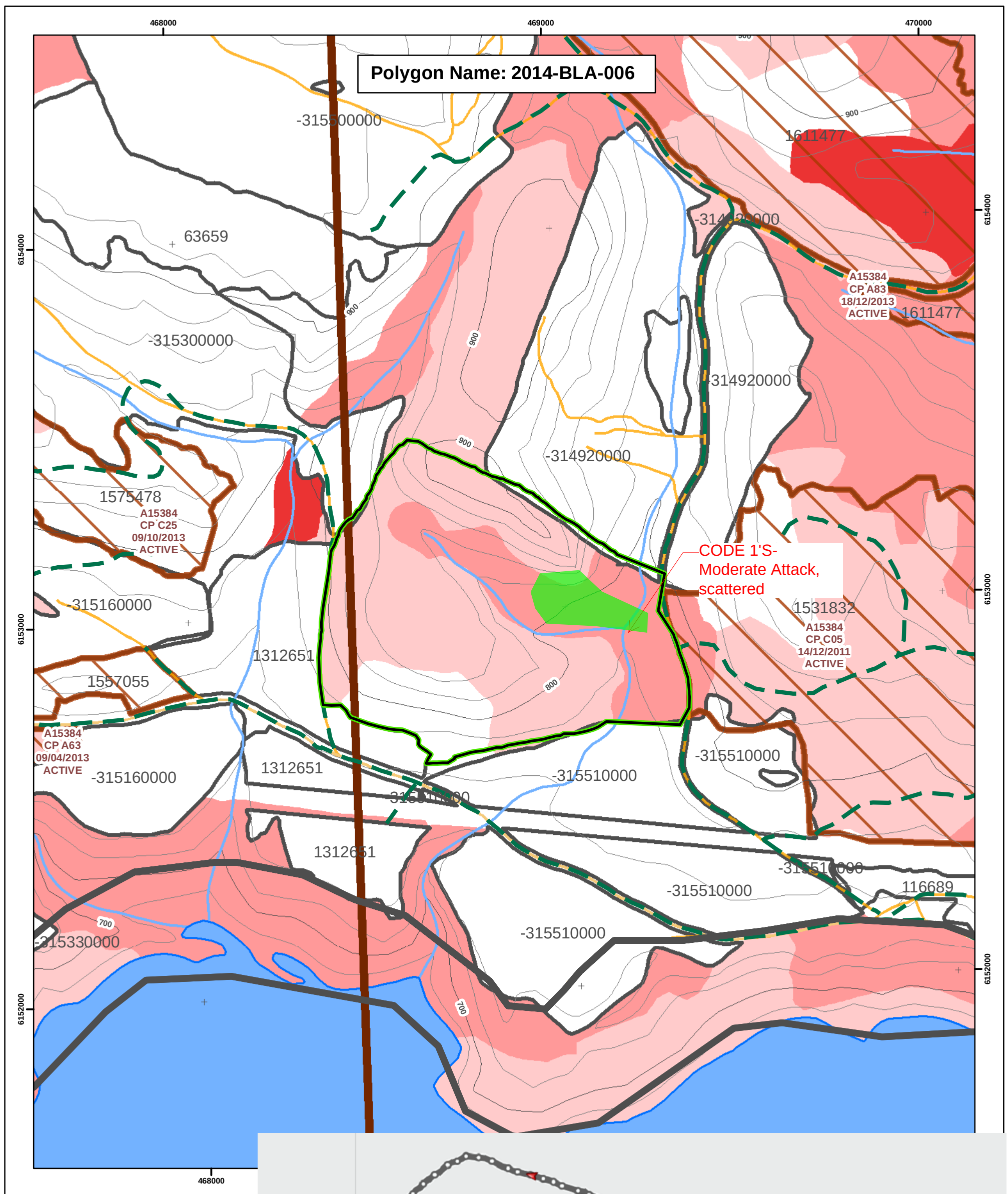
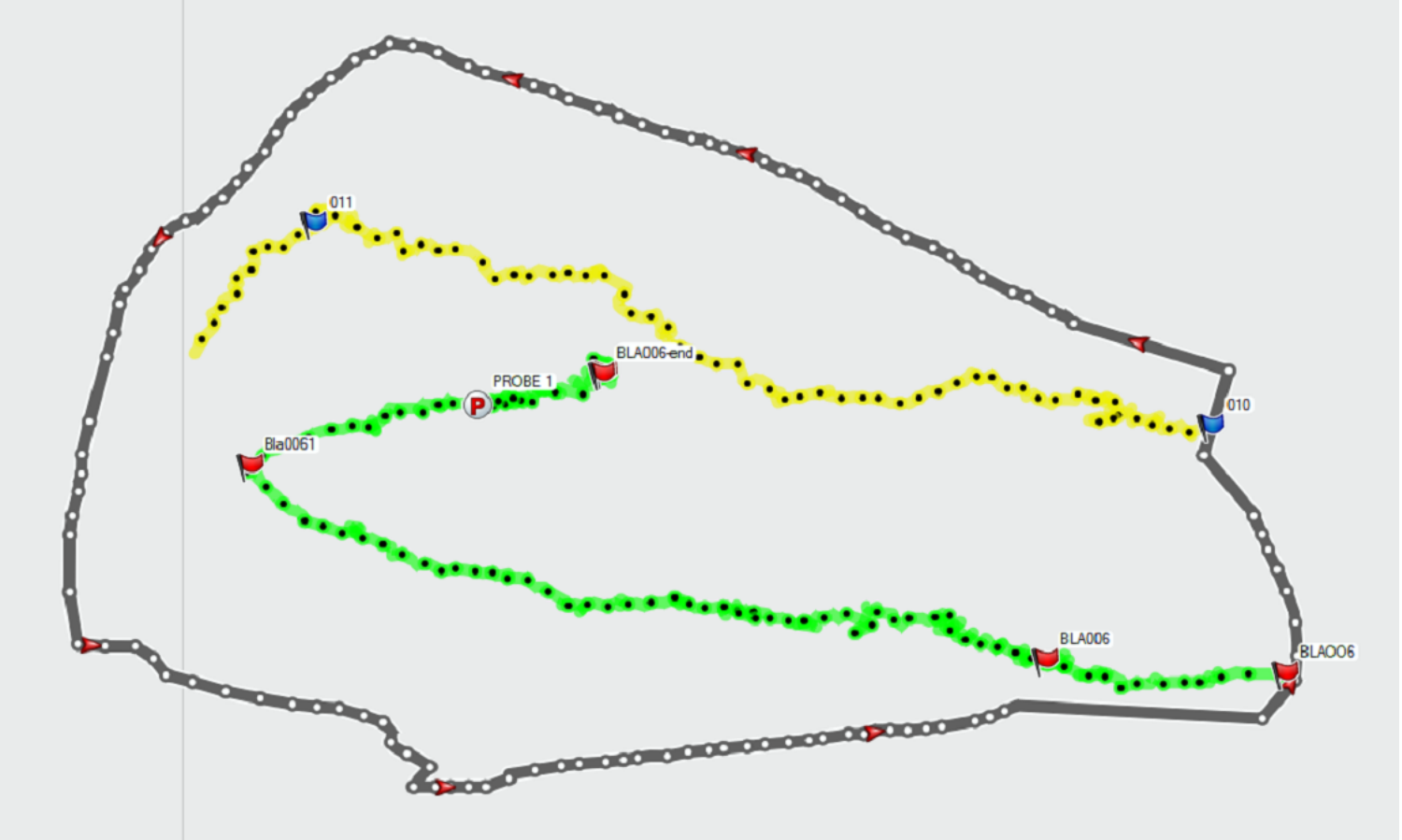




**SENECA ENTERPRISES LTD.**

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**SPRUCE BARK BEETLE REPORT
FH16DMK010**

POLYGON: BLA-006

HECTARES: 21.75

WALKTHROUGH DISTANCE: 1900

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)

4 21.1%

SUMMARY OF CURRENT INFESTATION

Walkthrough estimate shows around 20% of polygon has Moderate attack . This area is just off the mainline alongside a creek and has Code 5's mixed with several Code 1's. It has a minimal rate of spread as surrounded by cutblocks, and only moderate again in identified area. Fresh Boundary flag alongside road to the east side of polygon

MODERATE ATTACK NORTH OF ROAD (20 Hec), LIGHT SCATTERED ATTACK IN SOUTHWEST

ACCESS

Access is mainline along east side of Polygon.

POLYGON FEATURES (Topography, Terrain, Timber Types, Age)

Rolling hills, mix of dead pine and spruce, drainage through middle of polygon and along Road with some steeper slopes. Estimate of 50% Spruce mixed with Dead Pine and Balsam

SIZE, BOUNDARY and PATTERN OF INFESTATION

Infestation patchy but confined to around creek draws near mainline. Lots of old attack surrounds area

INCIDENCE AND SEVERITY OF ATTACK

Sanitation and salvage rating Light, however only 1 probe line established . Moderate to heavy attack in area surrounding Creek draw just off of mainline.

RISK OF BEETLE SPREAD

New cutblocks surrounding it, infestation could move within polygon 60% Spruce stand.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Polygon has a draw through with moderate slopes of 10-35%. Access to area needed to sanitize close to the mainline and fresh layout flag

RECOMMENDATIONS**HARVEST/ TRAP TREES****OPTION 1**

If logging activity in area with fresh orange boundary, try and incorporate this part to Harvest or lay trap trees to hold current infestation.

OPTION 2**TRAP TREES/ MONITOR**

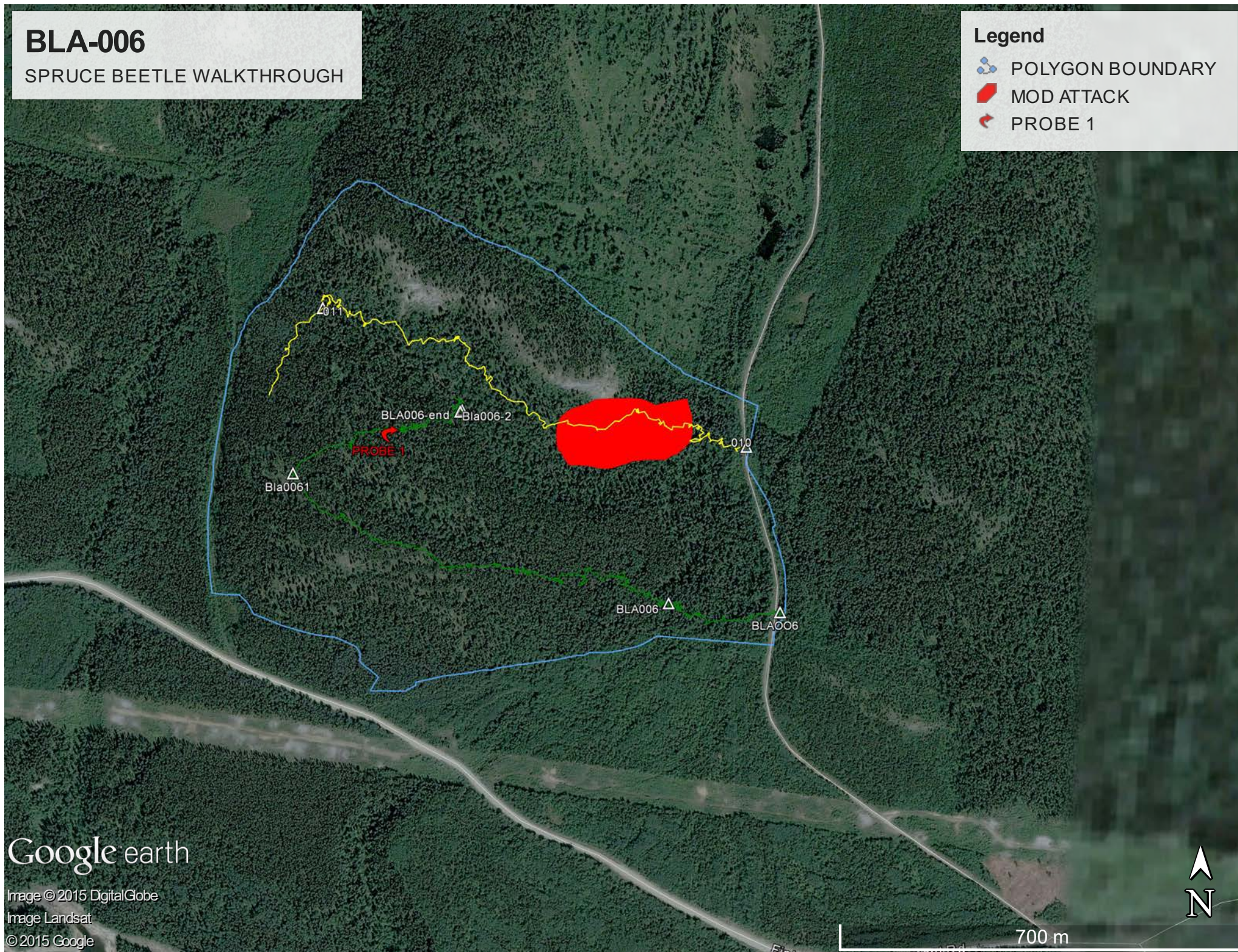
Monitor and kay down trap trees along main road,

BLA-006

SPRUCE BEETLE WALKTHROUGH

Legend

-  POLYGON BOUNDARY
-  MOD ATTACK
-  PROBE 1



Google earth

Image © 2015 DigitalGlobe
Image Landsat
© 2015 Google

N

700 m

Summary						
BLA-006	HEC	21.75	METERS WALKED	1900	% TRAVERSED	8.7%
PIXELS COVERED BY WALKTHROUGH	19	INFESTED PIXELS	4	ESTIMATED % OF BLOCK INFESTED (From Walk through)		21.1%

TABLE 5- Spruce Beetle Infestation Summary Sheet

OF NOTE- Results taken from a 100m Probe Line established at 1 per 50 hectares to represent

DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES
			2015		2014		2013		
			1	2	3	4	5	6	
17.5-25.0	3.3	13.2	0.0	0.0	0.0	0.0	3.3	0.0	36.3
25.1-30.0	5.3	5.3	0.0	0.0	0.0	0.0	5.3	0.0	53
30.1-35.0	7.1	14.2	0.0	0.0	0.0	0.0	7.1	0.0	42.6
35.1-40.0	9.4	0	0.0	0.0	0.0	0.0	0.0	0.0	0
40.1-45.0	11.6	0	0.0	0.0	0.0	0.0	0.0	0.0	0
45.1-50.0	13.8	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0
50.1-55.0	16.2	0	0.0	0.0	0.0	0.0	0.0	0.0	0
55.1-60.0	18.7	0	0.0	0.0	0.0	0.0	0.0	0.0	0
60.1 +	25.3	0	0.0	0.0	0.0	0.0	0.0	0.0	0
TOTALS	62.2	46.5	0.0	0	0.0	0.0	15.7	0	131.9

TABLE 4- Spruce Beetle Attack Density and Larval Density Rating

MEAN NO. OF ENTRANCE HOLES PER 225 cm2 PHLOEM SAMPLE	< 1 LOW Attack Density	MEAN NO. OF LIVING LARVAE PER 225 cm2 PHLOEM SAMPLE	< 4.9 LOW Mean Larval Density
	1.0- 1.9 MOD Attack Density		5.0 - 14.9 MOD Mean Larval Density
	2.0 - 3.9 HIGH Attack Density		< 4.9 LOW Mean Larval Density
1.50	< 3.9 SEVERE Attack Density	0.00	< 4.9 LOW Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough

% 2015 ATTACK	0.0%	0.0	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	0.0%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	202.2
% 2013 ATTACK	25.2%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	32.0%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

Sanitation rating light, not in area of attack.

SUMMARY OF ALL CARDS
FS1111

NUMBER OF CARDS

1

ACCESS -	Access is mainline along east side of Polygon.
POLYGON FEATURES -	Rolling hills, mix of dead pine and spruce, drainage through middle of polygon and along Road with some steeper slopes. Estimate of 50% Spruce mixed with Dead Pine and Balsam

DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			2015		2014		2013			
			1	2	3	4	5	6	BL	AT
17.5-25.0	3.3	4	0	0	0	0	1	0	2	9
25.1-30.0	5.3	1	0	0	0	0	1	0	0	10
30.1-35.0	7.1	2	0	0	0	0	1	0	0	6
35.1-40.0	9.4	0	0	0	0	0	0	0	0	0
40.1-45.0	11.6	0	0	0	0	0	0	0	0	0
45.1-50.0	13.8	1	0	0	0	0	0	0	0	0
50.1-55.0	16.2	0	0	0	0	0	0	0	0	0
55.1-60.0	18.7	0	0	0	0	0	0	0	0	0
60.1 +	25.3	0	0	0	0	0	0	0	0	0
TOTALS		8	0	0	0	0	3	0	2	25
BARK SAMPLES 15 cm x 15 cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN				
						Attacked Yr	Yr _____	Unattacked		
2	3	0	0	0	0	0	0	0		

SIZE, BOUNDARY AND PATTERN OF THE INFESTATION
Infestation patchy but confined to around creek draws near mainline. Lots of old attack surrounds area
INCIDENCE AND SEVERITY OF THE INFESTATION
Sanitation and salvage rating Light, however only 1 probe line established . Moderate to heavy attack in area surrounding Creek draw just off of mainline.
RISK OF BEETLE SPREAD
New cutblocks surrounding it, infestation could move within polygon 60% Spruce stand.
ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES
Polygon has a draw through with moderate slopes of 10-35%. Access to area needed to sanitize close to the mainline and fresh layout flag along main road.

SPRUCE BEETLE PROBE CARD

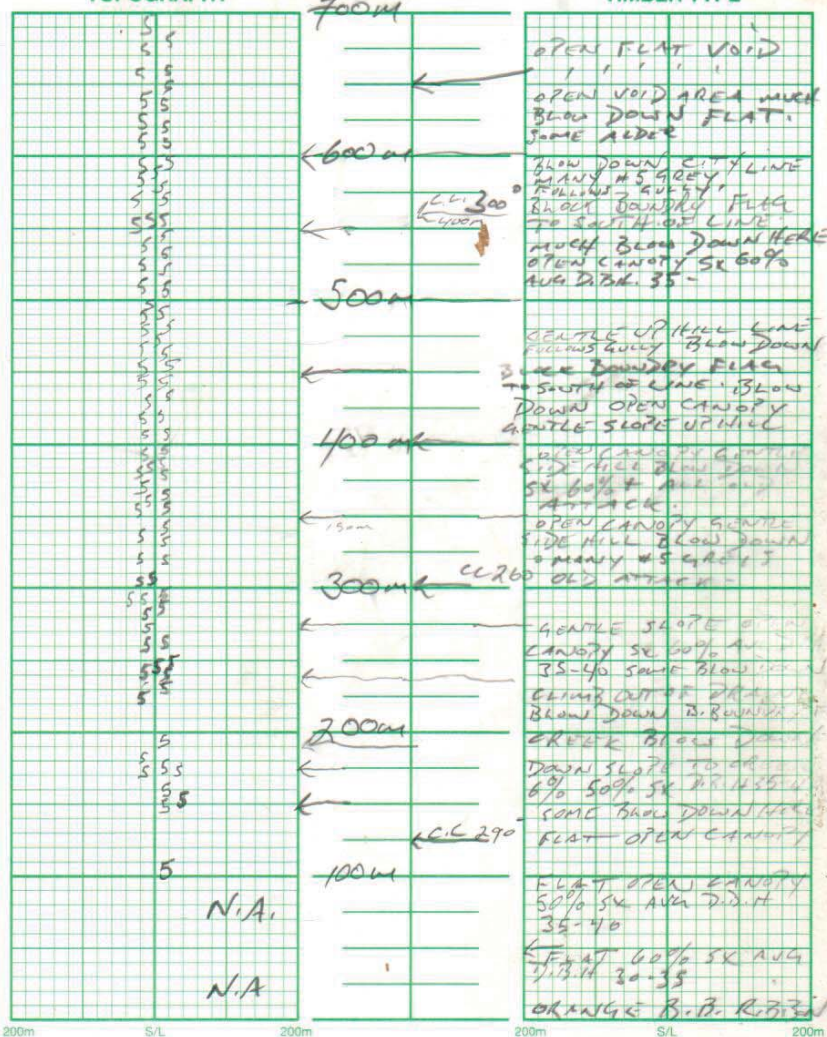
LOCATION B.L.A 006		N. 55° 31.346'		PAGE 1 OF 1					
BEARING 80°		DISTANCE 100 m		STRIP WIDTH 10 m					
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES
			1	2	3	4	5	6	
17.5 - 25.0	3.3	1111							D.K. 1
25.1 - 30.0	5.3	1							
30.1 - 35.0	7.1	11							
35.1 - 40.0	9.4								
40.1 - 45.0	11.6								
45.1 - 50.0	13.8	1							
50.1 - 55.0	16.2								
55.1 - 60.0	18.7								
60.1 +	25.3								
TOTALS		8						28	3. FR 1
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
NO SAMPLE	/	/	/	/	/				
NO SAMPLE	/	/	/	/	/				
COMMENTS QUITE HEAVY BLOW DOWN THIS PROBE LINE HEAVY OLD ATTACK MANY GREY 5s									
CREW NAMES DON & DAVE						DATE Y M D 15 10 10			

BLA 006

TOPOGRAPHY

STRIP No. 2

TIMBER TYPE



STRIP NO.: 2 DIRECTION: 270°
 START STRIP: 0 m
 JOB NO.: DATE: OCT/19/15
 CREW: DON & DAVE
 REMARKS:

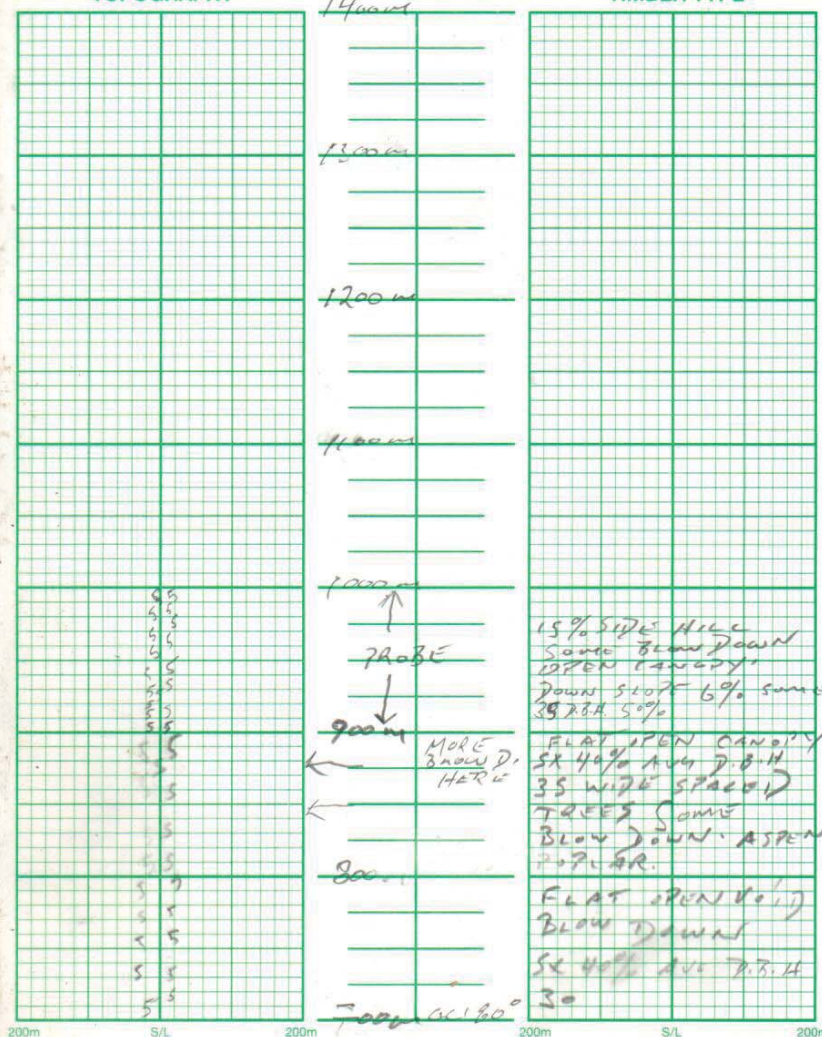


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TOPOGRAPHY

STRIP No. 2

TIMBER TYPE



STRIP NO.: 2 DIRECTION: 300°
 START STRIP: 700m
 JOB NO.: BLA 006 DATE: OCT/19/15
 CREW: DON & DAVE
 REMARKS:

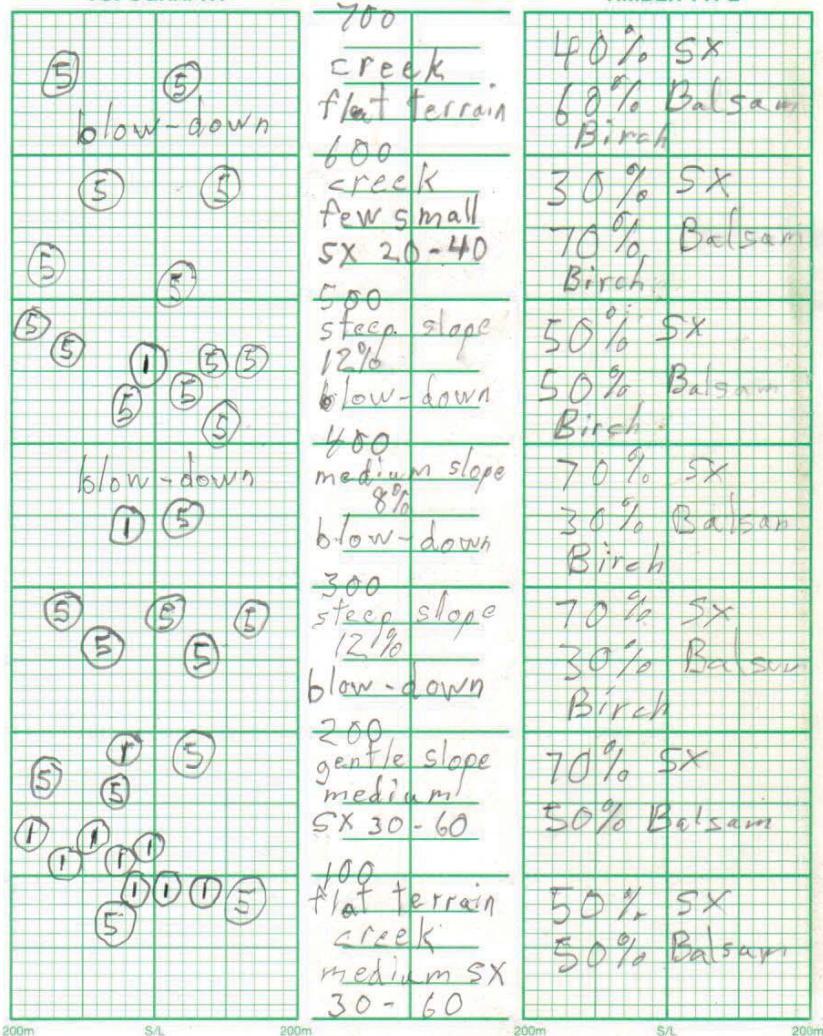


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TOPOGRAPHY

STRIP No. BLA-006

TIMBER TYPE



STRIP NO.: 1

DIRECTION: 275°

START STRIP: 0-700m

JOB NO.:

DATE: 15/10/10

CREW: Don & Dave

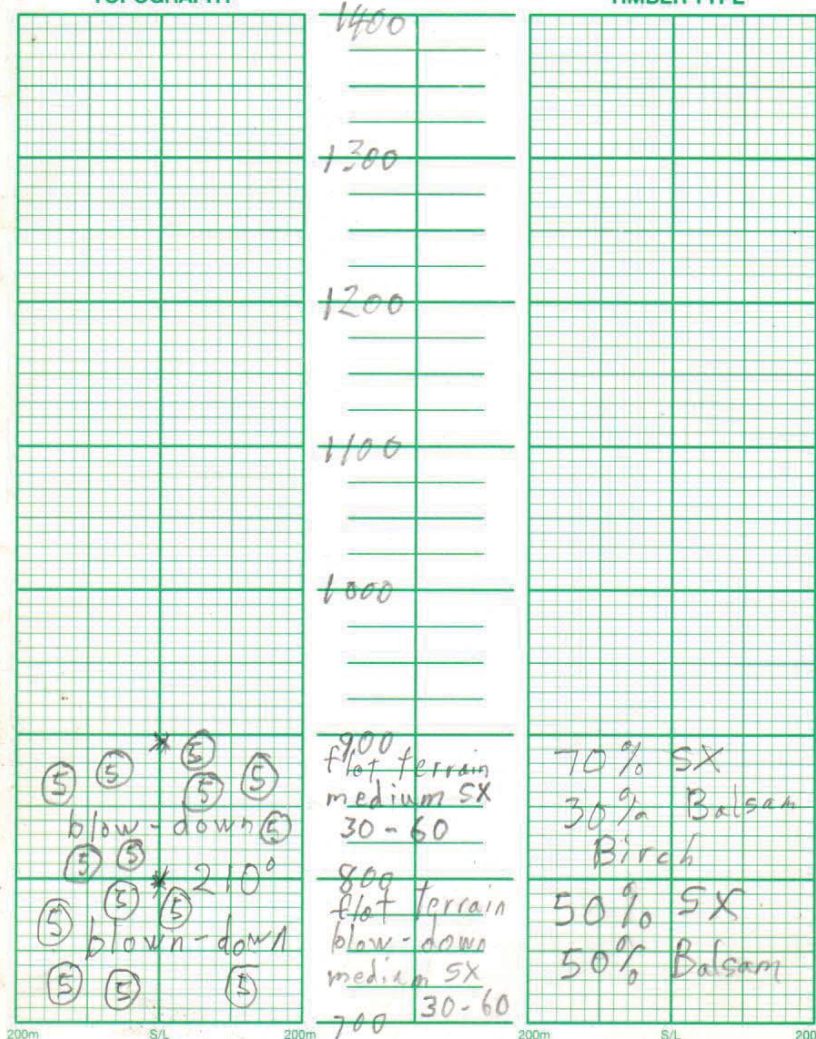
REMARKS:


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TOPOGRAPHY

STRIP No. BLA-006

TIMBER TYPE



STRIP NO.: 1

DIRECTION: 275°

START STRIP: 700-900

JOB NO.:

DATE: 15/10/10

CREW: Don & Dave

REMARKS:


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