

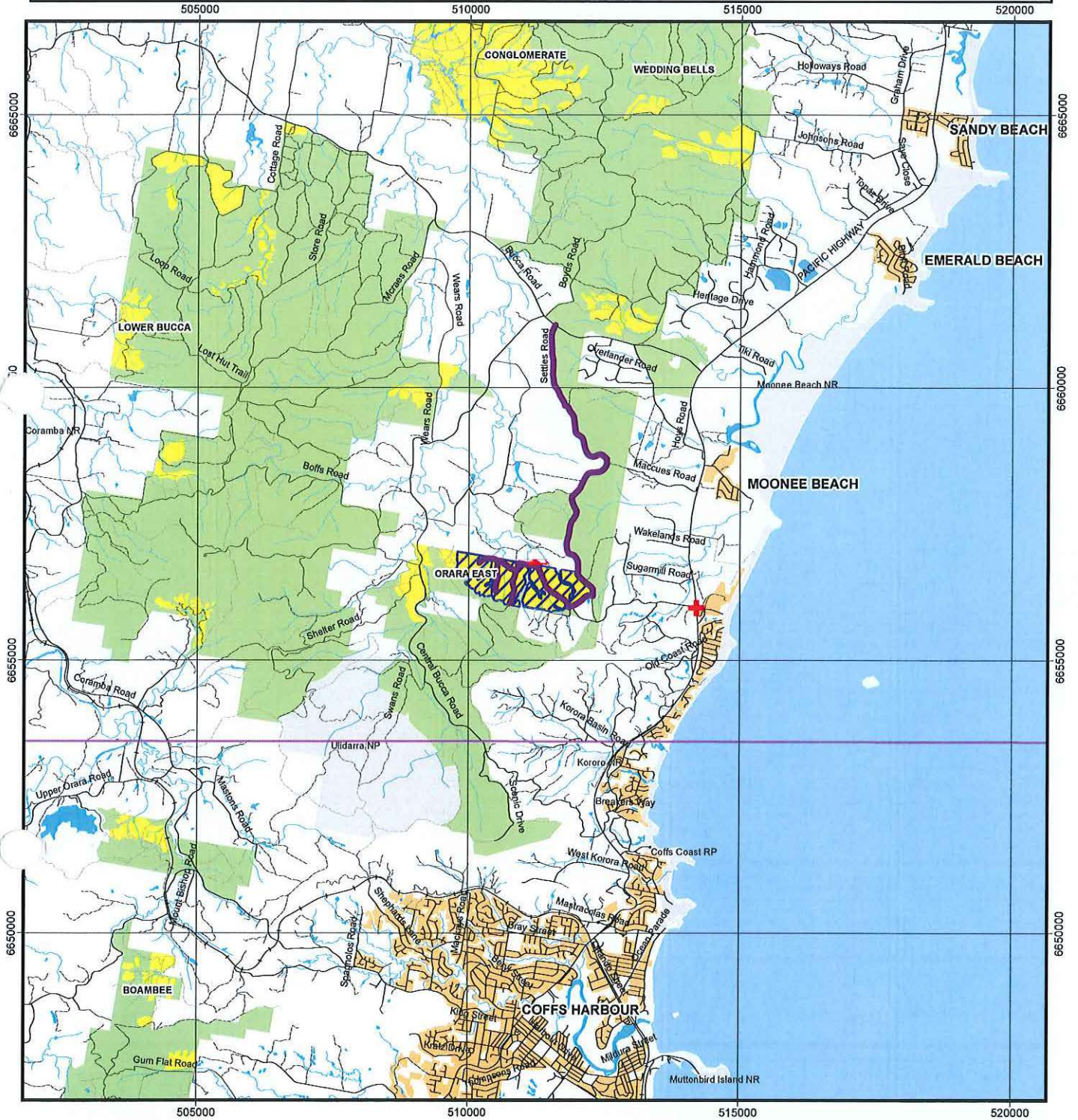


Map Sheets:  
 1:25,000 Moonee Beach 9537 4-S  
 1:100,000 Coffs Harbour 9537

North East Region - Coffs Harbour MA  
 Locality Map  
 Compartments 567/630/631  
 Orara East State Forest








Scale: 1:100,000





**MAP FEATURES**

-  Harvest Area
-  Plantations
-  State Forest
-  National Park & Nature Reserve
-  Built Up Area

**ROADS**


-  Sealed
-  All Weather, Unsealed
-  Dry Weather, Unsealed
-  Four Wheel Drive
-  Proposed Haulage

**SAFETY POINTS**

-  Helicopter Landing Area
-  Safety Meeting Point



Created By: S. Pickering  
 Created: 1/5/2014


  
 Map Sheets: 1:25,000
   
 Moonee Beach 9537-4S
   
 1:100,000 Coffs Harbour 9537
   
 Scale 1:10,000

**North East Region - Coffs Harbour MA**  
**Harvest Plan Operational M**  
**Compartments 567/630/631**  
**Orara East State Forest**  
**Harvest Areas**

- Harvest Area
- Wet Weather Harvesting
- Defer Harvest until suitable markets

**Non-Harvest Areas**

- Other State Forest/Native Forest
- Mapped Rainforest

**MAP FEATURES**

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

**Roads and Crossings**

- Temporary Dry
- Temporary Wet
- Crossing
- Sealed
- All Weather, Unsealed
- Dry Weather, Unsealed
- Four Wheel Drive
- Non Haulage Roads
- Roads to be Closed

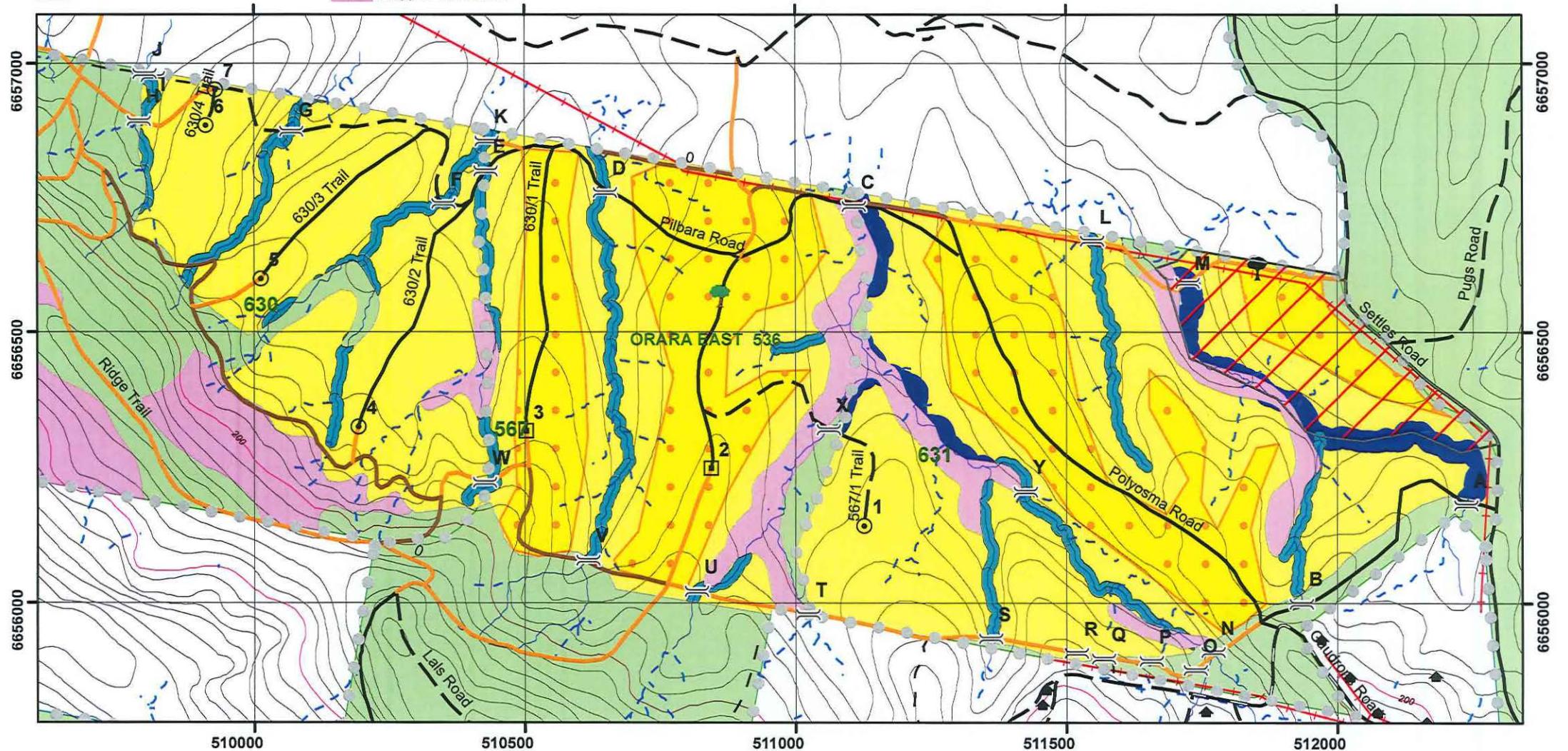
**Other Features**


- L...ous Tree
- Fig Tree (Retain)
- Houses
- Cables
- Unmapped Drainage feature
- Mapped Drainage feature

**Riparian Buffer Zones**

- 1st/2nd Order Streams (10m buffer either side)
- 3rd Order Streams (20m buffer either side)






Prepared By: S. Pickering  
 Date: 10/6/2014



  
 Map Sheets: 1:25,000  
 Moonee Beach 9537-4S  
 Scale 1:10,000

**North East Region - Coffs Harbour**  
**Forest Type Map**  
**Compartments 567-630-631**  
**Orara East State Forest**






**MAP FEATURES**

-  State Forest Boundary
-  Compartment Boundary
-  1 Km Grid
-  10 / 100 m Contour
-  State Forest (Non-harvest areas)

**ROADS**

-  Sealed
-  All Weather, Unsealed
-  Dry Weather, Unsealed
-  4WD Track
-  Non Haulage Roads

**Lidar derived Drainage**

-  0
-  1
-  2
-  3
-  4 PLUS

**Blackbutt stands - estimated**

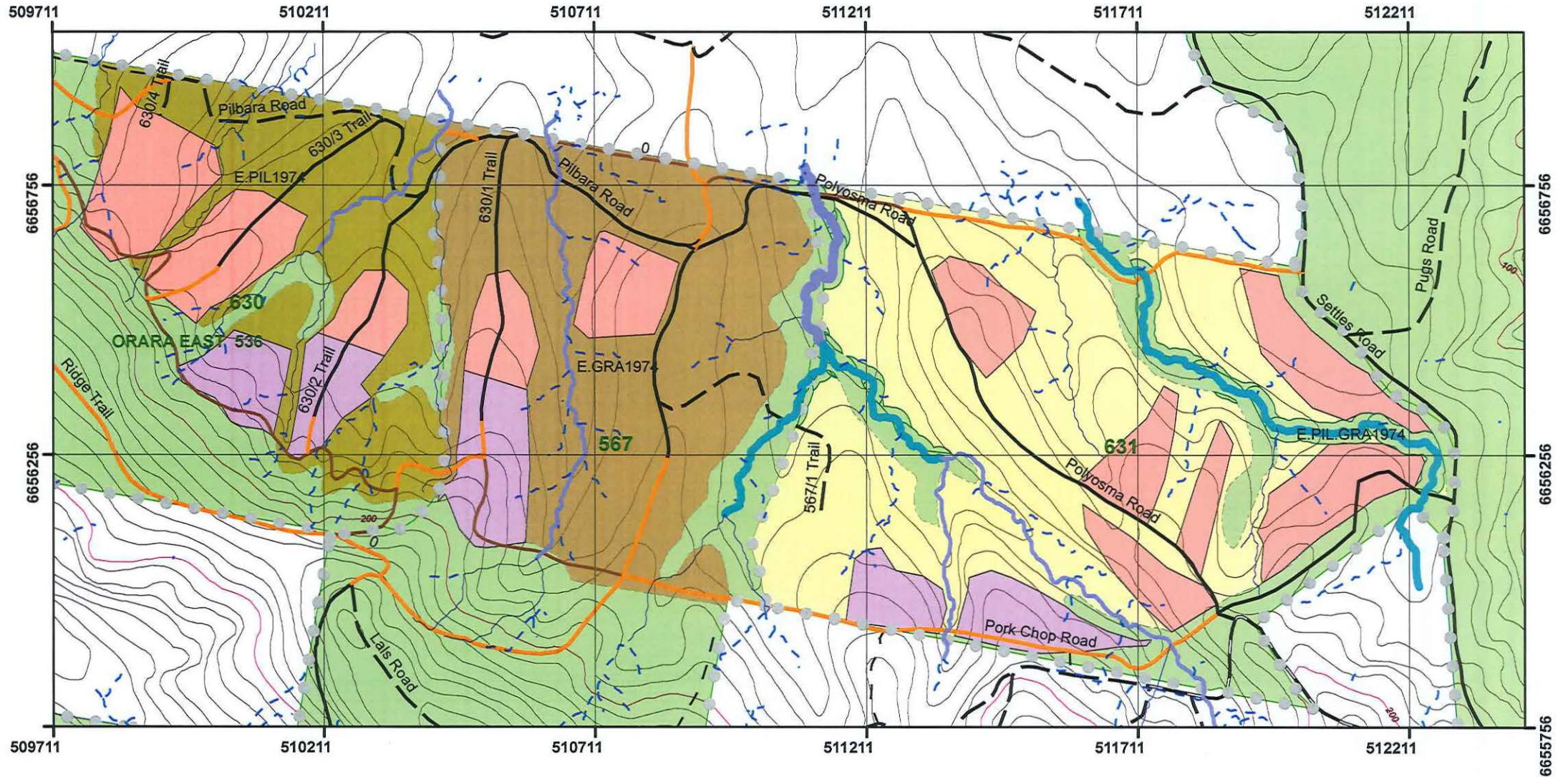
-  10-20%BBT
-  80-100%BBT

**Resource Unit (Plantations)**

**Species**

-  E.GRA
-  E.PIL
-  E.PIL.GRA

Prepared By: S. Pickering  
Date 11/6/2014






## OPERATIONAL HARVESTING PLAN PLANTATION CLEARFELL/THINNING

<b>Region</b>	<b>North East</b>
<b>Management Area</b>	<b>Coffs Harbour</b>
<b>State Forest</b>	<b>Orara East</b>
<b>Compartments</b>	<b>567-630-631</b>
<b>Harvest Plan Number</b>	<b>HP_2014-0111</b>
<b>Harvest Plan Name</b>	<b>C_567-630-631</b>

Prepared by:

Senior Planner		Date: 14/7/14
Steve Pickering		

Approved by:

PLANNING SUPERVISOR		Date: 25/07/2014
DEAN KEARNEY		

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

## 1. Area Identification

<i>Region</i>	North East Region
<i>Management Area</i>	Coffs Harbour
<i>State Forest</i>	Orara East
<i>Compartments</i>	567-630-631

<i>Compartment Number</i>	567	630	631	<i>Total</i>
<i>Gross Area (ha)</i>	206.2	101.7	83.2	391.2
<i>Net Harvest Area (ha)</i>	45.5	35.6	65.3	146.4
<i>Pricing Area</i>	Coffs Harbour	Coffs Harbour	Coffs Harbour	Coffs Harbour
<i>Operation Type</i>	Clearfall	Clearfall	Clearfall	Clearfall

## 2. Description of Proposal

### 2.1 Integrated Harvesting of Plantation Areas

Clearfelling of Flooded Gum (*E.grandis*) and Blackbutt (*E.pilularis*) plantation.

### 2.2 Other Proposed Works

	<i>Proposed</i>	<i>Details</i>
Roadworks	Yes	Roadworks Plan (attached).
Post-harvest Burning	Yes	Plan to be prepared separately.
Rehabilitation *	Yes	Plan to be prepared separately.

\* Consider rehabilitating adjacent degraded forest areas along the south western boundary at time of plantation re-establishment

## 3. Plantation Condition and Silvicultural Prescription

### 3.1 Plantation Description

The resource unit layer describes three different species plantings being 1974 Flooded Gum, Flooded Gum/Blackbutt and Blackbutt stands. However, the resource units recorded do not accurately reflect the species mix that exists on site now.

A limited amount of field checking combined with Lidar and API interpretation estimates that the site contains the areas of forest types/species mix as shown below. The density of blackbutt varies markedly across the site and consequently there is a degree of uncertainty about the estimate

Species	Flooded Gum	Flooded Gum/Blackbutt	Blackbutt
Age Class	1974	1974	1974
Area (ha)	103.4	29.7	13.2
Stand Health	Flooded gum is generally poor quality and small diameter – average 40-45cm dbhob Blackbutt on site is generally medium to good quality, average diameter 55-60cmdbhob. Generally better quality on the southern boundary of the stand where soil moisture and drainage is better.		
Estimated Species Mix by stem	100% FG	80% FG/20% BBT	100%BBT
Stand notes	<p>These stands occur over most of the plantation site. Where blackbutt is planted on the ridges, flooded gum is often planted below on the lower slopes and riparian sites.</p> <p>Some areas are particularly poor and it recommended that harvesting be deferred in some of the poorer areas until suitable residue markets are available. These areas must be retained along rationalised boundaries and areas of sufficient size to warrant establishment operations.</p>	<p>These stands are composed mostly of Flooded Gum with isolated blackbutt stems 20-40m apart becoming more dense on the southern boundary and on the western end of the plantation. Along Settles Road there is a patch which also carries native forest regrowth consisting of tallowood, turpentine and smooth-barked apple. It is recommended that harvesting be deferred in this area until a suitable residue market is available</p>	<p>These stands generally occur on the upper slopes along the southern boundary of the plantation area adjacent native forest and seed sources outside the plantation area boundary.</p>

### 3.2 Silvicultural History and Product Types

The area was thinned in 2001 with the exception of stands adjacent Settles Road and one isolated ridge between crossings X and Y

Because of the small size of the Flooded Gum expect a high proportion of pulp and salvage grade logs. Some poles and girders will be produced from the Blackbutt stands.

### Silvicultural Objectives and Prescriptions

- It is proposed to clearfell all the available harvest area, subject to market constraints (see 3.1)
- Where sufficient blackbutt stems exist – retain seed trees at approximately 60m spacing to assist with plantation re-establishment.
- Seed trees must be
  - Eucalyptus pilularis
  - as tall as possible (~30-40m),
  - have good form,
  - be in the size range 40-70cm dbhob, and
  - generally be spaced at 1.5 x tree height but not more than 2 x tree height (trunk to trunk).
- Trees in retention areas may also serve as seed trees.
- Consideration be given at the time of re-establishment to replanting adjacent degraded forest along the south western boundary. Area currently contains approximately 5 hectares of approximately 5-6 widely spaced trees/ha with lantana understory

### 3.3 Desired Return Time

Clearfell areas to be re-established within 12-18 months.

#### 4. Legal Conditions

The area to be harvested is an authorised plantation under the Plantations and Reafforestation Act (1999) (Authorisation no. CH1202P).

As such, the operation must comply with:

- Plantations and Reafforestation Act (1999).
- Plantations and Reafforestation (Code) Regulation (2001) - (amended 2010), subject to the conditions described in Attachment 1 of the Authorisation for the timber plantation. (see special conditions for conditions contained in Attachment 1)

Legislation relating to the operations on State Forests and other Crown Timber Lands is detailed in FNSW Forest Practices Codes. In addition this operation must specifically comply with:

- Forests NSW Forest Practices Code part 4, Forest Roads and Fire Trails (February 1999).
- Licence Conditions issued by Forests NSW under the Forestry Act (1916).

In addition for operations on boundary trails and within native forest areas inside plantation boundaries, this operation must also specifically comply with:

- State Forests of NSW Forest Practices Code - Part 2 Timber Harvesting in Native Forests (February 1999)
- Integrated Forestry Operations Approval issued under part 5B of the Forestry Act 2012 including the associated licences:
  - Threatened Species Conservation Licence issued under the Threatened Species Conservation Act (1995).
  - Fisheries Licence issued under section 220ZW of the Fisheries Management Act 1994.
  - Environment Protection Licence No. 4017 (UNE) issued under section 55 of the Protection of the Environment Operations Act 1997. **Roading operations on crossings A,B,C,M,N,O,P,Q,R,S,T,U,V are licensed**

#### 5. Special Conditions

##### 5.1 Non-Harvest Areas

The Operational Map indicates the non-harvest areas in the compartment, as detailed in the legend.

- Harvesting disturbance is not permitted in non-harvest areas.
- Harvesting may take place within buffer zones of 1st and 2nd order drainage lines (as indicated on the operational map) and un-mapped drainage lines in accordance with the conditions outlined in section 9.2 below.
- No harvesting or other disturbance may take place within the 20m buffer on 3rd order (or greater) drainage lines, wetlands or rivers. No machinery may enter the buffer (except where crossing a drainage line approved for use in this plan – see section 8.1) and no trees are to be removed.

##### 5.2 Special Authorisation Conditions

The plantation authorization contains special conditions. For full text see Appendix 1. In summary, these conditions

1. Retain all native trees that have not been planted (excluding in-growth and those trees that have grown since plantation establishment). The trees to be retained can be identified by their large diameter. (note fig tree shown on harvest plan map)
2. On any day during which harvesting is to occur, a visual assessment must be made of the area to be harvested in order to establish whether koalas are present. If koalas are detected, enforce a 50m temporary buffer around each inhabited tree. Where it is practicable to do so, a temporary corridor of un-harvested vegetation must be created to link the temporary buffer to the nearest retained vegetation. When the koala has moved from within the temporary buffer and/or corridor, these areas may be harvested.
3. Where populations of more than 20 individuals of *Quassia sp. Moonee Creek* are found, at least 90% of these must be protected by a 20m exclusion zone.

### 5.3 Leases, Permits, Plots

<i>Type</i>	<i>Present</i>	<i>Details</i>	<i>Conditions</i>
Crown Leases	No		
Occupation Permits (Grazing)	No		
Occupations Permits (Apiary)	No		
Occupation Permits (Other)	No		
Permanent Growth Plots	No		
Research Plots	No		
Plus Trees	No		
Special Purpose Permits	No		

### 5.4 Noise and Dust

There are residences to the south of the plan area that may be affected by noise and dust. Mitigative measures to lessen the impact must be developed on a site specific basis by the harvesting contractor in consultation with FCNSW. Measures may include;

- Liaising with neighbours regarding noise issues.
- Changes to the activity that would reduce the noise impact or disturbance.
- Restricting hours of operation (e.g. 7am to Sunset)
- Restrict speed adjacent houses.

### 5.5 Critical Boundaries

#### 5.5.1 Private Property

Private property adjoins the harvest area to the north and to the south.

To the north the boundary is fenced with a well maintained fence. The boundary is obvious as the private property is substantially cleared.

To the south the boundary is evident but the fenceline is not functional. Use Pork Chop Road as the boundary for harvesting.

- Harvesting must not impact on private property or any fence line. Debris must not be placed closer than 5m from the boundary or fence line
- Any damage to a functional fence must be immediately repaired by the contractor.
- When harvesting within 2 tree lengths of a private property boundary, the harvesting contractor must establish a safe working procedure to ensure no personell are placed in a dangerous position

#### 5.5.2 Other critical boundaries

Retained native forest, rainforest and mapped native forest areas are shown on the harvest plan operational map. Operations must not impact on these areas unless specifically authorised in this harvesting plan. Use map and GPS to locate the plantation boundary

- If there is any doubt about the location of a critical boundary, the Harvesting Team Leader must be consulted about requirements to adequately determine the boundary location.

### 5.6 Wet Weather Operational Area

Areas on the operational map have been identified as indicative wet weather harvesting areas (marked as yellow with brown dots).



**5.7 Rainforest/Endangered Ecological Communities**

- Endangered Ecological Community (EEC) 'Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions' is potentially present within these compartments outside the mapped rainforest extent. Areas of this forest community should be identified as described in the FNSW EEC Identification Guide, and if present within the operation area, excluded from harvesting.
- Rainforest has been mapped within the compartments. Other areas of unmapped rainforest as described in the Forests NSW Forest Practices Circular 2005/02 are to be excluded from operations.

**5.8 Telstra cables**

- There is a Telstra cable that runs adjacent to Settles Road and along the northern and southern boundaries of the plantation area as shown on the HPOM.
- Site plans for the cable are held on the Harvest Plan Folder.

Dial before you dig procedure must be followed prior any excavation or road maintenance works in this area to determine cable locations.

**5.9 Access to adjacent private property**

- Neighbours are known to be using Polyosma Road to access property's on the northern boundary, particularly for blueberry picking. Harvesting to develop procedures for maintaining access to properties in a safe manner where practicable

**5.9 Haulage Considerations**

- Haulage is planned to access the Pacific Highway via Settles and Bucca Road. This route may be used by B-doubles.
- All forest roads must be closed for B-double use.
- Additional signage should be used on Bucca Road to notify traffic of turning trucks.
- Gaudrons Road is not suitable for haulage because of residential traffic and low slung electricity cables
- Harvesting to advertise forest and road closures by placing notices in the forest at least 2 weeks prior to closures

**6. Forest Management Zoning Conditions**

The following Forest Management Zones and conditions apply:

<i>FMZ</i>	<i>Type</i>	<i>Notes</i>
Zone 3A	Harvesting Protection	Rainforest Forest Type Protection. These areas must be protected as marked on the map.
Zone 4	General Management	Native forest – not available for harvesting. Note: There are areas in the south west that have little tree cover and are dominated by lantana. Consider these areas for replanting during re-establishment
Zone 5	Hardwood Plantation	Harvesting permitted in accordance with the conditions outlined in this harvesting plan.

**7. Cultural Heritage**

**7.1 Aboriginal Cultural Heritage**

- No special conditions apply.

**7.2 Non Aboriginal Cultural Heritage**

- No special conditions apply.

**8. Soils and Water**

<i>Compartment</i>	567	630	631
<i>Inherent Hazard Level</i>	1	1	1
<i>Dispersible Soils</i>	Yes (see below)	Yes (see below)	Yes (see below)
<i>Mass Movement Hazard</i>	Yes (see below)	Yes (see below)	Yes (see below)
<i>Seasonality</i>	No	No	No

**8.1 Dispersible Soils**

- Avoid using crossings of drainage lines where possible.
- Crossings must be approved for use prior to use
- Crossings of drainage lines may be used for forwarder extraction provided groundcover of at least 70% within 20m of the crossing is achieved through retaining or respreading slash and logging debris to over the extraction track

Crossing Approved for use	Crossings not approved for use
W, Y, T, U	L, M

- Crossings along Pork Chop Road along the northern boundary are to be maintained for use as a fire trail. These crossings may be used for forwarding with specific prior approval by FCNSW and an assessment that use by machinery will not compromise road maintenance works.

**8.2 Mass Movement conditions**

- The construction of new tracks and roads must not involve side cuts greater than 2m
- Forwarder tracks must follow the terrain rather than side cut across it wherever possible
- Old tracks >30degrees that are stable and show no signs of mas movement may be used provided they can be drained according to P&R (Code) specifications

**8.3 Wet Weather Controls**

Conditions 14.1-14.5 of FCNSW Forest Practices Code Part 1 – Timber harvesting in Forests NSW Plantations apply:

- Automatic Closures apply to forwarders and loaders when water is running on extraction tracks.
- Automatic closures apply to loaders when there is run-off from the landing surface.
- Automatic closures apply to the use of natural surface roads when there is runoff from the road.
- Machinery must not exceed acceptable rutting limits (see Condition 14.4 of the Forest Practices Code and condition 50 of the P&R Code).
- Harvesting is only permitted to continue within drainage feature protection areas if the top 200mm of soil is dry enough to avoid soil erosion.

**9. Drainage Features**

**9.1 Drainage feature protection**

- The Operational Map indicates known mapped drainage features and widths of protective measures. (Note: Some of the drainage features indicated on the Operational Map with filter strips may, at the time of marking, be determined as depressions).
- The minimum buffer zone width for each side of drainage features is shown below.

<i>Stream Order</i>	<i>Buffer zones each side of drainage features (m) (Hazard Class 1)</i>
Drainage Depressions	5
Unmapped Drainage Lines	10
1st Order Streams	10
2nd Order Streams	10
3 <sup>rd</sup> and higher Order Streams	20

## 9.2 Operational Conditions for Drainage Features

- Harvesting within buffer zones must comply with conditions 15, 16, 62-63 of the Plantations and Reafforestation (Code) Regulation 2001.
- No harvesting is permitted within the buffer zone of a wetland or river (3rd order or greater drainage line).
- Harvesting within the buffer zone of a 1st or 2nd order drainage line can only occur when the person carrying out the harvesting operation is satisfied that the top 200mm of soil is dry enough to allow operations without risk of soil erosion to the edge of the drainage feature.
- No harvesting machinery is permitted to enter the 5m zone (area immediately surrounding either side of all drainage lines) for the purposes of harvesting. Harvesting operations must use "reach in" techniques to harvest this area.

## 10. Tree Marking Conditions and Code

Standard Markings/Symbols: Markings/Symbols that deliver key requirements on a state-wide basis.

<i>Description</i>	<i>Symbol</i>
Compartment boundary (Where not defined by clear features e.g. Road, trail, creek).	"O" or Yellow tape
Exclusion zone (Line not to be crossed or disturbed by fallers or harvesting machinery at any time).	Three horizontal lines / rings OR Blue tape
Edge of net harvest area (e.g. unmerchantable). Retained trees and critical boundaries to be marked within 30m beyond the boundary. Tree heads may fall across the line, provided they comply with boundary and tree retention rules (e.g. 5m debris).	"⊙"
Buffer Zone Areas where machinery is not permitted but there may be trees to be felled.	Two horizontal lines / rings (indicate distance if required)
Drainage depression buffer strip.	Not marked
Extraction System, OR Road/Track line.	"I" or white tape
Dump site (with optional dump number reference).	"D" or red tape
Approved crossing site.	"↑"
Slope angle indication (commences here).	eg "25°"
Individual tree.	"•" or dots
Directional felling mark.	"←" over "•"
Retained trees not to be removed or damaged (e.g. grower).	One horizontal line or ring
Cancellation Mark (Mark to formally cancel previous marks).	"X"

## **11. Roads and Crossings**

- There are a number of non-haulage roads as indicated on the operational map that are not to be used by haulage traffic. They may be used with SFO approval for snigging or extraction provided they are drained to the appropriate specifications and in accordance with condition 8.1. They may be used for vehicular access where they have been assessed by the SFO prior to use, and are in a stable condition unlikely to cause environmental harm.
- Harvesting machinery may cross drainage lines at authorised crossings as per conditions 37-41 the P&Reafforestation (Code) Regulation 2001 and in accordance with condition 8.1. The SFO must give authorisation prior to crossing drainage lines. (See section 8.1 – Dispersible soils)
- Machinery may only cross drainage depressions and drainage lines if the crossing point is shallow and dry, surrounding soil is dry, drains or other measures are used to prevent water from approaches entering the drainage line in the event of wet weather, and no earthworks are required to enable the machinery to cross the drainage line.
- Crossings must be drained using drainage structures within 5-30m either side of the crossing.
- Machinery may cross drainage lines and depressions that occur on extraction tracks by using slash crossings. Slash crossings are temporary crossings and must be removed within 5 days, and the approaches must be closed and cross-drained.
- Wellands must not be crossed under any circumstances.

### **11.1 Road Maintenance/Construction/Re-Opening**

See Roadworks Plan/Road Maintenance Plan.

## **12. Log Dumps**

### **12.1 Location**

- Log dumps and landings that require construction must be located outside buffer zones, areas of native vegetation and zones marked as 'No Loading Permitted' zones on the Harvest Plan Operational Map.
- Log stockpile areas within native forest areas must be approved by FCNSW prior to establishment and must be located so as to minimise disturbance to understorey elements.
- Log stockpile sites (no construction required) are permitted along all sections of road within the plantation area unless marked as 'No Loading Permitted' zones on the Harvest Plan Operational Map.

### **12.2 Treatment**

- Conditions 60-61 of the P & R Code, and 17.2 – 17.4 of the Forest Practices Code (FPC) 2005 must apply.
- Debris accumulated during processing at log dumps and landings must be located outside the boundary of buffer zones. Even distribution of slash and debris across running tracks is required. This will alleviate ground compaction and reduce exposure of soil to erosion and run-off.
- If any area used as a log dump or landing for harvesting operations ceases to be so used for more than one week, measures to minimise soil erosion must be put in place.

## **13. Extraction Tracks**

### **13.1 Relevant Conditions**

Conditions 64(a)-(c) of the Plantation & Reafforestation Code, and 9.1-9.4 and 14.1-14.4 of the Forest Practices Code 2005.

- The grade of constructed extraction tracks must not exceed 25°.
- Blading-off of extraction tracks is not allowed.

### **13.2 Walk-over Extraction**

Special attention must be paid to the placement of slash over ground area of any concentrated machinery movement. Such areas will include the exits of extraction tracks onto roads, at the intersection of running tracks in the harvest area and at log landings.

### 13.3 Extraction Track Drainage

Soil erosion from tracks should be minimised by:

- Retaining groundcover and using slash and leaf litter. Slash should be placed evenly across the track to divert water.
- Using natural cross-fall drainage.

Drainage structures must be constructed if concentrated water flow occurs for distances exceeding those in the following table - Maximum distance of water flow or potential water flow along snig tracks or extraction tracks (metres measured along the ground surface):

<i>Track Grade (degrees)</i>	<i>Maximum Distance (m)</i>
0-5	100
5-10	60
10-15	40
15-20	30
20-25	25

### 13.4 Wet Weather Provisions

Machinery used for harvesting must not be operated on a harvesting area or natural surface log dump or landing if surface runoff is occurring. This machinery can operate on saturated soils if:

- The machinery is supported by a bed of slash; and
- Walkover extraction techniques are utilised; and
- The rutting depths to not exceed the depths specified in the table below.

<i>Location</i>	<i>Maximum permitted rutting depth</i>
Within 10m of any road.	150mm
Within 30m of a log dump or landing or any major extraction tracks.	250mm
Anywhere else within a harvesting area.	100mm

### 14. Product Specifications and Accounting

All timber products must be graded and required accounting procedures initiated prior to the products being removed from the dump.

### 15. Yield Estimates

Compt	567	630	631	Total	m3/ha	%BBT
HQL	338	415	465	1219	8	91%
HQS	401	377	510	1288	9	57%
Girders	40	52	56	148	1	100%
Poles	50	65	70	185	1	100%
e-LOGS	912	519	1038	2469	17	0%
LQ Grade 1	2399	1644	2830	6872	47	20%
LQ Grade 2	1162	773	1362	3297	23	17%
Total	5302	3845	6330	15477	106	27%

**16. Pre-Operation Briefing**

- I acknowledge that I have received a copy of the Harvesting Plan for Compartments 567, 630, 631 in Orara East State Forest and that I have been briefed on the conditions of the Plan and understand the supervision and operational control requirements as explained to me by the Forest Planner or his/her delegate.

Signature		Name	
Position	Supervising Forest Officer	Date	

Signature		Name	
Position	Relieving Supervising Forest Officer	Date	

**Harvesting Contractor Acknowledgment**

- I acknowledge that I have received a copy of the Harvesting Plan for Compartments 567,630, 631 in Orara East State Forest and that I understand the conditions of the Plan as explained to me by a FCNSW officer. I will brief other operators not present at this briefing prior to them starting operations and ensure that risk assessment for the Safety Management Plan is completed for this area prior to operations commencing.

Signature		Name	
Position	Principal Contractor	Date	

**Personnel Attending Induction**

<i>Contractor Personnel</i>	<i>Date</i>	<i>FCNSW Personnel</i>	<i>Date</i>

This pre operation briefing must be separated from the harvesting plan once the briefing is complete the signed copy of this must be filed with the official copy of the plan.

**Induction Questionnaire**

- Where is the safety point and emergency helipad?
- What safety issues are there in harvesting (adjacent boundaries and how will you resolve them?)
- What will be done to manage noise issues?
- Where are cables located
- What are the authorisation conditions?
- What are special conditions related to dispersible soils
- What operations are licenced under the EPL?

## Appendix 1

### Special Authorisation Conditions

1. All non-planted vegetation within the authorized plantation area that existed at the time the plantation was established must be retained.
2. On any day during which harvesting is to occur, a visual assessment must be made of the area to be harvested in order to establish whether koalas are present. If koalas are detected at any time prior to or during harvesting, the inhabited tree/s must be marked and a 50m temporary buffer instated around each inhabited tree. Where it is practicable to do so, a temporary corridor of un-harvested vegetation must be created to link the temporary buffer to the nearest retained vegetation. Harvesting operations may then proceed around the temporary buffer and corridor. When the koala has moved from within the temporary buffer and/or corridor, these areas may be harvested.
3. A pre-harvest search will be completed for *Quassia sp. Moonee Creek* before harvesting of the existing plantation. Sites where individuals are identified will be excluded from specified forestry activities. Details of species locations and protection zones will be provided to NSW DPI Plantation Unit. The minimum survey effort required is a 4 kilometre traverse over 6 hours, avoiding areas where *Lantana camara* dominates the understory. Where populations of more than 20 individuals are found, at least 90% of these must be protected by a 20m exclusion zone. Within exclusion zones all plantation operations are prohibited, and weeds must be controlled. Exclusion zones must be marked in the field and their intent communicated to all relevant staff and contractors.
4. 30m protection zones are to be implemented on mapped drainage lines within a 200m radius of records of *Mixophyes iterates* (Giant Barred Frog). These must be shown on the operational map. Machinery must not enter these protection zones. Soil disturbance during log extraction must be kept to a minimum within these protection zones.

**FORESTRY CORPORATION OF NSW – NORTH EAST REGION**  
**ROADWORKS PLAN**

**Orara East State Forest; Compartments 567/630/631**

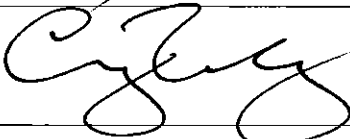
**ASSOCIATED HARVEST PLAN NO. HP\_2014-0111**

**Certification**

Prepared by:

Senior Planner		Date: 14/7/14
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Road Works and Operational Expenditure Approved by:

Roading Agr.		Date: 22/7/14
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**Duration of Approval:**

The above approval is valid until 12 months from date of signature.

**Contents**

1. Cover Page
2. Operational Map
3. Costings
4. Roadworks Plan Text/Prescriptions/Road and crossings work sheets
5. Locality Map
6. Safety Plan HAMEEP
7. Harvesting Plan
8. Harvesting Notification List (Operations Team Leader and Roding Supervisor Only)



17/11/15

10/11/15

1/11/15

1/11/15

1/11/15

**1. Objectives**

- Roadworks are required to service plantation harvesting operations within the above compartments. These compartments are scheduled for harvest from late 2014 on.
- 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:

- Technical Guidance Notes for Roadworks.
- State Forests of NSW Forest Practices Code - Part 1 Timber Harvesting in Forests NSW Plantations 2005 and Forest Practices Code Part 4 Forest Roads and Fire Trails (February 1999).
- Plantations and Reafforestation Act (1999).
- Plantations and Reafforestation (Code) Regulation (2001), subject to the conditions described in Attachment 1 of the Authorisation for the timber plantation.

and (applying to roading bordering and through native forest)

- Standard Harvest Plan Conditions for Native Forest Operations in North East Region.
- Licence Conditions issued by Forestry Corporation of NSW under the Forestry Act (2012).
- 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 5B of the Forestry Act 2012 (IFOA) including the associated licences:
  - Threatened Species Licence issued under the Threatened Species Conservation Act (1995).
  - Fisheries Licence issued under section 220ZW of the Fisheries Management Act 1994.
  - Environment Protection Licence No. 4017 (UNE) issued under section 55 of the Protection of the Environment Operations Act 1997.
  - **Works on Crossings A, B,C,M,N,O,P,Q,R,S,T,U,V are licenced operations**
  - All EPL conditions will apply to roading operations unless otherwise specified

**3. Special Conditions**

<i>Feature</i>	<i>Conditions</i>
Cultural Heritage	No
Threatened Species	See section 5.2 & 5.7 of the harvesting plan. Minimise disturbance within protection zones.
Dispersible Soils Hazard	No conditions to apply to roading
Mass Movement Hazard	No
Seasonality	No
Engineering Design	No
Environmental impacts i.e. Dust, Noise, Water, Visual	No
Haulage Standards	No
National Park	No
Private Property	Yes – private property owners access properties through the north via polyosma and Pilbara Road. Develop procedures to maintain reasonable access to the properties where practicable

Permit To Enter required	No
Quarries and Gravel Pits	No
Underground/Overhead Utilities	<p>Yes</p> <ul style="list-style-type: none"> <li>• There is a Telstra cable that runs adjacent to Settles Road and along the northern and southern boundaries of the plantation area as shown on the HPOM.</li> <li>• Site plans for the cable are held on the Harvest Plan Folder.</li> </ul> <p>Dial before you dig procedure must be followed prior any excavation or road maintenance works in this area to determine cable locations.</p>
Safety Issues (includes hazards, public use of roads)	See Hazard Assessment in the Site Safety Pack

### 3.1 EPL Licencing (if applicable)

- Operations through and adjacent native forest areas are licensed under the EPL.
- The Roding Manager/Harvesting Manager is responsible for licencing the activity
- The Roding Supervisor must notify the Roding Manager/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

See attached work sheets

# Road Maintenance/Upgrade

Road Name 567/1 Trail

Category Temporary

Location Runs east off Polyosma Road to turnaround 1

Length (m) 550

WORKS		YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes	<input type="checkbox"/>		
	Mass Movement	<input type="checkbox"/>		
	Dispersible	<input type="checkbox"/>		
Pavement Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA	Upgrade Length (m) 0 Upgrade Spoil NA
	Grade Lowering	<input type="checkbox"/>	NA	
	Realignment	<input type="checkbox"/>	NA	
	Reopening	<input checked="" type="checkbox"/>	Full Length	
Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	Full Length	Maintenance Length (m) 550
	Repair surface	<input type="checkbox"/>	NA	
	Crown/Crossfall	<input type="checkbox"/>	NA	
	Gravel	<input checked="" type="checkbox"/>	either side of xing X	Gravel Length (m) 50
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Max Clearing width (m) 3	See general condition 4
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition	
	Batter Repair/Upgrade	<input type="checkbox"/>	NA	
Drainage	Culverts	<input type="checkbox"/>	NA	Size: Sets:
	Mitres	<input type="checkbox"/>		
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 4	
	Belts/Channels	<input type="checkbox"/>	Sets:	
	Drop Downs	<input type="checkbox"/>	Sets:	
	Silt Trapping	<input type="checkbox"/>		
Comments: NA				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name 630/1 Trail

Category Temporary

Location Running South off Pilbara Road to turnaround 3

Length (m) 500

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
<b>Site Info</b>		Works >30 Slopes	<input type="checkbox"/>		
		Mass Movement	<input type="checkbox"/>		
		Dispersible	<input type="checkbox"/>		
<b>Pavement</b>	<b>Upgrade</b>	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA	
		Grade Lowering	<input type="checkbox"/>	NA	
		Realignment	<input type="checkbox"/>	NA	
		Reopening	<input type="checkbox"/>	NA	
	<b>Maintenance</b>	Clear veg/debris	<input checked="" type="checkbox"/>	NA	Maintenance Length (m) 500
		Repair surface	<input checked="" type="checkbox"/>	NA	
		Crown/Crossfall	<input checked="" type="checkbox"/>	NA	
Gravel		<input type="checkbox"/>	NA	Gravel Length (m)	
<b>Roadside/Batters</b>	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3	See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition		
	Batter Repair/Upgrade	<input type="checkbox"/>	NA		
<b>Drainage</b>	Culverts	<input type="checkbox"/>	NA	Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets:		
	Belts/Channels	<input type="checkbox"/>	Sets:		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: NA					

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

Date	Event	Initial

Road Name 630/2 Trail

Category Temporary

Location South from Pilbara Road to turnaround 4

Length (m) 500

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info		Works >30 Slopes	<input type="checkbox"/>		
		Mass Movement	<input type="checkbox"/>		
		Dispersible	<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA	
		Grade Lowering	<input type="checkbox"/>	NA	
		Realignment	<input type="checkbox"/>	NA	
		Reopening	<input type="checkbox"/>	NA	
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	NA	Maintenance Length (m) 500
		Repair surface	<input checked="" type="checkbox"/>	NA	
		Crown/Crossfall	<input checked="" type="checkbox"/>	NA	
Gravel		<input checked="" type="checkbox"/>	Near Crossingt F	Gravel Length (m) 100	
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3	See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition		
	Batter Repair/Upgrade	<input type="checkbox"/>	NA		
Drainage	Culverts	<input type="checkbox"/>	NA	Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 3		
	Belts/Channels	<input checked="" type="checkbox"/>	Sets: 2		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: NA					

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

Date	Event	Initial

Road Name 630/3 Road

Category Temporary

Location South off Pilbara Road to turnaround 5

Length (m) 400

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info		Works >30 Slopes	<input type="checkbox"/>	
		Mass Movement	<input type="checkbox"/>	
		Dispersible	<input type="checkbox"/>	
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA
		Grade Lowering	<input type="checkbox"/>	NA
		Realignment	<input type="checkbox"/>	NA
		Reopening	<input type="checkbox"/>	NA
Maintenance		Clear veg/debris	<input checked="" type="checkbox"/>	NA Maintenance Length (m) 400
		Repair surface	<input checked="" type="checkbox"/>	NA
		Crown/Crossfall	<input checked="" type="checkbox"/>	NA
		Gravel	<input type="checkbox"/>	NA Gravel Length (m)
Roadside/Batters		Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3 See general condition 4
		Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition
		Batter Repair/Upgrade	<input type="checkbox"/>	NA
Drainage		Culverts	<input type="checkbox"/>	NA Size: Sets:
		Mitres	<input checked="" type="checkbox"/>	
		ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 3
		Belts/Channels	<input type="checkbox"/>	Sets:
		Drop Downs	<input type="checkbox"/>	Sets:
		Silt Trapping	<input type="checkbox"/>	
Comments: NA				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name 630/4 Road

Category Temporary

Location South from western end of Pilbara Road to turnaround 6

Length (m) 100

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes	<input type="checkbox"/>			
	Mass Movement	<input type="checkbox"/>			
	Dispersible	<input type="checkbox"/>			
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA	
		Grade Lowering	<input type="checkbox"/>	NA	
		Realignment	<input type="checkbox"/>	NA	
		Reopening	<input type="checkbox"/>	NA	
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	NA	Maintenance Length (m) 100
		Repair surface	<input type="checkbox"/>	NA	
		Crown/Crossfall	<input checked="" type="checkbox"/>	NA	
	Gravel	<input type="checkbox"/>	NA	Gravel Length (m)	
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Max Clearing width (m) 3	See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition		
	Batter Repair/Upgrade	<input type="checkbox"/>	NA		
Drainage	Culverts	<input type="checkbox"/>	NA	Size: Sets:	
	Mitres	<input type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 1		
	Belts/Channels	<input type="checkbox"/>	Sets:		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: NA					

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial



Road Name 631 Trail

Category Permanent

Location Settles Rd - Polyosma Road

Length (m) 550

WORKS		YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works >30 Slopes	<input type="checkbox"/>	
	Mass Movement	<input type="checkbox"/>	
	Dispersible	<input type="checkbox"/>	
Pavement	Upgrade	Widening	<input type="checkbox"/> Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA
		Grade Lowering	<input type="checkbox"/> NA
		Realignment	<input checked="" type="checkbox"/> Crossing B - approx 50m either side
		Reopening	<input type="checkbox"/> NA
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/> NA Maintenance Length (m) 550
		Repair surface	<input checked="" type="checkbox"/> Full Length
		Crown/Crossfall	<input type="checkbox"/> NA
	Gravel	<input checked="" type="checkbox"/> From Settles Road approx 200m to west Gravel Length (m) 200	
Roadside/Bates	Remove trees >20 cm	<input checked="" type="checkbox"/> Max Clearing width (m) 3 See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/> Remove vegetation only in accordance to general condition	
	Batter Repair/Upgrade	<input checked="" type="checkbox"/> See Crossing B	
Drainage	Culverts	<input type="checkbox"/> NA Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>	
	ROD/Spoon	<input checked="" type="checkbox"/> Sets:	
	Belts/Channels	<input checked="" type="checkbox"/> Sets: 2	
	Drop Downs	<input type="checkbox"/> Sets:	
	Silt Trapping	<input type="checkbox"/>	
Comments: NA			

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Northern Boundary Trail (Central Section)

Category Close

Location West of Polyosma Road to crossing K

Length (m) 550

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works >30 Slopes	<input type="checkbox"/>		
	Mass Movement	<input type="checkbox"/>		
	Dispersible	<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA
		Grade Lowering	<input type="checkbox"/>	NA
		Realignment	<input type="checkbox"/>	NA
		Reopening	<input type="checkbox"/>	NA
Maintenance		Clear veg/debris	<input type="checkbox"/>	NA Maintenance Length (m) 550
		Repair surface	<input checked="" type="checkbox"/>	Drain rip and reseed to slashable fire trail standard only
		Crown/Crossfall	<input type="checkbox"/>	NA
		Gravel	<input type="checkbox"/>	NA Gravel Length (m)
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>		Max Clearing width (m) 3 See general condition 4
	Remove trees <20 cm	<input type="checkbox"/>		Remove vegetation only in accordance to general condition
	Batter Repair/Upgrade	<input type="checkbox"/>		NA
Drainage	Culverts	<input type="checkbox"/>		NA Size: Sets:
	Mitres	<input type="checkbox"/>		
	ROD/Spoon	<input checked="" type="checkbox"/>		Sets:
	Belts/Channels	<input type="checkbox"/>		Sets:
	Drop Downs	<input type="checkbox"/>		Sets:
	Silt Trapping	<input type="checkbox"/>		
Comments: NA				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Northern Boundary Trail (Eastern Section)

Category Fire Trail Access Only

Location Settles Road - Polyosma Road

Length (m) 850

WORKS		YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works >30 Slopes	<input type="checkbox"/>	
	Mass Movement	<input type="checkbox"/>	
	Dispersible	<input type="checkbox"/>	
Pavement	Upgrade	Widening	<input type="checkbox"/> Location NA Upgrade Length (m) 0 <input type="checkbox"/> Formation Width (m) NA Upgrade Spoil NA <input type="checkbox"/> Curve Widening NA
		Grade Lowering	<input type="checkbox"/> NA
		Realignment	<input type="checkbox"/> NA
		Reopening	<input type="checkbox"/> NA
Maintenance		Clear veg/debris	<input checked="" type="checkbox"/> NA Maintenance Length (m) 850
		Repair surface	<input checked="" type="checkbox"/> Bogholes /erosion around crossings L and M
		Crown/Crossfall	<input type="checkbox"/> NA
		Gravel	<input checked="" type="checkbox"/> Small rock on Crossings L and M Gravel Length (m) 50
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3 See general condition 4
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition
	Batter Repair/Upgrade	<input type="checkbox"/>	NA
Drainage	Culverts	<input type="checkbox"/>	NA Size: Sets:
	Mitres	<input type="checkbox"/>	
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 8
	Belts/Channels	<input type="checkbox"/>	Sets:
	Drop Downs	<input type="checkbox"/>	Sets:
	Silt Trapping	<input type="checkbox"/>	
Comments: NA			

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Northern Boundary Trail (Western Section)

Category Fire Trail Access Only

Location 630/4 Trail to crest other side of crossings I and J

Length (m) 250

	WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes	<input type="checkbox"/>		
	Mass Movement	<input type="checkbox"/>		
	Dispersible	<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/> Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA	
		Grade Lowering	<input type="checkbox"/> NA	
		Realignment	<input type="checkbox"/> NA	
	Maintenance	Reopening	<input type="checkbox"/> NA	
		Clear veg/debris	<input type="checkbox"/> NA	Maintenance Length (m) 250
		Repair surface	<input type="checkbox"/> NA	
		Crown/Crossfall	<input type="checkbox"/> NA	
Gravel	<input type="checkbox"/> NA	Gravel Length (m)		
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3 See general condition 4	
	Remove trees <20 cm	<input type="checkbox"/>	Remove vegetation only in accordance to general condition	
	Batter Repair/Upgrade	<input type="checkbox"/>	NA	
Drainage	Culverts	<input type="checkbox"/>	NA Size: Sets:	
	Mitres	<input type="checkbox"/>		
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 6	
	Belts/Channels	<input type="checkbox"/>	Sets:	
	Drop Downs	<input type="checkbox"/>	Sets:	
	Silt Trapping	<input type="checkbox"/>		
Comments: Install drainage - especially approaches to crossings I and J				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Pilbara Road

Category Permanent

Location West from Polyosma Road to turnaround 7

Length (m) 1300

WORKS		YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes	<input type="checkbox"/>		
	Mass Movement	<input type="checkbox"/>		
	Dispersible	<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA
		Grade Lowering	<input type="checkbox"/>	NA
		Realignment	<input type="checkbox"/>	NA
	Maintenance	Reopening	<input type="checkbox"/>	NA
		Clear veg/debris	<input checked="" type="checkbox"/>	NA Maintenance Length (m) 1300
		Repair surface	<input checked="" type="checkbox"/>	NA
		Crown/Crossfall	<input checked="" type="checkbox"/>	NA
Gravel	<input checked="" type="checkbox"/>	Steep sections in out of crossing D only Gravel Length (m) 200		
Roadside/Batters	Remove trees >20 cm	<input checked="" type="checkbox"/>	Max Clearing width (m) 3 See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition	
	Batter Repair/Upgrade	<input type="checkbox"/>	NA	
Drainage	Culverts	<input type="checkbox"/>	NA Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>		
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 6	
	Belts/Channels	<input checked="" type="checkbox"/>	Sets: 12	
	Drop Downs	<input type="checkbox"/>	Sets:	
	Silt Trapping	<input type="checkbox"/>		
Comments: NA				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Polyosma Road

Category Permanent

Location Gaudrons Road to Turnaround 2

Length (m) 1800

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info	Works >30 Slopes		<input type="checkbox"/>		
	Mass Movement		<input type="checkbox"/>		
	Dispersible		<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA	
		Grade Lowering	<input checked="" type="checkbox"/>	In/out of Crossing C	
		Realignment	<input type="checkbox"/>	NA	
		Reopening	<input type="checkbox"/>	NA	
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	Verges only	Maintenance Length (m) 1800
		Repair surface	<input type="checkbox"/>	NA	
		Crown/Crossfall	<input checked="" type="checkbox"/>	Full length	
Gravel		<input checked="" type="checkbox"/>	As required	Gravel Length (m) 200	
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3	See general condition 4	
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition		
	Batter Repair/Upgrade	<input type="checkbox"/>	NA		
Drainage	Culverts	<input type="checkbox"/>	NA	Size: Sets:	
	Mitres	<input checked="" type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 2		
	Belts/Channels	<input checked="" type="checkbox"/>	Sets: 3		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: NA					

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Pork Chop Road

Category Fire Trail 4wd access only

Location Polyosma Road to Polyosma Road

Length (m) 1150

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info		Works >30 Slopes	<input type="checkbox"/>	
		Mass Movement	<input type="checkbox"/>	
		Dispersible	<input type="checkbox"/>	
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA
		Grade Lowering	<input type="checkbox"/>	NA
		Realignment	<input type="checkbox"/>	NA
		Reopening	<input type="checkbox"/>	NA
Maintenance		Clear veg/debris	<input checked="" type="checkbox"/>	NA Maintenance Length (m) 1150
		Repair surface	<input checked="" type="checkbox"/>	Repair crossings and rutting erosion
		Crown/Crossfall	<input type="checkbox"/>	NA
		Gravel	<input type="checkbox"/>	NA Gravel Length (m)
Roadside/Batters		Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3 See general condition 4
		Remove trees <20 cm	<input type="checkbox"/>	Remove vegetation only in accordance to general condition
		Batter Repair/Upgrade	<input type="checkbox"/>	NA
Drainage		Culverts	<input type="checkbox"/>	NA Size: Sets:
		Mitres	<input type="checkbox"/>	
		ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 20
		Belts/Channels	<input type="checkbox"/>	Sets:
		Drop Downs	<input type="checkbox"/>	Sets:
		Silt Trapping	<input type="checkbox"/>	
Comments: NA				

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

Road Name Ridge Trail

Category Fire Trail 4wd access only

Location South of Southern Boundary Trail

Length (m) 200

		WORKS	YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS	
Site Info		Works >30 Slopes	<input type="checkbox"/>		
		Mass Movement	<input type="checkbox"/>		
		Dispersible	<input type="checkbox"/>		
Pavement	Upgrade	Widening	<input type="checkbox"/>	Location NA Formation Width (m) NA Curve Widening NA Upgrade Length (m) 0 Upgrade Spoil NA	
		Grade Lowering	<input type="checkbox"/>	NA	
		Realignment	<input type="checkbox"/>	NA	
		Reopening	<input type="checkbox"/>	NA	
	Maintenance	Clear veg/debris	<input checked="" type="checkbox"/>	NA	Maintenance Length (m) 200
		Repair surface	<input checked="" type="checkbox"/>	Steep Hill requires repair of rutting erosion and repair of rollovers - Consider closing for long term use	
		Crown/Crossfall	<input checked="" type="checkbox"/>	NA	
		Gravel	<input type="checkbox"/>	NA	Gravel Length (m)
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3	See general condition 4	
	Remove trees <20 cm	<input type="checkbox"/>	Remove vegetation only in accordance to general condition		
	Batter Repair/Upgrade	<input type="checkbox"/>	NA		
Drainage	Culverts	<input type="checkbox"/>	NA	Size: Sets:	
	Mitres	<input type="checkbox"/>			
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets:		
	Belts/Channels	<input type="checkbox"/>	Sets:		
	Drop Downs	<input type="checkbox"/>	Sets:		
	Silt Trapping	<input type="checkbox"/>			
Comments: Repair existing					

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial



Road Name Southern Boundary Fire Trail (East)

Category Close

Location Polyosma Road to Ridge Road

Length (m) 500

WORKS		YES	INSTRUCTIONS/SITE SPECIFIC CONDITIONS
Site Info	Works >30 Slopes	<input type="checkbox"/>	
	Mass Movement	<input type="checkbox"/>	
	Dispersible	<input type="checkbox"/>	
Pavement	Upgrade	Widening	<input type="checkbox"/> Location NA Upgrade Length (m) 0 Formation Width (m) NA Upgrade Spoil NA Curve Widening NA
		Grade Lowering	<input type="checkbox"/> NA
		Realignment	<input type="checkbox"/> NA
		Reopening	<input type="checkbox"/> NA
Maintenance		Clear veg/debris	<input type="checkbox"/> NA Maintenance Length (m) 500
		Repair surface	<input checked="" type="checkbox"/> Various steep sections - repair rutting and install drainag, remove crossing V and close road
		Crown/Crossfall	<input type="checkbox"/> NA
		Gravel	<input type="checkbox"/> NA Gravel Length (m)
Roadside/Batters	Remove trees >20 cm	<input type="checkbox"/>	Max Clearing width (m) 3 See general condition 4
	Remove trees <20 cm	<input checked="" type="checkbox"/>	Remove vegetation only in accordance to general condition
	Batter Repair/Upgrade	<input type="checkbox"/>	NA
Drainage	Culverts	<input type="checkbox"/>	NA Size: Sets:
	Mitres	<input type="checkbox"/>	
	ROD/Spoon	<input checked="" type="checkbox"/>	Sets: 10
	Belts/Channels	<input type="checkbox"/>	Sets:
	Drop Downs	<input type="checkbox"/>	Sets:
	Silt Trapping	<input type="checkbox"/>	
Comments: NA			

Start Date:

Finish Date:

Soil Stabilisation Date (must be within 5 days):

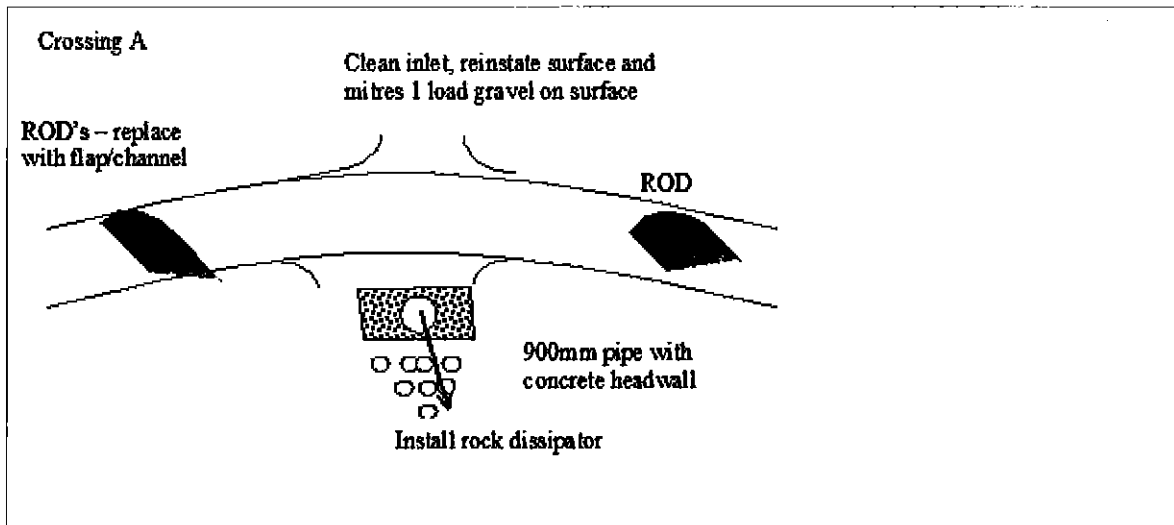
Date	Event	Initial

# Crossing Works

**Crossing Name** A 631 Trail    **Road Name** 631 Trail    **Location** 50m West of Settles Road  
**Drainage Feature** 3rd order stream    **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Pipe culvert	900mm	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Existing gravel surface Clean Inlet, Install 1/2 load rock on outlet, replace roll overs with rubber flaps, install 2 loads gravel on surface	<b>Approaches</b>	
<b>Reshape Bed/banks</b>	Nil	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install belt/channel
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Install belt/channel
<b>Outlet</b>	Armour with rock	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Install Rock armouring
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	Straw bale



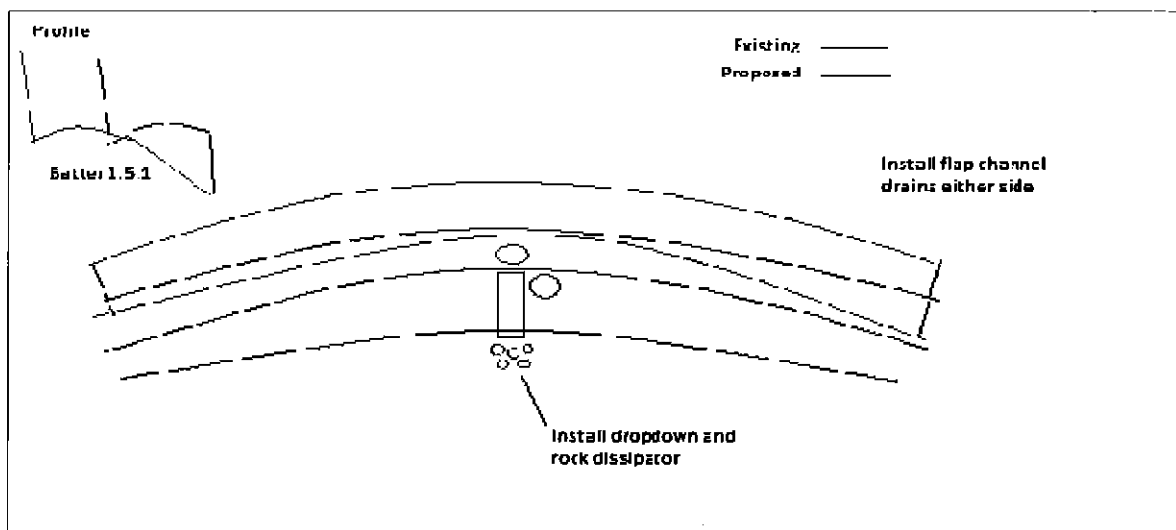
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** B 631Trail    **Road Name** 631Trail    **Location** 500m west of Settles Road  
**Drainage Feature** 1st order stream    **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Pipe culvert	450	Unstable (upgrade)	Pipe culvert	450	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Existing natural surface Realign road to the south - cut in new road allignment, remove and relay pipe, batter back fill batter at 1.5:1 stabilise with geofabric Trinter and mulch/seed	<b>Approaches</b>	Armour with gravel/rock
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install belt/channel
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Install belt/channel
<b>Outlet</b>	Install precast headwall, fluming, rock	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Compact fill batter, jutemesh and seed	<b>OutletControl</b>	Drop down fluming
<b>ErosionControl</b>	Jutemesh and seed	<b>TableDrain</b>	



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

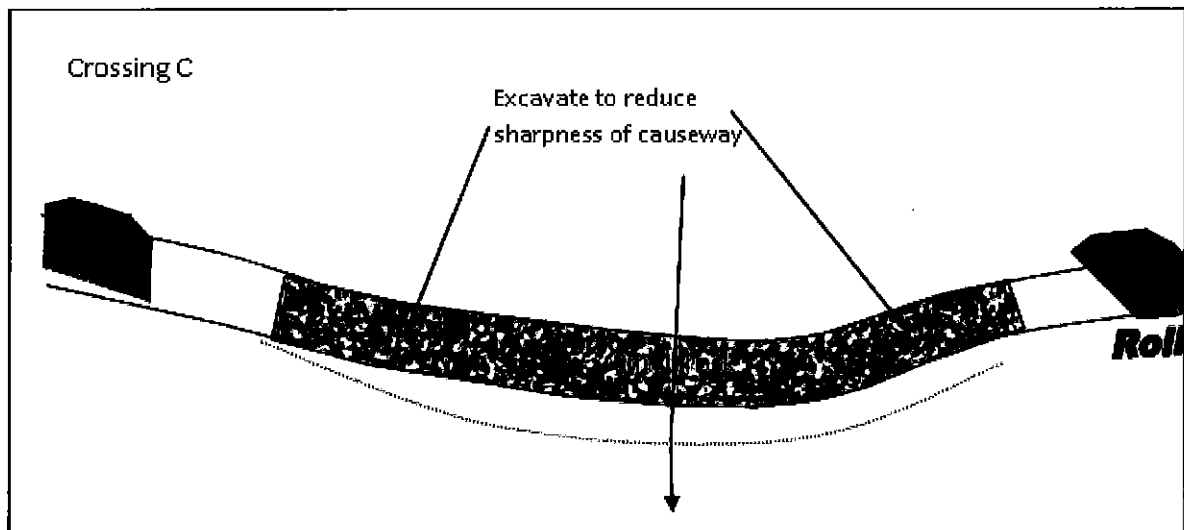
Date	Event	Initial

**Crossing Name** C Polyosma R **Road Name** Polyosma Road **Location** 1km from Gaudrons Road

**Drainage Feature** 4th order stream **Stream Permanency** Permanent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Reshape approaches, install rock/gravel Watch for telstra cable upstream	<b>Approaches</b>	Reduce approach/departure grade
<b>Reshape Bed/banks</b>	Reshape causeway	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>	Existing armoured/vegetated	<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>	Existing armoured/vegetated	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

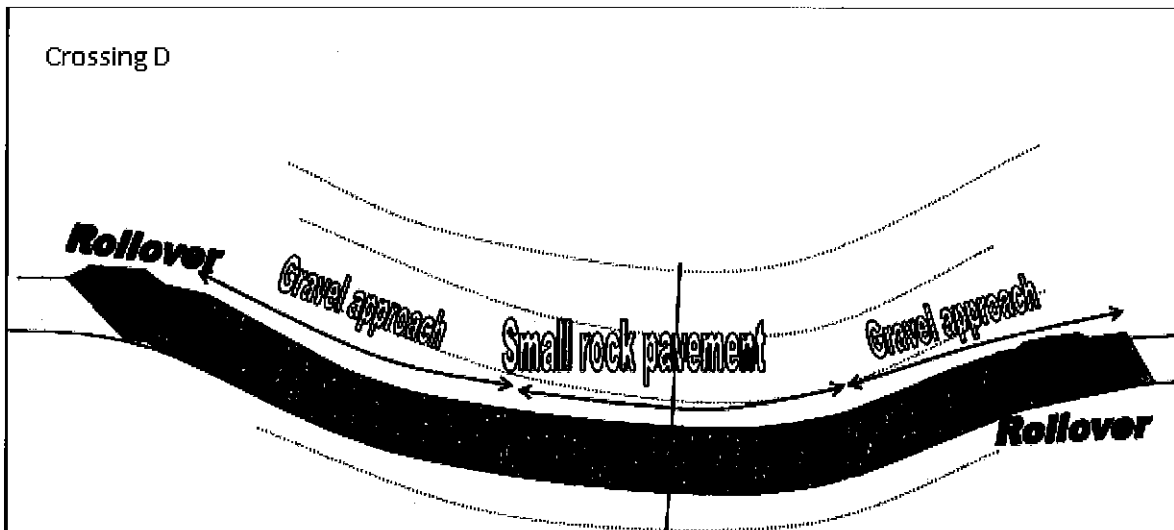
Date	Event	Initial

**Crossing Name** D Pilbara Roa **Road Name** Pilbara Road **Location** 300m west of Polyosma Rd

**Drainage Feature** 1st order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Armour with gravel/rock	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Nil	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>	Existing armoured/vegetated	<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>	Existing armoured/vegetated	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



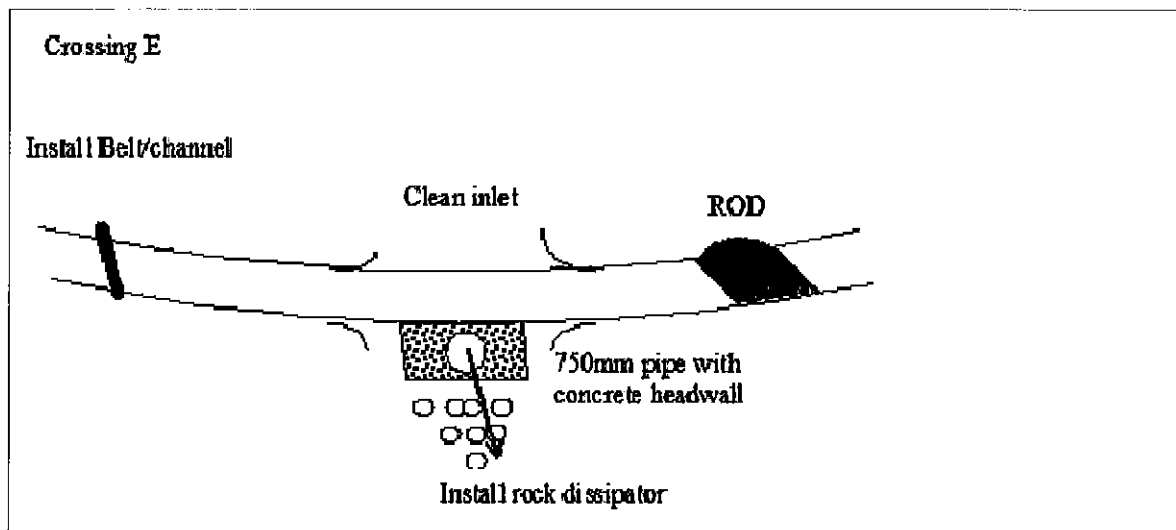
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** E Pilbara Road **Road Name** Pilbara Road **Location** 100m west of Pilbara Road  
**Drainage Feature** 1st order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Pipe culvert	750MM	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install Gravel (2 Loads)	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Nil	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install belt/channel
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>	Clean	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Install Load Rock on outlet
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



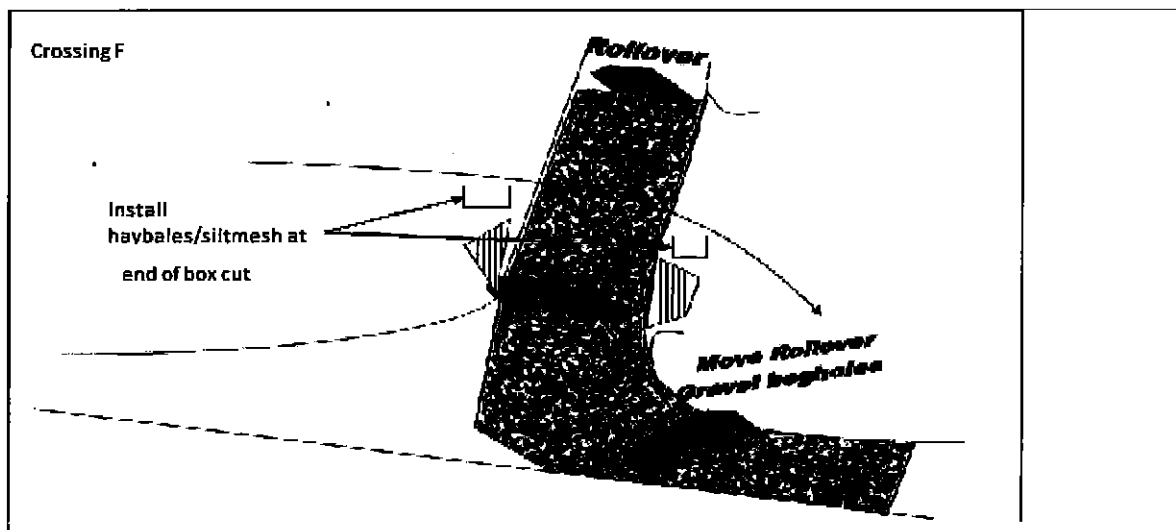
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** F Pilbara Road **Road Name** Pilbara Road **Location** 600m west on Pilbara Road  
**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Existing gravel surface 1 Load small rock/2 load gravel on causeway, 4 loads gravel either side Unstable soil - use imported gravel for rollovers	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Reshape causeway	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	Remove from site	<b>5-30m Upstream Left</b>	Install rollover closer to cross
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Existing rollover move closer
<b>Outlet</b>	Clean	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Nat Vegn
<b>ErosionControl</b>	Silt fence	<b>TableDrain</b>	Install hay bales/silt fence in



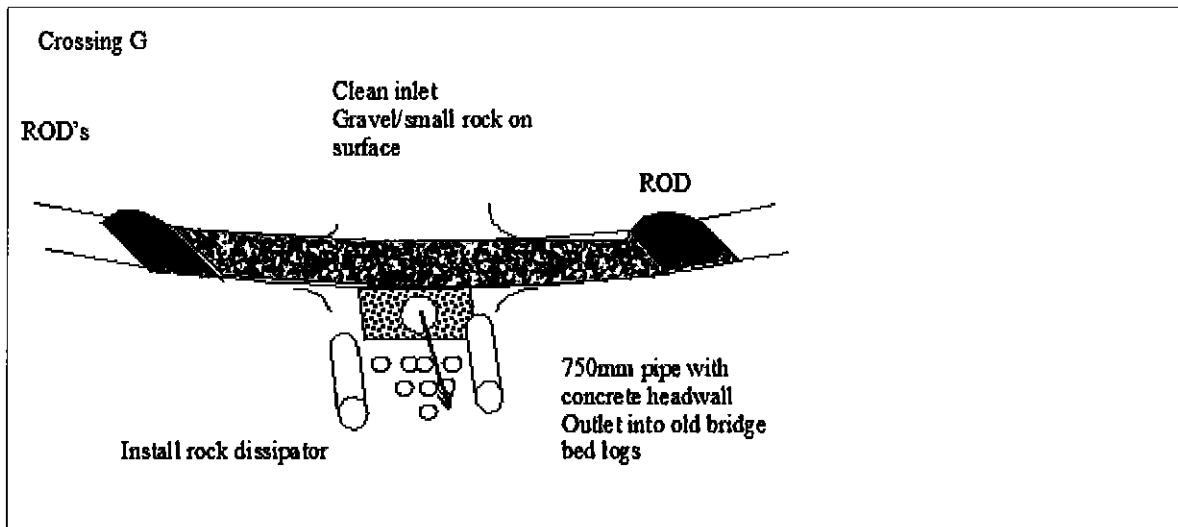
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** G Pilbara Roa **Road Name** Pilbara Road **Location** 1100m west on Pilbara Road  
**Drainage Feature** 1st order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Pipe culvert	750mm	Stable (maintenance)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Existing gravel surface	<b>Approaches</b>	Armour with gravel/rock
<b>Reshape Bed/banks</b>	Nil	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>	Install rock dissipator	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

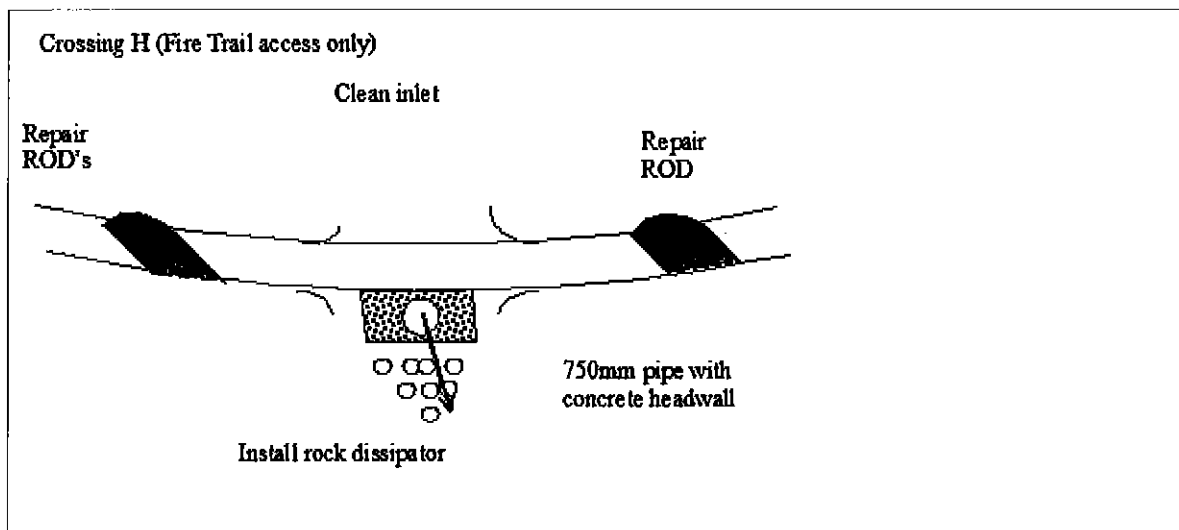
Date	Event	Initial



**Crossing Name** H Pilbara Roa **Road Name** Pilbara Road **Location** 1450m west on Pilbara Road  
**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Pipe culvert	750mm	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Existing natural surface Add rock dissipator on outlet. Drain water off crossing surface and reshape. 4wd access only	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Nil	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>		<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>	Armour with rock	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



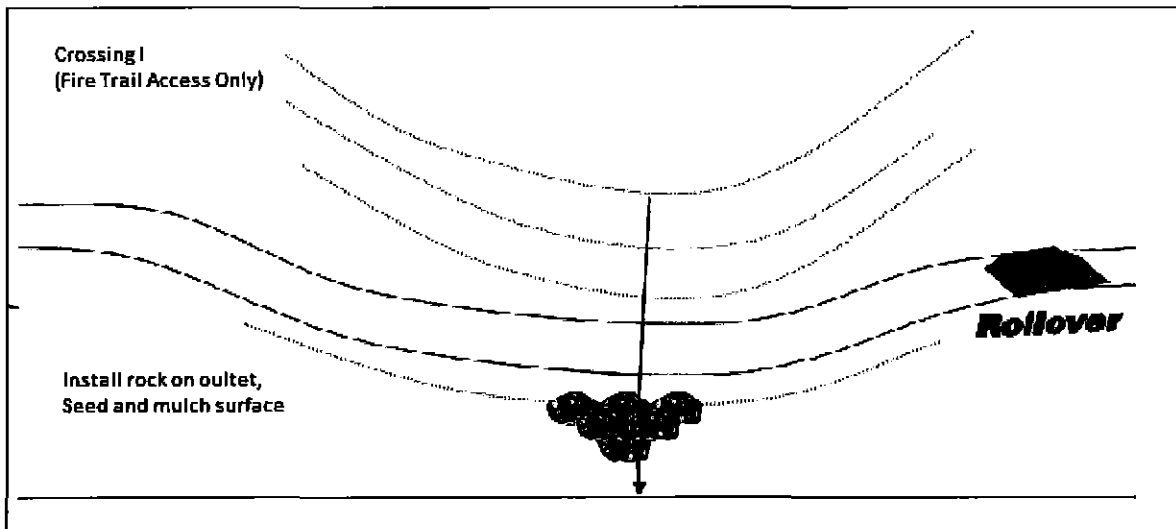
Start Date:                      Finish Date:                      Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

**Crossing Name** Northern Bou **Road Name** Northern Boundary FI **Location** Western end of block  
**Drainage Feature** Unmapped drainage line **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Gully stuffer	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Add rock to outlet, install ROD on approaches, small rock on crossing with FCNSW truck	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Existing crest
<b>Outlet</b>	Install rock dissipator/dropdown	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

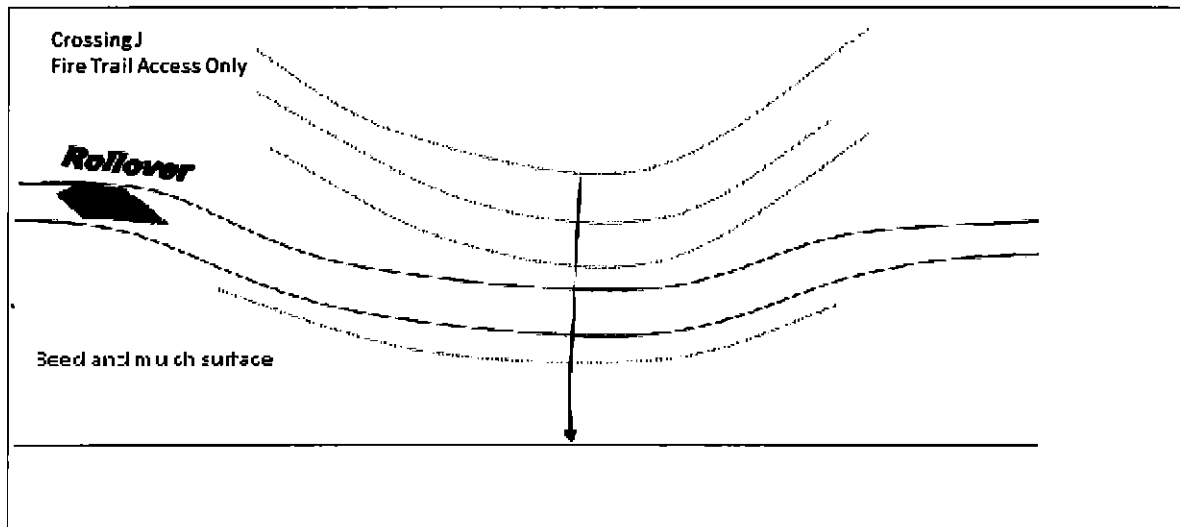
Date	Event	Initial

**Crossing Name** J Northern Bou **Road Name** Northern Boundary **Fi Location** Western end of block

**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install drainage on track and seed track, small rock on crossing with FCNSW truck	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>		<b>5-30m Upstream Left</b>	Existing crest
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>		<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



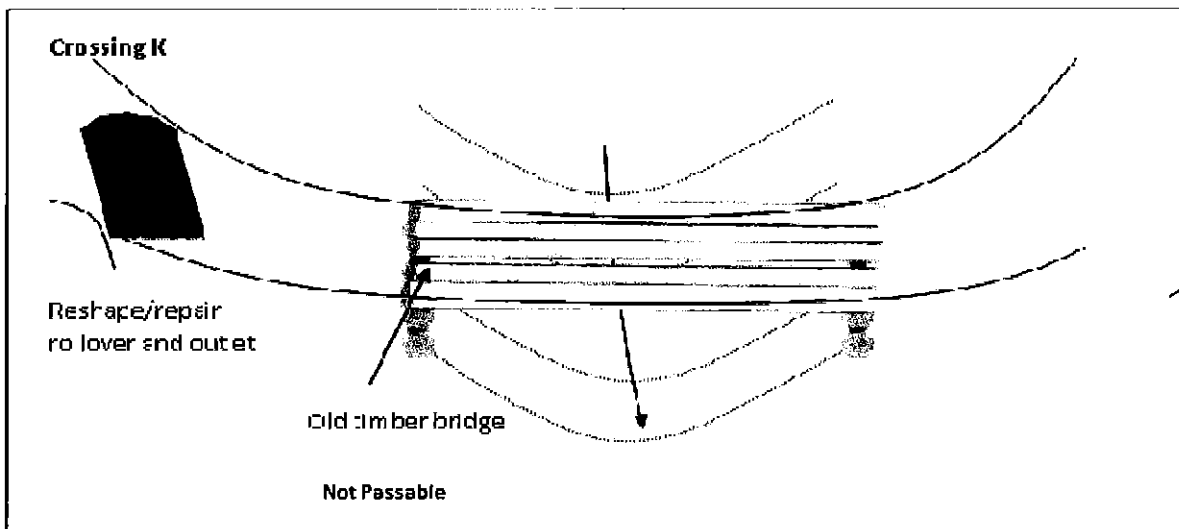
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** K Northern Bo **Road Name** Northern Boundary T **Location** On boundary downstream of Xings E  
**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Log bridge	NA	Stable (no works)	Nil	NA	Close

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Timber bridge - unusable but no risk of pollution - leave as is and allow to revegetate. Reinstall Rollover drain USL	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Maintain Existing rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	
<b>Outlet</b>		<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



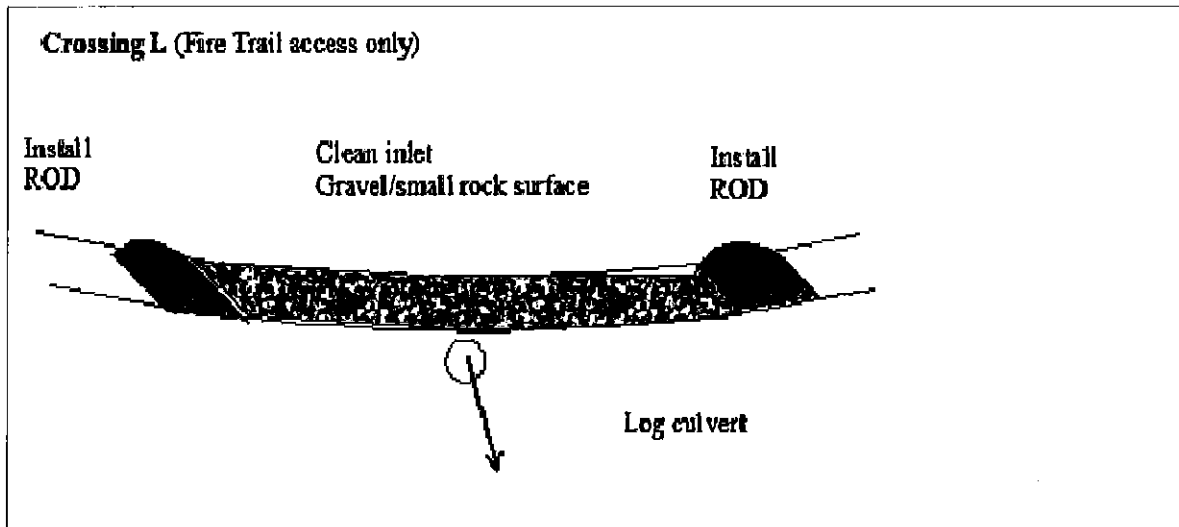
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** L Northern Bo **Road Name** Northern Boundary T **Location** Northern Boundary  
**Drainage Feature** 1st order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Log culvert	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Armour with rock Erosion on approaches - repair and drain track approaches Check for Telstra cable location	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Reshape crossing	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>		<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>	Clean	<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>	Clean	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Silt fence
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

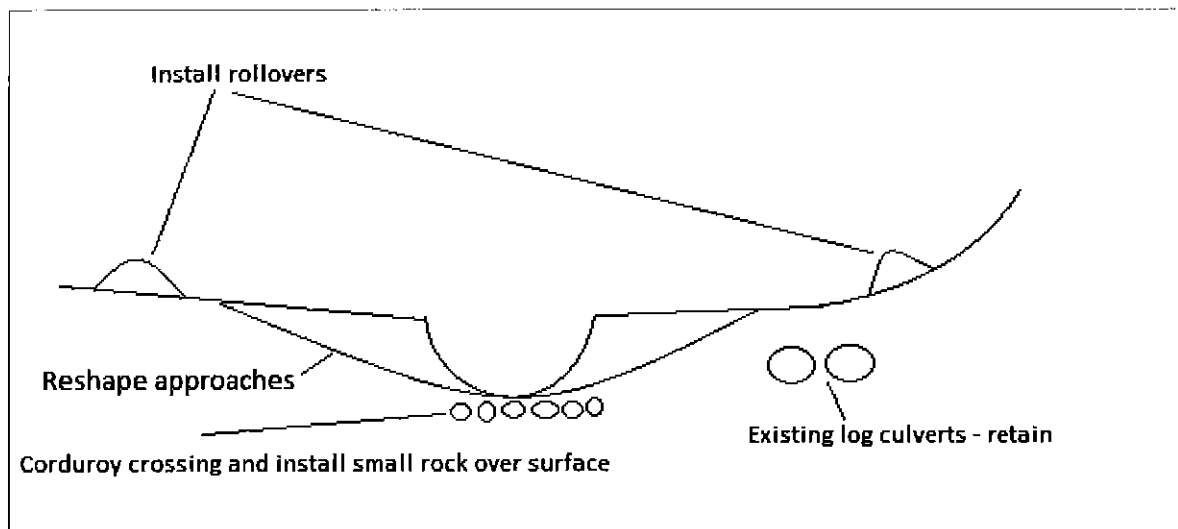
Date	Event	Initial

**Crossing Name** M Northern Bo **Road Name** Northern Boundary T **Location** 300M from Selles Road

**Drainage Feature** 3rd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Log culvert with causeway	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install corduroy - rock/gravel to stabilise crossing. Check for Telstra cable location. Conduct works when stream is not running or pump water across track whilst works in progress.	<b>Approaches</b>	Armour with gravel/rock
<b>Reshape Bed/banks</b>	Reshape causeway	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>	Armour with rock	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Seed and mulch disturbed areas	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Silt fence	<b>TableDrain</b>	



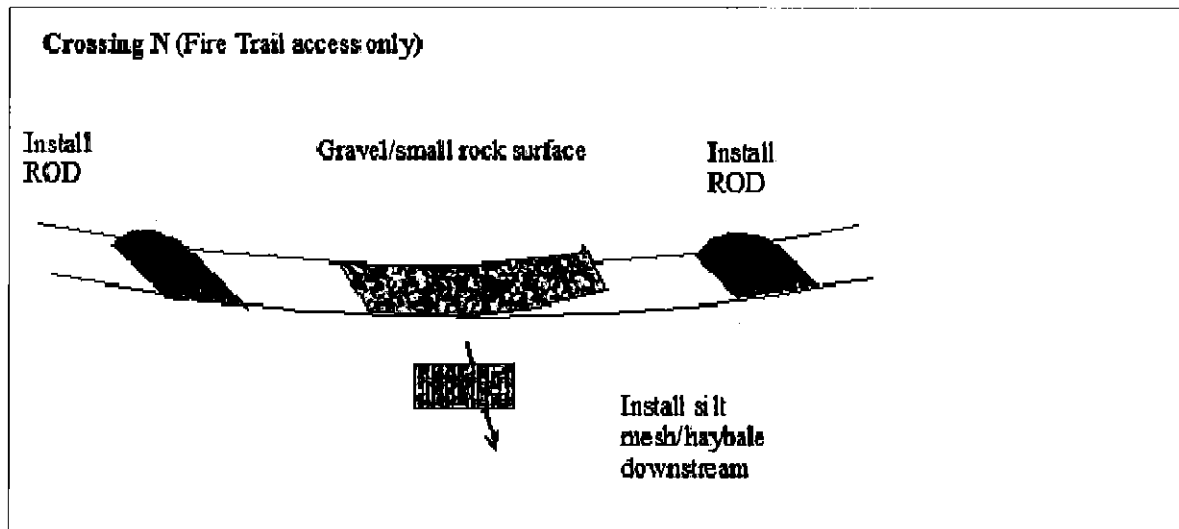
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** N Pork Chop R **Road Name** Pork Chop Road **Location** 100m East of Polyosma Road  
**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
Pavement/Structure	Install 8t small rock	Approaches	Nil required
Reshape Bed/banks		Temporary Drainage	Nil required
Disposal of Spoil	NA	5-30m Upstream Left	Install rollover
Inlet		5-30m Upstream Right	Install rollover
Outlet	Install Siltmesh	Practices where no 5-30	NA
Stabilisation	Nil required	OutletControl	Natural vegetation
ErosionControl	Nil required	TableDrain	



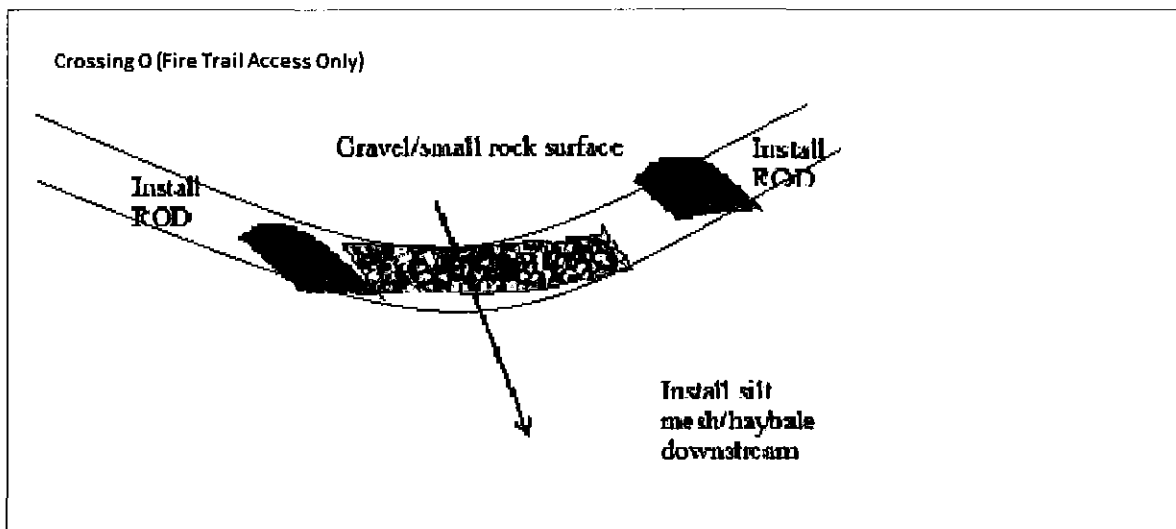
Start Date:                      Finish Date:                      Soil Stabilisation Date (must be within 5 days):

Date	Event	Initial

**Crossing Name** O Pork Chop **Road Name** Pork Chop Road **Location** 150m west of Polyosma Road  
**Drainage Feature** Unmapped drainage line **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install 4t small rock	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Reshape causeway	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>		<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

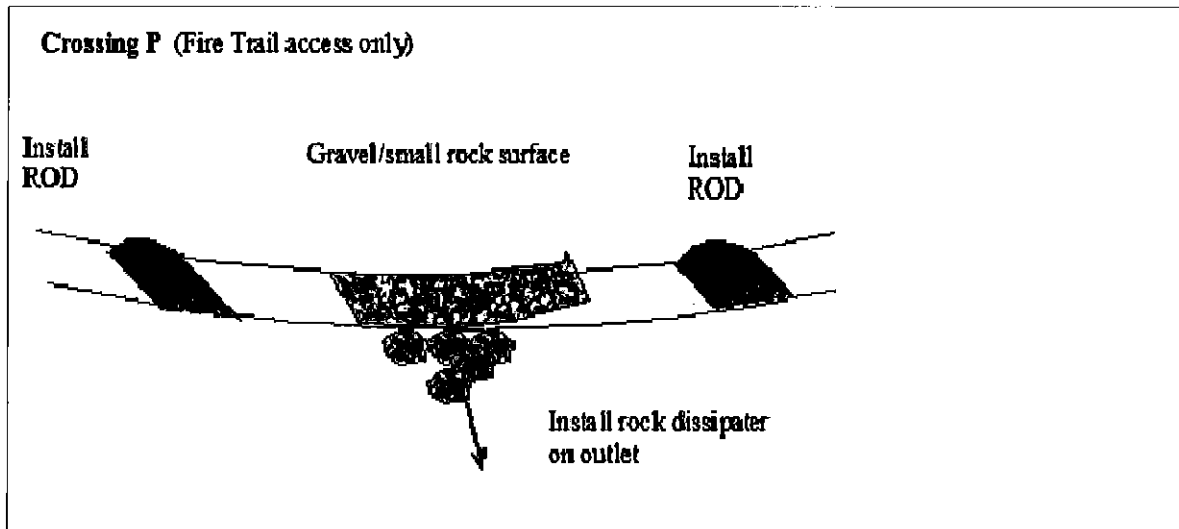
Date	Event	Initial



**Crossing Name** P Pork Chop R **Road Name** Pork Chop Road **Location** 200m west of Polyosma Road  
**Drainage Feature** Unmapped drainage line **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install 4t small rock on crossing	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>	Install large rock on outlet	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Silt fence	<b>TableDrain</b>	



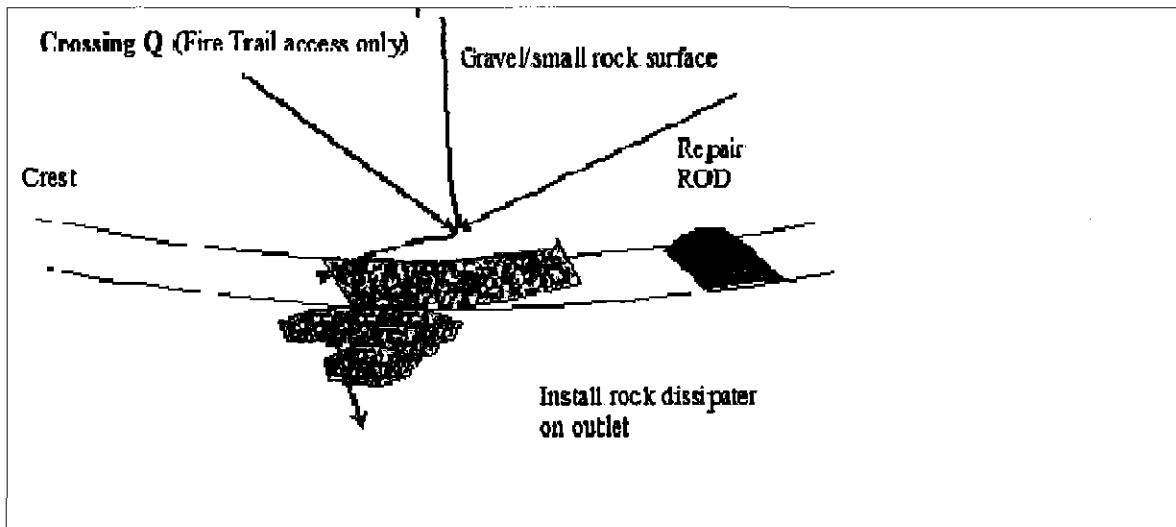
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** Q Pork Chop **Road Name** Pork Chop Road **Location** 300m west of Polyosma Road  
**Drainage Feature** Depression **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Create infall to ROD outlet, spread 4t small rock	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Reshape causeway	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>		<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



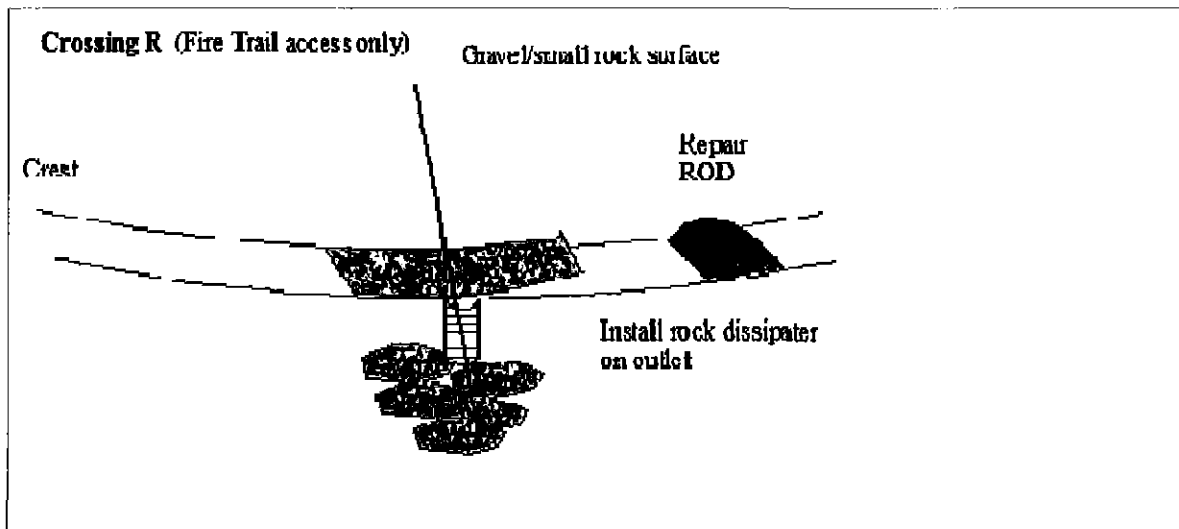
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** R Pork Chop R **Road Name** Pork Chop Road **Location** 350m west of Polyosma Road  
**Drainage Feature** Unmapped drainage line **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install 4 t rock on crossing and outlet	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Existing crest
<b>Outlet</b>	Install dropdown fluming	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



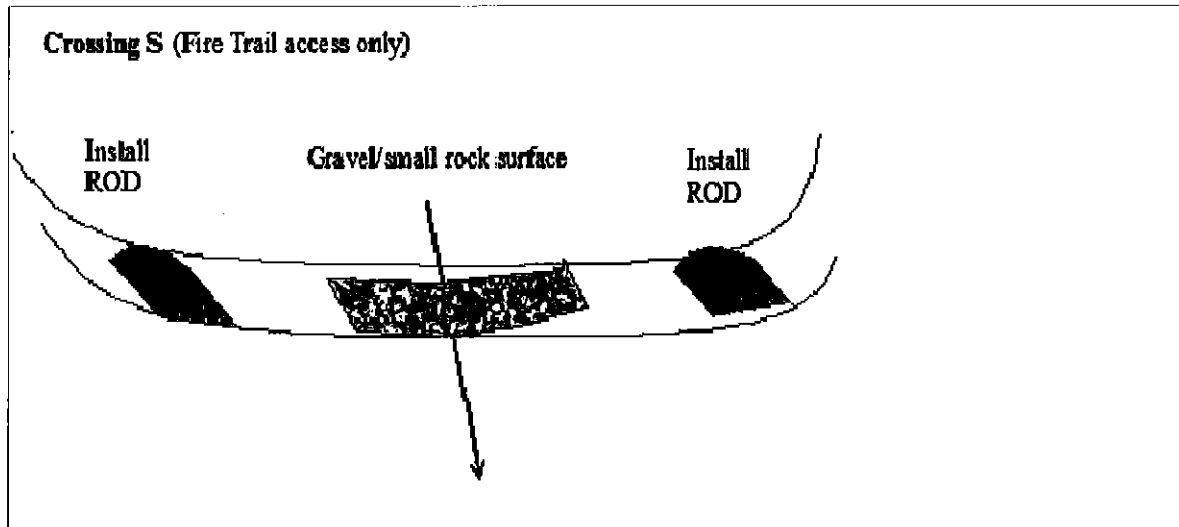
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** S Pork Chop R **Road Name** Pork Chop Road **Location** 600m west of Polyosma Road  
**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install 4 t rock on crossing and outlet	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>	Armour with rock	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

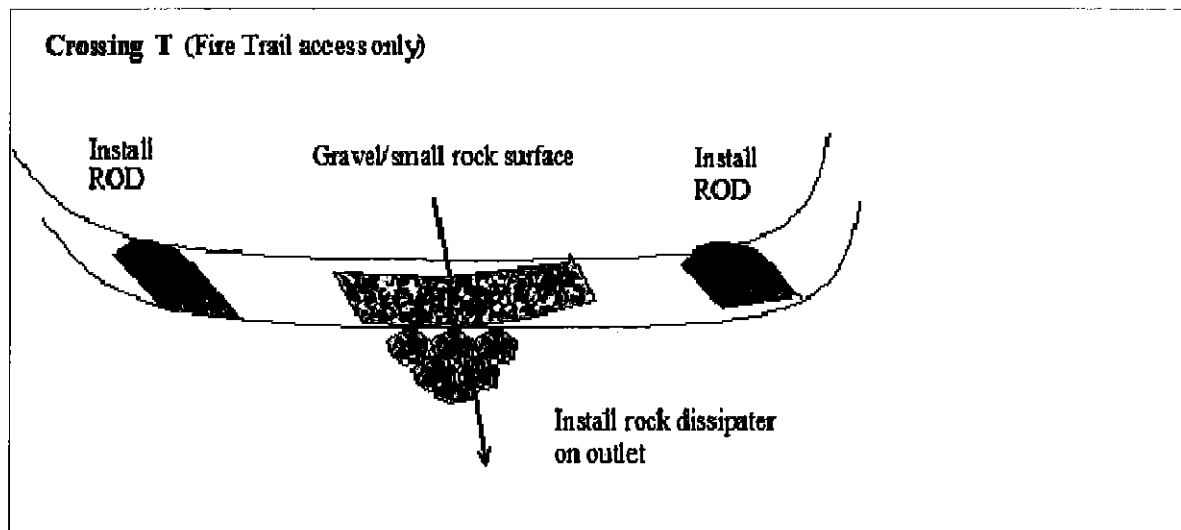
Date	Event	Initial

**Crossing Name** T Pork Chop R **Road Name** Pork Chop Road **Location** 800m west of Polyosma Road

**Drainage Feature** 1st order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install 4 t small rock on pavement, 4 t large rock dropdown on outlet	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>	Armour with rock/dropdown	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



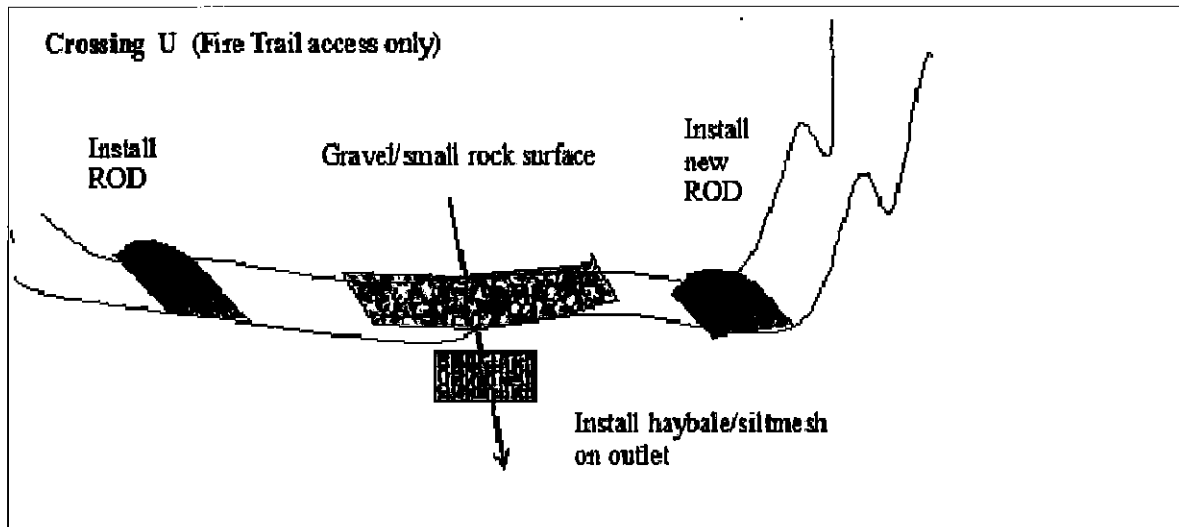
**Start Date:**                      **Finish Date:**                      **Soil Stabilisation Date (must be within 5 days):**

Date	Event	Initial

**Crossing Name** U Pork Chop R **Road Name** Pork Chop Road **Location** 1000m west of Polyosma Road  
**Drainage Feature** 1st order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Causeway	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install small rock on crossing Consider closing approach from west	<b>Approaches</b>	Repair erosion to west
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover closer to xing
<b>Outlet</b>	Silt mesh	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Straw bale
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

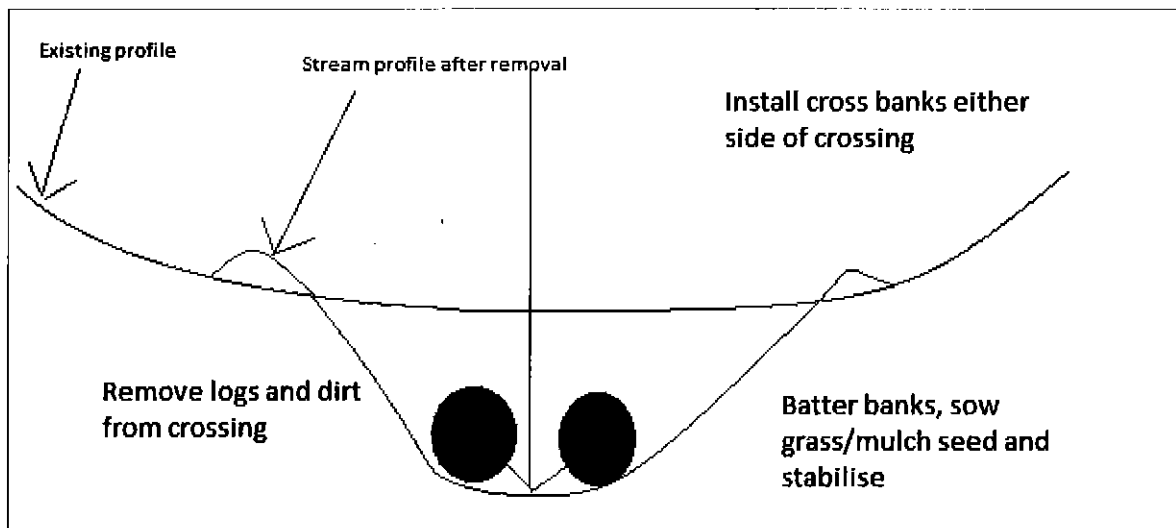
Date	Event	Initial

**Crossing Name** V Southern Bo **Road Name** Southern Boundary **Location** 150m west of Polyosma Road

**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Gully stuffer	NA	Remove and close	Nil	NA	Close

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Remove outside riparian zone Remove logs, batter back banks, seed and mulch disturbed soil	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Batter back stream banks	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	Incorporate into pavement	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>		<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Disturbed batters: jutemesh and seed	<b>OutletControl</b>	
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

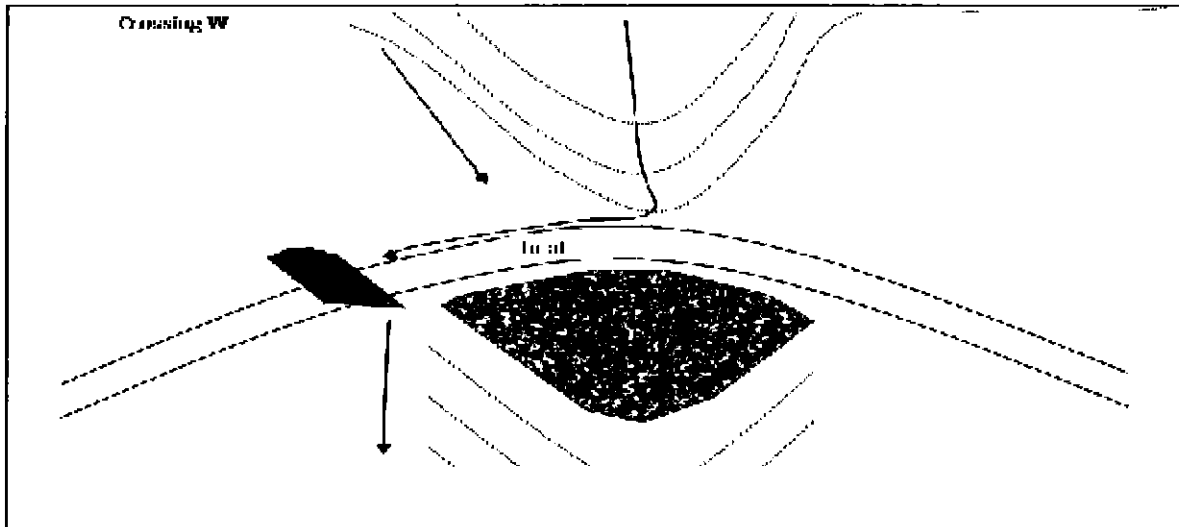
Date	Event	Initial

**Crossing Name** W Southern B **Road Name** Southern Boundary **Location** 100m west of 630/1 Trail

**Drainage Feature** 1st order stream- Depression o **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Stable	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Install infall on outer edge to ensure water exits at rollover	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>		<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Existing rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Existing rollover
<b>Outlet</b>		<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

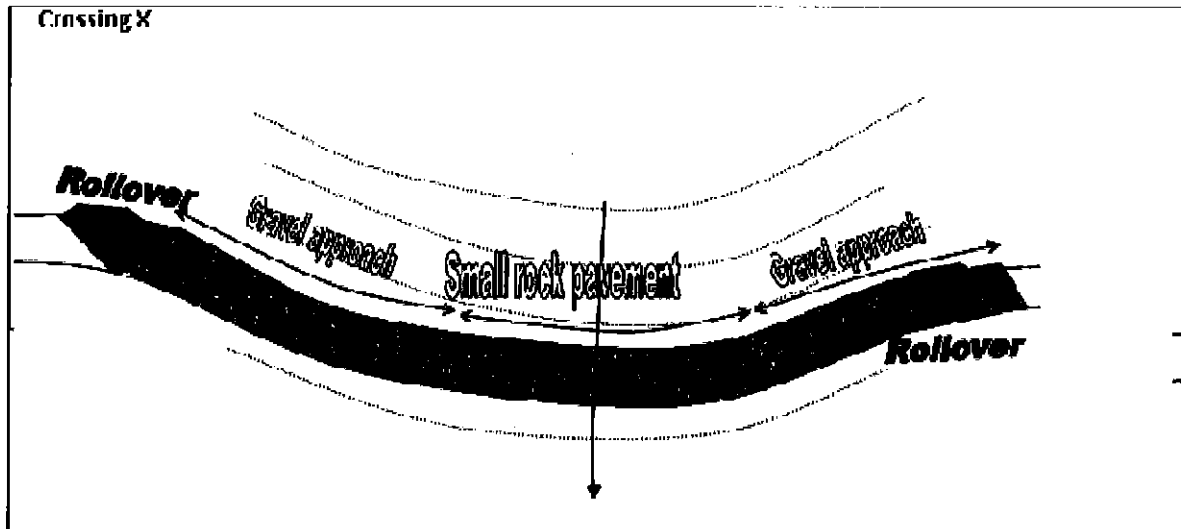
Date	Event	Initial



**Crossing Name** X 567/1 Trail **Road Name** 567/1 Trail **Location** 200m east of Polyosma Road  
**Drainage Feature** 2nd order stream **Stream Permanency** Intermittent

Existing Crossing	Size	Stability Status	Crossing Required	Size (mm/m)	Future
Causeway	NA	Unstable (upgrade)	Existing	NA	Permanent

Crossing Works		Approaches and Road Drainage	
<b>Pavement/Structure</b>	Rock base and gravel cover	<b>Approaches</b>	Nil required
<b>Reshape Bed/banks</b>	Repair eroding banks	<b>Temporary Drainage</b>	Nil required
<b>Disposal of Spoil</b>	NA	<b>5-30m Upstream Left</b>	Install rollover
<b>Inlet</b>		<b>5-30m Upstream Right</b>	Install rollover
<b>Outlet</b>	Armour with rock	<b>Practices where no 5-30</b>	NA
<b>Stabilisation</b>	Nil required	<b>OutletControl</b>	Natural vegetation
<b>ErosionControl</b>	Nil required	<b>TableDrain</b>	



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

Date	Event	Initial