

Approved Tunnel Information

Portal #1- End	Portal #2- End

North Island Main Trunk Line BRITOMART Tunnel KR-AT-NIMT-20

Document Type:	Generic Plan	Review Date:	November 2020
Approver Role:	HSE Advisor	Document No:	KR-AT-NIMT-20
Approver Name:	Glen Campbell	Approval Date:	November 2016
Approver Signature:			

Version	Date	Amendments	
		Section	Details
1.0	Nov 2016	Entire	Entire document developed/reviewed by key staff
2.0	June 2017	Entire	Added in Tunnel Details after RPE "Entry Requirements" section and Leptospirosis hazard
3.0	July 2018	Entire	Removed: Masks and filters

Tunnel Details

Title	Description			
Tunnel Common Name	BRITOMART			
Tunnel Number	20			
Line	North Island Main Trunk			
Length (m)	427			
Metrage	Start	681.15 Portal 1	End	681.577 Portal 2
Typical Traffic	Frequent trains, XXX pass			
Communications	Radio & Cellphone – MUST sign in with MCR 09 374 3872			
Electrified	Yes			
Type of RPE	SCSR			
Entry Requirements	1. Britomart Tunnel Only: If working in the Britomart Tunnel the following conditions apply 2. Notify Britomart Master control room of your Intention to enter the Tunnel and Inform the Operator at least 24hours prior to the planned access. 3. ALL Kiwirail Workers must report to the Main Control Room where they will receive a Station Induction and sign in, including when accessing from platform area to electric rooms etc. 4. Following this protocol will ensure that the Tunnel fan will be turned on to ensure fresh air supply to the Kiwirail Workers 5. if entry into the Tunnel will be made by use of HRV , prior to entry contact must be made with Britomart control room to have the Tunnel air flushed clear by use of ventilation system. 6. A Kiwirail supervisor/Team Leader must notify AT Main Control that all Kiwirail Workers have left the area at the end of the works this will ensure that the ventilation system is shut down and assures the control room that all staff have left the Tunnel. 7. All gates must be locked and secured after egress if unable to lock gates contact Britomart Control Room who will ensure they are secured. 8. ANY EMERGENCY 155 CALLOUT MUST FOLLOW STEPS 3-7 Email:britomartmcr@aucklandtransport.govt.nz Tel:24/7: 09 374 3872 Or 09 374 3873			
Approved by	Name	Glen Campbell	Date Approved 01/11 /2016	
Emergency Information				
KR Emergency Facilities	Nil Applicable Tunnel Emergency Mgmt Plan LNI L1.2 Section 7			
HRV ontracking	End	680.05km Tamaki Drive Ports of Auckland,		

GPS & location	Portal 1	36.50.87S, 174.47.24E		
	End	Britomart Station, 12 Queen St		
	Portal 2	36.50.70S, 174.46.25E		
Helicopter GPS	End		End	
Emergency Services (ES) access by land – <i>NOTE: these are the physical street address to give to ES</i>	End	Tamaki Drive Ports of Auckland		
	End	Britomart Station, 12 Queen St		
Nearest Emergency Services Details <i>NOTE: If travelling to ES</i>	Dial 111 Auckland City Hospital, 2 Park Road, Grafton <i>See following pages for driving directions and indicative time frames and distances</i>			

Driving instructions from Portal 1- End

← from Ports of Auckland, Level 1, Ports of Auckland Bu...
to Auckland City Hospital, 2 Park Road, Grafton, Auckl...

9 min (3.2 km)
via SH 16
6 min without traffic

Ports of Auckland
Level 1, Ports of Auckland Building/1 Sunderland St, Parnell,
Auckland 1010

- Take Sunderland St to Tamaki Dr/Urban Route 6
1 min (350 m)
- Drive from SH 16 to Grafton
4 min (2.1 km)
- Take Grafton Rd to Park Rd
2 min (800 m)

Auckland City Hospital
2 Park Road, Grafton, Auckland 1023

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Driving instructions from Portal 2- End

← from Sierra Cafe Britomart, Britomart Transport Centr...
to Auckland City Hospital, 2 Park Road, Grafton, Auckl...

10 min (2.7 km)
via Grafton Rd
7 min without traffic

Sierra Cafe Britomart
Britomart Transport Centre 12 Queen Street, 1010

- Take Tyler St to Customs St E
2 min (300 m)
- Drive from Anzac Ave and Grafton Rd to Grafton
5 min (1.6 km)
- Take Grafton Rd to Park Rd
2 min (800 m)

Auckland City Hospital
2 Park Road, Grafton, Auckland 1023

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Hazards

KiwiRail is committed to identifying, eliminating and reducing the risk arising from rail and maintenance operations in tunnels. Our immediate actions are to eliminate the risk of a serious accident arising from fire and fume exposure in a tunnel and where this is not achievable to minimise the risks as far as is reasonably practicable.

Serious tunnel accidents, while extremely rare, can have catastrophic consequences. Because of their rarity they are not always front of mind.

In general every tunnel will have some generic hazards due to the nature of the tunnels.

Some of these hazards are as follows:

Hazard	Detail	Action/Control required
Fire	- Plant, vehicles or work processes start fire - Heat and burns - Oxygen depleted - Combustion fumes	- Equipment maintenance and certifications current - Pre tunnel entry checks - Use approved work processes - Fire extinguishers available - SCSR's
Toxic gases / exhaust emissions	- Track maintenance machines - Loaders and excavators - Work Train Loco - HRV - Minor plant - Work process (eg rail welding)	- No petrol powered plant or equipment to be used in tunnel - Diesel / electric / hydraulic powered minor plant equipment to be used in Tunnel - Use Tunnel Gas Monitors - Ventilation
Vehicles	Plant – HRV – uncontrolled movement leads to collision	Apply handbrake and leave in gear
	Plant – Machinery – personnel hit by machinery	- Hard hats to be worn around plant - Staff trained/supervised - Stay out of swing area of machine where possible
	Riding on rail vehicles – fall, injury	If there is no safe ride position do not ride on rail vehicles.
	Conflicting rail vehicle movements - collision	- RPO to authorise vehicle and plant movements - Horn used to indicate movement.
	Crew on ground – hit by machinery	- Machine Operators to be vigilant for workers on the ground - Establish and discuss communication behaviour at safety briefing
Underfoot conditions	- Wet head of rail - slip - Ballast uneven surface - trip - Ice build-up in shady areas outside tunnel - slip - Tunnel Drainage trench alongside tunnel walls – trip, fall - Obstructions – trip, fall	- Above ankle lace-up safety boots. - Steel toe capped gumboots if wet and muddy - Look before placing feet - Do not stand on head of rail - Inspect work site before start

Overhead conditions	• Loose structure / sheeting / cables etc – collision or personnel hit	• Assess before entering tunnel
Temperature Environment	• Cold weather - hypothermia	• Monitor for symptoms of hypothermia • Warm drinks provided • Cold weather PPC
	• Tunnel fan operating – additional chill factor - hypothermia	• Constantly monitor fan speed and chill factor • Adjust to provide safe and comfortable environment
	• Wind direction / Fan speed – air flow too great or too little	• Monitored by flag and dust • Authorised personnel only to adjust fan speed
Light/ visibility	• Lack of light – slip, trip, fall, collision, errors, glare from light sources	• Background lighting installed on tunnel wall • Personal issue of task head LED lights • Lighting plants set up outside portals • Don't look directly into LED headlamps • Allow time for eyes to adjust to changed light levels
Noise	• High noise levels	• Hearing protection
Dust	• High levels of dust	• Dust masks • Ventilation
Manual handling	• Injury	• Assess the requirement to move equipment • Think about moving in tight spaces
Fall from height	• Injury	• Use safe working at height processes
Dehydration	• Dehydration	• Provide drinking water
Visitor access to tunnel	• Visitor not qualified in tunnel operations – less aware of hazards	• Supervised at all times • Fully briefed and aware of the evacuation plan • Follow instructions of the qualified person • Be fully briefed at putting SCSR on • The qualified person must enter the tunnel first, check gas levels and deem it safe before accompanying the unqualified personnel into the tunnel • Approved PPE to be worn
Tunnel communication	• Inadequate communication	• Refer to communications plan at section 3

Unique Hazards to This Tunnel

Hazard	Detail	Action/Control required
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Platforms	•	•
Public	•	•
Grease and diesel on ballast	•	•
Leptospirosis	It is possible that Leptospirosis, an infectious disease, may exist in the waste water that has leached into the tunnel area.	Follow Safety guidelines for Leptospirosis Hazard in Britomart Transport Terminal

Reference Materials

- Working in Tunnels Instructions
- Emergency Management Plan
- Emergency Data Information
- Safety guidelines for Leptospirosis Hazard in Britomart Transport Terminal