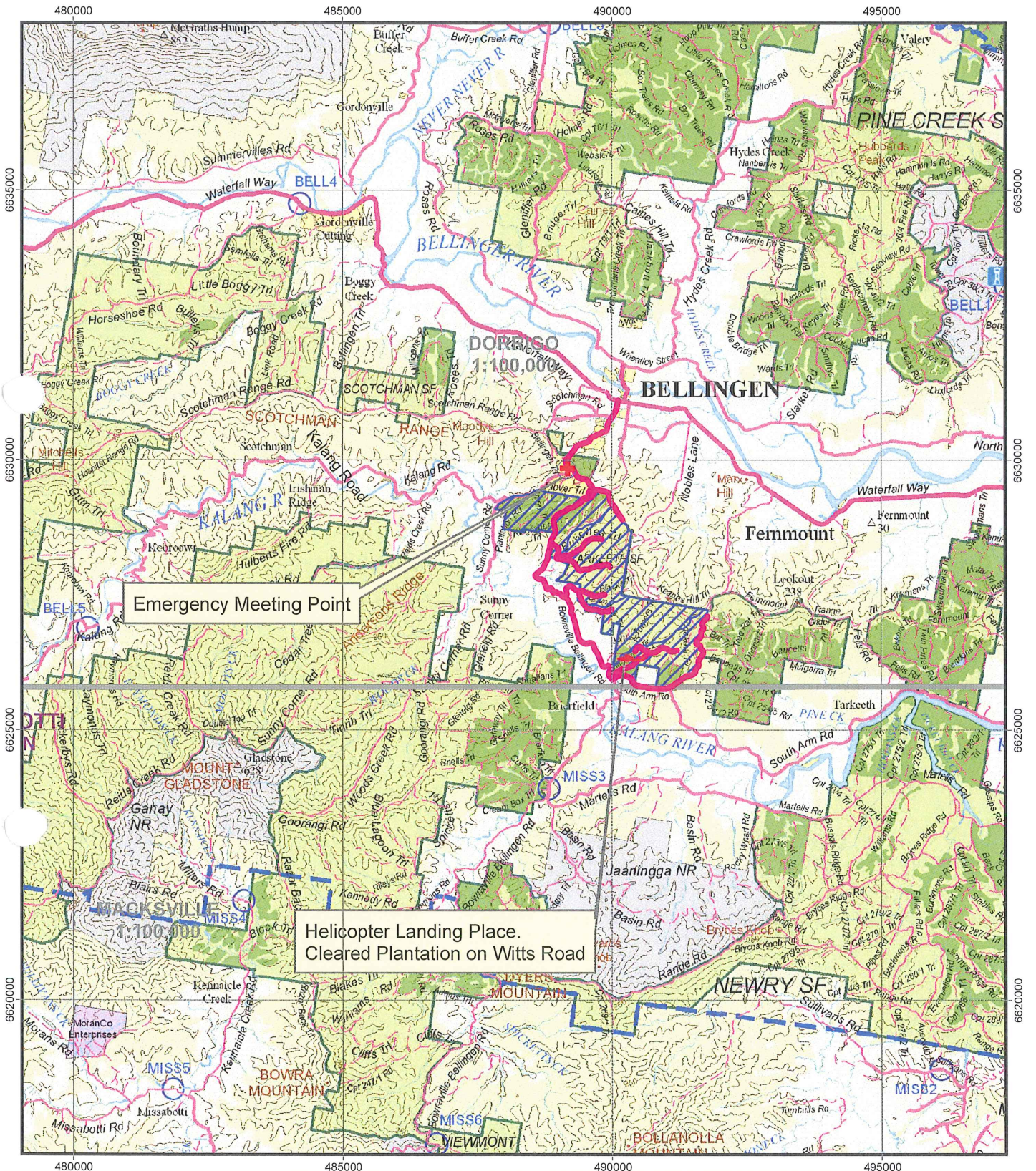




Map Sheets:
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 Missabotti 9436-1N
 1:100000 Dorrigo 9437
 Macksville 9436
 Scale: 1:100,000

North East Region - Urunga MA
 Locality Map
Compartment 249 - 252
 Tarkeeth State Forest

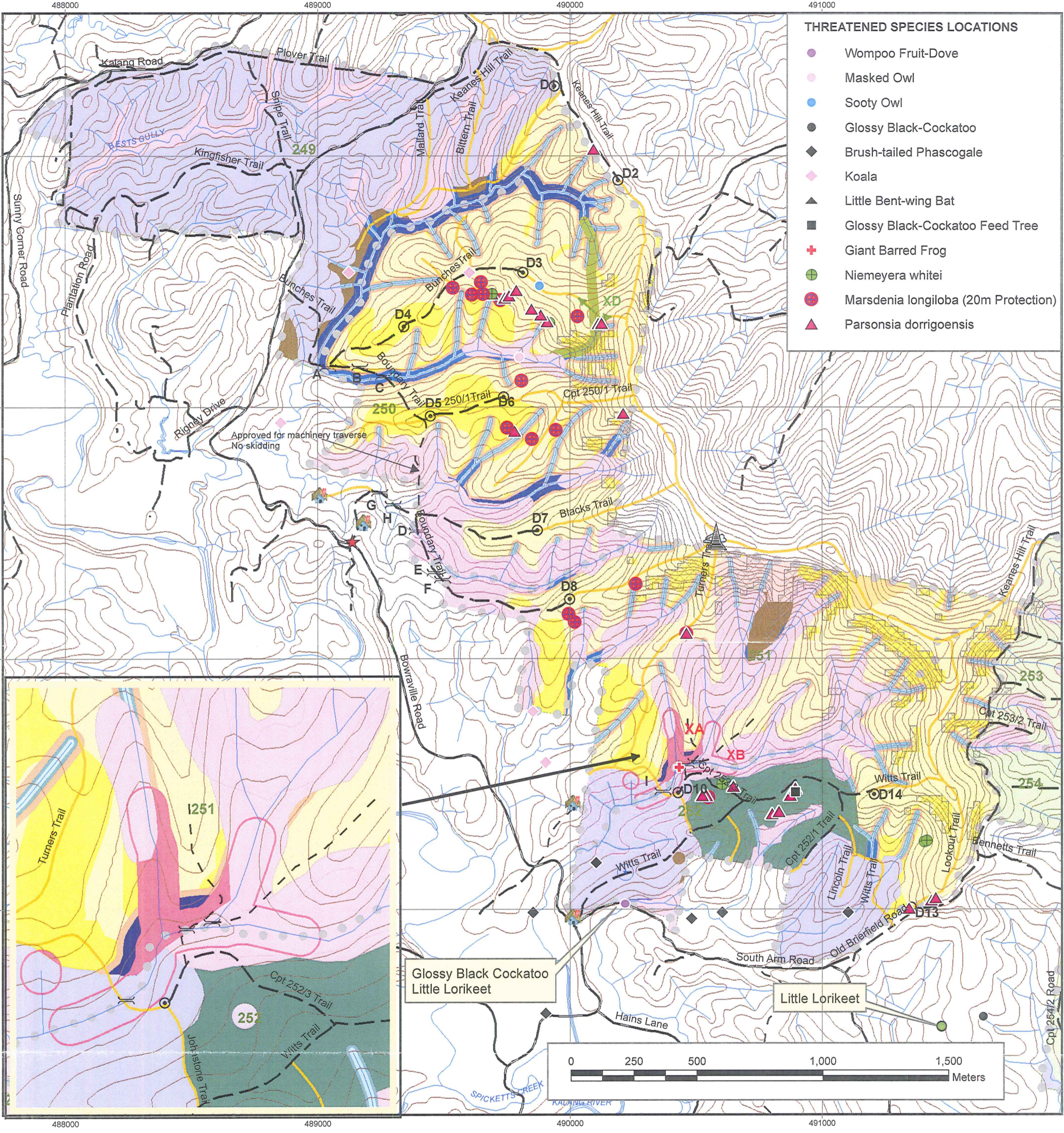


MAP FEATURES

- Subject Area
- Emergency Meeting Point (Safety Point)
- Helicopter Landing Point
- State Forest
- 1:25000 Map Sheet
- 1:100000 Map Sheet
- National Park Estate
- Haulage Route



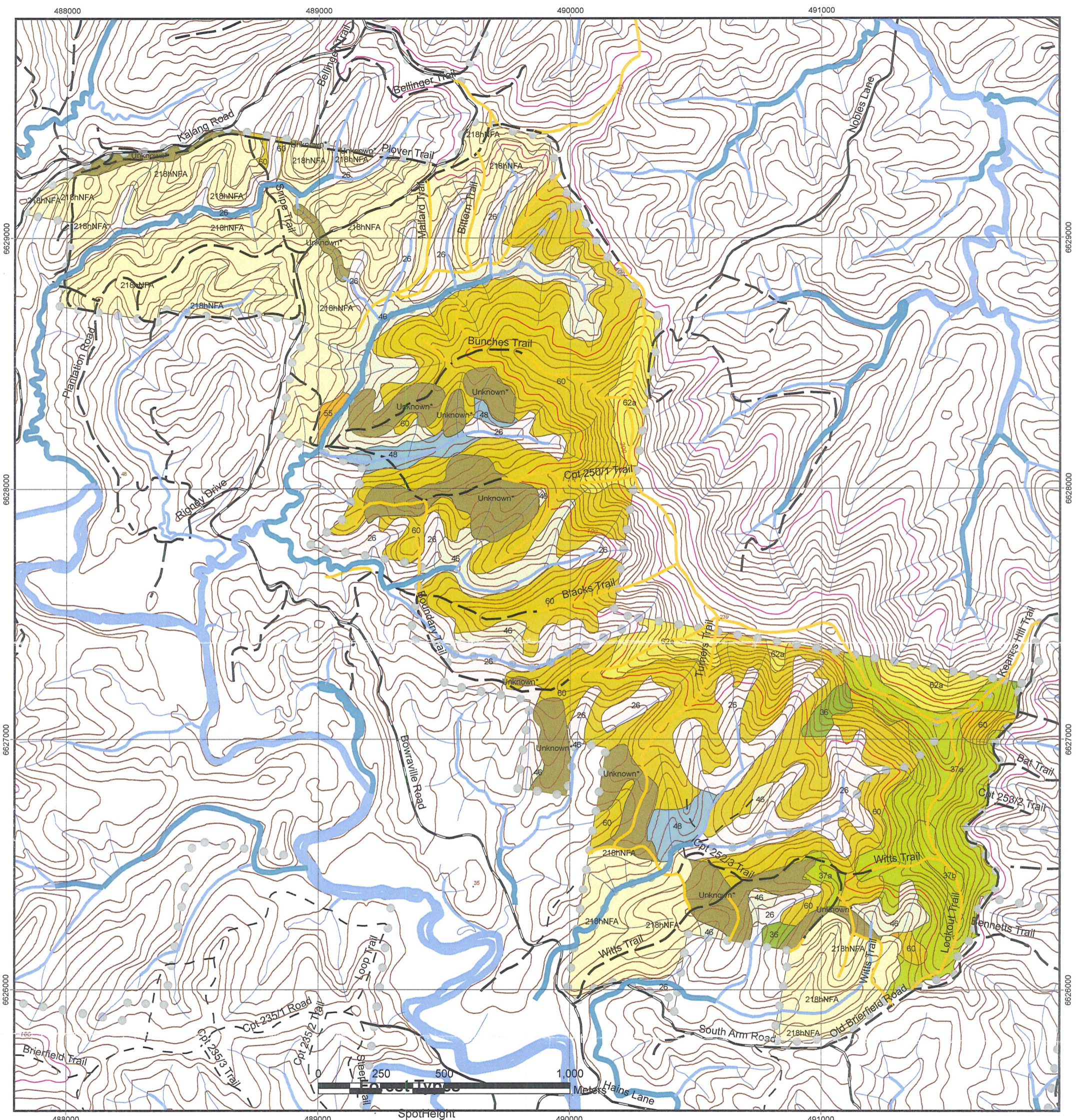
Prepared by... S. Pickering
 Date: 28/3/2012



North East Region - Urunga MA
Forest Type Map
Compartments 249, 250, 251, 252.
 Tarkeeth State Forest



Map Sheets:
 1:25000 Bellingen 9437
 1:100000 Dorrigo 9437
 Scale 1:15,000



MAP FEATURES

- State Forest Boundary
- Compartments Boundary
- 1 Km Grid
- 10 / 100 m Contour

ROADS

- Sealed
- All Weather, Unsealed
- Dry Weather, Unsealed
- 4WD Track
- New Construction
- Non Haulage Roads
- Roads not to be used
- Forwarder use only

- Contours 100m
- Contours 10m
- Type 26 Viney Scrub
- Type 36 Moist Blackbutt
- Type 37 Dry Blackbutt
- Type 46 Sydney Blue Gum
- Type 48 Flooded Gum
- Type 55 Various Wattles
- Type 60 Narrowleaved White Mahogany - Red Mahogany - Grey Ironbark - Grey Gum
- Type 62 Grey Gum - Grey Ironbark - White Mahogany
- Type 218 Forestry Plantations
- Untyped

Prepared by... Peter Simon & Flavio Bugno
 Date: 28/11/11

FORESTS NEW SOUTH WALES - NORTH EAST REGION
HARVESTING PLAN No. 3766

Tarkeeth State Forest - Compartments 249, 250, 251 & 252


1. Certification

This plan has been prepared in accordance with the Integrated Forestry Operations Approval issued under the Forestry and National Park Estate Act 1998 and addresses significant aspects and impacts in the planning process. The **Standard Harvest Plan Conditions for Native Forest Operations in North East Region** apply to this operation.

Prepared by:

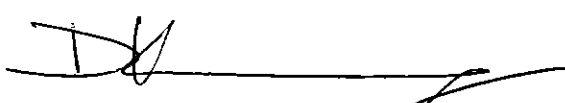
Harvest Planner		Date: 27/3/2012
for Peter Simon		

Endorsed by:

Senior Planner		Date: 27/3/2012
for Flavio Bugno		

Endorsed by:

Active

Regional Planning Manager		Date: 28/03/12
for John Murray John Murray		

Approved by:

Regional Manager		Date: 29/3/12
Craig Busby		

Note: Approval includes the Harvest Plan Operational Map (HPOM) version 1.

2. Description of Proposal

Selective harvesting of regrowth native forest stands, using Single Tree Selection or

Other

	Proposed	Details
Roadworks	Yes	Roadworks Plan (attached)
Post harvest Burning	Yes	Plan to be prepared separately
Rehabilitation	No	

3. Area Identification and Yield Estimates

Region	North East Region
Management Area	Urunga
State Forest	Tarkeeth
State Forest No.	1036
Pricing area	Coastal North

	Cpt 249	Cpt 250	Cpt 251	Cpt 252	TOTAL
Gross Area (ha)	138	163	124	109	534
Net Harvest Area (ha)	4	115	65	41	237
Estimated Yield (m3/ha)	15	20	20	25	20
Volume (m3) All Product	60	2300	1300	1025	4685

Products	Total (m3)
High Quality Large	1251
High Quality Small	1350
Low Quality	1200
Veneer	221
Poles	422
Girders	221
Total	4685

4. Forest Description

Forest Type: (See Forest type map)

- White Mahogany, Red Mahogany, Grey Ironbark and Grey Gum type 60 and 62, and Blackbutt types 36 & 37 dominate the upper slopes and ridges. Viney Scrub type 26, Blue Gum type 46 and Flooded Gum type 48 dominate on lower slopes and along drainage lines.
- The untyped forest type is assessed as the adjacent types 37 or 60.
- Other mapped types in the area include Forestry Plantations type 218 and various wattles type 55.

Harvest History:

- These compartments were originally APM forests and plantations were established on pasture areas in 1968. They have been harvested several times since 1968.
- The last harvest of the native forest sections was in 1994 using STS silviculture.

Stand Age/Size Class Description: Mixed Age stand consisting of:

- Sapling: 0-10cm dbhob regrowth from natural regeneration
- Large sapling -10-20cm dbhob regrowth from 1994 harvest event
- Pole/Mature 30-100cm dbhob component resulting from previous harvest events.

Site Quality

- Generally moderate-good site quality with site height 20-35m.

Stand health

- Good within Dry Blackbutt forest type and upper ridges
- Fair along mid-slopes with limited regeneration.
- Poor along drainage lines.

5. Silviculture and Harvesting Prescriptions

Notwithstanding the prescriptions detailed below, all conditions of the IFOA, including General and Species Specific conditions of the Threatened Species Licence and the Environment Protection Licence are to be applied, where they are described in this plan or in the respective licences.

Objectives:

- Maximise the recovery of merchantable timber from the mature age/size cohort within the constraints of the harvest plan
- Create suitable conditions for a regeneration event.

	Mixed Aged Mixed Species
Treatment – current ops	Moderate STS
Est. % of NHA	100%
Expected BA Removal (%)	30%
Future Ops 15-20 years	Thinning (sapling size cohorts)

Single Tree Selection prescription:

- Tree removal and ground disturbance must also maximise regeneration opportunities.
- Single Tree Selection must remove no more than 40% of the basal area across the net harvest area.
- Trees with dbhob <20cm must not be selected for harvesting under STS (1.5.10 IFOA).
- BA removal may exceed 40% in some localized areas, but will be balanced by offset areas, non harvest areas and tree retention across the tract.

6. Special Conditions

6.1 EPL Licensing

NOTE: This operation is licensed.

A commencement of Operations form is to be forwarded to the Office of Environment and Heritage within 14 days of commencement of operations authorised under this plan. The Harvesting Manager is responsible (A Commencement of operations form is attached.)

A cessation of Operations form is to be forwarded to the Office of Environment and Heritage within 14 days of cessation of operations authorised under this plan.

The Supervising Forest Officer must notify the Harvesting Manager when operations have commenced and ceased

6.2 Seasonal Harvesting and Burning Restrictions

No

6.3 Leases, Permits, Plots

	Occurs	Details	Conditions
Crown Leases	No		
Occupation Permits (grazing)	No		
Occupation Permits (apiary)	No		
Occupation Permits (other)	No		
PGP's	No		
Research Plots/Plus Trees	No		
Special Purpose Permits	No		

6.4 Noise and Dust

There are residents in close proximity to the operation that are likely to be affected by log truck noise and dust at the junction of Witts Road, Bowraville Road and Blacks Trail. Site specific operational conditions to minimise likely impacts must be developed by the SFO and Contractor in conjunction with the residents and approved by the Harvesting Team Leader.

6.5 Critical Boundaries

Private Property: adjoins Cpt 249 from the north-east and west, Cpt 250 from the east and west, Cpt 251 from the north and west, and Cpt 252 from the south. The western and southern boundaries are fenced and the northern and eastern boundaries are unfenced and no boundary markers were located during planning.

Other critical boundaries:

- There is a plantation boundary within Cpt 249 to the north-west, within Cpt 251 to the south and within Cpt 252 to the south. All plantation has been recently clearfelled and the boundaries clearly identifiable.
- If there is any doubt about the location of a critical boundary, clarification must be sought from the Harvesting Team Leader to determine the requirements for boundary mark-up.
- Harvesting must not impact on private property or any fence line.
- Any damage to a functional fence must be immediately repaired by the contractor.

6.6 Neighbour considerations

Boundary trail traverses private property (see crossings E and F). A permit to enter to use this road for haulage has been obtained and is held on file. Contact details are held on file - ref.lot/folio no. 14/845310.

Blacks Trail is on a crown road reserve adjacent lot/folio no. 508/755557. The Operations Team Leader must contact the neighbor prior to commencing roading operations. The harvesting team leader must contact the landholder on completion of operations. Contact details are held on file

6.7 Haulage Considerations

- Haulage is planned to access the Bowraville Road via Keanes Hill Trail, Bunches Trail, Witts Road and Blacks Trail. And South Arm Road via Old Brierfield Road.
- These roads are not approved for use by B-Doubles
- The western end of Blacks Trail travels through a road reserve and is used as access to neighbouring properties. Trucks must be aware of traffic in this section as it offers limited places to pass on-coming traffic.
- Signage should be used on the above intersections to notify traffic of turning trucks.

6.8 IFOA Required Approval Of Forestry Activities

Approvals have been obtained for the following activities / locations as shown on the operational map.

Crossing No.	Activity	Type	Conditions
XA, XB	Snig reopening Snigging	Rainforest Riparian Habitat Protection	Clear vegetation and debris from existing tracks. Remove cleared debris to outside riparian zone. No debris is to be placed near trees. Restrict snigging to existing track pavement and over armoured piped crossings. Use of bumper trees and / or logs to prevent log from dragging along drainage feature. Snigging not to occur on Crossing XB when water is physically running over crossing. Install temporary approach drainage at the end of each days work. Repair pavement surface, seed and drain to EPL on completion of snigging.
XD	Snigging	Ridge & Headwater Habitat	Snigging restricted to Bunches Trail. No debris is to be placed near trees. Standard EPL conditions to be applied.

- NOTE: Any additional crossings of Rainforest, HCVOG and Riparian Protection Zones require prior Regional Manager (or NPWS) approval before can be undertaken.
- It is the responsibility of the SFO to identify any additional areas that need to be crossed, the location of any such crossings without approval and to contact the Planning Unit to obtain the necessary approval.

6.9 Unmapped Rainforest

- Unmapped rainforest is to be identified and marked for retention in accordance with Forest Practices Circular 2005/02

6.10 Fire Fighting Trails

- The following trails are mapped as non haulage roads past the designated dump sites as shown on the harvest plan map but may be used for snigging. They must remain trafficable

HARVEST PLAN No. – Tarkeeth SF, Compartments 249, 250, 251 & 252

for 4WD and drained to EPL standards after the harvesting operation for the purposes of fire fighting.

- These roads include Bunches Trail, Cpt 250/1 Trail, Blacks Road, Boundary Trail, Turners Trail, Witts Trail and Lookout Trail.
- Boundary Trail between dump 5 and Blacks Trail may be used by harvesting machinery to traverse the shown protection zones.
- Snigging on this section of trail is not approved.
- Machinery must use walkover techniques.
- Track must remain trafficable for 4WD and be drained to EPL standards at the time of use. Ensure ROD either side of drainage line crossing are effective.

6.12 School Bus Routes

- School buses travel along South Arm Road, Monday to Friday between 8:00am- 8:45am and 3:45pm – 4:30pm. Appropriate signage of log truck use and UHF Channel in use, must be placed at the intersections of South Arm Road and Bowraville Road and, South Arm Road and Old Brierfield Road.

6.13 Downhill Snigging

Condition 82 of the EPL applies.

Where downhill snig tracks connect directly with a log dump or log landing, one of the following techniques or a combination thereof must be used:

- a) snig tracks must enter the log dump or log landing from the side or below;
- b) a drainage structure must be in place immediately before a snig track enters the log dump or log landing at the end of each day's operation.

7. Forest Management Zoning Conditions

The following Forest Management Zones and conditions apply:

FMZ	Type	Notes
Zone 3A	Harvesting Protection	High Conservation Old Growth Forest (HCVOG) and Rainforest. These areas must be protected as marked on the map.
Zone 3B	Special prescription	Visual protection along the northern side, and a small section on the southern side, of Keanes Hill Trail. Harvesting operations must aim at retaining the visual amenity of the forest as viewed from Keanes Hill Trail and canopy removal must not exceed 50% in visible areas.
Zone 4	General Management	Available for harvesting in accordance with the conditions of this harvest plan.
Zone 5	Hardwood Plantation	Not available for harvesting under this harvest plan
Zone 8	Further Assessment	<p>These areas are to be rezoned FMZ 4 with management by prescription (Standard Harvest Plan Conditions for Native Forest Operations in North East Region apply)</p> <p>These areas include:</p> <ul style="list-style-type: none"> • Modelled IHC 4 areas – assess actual slope in the field and exclude areas >30 degrees in accordance with condition 3 of schedule 4 of the EPL. • Mapped drainage features – identify in the field and apply EPL and TSL conditions based on actual field location, • modelled drainage features - modelled streams are to be inspected by the SFO. Appropriate prescriptions (Schedule 4 of the EPL) are to be applied if required and noted on the harvesting operational map. • Areas with gaps in Forest type mapping. These areas have been assessed as native forest. Harvest in accordance with the conditions of this plan

8. Cultural Heritage Conditions

Aboriginal Cultural Heritage

No special conditions apply.

Non Aboriginal Cultural Heritage

No special conditions apply.

9. Flora and Fauna Conditions

10. Refer to Technical Guidance Note 2005-3A March 2005 for conditions (TSL Booklet)

Mark-up Conditions

The SFO must search for threatened species and mark-up the block as per Conditions **5.1 (General)**, and **5.2 (Koala)** of the TSL. The Tree Marking code is shown in the Standard Harvest Plan Conditions for Native Forest Operations in North East Region.

Tree retention Conditions applying:

Prescription	TSL Condition
Hollow bearing and recruit trees	(Regrowth Zone) 5.6c,d
Greater Glider density > 1 per ha?	No – 6.9 d does not apply
Stag Retention	5.6e
Significant Food Resources	5.6f
Protection of Retained Trees	5.6g

Species Known or Likely to Occur

- Recent and reliable records exist within, or within close proximity of the compartments for the following threatened species. These species require species-specific or site-specific prescriptions if further records or habitat features are identified during mark-up.

SPECIES GROUP	COMMON NAME	SCIENTIFIC NAME
Amphibians	Giant Barred Frog	<i>Mixophyes iteratus</i>
Reptiles	Nil	<i>Varanus gouldii</i>
Mammals	Golden-tipped Bat	<i>Kerivoula papuensis</i>
	Large Footed Myotis	<i>Myotis adversus</i>
	Black Flying Fox	<i>Pteropus alecto</i>
	Little Red Flying Fox	<i>Pteropus scapulatus</i>
	Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>
	Koala	<i>Phascolarctos cinereus</i>
Birds	Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>
	Masked Owl	<i>Tyto novaehollandiae</i>
	Powerful Owl	<i>Ninox strenua</i>
	Sooty Owl	<i>Tyto tenebricosa</i>
	Glossy-black Cockatoo	<i>Calyptorhynchus lathami</i>
Flora	Newry Golden Wattle	<i>Acacia chrysotricha</i>
	Rusty Plum	<i>Niemeyera whitei</i>
	Red Bobbel Nut	<i>Hicksbeachia pinnatifolia</i>
		<i>Marsdenia longilobia</i>
	Milky Silkpod	<i>Parsonsia dorrigoensis</i>
	<i>Tylophora woolsii</i>	

Site-Specific Conditions, Exclusion Zones & Modified Harvest Areas

Table 1: General Prescriptions

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Koala Mark-up Searches	5.2.2	3 KOAL records in and within 100m of cpt boundaries	These compartments contain preferred forest types, marking-up must be conducted at least 300m in advance of harvesting operations. In the event that a koala or scats (as noted in 5.2.2(i)) are found, a koala star search will be conducted to determine koala use area/s.
Tree Retention	5.6 (f),(g)	1 GLBC feed trees in cpt U_252	Retain and protect glossy black cockatoo feed trees.
Burning	5.16	Threatened species have been recorded in these cpts.	The habitat requirement of threatened species must be taken into account when instigating hazard reduction burns to promote and maintain an understorey mosaic, significant areas of dense understorey vegetation and to minimise impact on large fallen logs.

HARVEST PLAN No. – Tarkeeth SF, Compartments 249, 250, 251 & 252

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Ground Habitat Protection	5.17 (a)	6 BTPG records in and around cpt boundaries	To the greatest extent practical, protect ground habitat from SFA. Ground habitat includes understorey vegetation, ground cover vegetation, leaf litter and fallen timber.
	5.17 (b)	CWRV + small mammals reptiles	Commercial Firewood collection is not permitted
	5.17 (d)	Larger CWRV	Firewood licences state that timber with hollows and/or over 40 cm diameter must not be collected or damaged.

Table 2: Species Specific Prescriptions (record and survey based)

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
Giant barred Frog (<i>Mixophyes iteratus</i>)	6.3	1 MIX ITE record in cpt U_251	Exclusion zone of 30m on both sides of all streams within 200m of record as mapped.
Powerful Owl (<i>Ninox strenua</i>)	6.9	3 POWL records within 2km of cpt boundaries	Landscape approach as specified in 6.9.2 will be used. Condition 5.13 may be applicable to protect any roosts or nests found.
Masked Owl (<i>Tyto novaehollandiae</i>)		1 MOWL record in cpt U_250	Search gully lines and heads of gullies for roost and nest sites.
Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>)	6.12	5 BTPG records in and with 500m of cpt boundaries	Exclusion zone of 20ha to be retained as mapped. Den records must be contained within exclusion zones.
Koala (<i>Phascolarctos cinereus</i>)	6.14	3 KOAL records in and within 100m of cpt boundaries	Evidence of koalas was found in the compartment, but pre-logging surveys did not detect intermediate or high use areas. Compartment mark-up 5.2.2 must be completed.
<i>Marsdenia longiloba</i>	6.23	15 MARS LONG records in cpt U_250, 251, 252	20m Exclusion Zones, all individuals
<i>Niemeyera whitei</i>	6.27	7 NIEM WHIT records in	Harvesting is permitted in populated areas. These species are managed under threatened flora monitoring programs.

TSL Condition	TSL Condition No.	Record Details	Prescription Summary
<i>Parsonsia dorrigoensis</i>		cpt U_250, 252 24 PARS DORR records in and within 50m of cpt boundaries	Exclude planned fire from known populations

Table 3: Other Ecological Considerations

Issue, Feature or Record	Presence	Assessment and Management Recommendations
EEC: Lowland Rainforest in the NSW North Coast and Sydney bioregion.	Likely to be present - continue search within NLA.	Identify and mark in field to exclude specified forestry activities. Contact FNSW ecology unit for guidance if required.
EEC : Swamp sclerophyll forests on coastal flood plains of the NSW North Coast bioregion.	Unlikely to be present - continue search within	Identify and mark in field to exclude specified forestry activities. Contact FNSW ecology unit for guidance if required.
EEC: Subtropical coastal flood plain forest of the NSW North Coast bioregion.	Unlikely to be present - continue search within NLA.	Identify and mark in field to exclude specified forestry activities. Contact FNSW ecology unit for guidance if required.

In addition to Forest Management Zone Exclusions, the following exclusion zones occur and are shown on the operational map.

Riparian Protection (TSL Condition 5.7)
Ridge and Headwater Habitat (TSL Condition 5.8)

Boundary marking conditions for each exclusion zone are described in the tree marking code (see Standard Harvest Plan Conditions for Native Forest Harvesting in North East Region).

11. Fisheries Licence Conditions

Refer to Technical Guidance Note 2005- 02 March 2005 (Fisheries Licence Booklet)

Conditions of the Fisheries Licence do not apply in these compartments.

12. Soils and Water Protection Conditions

Refer to Technical Guidance Note 2005- 1C (Environment Protection Licence Booklet) & Standard Harvest Plan Conditions for Native Forest Harvesting in North East Region

Site-specific EPL conditions –

Elements	Conditions
Unmapped Drainage Lines	No
Drainage Feature Protection	See HPOM for widths
Inherent Hazard Class	2
Dispersible Soils	NO
Mass Movement	Yes
Log Dumps	Refer relevant conditions for IHL
Snig Tracks	Refer relevant conditions for IHL <ul style="list-style-type: none"> • The construction of a new snig track must not involve side cuts of greater than 2m cut batter except with specific approval from the soils specialist. • Wherever possible snig tracks must follow the terrain rather than sidecut across it, particularly where the slope exceeds 25 degrees. • Any old snig tracks on slopes up to 30 degrees (including side cut snig tracks) that are showing no signs of mass movement may be used provided they can be satisfactorily drained to EPL specifications.
Roads	See schedule 5 of EPL Booklet
Non-Haulage Roads	May be used for extraction EPL applies Remove debris on completion of operations

13. Legal Conditions

This operation must comply with:

- Standard Harvest Plan Condition for Native Forest Operations in North East Region
- Licence Conditions issued by Forests NSW under the Forestry Act (1916)
- State Forests of NSW Forest Practices Code - Part 2 Timber Harvesting in Native Forests February 1999 and Forest Practices Code Part 4 Forest Roads and Fire Trails (February 1999).
- Integrated Forestry Operations Approval issued under part 4 of the Forestry and National Parks Estate Act 1998 (IFOA) including the associated licences:
 - Threatened Species Conservation Licence (TSL) issued under the Threatened Species Conservation Act (1995) as amended May 2003
 - Licence issued under section 220ZW of the Fisheries Management Act 1994 (FL) as amended May 2003
- Environment Protection Licence No. 3957 (LNE) issued under section 55 of the Protection of the Environment Operations Act 1997 (EPL)

14. Attachments

- Attachment 1: Locality map
- Attachment 2: Harvest Plan Operational Map
- Attachment 3: Forest Type Map
- Attachment 4: Site Safety Plan prescribes describes safety requirements and Medical Emergency Evacuation Plan for this harvesting operation.
- Attachment 5: Roding plan prescribes roading requirements for this harvesting operation.

15. Pre-Operational Briefing

I acknowledge that I have received a copy of the Harvesting Plan for Compartments 249, 250, 251, 252 in Tarkeeth State Forest and that I have been briefed on the conditions of the Plan. I understand the supervision and operational control requirements as outlined in the plan.

Position	Name	Signature	Date

Induction questions

1. Where is the safety meeting point and helipad
2. Is the operation licensed?
3. What are the conditions that must be followed for control of noise and dust?
4. What are the conditions for using Blacks Trail; and Boundary Trail?
5. What are the conditions for unmapped rainforest
6. Where is the school bus route and what is required to be done?
7. What is the prescription for Marsdenia longilobia. How many plants in the net harvest area?
8. What are the standard conditions for downhill snigging?
9. What must be done at Xing A and B
10. How will machinery get from dump 5-7

Appendix 1 SFO Forms –

LOCATION SF: _____ **CPT NO:** _____

- This diary should record general daily events, SFO movements, Operations visited which are not otherwise recorded in detail elsewhere.

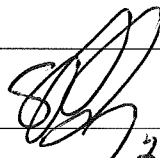
Date	Event	Initial

FORESTS NEW SOUTH WALES – NORTH EAST REGION

ROAD WORKS PLAN

State Forest Tarkeeth; Compartments 249, 250, 251 & 252

Certification

Prepared By: Harvest Planner	<i>js</i> Peter Simon	Approved By: Regional Manager	Craig Busby
Signature		Signature	
Date	29/3/12	Date	29/3/12

1. Objectives

Roadworks are required to service native harvesting operations within the above compartments. These compartments are scheduled for harvest in late 2011.

The operational map shows the location of the proposed works.

Attachments: **Financial Analysis Spreadsheet** gives full details of costs, benefits, material & plant requirements

2. Specifications and Legal Conditions

This operation must comply with:

- Standard Harvest Plan Conditions for Native Forest Operations in North East Region
- Licence Conditions issued by Forests NSW under the Forestry Act (1916)
- State Forests of NSW Forest Practices Code - Part 2 Timber Harvesting in Native Forests February 1999 and Forest Practices Code Part 4 Forest Roads and Fire Trails (February 1999).
- Integrated Forestry Operations Approval issued under part 4 of the Forestry and National Parks Estate Act 1998 (IFOA) including the associated licences:
- Threatened Species Conservation Licence (TSCL) issued under the Threatened Species Conservation Act (1995)
- Licence issued under section 220ZW of the Fisheries Management Act 1994 (FL) Environment Protection Licence No. 3957 (LNE) issued under section 55 of the Protection of the Environment Operations Act 1997 (EPL)
- Technical Guidance Notes for Roadworks.

3. Special Conditions

Feature	Conditions
Cultural Heritage	No
Threatened Species	See harvesting plan. Minimise disturbance within protection zones.
Dispersible Soils Hazard	No
Mass Movement Hazard	Yes. No road construction proposed.
Seasonality	No
Engineering Design	No
Environmental impacts ie Dust, Noise, Water, Visual	Yes - There are residents in close proximity to the operation that are likely to be affected by noise and dust at the junction of Witts Road, Bowraville Road and Blacks Trail. Site specific operational conditions must be developed and approved by the Operations Team Leader to minimise likely impacts. Roads also being used by residents – See Hazard Assessment
Haulage Standards	Yes, except for 4WD section of Boundary Trail between dump 5 and Blacks Trail.
National Park	No
Private Property	Yes. Private property exists along the entire SW and NE boundaries of the cpts. Blacks Trail is on a crown road reserve adjacent lot/folio no. 508/755557. The Operations Team Leader must contact the landholder on commencement of operations and discuss placement of gates and locks across the reserve. Contact details are held on file.
Permit To Enter required	Yes - Boundary trail traverses private property (see crossings E and F). A permit to enter to maintain and use this road for haulage has been obtained and is held on file. The Operations Team Leader must contact the neighbor prior to commencing roading operations. Contact details are held on file - ref.lot/folio no. 14/845310.
Quarries and Gravel Pits	No
Underground/Overhead Utilities	Yes Underground wires exist at the junction of Blacks Trail and Bowraville Road. See Dial before you Dig in HP Folder and Operational Map.
Safety Issues (includes hazards, public use of roads)	Yes. Blacks Trail road reserve used as main access to private property houses. High public usage of all roads within the cpts. See Hazard Assessment in the Site Safety Pack

NOTE: This operation is licensed.

A commencement of Operations form is to be forwarded to the Office of Environment and Heritage within 14 days of commencement of operations authorised under this plan. The Harvesting Manager is responsible (A Commencement of operations form is attached.)

A cessation of Operations form is to be forwarded to the Office of Environment and Heritage within 14 days of cessation of operations authorised under this plan.

The Supervising Forest Officer (Roading and/or harvesting) must notify the Harvesting Manager when operations have commenced and ceased

4. General Conditions

Remove trees in accordance with FNSW Safety Standard 1.3.9; and

Remove vegetation within 3m of the road prism **only where required** to maintain safe sight distance and passage of trucks.

Note: Clearing is generally permitted within 3m of the road prism for all roads. Ground disturbance and tree debris may impact outside this 3m either side of the road prism as is required to effect clearing within 3m of the road prism. Conditions 5, 6 and 47 Schedule 5 of the EPL must apply.

5. Works Schedule

ROAD MAINTENANCE / UPGRADE

Road Name: Boundary Trail **Category:** Temporary **Road Length** 1700m.

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	<input type="checkbox"/>	
	Mass movement condns	<input checked="" type="checkbox"/>	Minor slip near Crossing C. No works required.
	Dispersible Soils Condns	<input type="checkbox"/>	
Pavement	Widening	<input type="checkbox"/>	
	Minor Realignment	<input type="checkbox"/>	
	Re-opening	<input type="checkbox"/>	
	Remove vegetation / debris	<input checked="" type="checkbox"/>	
	Repair surface	<input checked="" type="checkbox"/>	
	Crown / Crossfall	<input checked="" type="checkbox"/>	
	Gravel	<input checked="" type="checkbox"/>	200m section of red clay hill, north of Dump 5. Approx. 489339/6628042.
Roadside & Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	In accordance with general condition 4.
	Remove trees <20 cm	<input checked="" type="checkbox"/>	In accordance with general condition 4.
	Repair of Batters	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	
	Mitre Drains	<input checked="" type="checkbox"/>	
	ROD / Spoon	<input checked="" type="checkbox"/>	
	Belts/Channels	<input checked="" type="checkbox"/>	
	Drop Downs	<input type="checkbox"/>	
	Silt Trapping	<input type="checkbox"/>	
Note: Maintain 400m section of trail from dump 5 to Blacks Trail not to 4WD standard only. Install ROD to EPL specification – including on mapped drainage line crossing.			

Start Date:

Finish Date:

Date	Event	Initial

ROAD MAINTENANCE / UPGRADE

Road Name: Blacks Trail **Category:** Temporary **Road Length** 965m

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	<input type="checkbox"/>	
	Mass movement conditions	<input type="checkbox"/>	
	Dispersible Soils Conditions	<input type="checkbox"/>	
Pavement	Widening	<input type="checkbox"/>	
	Minor Realignment	<input type="checkbox"/>	
	Re-opening	<input type="checkbox"/>	
	Remove vegetation / debris	<input checked="" type="checkbox"/>	
	Repair surface	<input checked="" type="checkbox"/>	
	Crown / Crossfall	<input checked="" type="checkbox"/>	
	Gravel	<input type="checkbox"/>	
Roadside & Batters	Remove trees >20 cm dbhob	<input checked="" type="checkbox"/>	
	Remove trees <20 cm dbhob	<input checked="" type="checkbox"/>	In accordance with general condition 4.
	Repair/upgrade of Batters	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	
	Mitre Drains	<input checked="" type="checkbox"/>	
	ROD / Spoon	<input checked="" type="checkbox"/>	
	Belts/Channels	<input checked="" type="checkbox"/>	
	Drop Downs	<input type="checkbox"/>	
	Silt Trapping	<input type="checkbox"/>	
Note Special conditions – must contact landholder prior to relocating fencepost to allow truck passage.			

Start Date:

Finish Date:

Date	Event	Initial

ROAD MAINTENANCE / UPGRADE

Road Name: Witts Trail **Category:** Temporary **Road Length** 1390m

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	<input type="checkbox"/>	
	Mass movement conditions	<input type="checkbox"/>	
	Dispersible Soils Conditions	<input type="checkbox"/>	
Pavement	Widening	<input type="checkbox"/>	
	Minor Realignment	<input type="checkbox"/>	
	Re-opening	<input type="checkbox"/>	
	Remove vegetation / debris	<input checked="" type="checkbox"/>	
	Repair surface	<input type="checkbox"/>	
	Crown / Crossfall	<input type="checkbox"/>	
	Gravel	<input type="checkbox"/>	
Roadside & Batters	Remove trees >20 cm dbhob	<input type="checkbox"/>	
	Remove trees <20 cm dbhob	<input type="checkbox"/>	
	Repair/upgrade of Batters	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	
	Mitre Drains	<input checked="" type="checkbox"/>	
	ROD / Spoon	<input checked="" type="checkbox"/>	
	Belts/Channels	<input checked="" type="checkbox"/>	
	Drop Downs	<input type="checkbox"/>	
	Silt Trapping	<input type="checkbox"/>	

Start Date:

Finish Date:

Date	Event	Initial

ROAD MAINTENANCE / UPGRADE

Road Name: 252/3 Trail **Category:** Temporary **Road Length** 340m

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	<input type="checkbox"/>	
	Mass movement conditions	<input type="checkbox"/>	
	Dispersible Soils Conditions	<input type="checkbox"/>	
Pavement	Widening	<input type="checkbox"/>	
	Minor Realignment	<input type="checkbox"/>	
	Re-opening	<input type="checkbox"/>	
	Remove vegetation / debris	<input checked="" type="checkbox"/>	
	Repair surface	<input type="checkbox"/>	
	Crown / Crossfall	<input type="checkbox"/>	
	Gravel	<input type="checkbox"/>	
Roadside & Batters	Remove trees >20 cm dbhob	<input type="checkbox"/>	
	Remove trees <20 cm dbhob	<input type="checkbox"/>	
	Repair/upgrade of Batters	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	
	Mitre Drains	<input checked="" type="checkbox"/>	
	ROD / Spoon	<input checked="" type="checkbox"/>	
	Belts/Channels	<input checked="" type="checkbox"/>	
	Drop Downs	<input type="checkbox"/>	
	Silt Trapping	<input type="checkbox"/>	

Start Date:

Finish Date:

Date	Event	Initial

ROAD MAINTENANCE / UPGRADE

Road Name: 250/1 Trail **Category:** Temporary **Road Length** 330m

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	<input type="checkbox"/>	
	Mass movement conditions	<input type="checkbox"/>	
	Dispersible Soils Conditions	<input type="checkbox"/>	
Pavement	Widening	<input type="checkbox"/>	
	Minor Realignment	<input type="checkbox"/>	
	Re-opening	<input type="checkbox"/>	
	Remove vegetation / debris	<input checked="" type="checkbox"/>	
	Repair surface	<input checked="" type="checkbox"/>	
	Crown / Crossfall	<input checked="" type="checkbox"/>	
	Gravel	<input type="checkbox"/>	
Roadside & Batters	Remove trees >20 cm dbhob	<input checked="" type="checkbox"/>	
	Remove trees <20 cm dbhob	<input checked="" type="checkbox"/>	In accordance with general condition 4.
	Repair/upgrade of Batters	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	
	Mitre Drains	<input checked="" type="checkbox"/>	
	ROD / Spoon	<input checked="" type="checkbox"/>	
	Belts/Channels	<input checked="" type="checkbox"/>	
	Drop Downs	<input type="checkbox"/>	
	Silt Trapping	<input type="checkbox"/>	

Start Date:

Finish Date:

Date	Event	Initial

ROAD MAINTENANCE / UPGRADE

Road Name: Bunches Trail **Category:** Temporary **Road Length** 1380m

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	<input type="checkbox"/>	
	Mass movement conditions	<input type="checkbox"/>	
	Dispersible Soils Conditions	<input type="checkbox"/>	
Pavement	Widening	<input type="checkbox"/>	
	Minor Realignment	<input type="checkbox"/>	
	Re-opening	<input type="checkbox"/>	
	Remove vegetation / debris	<input checked="" type="checkbox"/>	
	Repair surface	<input checked="" type="checkbox"/>	
	Crown / Crossfall	<input checked="" type="checkbox"/>	
	Gravel	<input checked="" type="checkbox"/>	200m section each side of the approaches to Crossing A.
Roadside & Batters	Remove trees >20 cm dbhob	<input checked="" type="checkbox"/>	
	Remove trees <20 cm dbhob	<input checked="" type="checkbox"/>	In accordance with general condition 4.
	Repair/upgrade of Batters	<input type="checkbox"/>	
Drainage	Culverts	<input type="checkbox"/>	
	Mitre Drains	<input checked="" type="checkbox"/>	
	ROD / Spoon	<input checked="" type="checkbox"/>	
	Belts/Channels	<input checked="" type="checkbox"/>	
	Drop Downs	<input type="checkbox"/>	
	Silt Trapping	<input type="checkbox"/>	

Start Date:

Finish Date:

Date	Event	Initial

I ROAD MAINTENANCE / UPGRADE

Road Name: Keanes Hill Trail **Category:** Temporary **Road Length** 1260m

Note: Recently maintained for RFS asset protection. Follow-up maintenance when required.

	WORKS	REQUIRED	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works on >30° slopes	☐	
	Mass movement conditions	☐	
	Dispersible Soils Conditions	☐	
Pavement	Widening	☐	
	Minor Realignment	☐	
	Re-opening	☐	
	Remove vegetation / debris	☐	
	Repair surface	☐	
	Crown / Crossfall	☐	
	Gravel	☐	
Roadside & Batters	Remove trees >20 cm dbhob	☐	
	Remove trees <20 cm dbhob	☐	
	Repair/upgrade of Batters	☐	
Drainage	Culverts	☐	
	Mitre Drains	☐	
	ROD / Spoon	☐	
	Belts/Channels	☐	
	Drop Downs	☐	
	Silt Trapping	☐	

Start Date:

Finish Date:

Date	Event	Initial

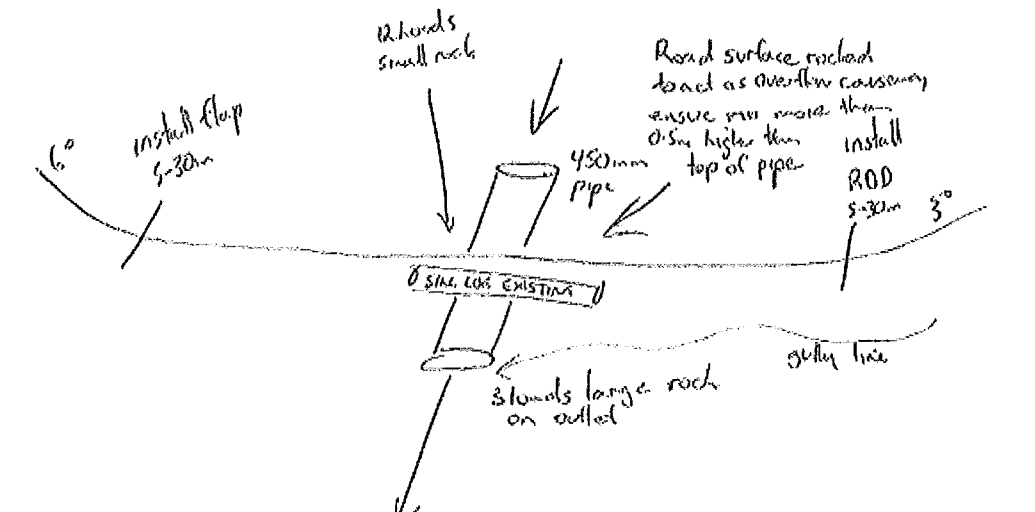
CROSSING WORKS

ROADING PLAN – Tarkeeth State Forest, Compartments 249, 250, 251, 252

Crossing Name: A Bunches Trail, 400m south-west from the junction of Bowraville Rd

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Pipe with Causeway	Existing	Permanent	3 rd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Rock	5-30m Upstream left	Flap
Disposal of spoil	NA	5-30m Upstream right	Rollover
Inlet/Outlet	Armour with rock on outlet	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Nil	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation & silt mesh



Start Date: Finish Date:
 Soil Stabilisation Date (must be within 5 days):

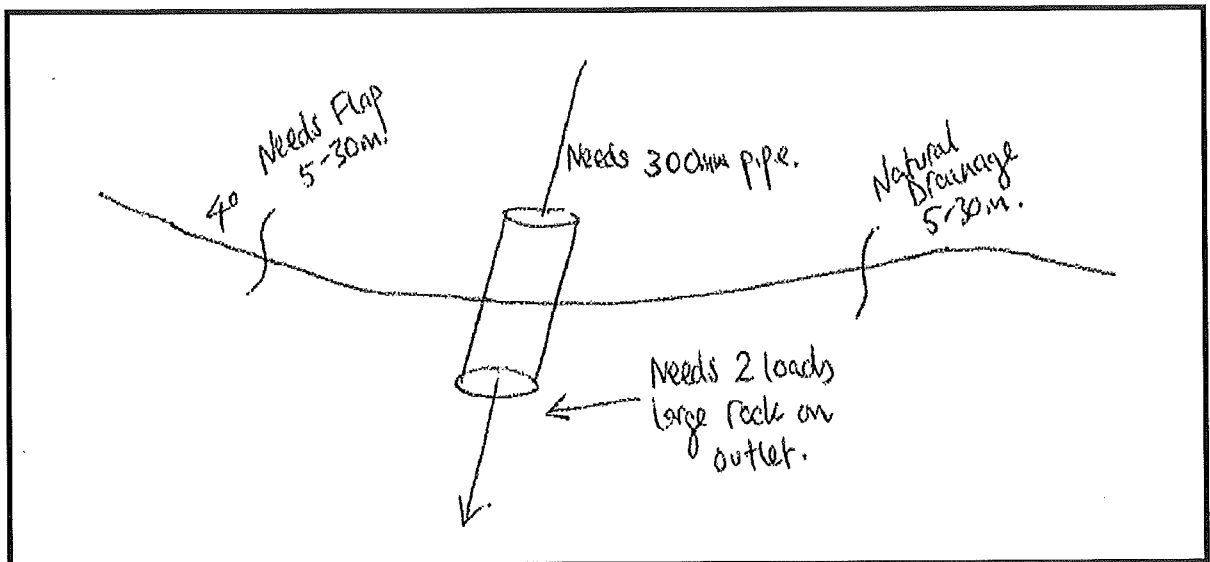
Date	Event	Initial

CROSSING WORKS

Crossing Name: B Boundary Trail, 160m east from junction of Bunches Trail

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Pipe (300mm)	Replacement	Permanent	Unmapped	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Natural	5-30m Upstream left	Flap
Disposal of spoil	NA	5-30m Upstream right	Natural drainage
Inlet/Outlet	Armour with rock on outlet	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Nil	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation



Start Date: Finish Date:
 Soil Stabilisation Date (must be within 5 days):

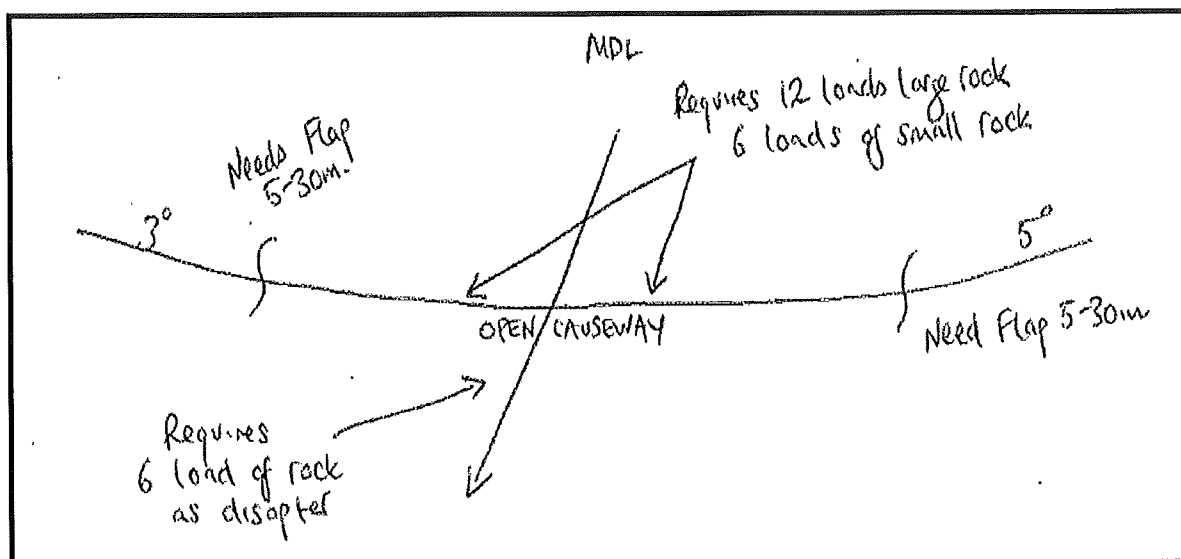
Date	Event	Initial

CROSSING WORKS

Crossing Name: C Boundary Trail, 260m east from junction of Bunches Trail

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Open Causeway	Existing	Permanent	2 nd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Rock	5-30m Upstream left	Flap
Disposal of spoil	NA	5-30m Upstream right	Flap
Inlet/Outlet	Armour with rock on outlet	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Natural Vegetation	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation



Start Date: Finish Date:
 Soil Stabilisation Date (must be within 5 days):

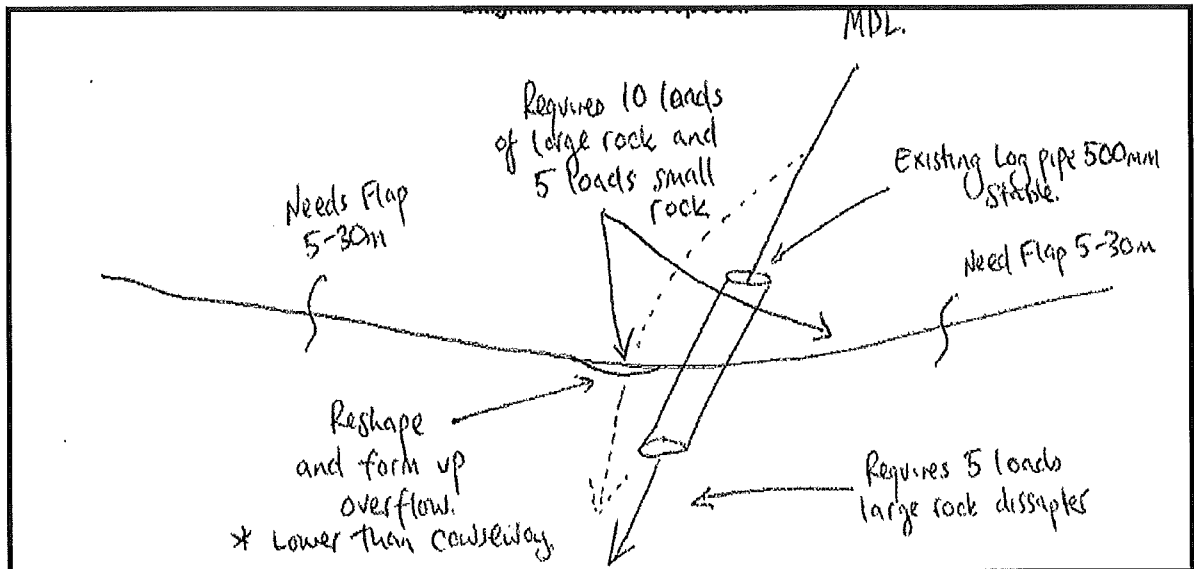
Date	Event	Initial

CROSSING WORKS

Crossing Name: D Boundary Trail, 70m south from junction of Blacks Trail

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Log Pipe with Causeway	Existing	Permanent	2 nd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Rock	5-30m Upstream left	Flap
Disposal of spoil	NA	5-30m Upstream right	Flap
Inlet/Outlet	Armour with rock on outlet	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Natural Vegetation & Rock	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation



Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

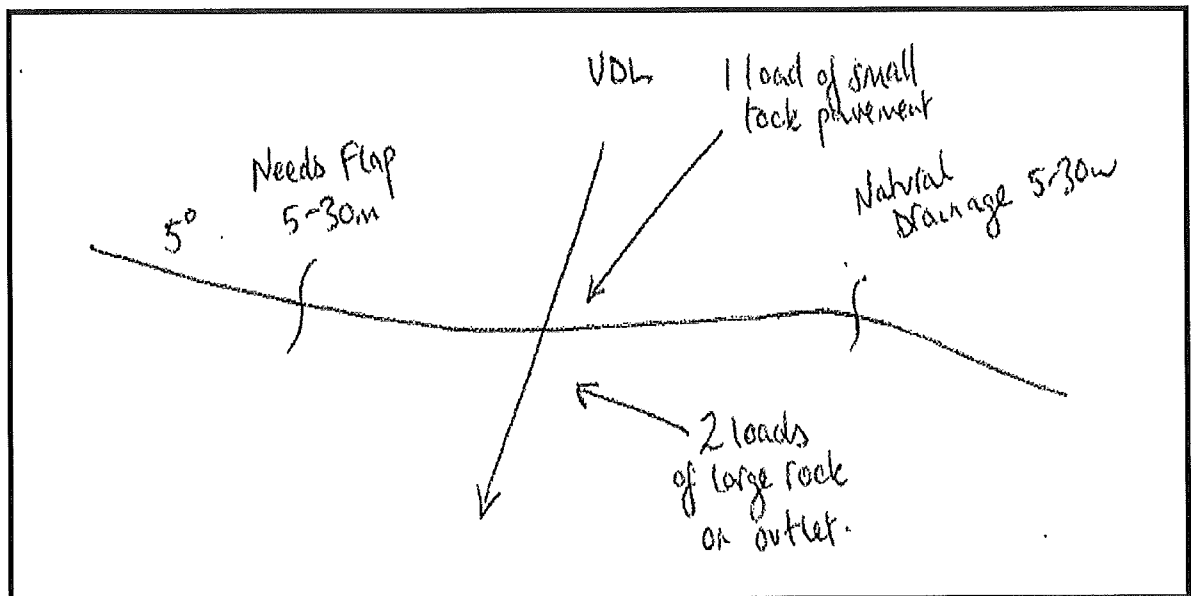
Date	Event	Initial

CROSSING WORKS

Crossing Name: E Boundary Trail, 250m south from junction of Blacks Trail

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Causeway	Existing	Permanent	Unmapped	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Rock	5-30m Upstream left	Flap
Disposal of spoil	NA	5-30m Upstream right	Natural drainage
Inlet/Outlet	Armour with rock on outlet	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Natural Vegetation & Rock	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation



Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

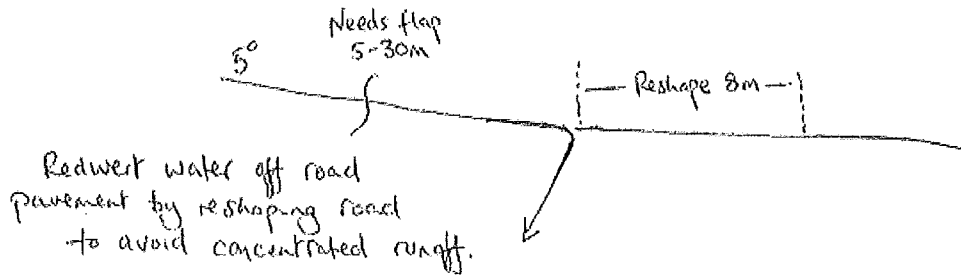
CROSSING WORKS

Crossing Name: F Boundary Trail, 290m south from junction of Blacks Trail

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Causeway	Existing	Permanent	Unmapped	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Reshape road pavement to avoid concentrated runoff.
Pavement/structure	Nil	5-30m Upstream left	Flap
Disposal of spoil	NA	5-30m Upstream right	Falls away
Inlet/Outlet	Natural Vegetation	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Natural Vegetation	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation

• Diagram of Works Proposed



Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

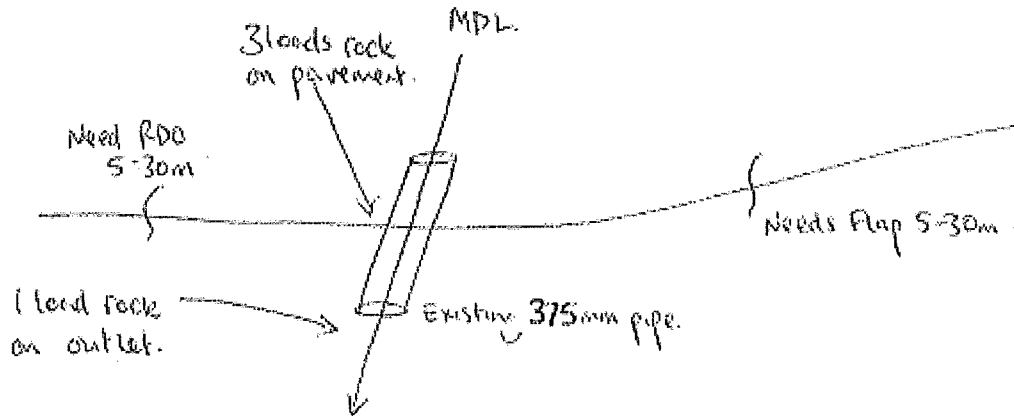
CROSSING WORKS

Crossing Name: G Blacks Trail, 280m north from junction of Bowraville Road

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Pipe with Causeway (Overflow)	Existing	Permanent	3 rd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Rock	5-30m Upstream left	Rollover
Disposal of spoil	NA	5-30m Upstream right	Flap
Inlet/Outlet	Natural Vegetation & Rock	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Natural Vegetation	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation & Silt Mesh

• **Diagram of Works Proposed**



Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

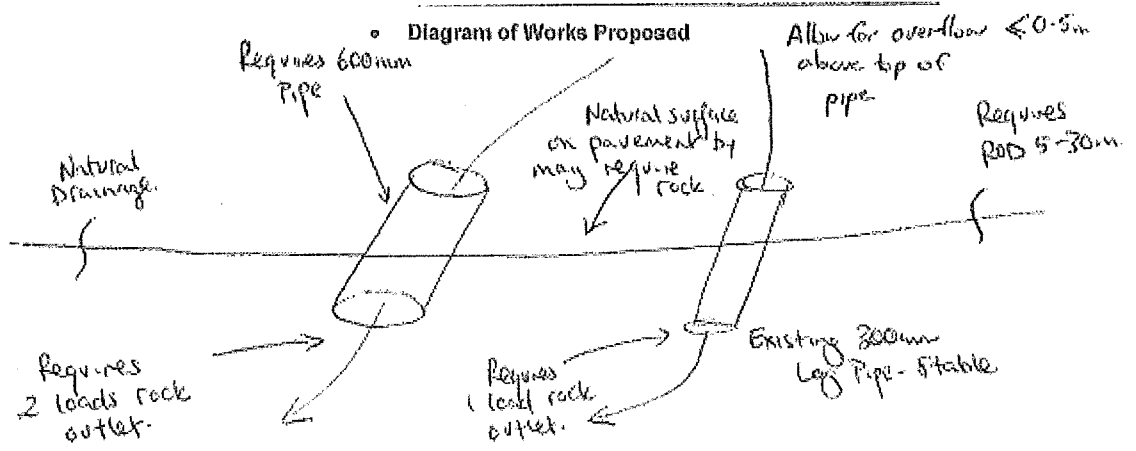
Date	Event	Initial

CROSSING WORKS

Crossing Name: H Blacks Trail, 350m north from junction of Bowraville Road

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Gully stuffer/Log Pipe with Causeway	Replace gully stuffer with 600mm concrete pipe	Permanent	3 rd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Minor bed reshaping to form overflow	Approach Works	Nil
Pavement/structure	Replace unstable log pipes with 600mm pipe.	5-30m Upstream left	Natural Drainage
Disposal of spoil	NA	5-30m Upstream right	Rollover
Inlet/Outlet	Natural Vegetation & Rock	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Natural Vegetation	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation & Silt Mesh



Start Date: Finish Date:
 Soil Stabilisation Date (must be within 5 days):

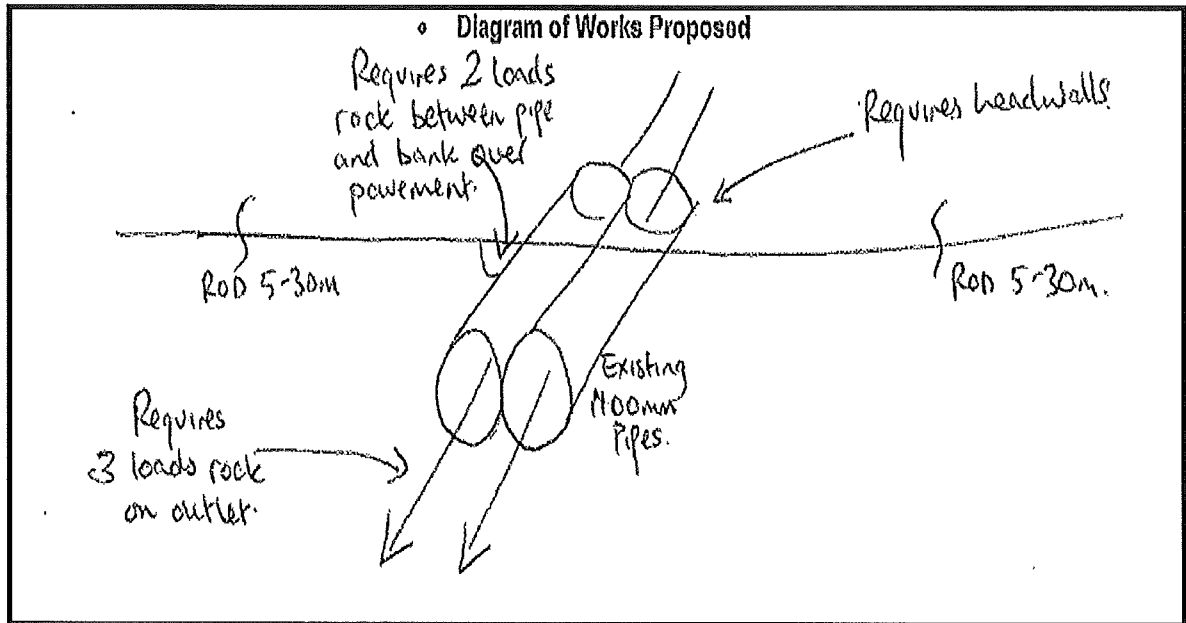
Date	Event	Initial

CROSSING WORKS

Crossing Name: IFOA Crossing XA Snig track north of dump 10

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Pipe	Existing	Permanent	3 rd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Rock	5-30m Upstream left	ROD/Crossbank
Disposal of spoil	NA	5-30m Upstream right	ROD/Crossbank
Inlet/Outlet	Rock	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Seed and mulch disturbed soil	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation & Silt Mesh



See Also Section 6.9 of Harvest Plan.

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

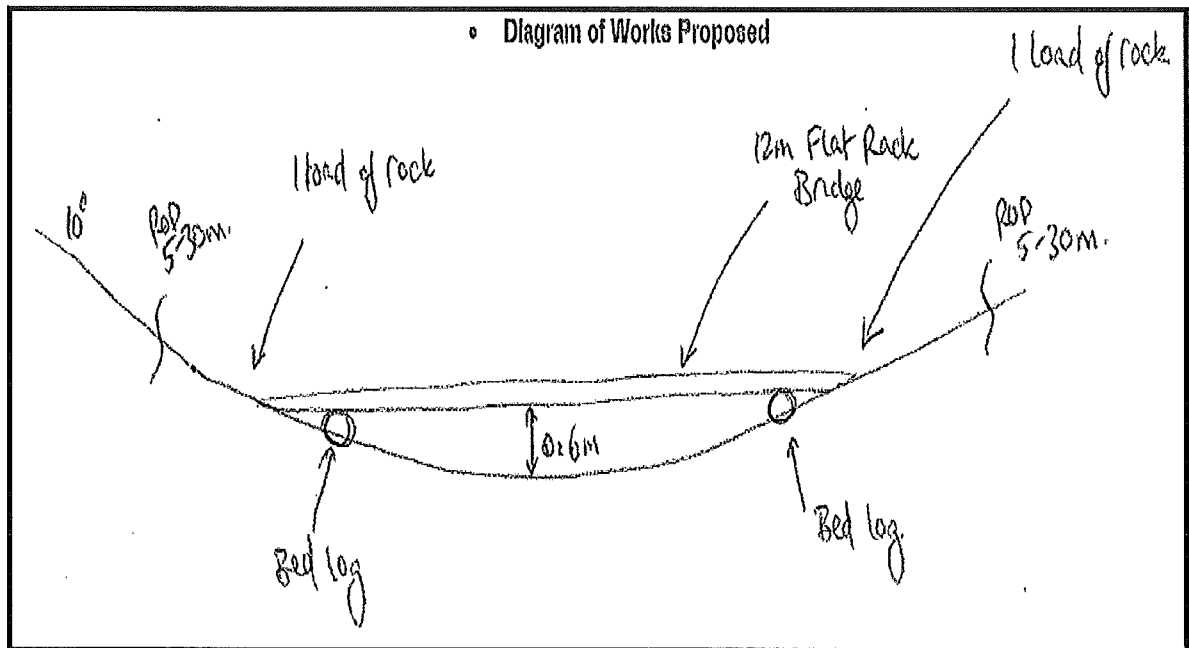
Date	Event	Initial

CROSSING WORKS

Crossing Name: | Snig track crossing north-west of dump 10

Crossing Type	Existing / New	Future of Crossing	Drainage Feature Type	Stream Permanency
Flat rack bridge	Replacement	Temporary	3 rd Order	Intermittent

Crossing		Approaches & Road Drainage	
Reshaping Bed & Banks	Nil	Approach Works	Nil
Pavement/structure	Bridge	5-30m Upstream left	ROD/Crossbank
Disposal of spoil	NA	5-30m Upstream right	ROD/Crossbank
Inlet/Outlet	Nil	Practices where no 5-30m	NA
Soil Stabilisation within 20m	Seed and mulch disturbed soil	Outlet control	Natural Vegetation
Soil erosion/sediment control	Natural Vegetation	Table drain silt control	Natural Vegetation & Silt Mesh



Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Pre-Operational Briefing

Staff/Contractor Acknowledgment

I acknowledge that I have received a copy of the Roadworks Plan for Compartments 249, 250, 251, 252 in Tarkeeth State Forest and that I understand the conditions of the Plan as explained to me by a Forests NSW officer.

Name	Signature	Date