, 2002. Recommendations applicable to the 873212 FDU in the Klanawa watershed have been incorporated into the site plan.

Sensitive Areas Comments

This cutblock is located in the Klanawa Fisheries Sensitive Watershed (FSW). Objectives were set by order to establish FSWs for Vancouver Island (effective December 28, 2005). Please refer to section C.2c under fisheries for more information. There are no other sensitive areas established.
A Sensitive Ecosystems Inventory (SEI) systematically identifies and maps rare and fragile ecosystems in a given area. The Weyerhaeuser SEI for TFL 44 shows no "sensitive ecosystems" (potential red and blue listed species or ecosystems) in the vicinity of cutblock 873212.
Four wetlands are adjacent to the cutblock and they have all been protected. Three are W4 wetlands and one is a W3 wetland. These wetlands are buffered by a minimum of 30 m from the proposed harvest area. The W3 wetland is located approximately 110 m southwest of FC 49. There is one Wildlife Tree Patch (WTP) associated with this cutblock. The WTP is located below Flora Main within an operationally constrained riparian area associated with streams 1, 13, 19 and 38 and a W4 wetland is also surrounded by the WTP.

Recreation Comments

An order to identify recreation sites, trails and interpretive forest sites as resource features for the South Island Forest District was signed by the District Manager and effective December 1, 2005. An exemption from writing results and strategies for the objectives authorized and signed by the District Manager November 30, 2005, therfore no results or strategies have been written for these objectives. This FDU does not conatin any of the identified recreation sites, trails or interpretive forest sites. Harvesting activities will not preclude future recreational opportunities.

Cultural Heritage Comments

An Archaeological Impact Assessment is not required for this cutblock.
This cutblock lies within the Ditidaht and Huu-ay-aht First Nations traditional territories. The aforementioned First Nations were contacted by BC Timber Sales Strait of Georgia Business Area personnel for communications as part of the FSP consultation process. The Huu-ay-aht First Nation issued a green letter for this FDU/cutblock dated May 28, 2007. During the previous block design by Hayes Forest Services Limited that is now substantially the same, the Ditidaht First Nation conducted a CMTsurvey. This CMT survey was done on June 1, 2 and 9, 2005. The Ditidaht report dated June 10, 2005 states that no CMTs or any other archaeological remains were found in this cutblock.

Developers and operators should be aware of the potential of undiscovered archaeological remains in any surveyed or unsurveyed areas which are protected under the Heritage Conservation Act. As well, Section 10 of the Forest and Range Practices Act (FRPA) requires all development activities in the vicinity of archaeological remains to be halted so as not to threaten these remains, and to notify BCTS personnel. In addition the Huu-ay-aht and the Ditidaht First Nations shall be notified of the location(s) and type of findings. The appropiate assessments will then be completed.

Biodiversity Emphasis/L.U. Comments

Practice requirements in the FPPR: s66 to s70 will be followed.
This Cutblock is not within a Special Management Zone.
Biological diversity is enhanced by the retention surrounding the harvest area and the WTP located below Flora Main.

There are two Wildlife Tree Patches (WTPs) associated with this cutblock. One WTP is located below Flora Main within an operationally constrained riparian area associated with streams 1, 13, 19 and 38 and a W4 wetland is also surrounded by the WTP. The other WTP is located west of the FL 910 spur road adjacent to stream 1 reaches 2 and 3.The 12% WTP retained complies with section 66(1) of the FPPR and it shall comply with the FSP when it is approved . As a result, the WTP's and the CWD retention values prescribed in this Site Plan will conform to the objectives set out for the Klanawa and Nitinat Landscape Units. The majority of this cutblock is in the Klanawa Landscape Unit but a portion is also within the Nitinat Landscape Unit.

Other Resources Comments

Trapper and mineral personnel made no comments during the FSP public review process.

ADDITIONAL COMMENTS:

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2009 01 26	NO

THE FOLLOWING INFORMATION IS ATTACHED FOR INFORMATION ONLY AND DOES NOT FORM PART OF THE SITE PLAN

HARVEST PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A84393	-	873212	40BC3MP	92C087-111		Flora Lake	48 51 30 / 124 44 54

SILVICULTURE SYSTEMS

SU	SYSTEM	VARIANT	PHASE	RESERVE	Min BA (m3/ha)	Min Residual Density (sph)
A,B,C	RETEN		REMOV	G		

Current Stand Structure/Site Conditions	The timber type is comprised primarily of second growth FdHw(CwBa) 341 and there is a small component of scrubby and dense second growth H(Ba) with no F observed in the area bounded by FCs 98 to 105 + 110m.
Silviculture Systems SU Comments	
Min. Characteristics of Leave Trees (Form, Health, Vigour)	Retention trees may have no more than 10% of retention trees with significant damage. Significant damage to Hw, Fd, and Cw is defined as a tree with: * Wounds that girdle more than 1/3 the circumference of the stem. * Any wounds on a supporting root within one metre of the stem. * A gouge - a wound that penetrates (splintered) into the sapwood or deeper.

SOIL ASSESSMENT

	HAZARD RATINGS			SOIL DISTURBANCE				SOIL CHARACTERISTICS			
								Depth to Unfavorable Subsoil			
SU	Soil Comp.	Soil Erosion	Soil Disp.	Max Allow Soil Dist %	Max Allow Max Amount TAS may exceed MASD prior	Max Allow Perm Access Structures %	MASD for Roadside work areas %	Min (cm)	Max (cm)	Type of Unfavorable Subsoil	Sediment Delivery Risk (Comm. Watershed)
A	H	H	M	5.0		7.0	25.0	60.0	100.0	Bedrock	
B	VH	M	L	5.0				80.0	100.0	Bedrock	
C	VH	H	L	5.0				50.0	60.0	Bedrock	

SU	Critical site conditions that affect the timing of operations and how they affect the timing
A	For all SUs: BCTS Wet Weather Shutdown Guidelines will be adhered to. Contact with retention trees during harvesting operations will be avoided. Stems are most susceptible during the "bark peeling" stage of growth, which is generally between April 1st and June 15th. Group/dispersed retention and single leave trees may have no more than 10% of total dispersed or total aggregate retention with significant damage. Significant damage to Hw, Fd and Cw is defined as a tree with: - Wounds that girdle more than 1/3 the circumference of the stem - Any wounds on a supporting root within one metre of the stem - A gouge - a wound that penetrates (splintered) into the sapwood or deeper. Additionally for Hw, Cw and Ba only: - A wound >400cm2 on the stem. - Contact with retained trees during the harvesting or site preparation operations should be avoided between April 1 and June 15th. Loam soils have a high compaction hazard and a high surface erosion hazard. Ground protection measures will be utilized as required, to ensure that no detrimental impacts occur. Harvesting and site preparation operations will cease immediately should observable compaction and/or rutting occur. If required rehabilitation will be scheduled once the soils are sufficiently well drained. To avoid rutting and understory disturbance, cease road building and yarding activities during and immediately following periods of heavy rainfall. Avoid ground based systems when wet soil conditions exist. Halt harvesting activities should wet ground conditions lead to any soil degradation.
B	Clay Loam soils have a very high compaction hazard and a moderate surface erosion hazard. Ground protection measures will be utilized as required, to ensure that no detrimental impacts occur. Harvesting and site preparation operations will cease immediately should observable compaction and/or rutting occur. If required rehabilitation will be scheduled once the soils are sufficiently well drained. To avoid rutting and understory disturbance, cease road building and yarding activities during and immediately following periods of heavy rainfall. Avoid ground based systems when wet soil conditions exist. Halt harvesting activities should wet ground conditions lead to any soil degradation.
C	Silty Clay Loam soils have a very high compaction hazard and a high surface erosion hazard. Ground protection measures will be utilized as required, to ensure that no detrimental impacts occur. Harvesting and site preparation operations will cease immediately should observable compaction and/or rutting occur. If required rehabilitation will be scheduled once the soils are sufficiently well drained. To avoid rutting and understory disturbance, cease road building and yarding activities during and immediately following periods of heavy rainfall. Avoid ground based systems when wet soil conditions exist. Halt harvesting activities should wet ground conditions lead to any soil degradation. Hoe forwarding trails must be rehabilitated to plantable condition once harvestng is completed.

SU MANAGEMENT COMMENTS	
SU	SU Description
A	SU A (35.4 ha) BEC: CWHvm1 05 01(20) 07(5) 4-5/D-(C) This SU covers the majority of the cutblock. It consists mainly of site series 05, with small scattered and unmappable sections of site series 01 and site series 07.This is a rich site covered by a FdHw(CwBa) 341 second growth timber type. Site index is estimated at approximately 34. Douglas-fir (Fdc) is the largest and most plentiful species on site due to the fact that it was the only species planted. Pit and mound microtopography is common throughout, indicating that widespread historical windthrow has occurred. This area was broadcast burned after the initial harvest prior to planting. The Fdc is "off-site" in this SU as indicated by its poor performance and distorted growth. The Fdc stems have thin crowns and are extremely limby with forked, crooked and or broken stems. The natural Western hemlock (Hw) that has seeded in is smaller than the Fdc but it is straight with smaller knots and it is performing relatively well. Amabilis fir (Ba) is less common, but it ranges from codominant to dominat in size with good form and vigor. Western red-cedar (Cw) is rare , and it is small when present. However, many large Cw and Ba stumps were observed that remain from the first pass harvesting. The main indicator vegetation consists of widespread swordfern, salmonberry, three-leaved foamflower, vanilla leaf, false lily of the valley, spiny wood fern, and traces of red elderberry, red huckleberry, thimbleberry and scattered maple. The dominant moss cover consists of Oregon beaked moss, step moss, and to a lesser extent flat moss and lanky moss. The aspect is flat to southeast on slopes of 0 to 30% and the slope position is described as level to lower. Salmonberry and thimbleberry are expected to be the main vegetation competitors. Competing brush potential for red alder is rated as high for SU A too. Soils: A 1.5cm LFH. The humus form is a mor. The Ah layer is 1 cm over a 60+cm Bm horizon with a Loam texture and the coarse fragment content is estimated at 20-30%. Drainage is described as well drained. Rooting depth was estimated at 60 - 100 cm. Elevation ranges from 200 - 350 m. A low incidence of hemlock dwarf mistletoe (DMH) was noted during the site plan fieldwork.
B	SU B (8.3 ha) BEC: CWHvm1 01 05(35) 06(5) 3-4(5)/C-(D) This SU is best described as a zonal site modified by the 05 and 06 site series. Hw is generally the dominant species by number of stems and volume, however Fd is relatively plentiful in places. Hw is performing the best with straight stems, less limbs and smaller knots. Ba is classified as a secondary species. The Fd ranges from codominant to the ocassional dominant, but it has poor form as noted in SU A. Cw is absent in the stand but many large Cw stumps were observed that remain from the first pass harvesting. Site index is estimated at approximately 31. Scrubby and dense second growth H(Ba) with no Fd was observed in the area bounded by FCs 98 to 105 + 110m. No understorey vegetation exists here due to the closed canopy. The old stumps that were observed in this area indicate that Hw was dominant in the previous stand and then this area was left for natural regeneration. Extensive pit and mound microtopography was observed throughout this SU, indicating that widespread historical windthrow has occurred. The main indicator vegetation includes Alaskan blueberry, traces of salal, deer fern, fals lily of the valley, and traces of red huckleberry, salmonberry, swordfern, three-leaved foamflower and western trillium. The dominant moss cover consists of Oregon beaked moss, lanky moss and to a lesser extent flat moss. The aspect is flat to southwest on slopes of 0 to 5% and the slope position is described as lower slope.Salmonberry is expected to be the main vegetation competitor. Soils: A 1cm LFH. The humus form is a mor. The Ah layer is 2 cm over an 80 cm Bf horizon with a Clay Loam texture and the coarse fragment content is estimated at 10%. Drainage is described as well drained. Rooting depth was estimated at 80 - 100 cm. Elevation ranges from 280 - 310 m. A low incidence of hemlock dwarf mistletoe (DMH) was noted during the site plan fieldwork. The site index is estimated at 30.
C	This Standards Unit is divided into two Ecological Units (EU) based on site series and planting prescriptions. SU C EU3: (7.3 ha) BEC: CWHvm1 07 05(30) 09(10) 5(4)-D This EU is located below Flora Mainline and it is best described as an 07 site series, modified by the 05 and 09 site series. This is a rich high brush potential site characterized by widespread salmonberry. The ss 09 sections are high bench floodplains that are comprised of old inactive floodplain sites. Douglas-fir (Fdc) is the largest and most plentiful species on the site due to the fact that it was the only species planted. The "off-site" Fdc exhibits poor growth performance as observed in SUs A and B, with limbs extending to the ground, thin chlorotic foliage and forked, crooked and or broken stems. Western hemlock (Hw) is the secondary species and it ranges from poor to acceptable growth performance. There is a zero to light dwarf hemlock (DMH) infestation in this EU. The site index is estimated at 36. The aspect is flat on slopes of 0 to 10% and the slope position is described as lower to level. Elevation ranges from 220 - 260 m. The main indicator vegetation consists of widespread: salmonberry, red elderberry, three - leaved foamflower and vanilla leaf. The mosses include Oregon beaked moss, flat moss and lanky moss. Salmonberry and red elderberry are expected to be the main vegetation competitors. Soils: A 2 cm LFH overlies a 13 cm Ah over a 7.5 cm Ae horizon, over a 30 cm Bm horizon with a Silty Clay to Silty Clay Loam texture and the coarse fragment content is estimated at 10%. Drainage is described as well drained. Rooting depth was estimated at 50 - 60 cm. Pit and mound microtopography is common. SU C EU 4: (1.2 ha) BEC: CWHvm1 07 05(30) 5(4)/D This EU consists mainly of an 07 site series, modified by the 05 site series and the ss 09 floodplain is absent. The site index is estimated at 34. The understorey vegetation is the same as in EU 3 except that scattered salal is also present. The aspect is flat on 0-20% slopes and the slope position is described as lower slope. Elevation ranges from 210 - 230 m. Salmonberry is expected to be the main vegetation competitor. Soils: 1 cm LFH. The humus form is a mor. A 3 cm Ah overlies a 45- 60 cm Bf horizon with a Silty Clay texture and coarse fragment content is estimated at 20%. The soils are well drained and the rooting depth is estimated at 50-60 cm over hardpan. Pit and mound microtopography is common.

SOIL MANAGEMENT COMMENTS

Soil Conservation

Practice requirements in the FPPR: s35 to s40 will be followed.
BC Timber Sales Strait of Georgia Business Unit WET WEATHER SHUTDOWN GUIDELINES must be adhered to.
A conventional harvest system employing Hoe Chuck and Grapple yarding is planned for this cutblock.

Soils have a very high compaction hazard and a moderate to very high soil displacement hazard and a high erosion hazard. Ground protection measures must be utilized to ensure that no detrimental impacts occur. Harvesting and site preparation operations must cease immediately should observable compaction and/or rutting occur. If required, rehabilitation will be scheduled once the soils are sufficiently dry. If rehabilitation is required, the licence holder must
(a) remove or redistribute woody materials that are exposed on the surface of the area and are concentrating subsurface moisture, to the extent necessary to limit the concentration of subsurface moisture on the area,
(b) de-compact compacted soils, and
(c) return displaced surface soils, retrievable side-cast and berm materials.
If rehabilitation of soils may cause sediment to enter a stream the licence holder, must place woody debris on the exposed soils, or revegetate the exposed mineral soils.

Temporary Access

All of the roads in the cutblock are classified as permanent access structures.

Slope Instability

A Terrain Stability Report was completed by Sharon Scott, M.S.c., P.Geo, Terrain Specialist, Hayes Forest Services Limited on June 28, 2005.
The report had the following conclusions: Proposed roads within proposed cutblock 873212 are generally well laid out from a terrain stability perspective. The alignments have a low post construction failure potential with a low consequence provided the TSFA report recommendations are followed and appropriate water management techniques are followed. All the proposed new roads are located on terrain which has a low potential instability from fillslopes, cutslopes and road drainage. The alignments can be conventionally constructed. Roads constructed on similar terrain to the south, west and east are stable. With the recommendations adhered to, should a debris slide initiate along the roads it likely would be a shallow seated debris slide with a 5-20 m headscarp and a 40-50 m downslope extent. In general, the consequence of a debris slide along the alignments is low, as material would run out onto benched terrain downslope of the alignments. Should a debris slide enter any streams it may transport longer distances (similar to other failures within a 1 km radius of the area). In general, as recommendations in the report are followed and standard road building practices regarding effective water mmanagement are used, then the potential for downstream impact is low.

Topography within the proposed cutblock 873212 is generally benched to rolling with some moderately rolling benches at higher elevations and a few narrow benches at higher elevations on the portions located north of stream 1. No instability indicators were noted, so the area is rated as having a low failure potential with low consequence. These slopes have been previously harvested and are stable.

Based on the field review the dominant winds are from the southwest and south. With respect to windthrow, there are no areas of concern due to terrain stability issues.
Weather Restrictions: BCTS Wet Weather Shutdown Guidelines must be strictly adhered to.

This site plan is consistent with the recommendations in the TSFA report.

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RIPARIAN ASSESSMENTS

Management Strategies

Any NCD(s) within the harvest area will be FX, YX and NC. No RMZ is required

Riparian Management Definitions:

FA Fall Away. Timber is to be felled away.

FA/BL Fall Away. Timber is to be felled away. Leaners and danger trees that cannot be safely felled away shall be felled and left bridging the stream.

YA Yard Away. Timber is to be yarded away. In order to improve deflection, cables are allowed to be suspended above the stream. Non-fish streams: merchantable leaners and danger trees that have been felled across the stream will, by necessity, be yarded across the stream.

FX Fall Across.

YX Yard Across. Maximize deflection to minimize stream bank disturbance.

NC No stream cleaning required.

HC Hand Clean introduced transportable debris

HH Harvest 100 % (no retention of saplings).

No basal area is retained in the Riparian Management Zones.

Ground-based machinery is not permitted within 5 m of any streambank. No machine crossings other than the designated crossing/hoe chucking sites at authorized crossing site(s) as indicated on the Site Plan and the Harvest Plan Maps.

Where prescribed, streams will be cleaned when a safe working distance has been established. Fine material will not be removed as part of any debris management strategy unless otherwise specified.

Do not remove stable natural material that is in a stream or that is embedded in a stream bank, or a root system that contributes to stream bank stability and fish habitat during harvesting or stream cleaning (except when constructing or modifying an authorized stream crossing).

Temporary stream crossing sites(s) may be designated and must be identified on the Site Plan and Harvest Plan Maps. Within this designated area, no more than three crossings of the stream may be made at any one location.

Reserve zone and management zone widths are provided as slope distances.

Note: The stream (riparian) prescriptions pertain to the portion of the stream within the harvest area. Where the stream lies outside the harvest area and a portion of the RMA is within the harvest area the prescription will be HH, FA, YA, by necessity.

Where the RMZ falls within retention areas (e.g. TLA, WTP), or is completely outside the harvest area, no harvesting will occur; therefore, 100% of the pre-harvest basal area will be retained. Where partial cutting (e.g. feathering) is prescribed within the RMZ the actual range of residual basal area for that section will be provided. When this document is signed, the signing forester is certifying that the RMP is consistent with the approved FSP and the riparian management strategies contained within.

Riparian I.D. and Class	RMA	SU	WIDTH (m)	BA or SPH Retained	Comments (Indicate if in a Community Watershed)
15R1 S3	RRZ		20.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
38 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
	RRZ		20.0	0- 0 m2/ha; 0 sph	
19A S4	RMZ		30.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3R1 S3	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
7R1 S3	RRZ		20.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
13R1 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
36R1 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
4A S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
15R2 S4	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This stream has 100% retention. Placement of the backline was on one side only and it is such that the 30 m riparian set backs are maintained.
16R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
17R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
19B S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3B S6	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
6 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
8 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
9A S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
10 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
9 S6	RMZ	C	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
4R2 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FA/BL YA NC. NO APPROVED MACHINE CROSSINGS. PORTIONS OF STREAM REACH AND RMA WITHIN HARVEST AREA. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3R2 S5	RMZ		30.0	0- 0 m2/ha; 0 sph	FA/BL YA HC accumulations of introduced debris that occurs in the stream post harvest NO APPROVED MACHINE CROSSINGS. PORTIONS OF STREAM REACH AND RMA WITHIN HARVEST AREA. Variable Retention:This S5 stream has approximately 40%-50% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	

13R2FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3A S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
7R2 S5	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This stream has 100% retention. Placement of the backline was on one side only and it is such that the 30 m riparian set backs are maintained.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
4R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S4 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
1R2 S3	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention: This S3 stream has 100% retention.
	RRZ		20.0	0- 0 m2/ha; 0 sph	
15R3 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14AFSZ UC	RRZ		0.0	0- 0 m2/ha; 0 sph	
	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
17R2FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
19R2FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
3wetlands W4	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. The W4 wetlands and RMAs are outside of the harvest area.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
wetland W3	RMZ		30.0	0- 0 m2/ha; 0 sph	FA YA NC. The W3 wetland and RMA are outside of the harvest area. It is located approximately 110 m southwest of FC47.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
4B S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14R2 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14B S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%.The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment. These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
22 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
27 S6	RMZ	B	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
33 S6	RMZ	C	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
35 S6	RMZ	C	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map. The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	

36R2 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC. Approved machine crossings are designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
5R1 S3	RRZ		20.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
19R1 S4	RMZ		30.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
	RRZ		0.0	0- 0 m2/ha; 0 sph	
2R1, 5R2 S5	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		30.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
2R2, 7A S6	RRZ		0.0	0- 0 m2/ha; 0 sph	
	RMZ		20.0	0- 0 m2/ha; 0 sph	Stream RMA is outside the harvest area. FA YA NC (By default)
1R1 S2	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA HC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. A 30 m RRZ and a 20 m RMZ have been established. During hand pruning it is imperative that pruning debris is prevented from entering the stream channel of S2 stream 1 reach 1 (east Klanawa River). Hand clean accumulations of introduced debris form hand pruning that occurs in the stream post harvest.
	RRZ		30.0	0- 0 m2/ha; 0 sph	
16R2 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
18 S6	RMZ			0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
20 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
26 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
29 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
31 S6	RMZ		20.0	0- 0 m2/ha; 0 sph	FA YA NC. STREAM REACH OUTSIDE HARVEST AREA, PORTIONS OF RMA WITHIN HARVEST AREA. Variable Retention:This S6 stream has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
14R1FSZ UC	MFZ		5.0	0- 0 m2/ha; 0 sph	FA YA NC. 5m Machine Free Zone is to be maintained. Variable Retention:This FSZ has 100% retention.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
10 in Harv. area S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
21 S6	RMZ	A	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	
25 S6	RMZ	B	20.0	0- 0 m2/ha; 0 sph	FX YX NC (Within the harvest area), FA YA NC (Outside the harvest area). Approved machine crossings designated on the map.The retention on S6 streams within the block was 0%. The removal of timber from both stream sides helps to eliminate the risk of windfall generated sediment.These S6 streams have ephemeral channels and shading is not required to regulate water temperature. Lack of incised stream banks did not necessitate retention to provide channel and bank stability.
	RRZ		0.0	0- 0 m2/ha; 0 sph	

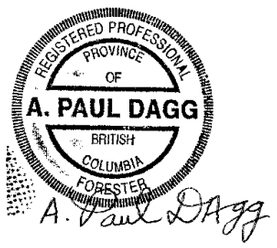
COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION			
A minimum of 4 logs per hectare, each being a minimum of 5 m in length and 30 cm in diameter at one end will be retained as per FPPR s68.			
Performance Std. (%) :	Block Target (%):	Coarse Woody Debris (m3/ha):	10.0

DEFINITIONS

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2009 01 26	NO

Print off the PAS/TAS table located as an attachment on the Block Details Screen and attach to this prescription.

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
PAUL DAGG	 Paul Dagg 2009.02.06 09:51:44 -08'00'
DATE SIGNED	
2009/02/6	
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.	

THE FOLLOWING INFORMATION IS ATTACHED FOR INFORMATION ONLY AND DOES NOT FORM PART OF THE SITE PLAN

SILVICULTURE PLAN

ORIGINAL

LICENCE #	CP	BLOCK	UBI	OPENING NUMBER	FDU	LOCATION	LATITUDE / LONGITUDE
A84393	-	873212	40BC3MP	92C087-111		Flora Lake	48 51 30 / 124 44 54

ECOLOGICAL INFORMATION

SU	Ecology Unit	Area	Zone	Subzone	Variant / Phase	Site Series (series - %)	Elevation Avg (m)	Slope Avg (%)	Aspect	Slope Position	Rooting Depth (cm)	Soil Texture
A	1	35.4	CWH	vm	1	05-75 01-20 07-5	275	30	flat-SE	Lower Slope		
B	2	8.3	CWH	vm	1	01-60 05-35 06-5	295	3	Flat-SW	Lower Slope		
C	3	7.3	CWH	vm	1	07-60 05-30 09-10	240	10	F	Lower Slope		
C	4	1.2	CWH	vm	1	07-70 05-30	220	10	F	Lower Slope		

STOCKING REQUIREMENTS

ASSESSMENT DATES

Standard Unit	Standards ID	Regen Delay (yrs)	Freegrow Early (yrs)	Freegrow Late (yrs)
A		3		20
B		6		20
C		3		20

Min/Max Elevation Regime: 200 / 350

SU : A MATURE LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0

WELL SPACED TREES (sph)			
Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
0	0	0	0.0

Height Relative to Competition (%)
0

SU : A POLE LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0

WELL SPACED TREES (sph)			
Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
0	0	0	0.0

Height Relative to Competition (%)
0

SU : A SAPLING LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0

WELL SPACED TREES (sph)			
Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
0	0	0	0.0

Height Relative to Competition (%)
0

SU : A REGENERATION LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0	
						WELL SPACED TREES (sph)					
Fdc Douglas Fir - Coastal	3.0	16 9 8 1	Ss Sitka Spruce	3.0	10 35	Target Pref/Acc		Minimum Pref/Acc		Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						900		500		400	2.0
Hw Western Hemlock	3.0									Height Relative to Competition (%)	
Ba Amabilis Fir	1.8									0	
Cw Western Red Cedar	1.5										

10: Restricted to northerly aspects

35: Risk of weevil damage

1: Elevated microsites are preferred

8: Restricted to steep slopes

9: Restricted to southerly aspects

16: Restricted to southern portion of biogeoclimatic unit in region

SU : B MATURE LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0	
						WELL SPACED TREES (sph)					
						Target Pref/Acc		Minimum Pref/Acc		Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						0		0		0	0.0
										Height Relative to Competition (%)	
										0	

SU : B POLE LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0	
						WELL SPACED TREES (sph)					
						Target Pref/Acc		Minimum Pref/Acc		Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						0		0		0	0.0
										Height Relative to Competition (%)	
										0	

SU : B SAPLING LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)				MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min	0	Max	0	0	
						WELL SPACED TREES (sph)					
						Target Pref/Acc		Minimum Pref/Acc		Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						0		0		0	0.0
										Height Relative to Competition (%)	
										0	

SU : B REGENERATION LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min 0	Max 0	0	
						WELL SPACED TREES (sph)			
Cw Western Red Cedar	1.5		Ss Sitka Spruce	3.0	35	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Ba Amabilis Fir	1.8	26			7				
Fdc Douglas Fir - Coastal	3.0	16 9 8				900	500	400	2.0
								Height Relative to Competition (%)	
Hw Western Hemlock	3.0							0	

35: Risk of weevil damage

7: Restricted to nutrient-medium sites

26: Suitable minor species on salal-dominated sites

9: Restricted to southerly aspects

8: Restricted to steep slopes

16: Restricted to southern portion of biogeoclimatic unit in region

SU : C MATURE LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min 0	Max 0	0	
						WELL SPACED TREES (sph)			
						Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						0	0	0	0.0
								Height Relative to Competition (%)	
								0	

SU : C POLE LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min 0	Max 0	0	
						WELL SPACED TREES (sph)			
						Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						0	0	0	0.0
								Height Relative to Competition (%)	
								0	

SU : C SAPLING LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min 0	Max 0	0	
						WELL SPACED TREES (sph)			
						Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
						0	0	0	0.0
								Height Relative to Competition (%)	
								0	

SU : C REGENERATION LAYER

PREFRERRED SPECIES			ACCEPTABLE SPECIES			POST SPACING DENSITY(sph)		MAX CONIFEROUS (sph)	
Species	Min Ht. (m)	Footnotes	Species	Min Ht. (m)	Footnotes	Min 0	Max 0	0	
						WELL SPACED TREES (sph)			
Ba Amabilis Fir	2.3	26	Ss Sitka Spruce	4.0	35	Target Pref/Acc	Minimum Pref/Acc	Minimum Pref	Min Horizontal Dist. Pref/Acc (m)
Fdc Douglas Fir - Coastal	4.0	9 1 23				900	500	400	2.0
Hw Western Hemlock	4.0							Height Relative to Competition (%)	
Cw Western Red Cedar	2.0							0	

35: Risk of weevil damage

26: Suitable minor species on salal-dominated sites

23: Restricted to trial use, max 20% of well spaced P&A

9: Restricted to southerly aspects

1: Elevated microsites are preferred

OTHER REQUIRED STOCKING INFORMATION

This planting prescription was done pre harvest by the SP Forester.

When the SOUTH ISLAND FORST DISTRICT, TFL 44 East, 2008, Forest Stewardship Plan is approved the stocking standards ID numbers shall be defined and they will be uploaded.
The planting prescription will convert the pre harvest "off-site" fir species to a (CwHwSs) species mix that is better ecologically suited to the site.
This is a low elevation gentle terrain area which is suited to an early spring plant.
SU A : Plant Cw80 Hw20 412As or equivalent with fertilization required.
SU B: Plant Cw100 412As or equivalent with fertilization required. In the rest of SU B Ecological Unit 2 SU C: (EU3) C3 on the Silviculture Plan Map plant Cw90 Ss10 due to a high salmonberry and red elderberry brush hazard. Weevil resistant Ss shall be planted.
SU C Ecological Unit 4 (EU4) C4 on the Silviculture Plan Map: Plant Cw 100 412As or equivalent with fertilization required.

Additional Standards Comments:

Reduce intertree spacing to 1.5 m to maximize the selection of suitable microsites in any areas of poor plantability due to hygric conditions and bedrock and target Cw here.
Minimum inter-tree spacing within 20 meters of either side of road centerline may be reduced to 1 meter where road construction or harvesting activities have created soil disturbance and reduced plantability.

A low incidence of hemlock dwarf mistletoe (DMH) was noted during the site plan fieldwork.
Possible strategies to reduce the spread of DMH involve regeneration of non-susceptible species along edges where the DMH hazard is high, removing or girdling infected trees, or leaving a vegetative or rock barrier between high hazard trees and susceptible regeneration. Where appropriate, one or more strategies will be implemented before susceptible regeneration is 3 m in height.
A post harvest assessment will confirm boundaries that require planting of a resistant buffer or other special management to mitigate the impact of the DMH in portions of the SUs.

Other Prescribed Treatments (FWP Activity):

Brushing:
Salmonberry is expected to be the main vegetation competitor in all three SUs. Competing brush potential for red alder is rated as high for SU A.Thimbleberry and red elderberry are also expected to be vegetation competitors in SU C. Therefore, prompt planting at (TSS 1200) is required with individual tree fertilization recommended. Brush levels will be monitored in conjunction with stocking surveys and treated where necessary to achieve the prescribed stocking standards.

Site Preparation:
This cutblock will be mechanically piled concurrent with yarding operations by the licensee. A post harvest assessment will determine if additional piling will be required to attain stocking standards. Burning of roadside slash piles should be complete within the first burning season after harvesting is completed.

ACTIVITIES

PLANTING

Planting (Container) 1900/01/01 SEASON:

AREA	PLANTING UNIT	UNIT AREA	SPECIES	COMMENTS	STEMS / HA	TOTAL STEMS
52.2	**1**	35.4	Western Hemlock		240	8496
			Western Red Cedar		960	33984
	2	8.3	Western Red Cedar		1200	9960
	3	7.3	Sitka Spruce		120	876
			Western Red Cedar		1080	7884
	4	1.2	Western Red Cedar		1200	1440

LIMITING FACTORS / COMMENTS

This planting prescription was done pre harvest by the SP Forester.

When the SOUTH ISLAND FORST DISTRICT, TFL 44 East, 2008, Forest Stewardship Plan is approved the stocking standards ID numbers shall be defined and they will be uploaded.
The planting prescription will convert the pre harvest "off-site" fir species to a (CwHwSs) species mix that is better ecologically suited to the site.
This is a low elevation gentle terrain area which is suited to an early spring plant.
SU A : Plant Cw80 Hw20 412As or equivalent with fertilization required.
SU B: Plant Cw100 412As or equivalent with fertilization required. In the rest of SU B Ecological Unit 2 SU C: (EU3) C3 on the Silviculture Plan Map plant Cw90 Ss10 due to a high salmonberry and red elderberry brush hazard. Weevil resistant Ss shall be planted.
SU C Ecological Unit 4 (EU4) C4 on the Silviculture Plan Map: Plant Cw 100 412As or equivalent with fertilization required.

Additional Standards Comments:

Reduce intertree spacing to 1.5 m to maximize the selection of suitable microsites in any areas of poor plantability due to hygric conditions and bedrock and target Cw here.
Minimum inter-tree spacing within 20 meters of either side of road centerline may be reduced to 1 meter where road construction or harvesting activities have created soil disturbance and reduced plantability.

SILVICULTURE ACTIVITY COMMENTS

ACTIVITY	COMMENT

MANAGEMENT STRATEGY

COARSE WOODY DEBRIS MANAGEMENT STRATEGY INFORMATION			
A minimum of 4 logs per hectare, each being a minimum of 5 m in length and 30 cm in diameter at one end will be retained as per FPPR s68.			
Performance Std. (%):	Block Target (%):	Coarse Woody Debris (m3/ha):	10.0

ADMINISTRATION

Amendment number	Date Typed (Yr Mo Dy)	Map Required?
ORIGINAL	2009 01 26	NO

RPF PRINTED NAME	RPF'S SIGNATURE and SEAL
PAUL DAGG	Paul Dagg 2009.02.06 09:51:31 -08'00'
DATE SIGNED	
2009/02/6	
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.	