KiwiRail

Local Network Instructions:

L5 Main North Line

Publication date 18 Dec, 2024

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1. General Instructions

Heat Sheets

The Daily Heat Sheet for the MNL can be found here.

1.1 Bulletins

Terminals must be supplied with all Bulletins for the areas shown:

Terminal	All Bulletins Affecting
Picton	• Main North Line
Christchurch	• Main North Line • Christchurch–Dunedin • Midland Line

1.2 Automatic Signalling

Train Controllers signal trains under Automatic Signalling Rules between:

- Picton and Vernon
- Belfast and Christchurch

1.3 Track Warrant Control

1.3.1 Main North Line

The Track Warrant Control system extends from Belfast to Vernon.

Belfast – Vernon	
Interlocked stations	• Kaikoura
Warrant stations	• Rangiora • Waipara • Scargill • Tormore • Spotswood • Ferniehurst • Claverley • Oaro • Hapuku • Pines • Parikawa • Wharanui • Taimate • Seddon

Belfast – Vernon	
Intermediate boards	• Eyreton • Sefton • Balcairn • Omihi • Spye • Domett • Mina • Hundalee • Rakautara • Kekerengu • Ben More • Mirza • Ward • Blind River • Dashwood • Weld Pass
TW Lever Locked sidings	• Lake Grassmere Siding

Circuit Marker Posts:

A white post has been located between the Station Warning Board and the Arrival Signal at each Warrant Station equipped with Points Indicators to mark the start of the track circuit approaching the Arrival Signal.

1.4 Shunting Trains and Light Locomotives

1.4.1 Arrangements

The area, hours, and work of shunting trains will be arranged and advised by the Terminal Supervisor/ Team Leader. Work required by the Access Provider is authorised by the Terminal Supervisor/Team Leader in conjunction with the Train Controller. Shunting trains and light locomotives may run as arranged by each Terminal Supervisor/Team Leader within their respective area. They may also run as directed by the Train Controller.

Locomotives may run long hood between Middleton and Addington wheel lathe or Addington platform in either direction which includes Annex Road, Matipo Street and Whiteleigh Avenue, provided:

- where ditch lights are provided, lights must be on full in the direction of travel
- where chutes on the locomotive body impede line of sight, locomotives must be piloted from the safe riding position on the leading end in the direction of travel
- the maximum speed over all level crossings does not exceed 10 km/h

Where no ditch lights are provided, locomotives may only run long hood leading during daylight hours provided:

- all movements must be piloted from the safe riding position on the leading end in the direction of travel
- visibility is not impaired by:
  - Adverse weather such as fog, snow or sleet etc.
  - Poor light at dawn or dusk
- the maximum speed over all level crossings does not exceed 10 km/h

1.4.2 Assisting Locomotives at Picton

When trains leaving Picton are assisted as far as 344.84 km (Elevation), the assisting locomotive will be attached to the rear of the train with the air brake in operation throughout, including the assisting locomotive.

Trains so banked will stop at 344.84 km to detach the assisting locomotive. The assisting locomotive must not pass 2L Down departure signal. The assisting locomotive will return to Picton as soon as ready.

SO02 Automatic Signalling Rules, **8. Interlocked Stations** is modified accordingly.

When the terminal brake test is being carried out with the assisting locomotive attached to the rear of the train, the person carrying out the test must ensure the brakes on the rear wagon release.

When the train is stopped on the south side of the elevation and the assisting locomotive has been detached, the TEM will be attached to the rear of the train. The brake pipe pressure must be checked on the TEM and confirmed that it matches the reading displayed on the train locomotive head-end monitor. Once this has been confirmed, the brakes will be released and the person carrying out the test is to observe that the TEM reading rises before the train departs.

Rail Operating Code 5.3 Train Marshalling, Build, and Inspection Procedures, 6.6 Intermediate Test is modified accordingly.

1.4.3 Picton – Middleton Terminals Locomotive Operating Instructions

When DX class locomotives are prepared at Middleton or Picton for MNL services:

- the dynamic brake must be selected to notch B1, and
- the GF contactor checked to ensure it had picked up to verify dynamic brake operation.

This action applies to the following services only - 2 DX class locomotives with the following tonnage:

- from Picton exceeds 1100 tonne
- from Middleton exceeds 1370 tonnes north of Lake Grassmere

Picton and Middleton Operations must tell Rolling Stock Representatives which service(s) exceed these tonnages.

Any locomotive with an inoperative dynamic brake must not be used on these services.

DXR class locomotives may run long hood leading within Christchurch station limits under the following conditions:

- head lights and ditch lights must be operating on the long hood end
- a horn must be operational on the long hood end
- must be crewed by a suitably qualified second person
- must be piloted from the safe riding position at the leading end when entering or travelling through non-interlocked areas.

NOTE
DXRs are permitted to enter the Christchurch to Islington and Christchurch to Lyttelton Block sections for repositioning.

1.4.4 Crewing

When shunting trains and light locomotives are running under ATC conditions, the Train Controller must be advised.

The Train Controller must endorse the train control diagram alongside the plot line for the intended movement.

1.5 Maximum Speeds

1.5.1 Maximum Speed of Motive Power Units and Rolling Stock

Motive Power Unit Class	Maximum Speed km/h
DC, DCP, DFT, DXB, DXC and DXR	100
DL	80
DSG – all yards	15

1.5.2 Main North Line

Portion of Line	Kilometres per hour		
	Exp P	Exp F	F
Addington–8.4 km (Styx Overbridge, No. 12)	**70**	**70**	**50**
EXCEPT			
0.00 km to 0.68 km (Addington)	40	40	40
8.4 km–Picton	**90**	**80**	**55**
EXCEPT			
Down trains between 27.533 km and 27.40 km, (includes Dunlop's Road level crossing. Restriction applies until train reaches level crossing)	55	55	..
Down trains from 62.51 km to 61.98 km (Cass Peak Road level crossing)	80	..	..
Scargill–Oaro			
EXCEPT			
Over Bridge No. 69 (at 99.23 km) for DXR locos	50	50	50
Between 165.23 km and 165.43 km (Mikonui Point)	40	40	40
Oaro–Picton			
EXCEPT			
Past Kaikoura platform for RM31	25	..	..
Through Tunnels 5 to 20 for USQ wagons conveying 2.9m containers	..	25	25
Through Tunnels 5, 10, 11, 13, 14, 15, 16, 19 and 20 for all 2.9m type containers, ZWF and ZWT wagons	55	55	..
For Concrete Sleeper Layer	..	..	15
Through Tunnels 15 to 20 for FC wagons	..	55	..
Past Seddon platform for RM31	25	..	..
Between 295.70 km and 296.02 km (Bridge No. 155, Awatere River)	30	30	30
Between 295.70km and 296.02km (Bridge No.155, Awatere River) for DL locomotives	25	25	25
Past Picton platform for DL locomotives	25	25	25

1.6 Whistle Boards

For Down trains km	For Up Trains km	Locations at or Between	Warning for
Track Meterage		**Main North Line**	
60.46	..	Rangiora and Waipara	Level Crossing
93.38	93.38	Scargill and Tormore	Level Crossing
..	141.50	Spotswood and Ferniehurst	Trucks crossing track #
209.91	209.39	Pines and Hapuku	Level Crossing (2)
..	271.64	Ward and Taimate	Level Crossing

NOTE
Operates between 0600 and 1600 hours, daily.

2. Level Crossings

2.1 Automatic Warning Devices

Except where the name of the crossing is prefixed by a symbol, the standard equipment consisting of flashing lights and bells is installed at level crossings listed in this instruction.

Letter	Meaning
A	Bell signals operate during restricted hours
B	Barrier arms also provided
C	Fitted with strobe lights
D	Fitted with Level Crossing Predictor
E	Signs worded “TRAIN COMING” operates when a train is approachingFitted with Level Crossing Predictor
F	Flashing signs worded “SECOND TRAIN COMING” operates when a second train is approaching
G	Pedestrian automatic gates also provided
J	Bell signals only
L	Flashing lights only
M	Manual Control instructions on following pages
O	Equipped with control panel to switch alarms off
P	When a power failure occurs, and Points Indicators have been illuminated or a signal cleared for a movement these level crossing alarms will continue to operate for up to four minutes before cancelling. Under these conditions the Locomotive Engineer should approach the crossing with caution, even if the alarms are operating.
R	Remote manual control of warning devices, for insulated vehicles
S	Fitted with special level crossing control panel
T	Fitted with remote manual control and barrier raise from Train Control
X	Enlarged white side lights

Unless otherwise stated Level Crossing Alarms will start and cancel automatically for the passage of trains.

In signalled areas the alarms will operate in conjunction with the signals leading over them. If it is necessary to pass a signal at Stop, all or some of the alarms in the section ahead may not operate correctly. In a number of cases, as specified by S&I Diagram, alarms will operate in conjunction with signals controlled by a local panel. Pressing the Clear button will initiate the alarms and after a short delay the signal will clear. Pressing the Stop button will restore the signals to Stop and after a time delay the alarms will stop.

At TWC Indicator loops the alarms will operate in conjunction with the indicators leading over them. Alarms Start Here boards may be provided to indicate where the alarms start. If it is necessary to pass these boards, but not the indicator, the indicator should be cancelled. If a train is required to pass an indicator at Stop the alarms may not operate correctly.

Crossings fitted with Level Crossing Predictors do not have a fixed starting point; rather the warning time for the automatic alarms is computed from the speed of the approaching train. Therefore, through movements approaching the crossing should not accelerate but maintain constant speed after passing a point approximately 500 metres from the crossing. If a movement stops on the approach to the crossing, provided it is not within 15 metres of the crossing, the alarms will cancel. When the movement restarts, the alarms will also restart automatically but the warning time may be reduced. The Locomotive Engineer must observe that the alarms are operating before proceeding over the crossing.

To avoid excessive operation of alarms when shunting, or for non-automatic operation, manual controls consisting of “Start” and “Cancel” buttons are provided as shown herein. Alarms started manually will cancel automatically when the train clears the crossing unless stated otherwise. Once the alarms have been manually cancelled all subsequent operations must be manually operated until the train leaves

the area. Under manual control the Locomotive Engineer must check the alarms are operating before proceeding onto the crossing. Where barrier arms are provided the Locomotive Engineer must wait until the barriers are fully down before proceeding onto the crossing.

When manually cancelled or cancelled automatically after the train has passed over the crossing, if the train remains in the track circuit controlled area for a prolonged period the alarms may reactivate and should be manually re-cancelled.

IMPORTANT
Manual controls must not be used to cancel alarms operating due to fault conditions.

2.2 Main North Line

Km	Features	Crossing	Locations at or between
1.49	B P S	Riccarton Road	Christchurch Station
1.70	B P S	Kilmarnock Street	Christchurch Station
1.92	G	Matai Street (Pedestrian)	Christchurch Station
2.49	B P S	Fendalton Road	Christchurch Station
2.92		Wroxton Terrace	Christchurch Station and Papanui
3.19	B S	Glandovey Road	Christchurch Station and Papanui
3.64	B S	Wairakei Road	Christchurch Station and Papanui
4.47	B S	Blighs Road	Christchurch Station and Papanui
5.16	B S	Harewood Road	Christchurch Station and Papanui
5.48	B S	Langdon's Road	Christchurch Station and Papanui
6.10	B S	Sawyers Arms Road	Papanui and Belfast
6.51	B S	Northcote Road	Papanui and Belfast
7.04	B S	Tuckers Road	Papanui and Belfast
7.56	B S	Sturrocks Road	Papanui and Belfast
7.83		Barnes Road	Papanui and Belfast
9.52		Radcliffes Road	Papanui and Belfast
10.91	B S	Belfast Road	Belfast
11.62	B S	Factory Road	Belfast
13.19	B S	Marshlands Road	Belfast and Rangiora
13.49		Spencerville Road	Belfast and Rangiora
15.20	B S	Kainga Road	Belfast and Rangiora
18.26	B D S	Courtenay Drive	Belfast and Rangiora
19.08	B S	Williams Street	Belfast
19.39		Peraki Street	Belfast and Rangiora
23.34		Mulcocks Road	Belfast and Rangiora
24.78	D	Fernside Road	Belfast and Rangiora
26.54	B S	Lineside Road (SH71)	Belfast and Rangiora
28.10	D	Boys Road	Belfast and Rangiora
28.89		Northbrook Road	Belfast and Rangiora
29.72	B M P S	High Street	Rangiora
30.46	M P	Wales Street	Rangiora
31.04		Coldstream Road	Rangiora and Waipara
32.97		High Street, (Ashley)	Rangiora and Waipara

Km	Features	Crossing	Locations at or between
39.57		Toppings Road	Rangiora and Waipara
41.35		Harleston Road	Rangiora and Waipara
51.75		Douglas Street	Rangiora and Waipara
60.29	D	Georges Road	Rangiora and Waipara
61.96	B P S	Waipara Flat Road (SH7)	Rangiora and Waipara
63.25	P	Johnston Street	Waipara
64.13		Church Road	Waipara and Omihi
73.40		SH1 (Omihi)	Omihi and Scargill
77.93	B S	SH1 (Spye)	Omihi and Scargill
86.30	A B P S	Scargill Valley Road	Scargill
115.28	J	Private Level Crossing	Domett and Mina
184.24		Inland Kaikoura Road	Oaro and Kaikoura
312.16	B S	Cloudy Bay Drive	Vernon
316.62		Alabama Road	Vernon and Blenheim Station
318.12		Stuart Street	Vernon and Blenheim Station
318.57		Kinross Street	Vernon and Blenheim Station
318.78	B D M S	Main Street (SH1)	Vernon and Blenheim Station
319.09	C D M	Horton Street	Blenheim Station and Blenheim FC
319.38	B C D M S	Dillon Point Road	Blenheim Station and Blenheim FC
319.92	A B S	Budge Street	Blenheim Station and Blenheim FC
320.85		Lower Wairau Road	Blenheim Station and Blenheim FC
321.17		Aberharts Road	Blenheim Station and Blenheim FC
322.35		Fell Street	Blenheim Station and Blenheim FC
323.29	D	Vickerman Street	Blenheim FC
324.80		Ferry Road	Blenheim FC
328.23		Hunters Road	Blenheim FC and Picton
347.08		Wairau Road (SH1)	Picton
347.35	B P S	Dublin Street	Picton
..	M	Lagoon Road	Picton

2.3 Alarms with Manual Controls

2.3.1 High and Wales Streets, Rangiora

Manual cancel is only available at the station for Up and Down trains standing at the platform. Operating the cancel button will revert the trailing indicator to Stop and after a short time delay cancel the alarms. The indicator will re-clear and the alarms restart when the train passes the Alarms Start Here board.

As the warning distance is shortened, trains should not exceed 25 km/h proceeding to the level crossing.

NOTE
These buttons cancel the alarms and the trailing indicator only on the main line.

2.3.2 Johnston Street, Waipara

Manual cancel is available at the station for Up trains standing at the platform. Operating the cancel button will revert the trailing indicator to Stop and after a short time delay cancel the alarms. The

indicator will re-clear and the alarms restart when the train passes the Alarms Start Here board. As the warning distance is shortened, trains should not exceed 25 km/h proceeding to the level crossing.

NOTE
This button cancels the alarms and the trailing indicator only on the main line.

2.3.3 Main Street (SH1), Horton Street, Dillons Point Road, Blenheim

When a train has stopped at the Blenheim Station platform the alarms will cancel automatically after a short time delay.

Alarms Start Here boards have been installed 20 metres from the crossing on the Down approach to Horton Street and on the Up approach to Dillons Point Road.

Trains starting from the platform must move cautiously towards the crossing, if the alarms have not already restarted, the alarms will begin to operate when the train passes the Alarms Start Here board.

2.3.4 Lagoon Road, Picton

Alarms do not start automatically. Manual controls are available either side of the road, at the entrance to the Locomotive Depot and in a shelter by the floodlight tower.

3. Standing Room for Wagons

3.1 Main North Line

Locations	Standing Room (metres)	Description of Siding
Christchurch Station	517	Passenger Loop
Belfast	900	Loop (698m clear of crossing)
	360	No.1 Road
Rangiora	710	Loop (525m clear of crossing)
Waipara	998	Loop
Scargill	900	Loop
Tormore	915	Loop
Spotswood	900	Loop
Ferniehurst	900	Loop
Claverley	1050	Loop
Oaro	735	Loop
Kaikoura	945	Loop
	675	No.1 Road
Hapuku	360	Loop
Pines	945	Loop
Parikawa	847	Loop
Wharanui	953	Loop
	383	No.1 Road
Taimate	900	Loop
Lake Grassmere	278	Loop
	345	Backshunt
Seddon	1085	Loop
Vernon	900	Loop
Blenheim FC	900	Loop
Picton	488	No.1 Arrival
	465	No.2 Arrival

4. Clearances

The following sidings and structures are not to standard height and/or side clearances. Take great care when working in these localities. Yard clearances are advised with the Workplace Safety Plan.

CAUTION
Rolling Stock must not be shunted past or through any structure without first ensuring that clearances are adequate.

An asterisk (*) alongside the name of the line or siding indicates that the distance shown in the column Side Clearance from Centre Line Of Track mm is the distance between the centre lines of the two tracks and is substandard.

4.1 Main North Line

Location	Siding or Line	Structure	Height Above Rail Level mm	Side Clearance from Centre Line Of Track mm	Remarks And Rolling Stock Prohibited from Passing Structure
Rangiora	Main and Loop*		..	3330	
	Main Line	Platform	300	1300	Ballast Cleaner
Kaikoura	Main Line	Platform	445	1280	Ballast Cleaner
Seddon	Main Line	Platform			Ballast Cleaner
Picton	Main Line	Veranda	3528	1409	FC if cradles are fitted

5. Radio Channels

5.1 Main North Line

From Km / location	To Km / location	Channel
0.10 - Christchurch	2.49 - Fendalton Road	7
2.49 - Fendalton Road	81.70 - Scargill	9
81.70 - Scargill	102.95 - Tormore	8
102.95 - Tormore	139.00 - Spotswood	12
139.00 - Spotswood	154.40 - Hundalee	7
154.40 - Hundalee	218.50 - Pines (south of Pines, including Tunnels 3 & 5 to 20)	3
218.50 (south of Pines)	246.00 - between Parikawa and Kekerengu IB	14
246.00 - between Parikawa and Kekerengu IB	302.50 - Weld Pass (including Tunnel 21)	13
302.50 - Weld Pass	331.00 - Tuamarina	11
331.00 - Tuamarina	347.60 - Picton	6

5.2 Snake Diagram

6. Main North Line

6.1 2DX Special Load Schedule between Christchurch and Blenheim

To be read in conjunction with the Master Locomotive Load Schedule.

The following applies for MNL trains hauling tonnage in excess of 1800 tonnes between Christchurch and Blenheim, in either direction:

- the maximum length is 800 metres
- the leading 600 tonnes of the train must have wagons loaded to 50 tonnes minimum weight
- the only wagon classes that may be used in the leading 600 tonnes are: CE, CET, CC, IAB, IAC, IBB, IH, IK, IL, YJ, YL
- the centre 600 tonnes of the train must be conveyed on wagons fitted with automatic couplers and loaded to 30 tonnes minimum weight
- the trailing 900 tonnes of the train may be a mix of empty and loaded wagons of any type. Hook and pin draw gear is acceptable in this portion of the train

Crossing loop restrictions:

Crossing loops too short for the maximum length are:

- Belfast
- Rangiora
- Oaro
- Hapuku

Additional requirements for all trains exceeding 1800 tonnes:

- dynamic brake must be operational on all locomotives departing Blenheim Freight Centre and Middleton terminal
- all traction motors must be cut in and operational between Wharanui and Blenheim Freight Centre. If a traction motor fails in this section, either an assisting locomotive will be required, or tonnage reduced to below 1800 tonnes to clear the section
- the section between Wharanui and Middleton can be run with one traction motor cut out with no load reduction

Releasing speeds for all trains exceeding 1800 tonnes:

- maintaining braking on ruling grades - 10 km/h
- serial braking on ruling grades – stopped

6.2 Casebrook CIMW Site

A coupled in motion weighbridge is installed at 7.2 km.

Fault conditions are alerted to Train Control and broadcast locally by radio on Channel 1.

Locomotive Engineers hearing a warning message must:

- obey any message instructions to reduce speed or stop, and
- must immediately contact the Train Controller for further instructions.

6.3 Berthing Trains at Rangiora and Waipara

To keep level crossing alarm operation to a minimum, Up trains will berth on the main line at Rangiora and Waipara, unless an Up freight train is crossing a passenger train, then the freight train will berth on the loop.

These arrangements may be varied by the Train Controller.

6.4 Waipara

When shunting at Waipara, movements may enter the Weka Pass Railway siding if the Train Controller directs that it is necessary to clear the crossing loop for a train crossing or for shunting purposes.

Movements in the siding must be piloted and the Main Street level crossing protected for these movements. The movement will wait west of the level crossing for clearance from the Train Controller to return to the crossing loop.

Before any movements enter the Weka Pass Railway Siding the Rail Operator in charge of the movement must establish if the Weka Pass Railway Locomotive Engineer is in attendance at the siding. If the Locomotive Engineer is there then their permission must first be obtained before any movement proceeds into the siding. Should the Weka Pass Railway Locomotive Engineer not be in attendance, then once it has been established that it is clear to do so, the movement may proceed into the siding cautiously.

There is a motor camp located at the south end of Waipara which can be inconvenienced by excessive locomotive noise during the hours of darkness. To minimise these disruptions consideration is to be given by the Train Controller to the following situations:

- attempt to regulate trains arriving for crossings to ensure simultaneous arrivals
- arrange for locomotives to be shut down for longer periods where appropriate

6.5 Testing of Tunnel Radio System

Infrastructure personnel who have received training will test the tunnel radio systems in a Hi-Rail vehicle as follows:

Tunnel	Test Frequency	Normal Test Day
T18 – T20	Weekly	Tuesday
T3 – T17	Weekly	Wednesday

When the Hi-Rail vehicle is in the appropriate tunnel and positioned correctly:

- Select the correct Train Control radio channel
- Press the * button to send call (where appropriate)
- The Train Controller will hear this, but nothing will be displayed on the MSP Radio computer screen
- A reply will be sent automatically to the Hi-Rail vehicle with 2 selcall tones
- Once 2 selcall tones close together have been heard then the system is operating correctly
- The Hi-Rail driver must advise the Train Controller of the test results. This information is to be noted on the train control diagram and Operations Support contacted for any reported faults.

6.6 Slip Alarm (between Ferniehurst and Hundalee IB)

A slip detection array will be located at 148.240km (between Ferniehurst and Hundalee IB) at an existing slip.

The array comprises of:

- 3 x tilt sensors

- 1 x camera

The tilt sensors will be activated when material overwhelms the bund causing a sensor to tilt beyond a pre-defined angle. The site also has a camera which will take a series of photos during the day and an infrared photo of the slip at night if slope failure is detected.

When slope failure is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system must:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area
- advise Operations Support to arrange Infrastructure personnel to undertake an inspection
  - Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required
- if a temporary speed restriction is required, the Train Controller will enter details into the Access Provider's Speed Restriction system and advise any trains that are already running

Upon receiving clearance from Infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until:

- the slip warning system has been reset, or
- infrastructure personnel are at the MNL 148.24 km to pilot the train over the slip

Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

6.7 Slip Alarm (between Claverley and Oaro)

A slip detection array is located at 158.400 km (between Claverley and Oaro) at an existing slip.

The array comprises of:

- 5 x tilt sensors
- 1 x camera

The tilt sensors will be activated when movement is detected and a sensor tilts beyond a pre-defined angle. The camera will take a series of photos during the day and an infrared photo of the slip at night if movement is detected.

When movement is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system must:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area
- advise Operations Support to arrange Infrastructure personnel to undertake an inspection
  - Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required
- If a temporary speed restriction is required, the Train Controller will enter details into the Access Provider's Speed Restriction system and advise any trains that are already running

Upon receiving clearance from Infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until

- the slip warning system has been reset, or
- Infrastructure personnel are at the 158.400 km to pilot the train over the slip

Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

6.8 Access Track Damage (between Claverley and Oaro)

Due to damage caused by scouring from the sea, all rail personnel traversing the access track below in vehicles must exercise extreme caution.

Between:

- 163.505 km (north end of Tunnel 3) and 167.544 km (from Bridge 97) between Claverley and Oaro

When using the access track in:

Hours of Daylight:

- The condition of the access track is permitted to be accessed from within the moving vehicle.

Hours of Darkness:

- Use of this access track is prohibited unless a protector or similarly designated person walks ahead of the vehicle to ascertain the condition and suitability of the access track for movement of vehicles.

6.9 Kaikoura

6.9.1 Vehicles left unattended on the Main line and Loop

Rail vehicles may be left on the main line or crossing loop at Kaikoura in accordance with the applicable Rules.

TO01 Train Movements, 10. Securing Motive Power Units and **TO08 Shunting, 7.3 Standing at Stations** are modified accordingly.

6.9.2 UHF Portable Radio

A locomotive UHF portable radio is at Kaikoura for use by personnel who assist Locomotive Engineers on ATC trains when they are stopped, or with parts of the train on both sides of a tunnel.

When this occurs the Locomotive Engineer should request that the person who is going to assist takes the UHF radio in addition to the normal equipment.

Channel 3 must be selected on the UHF portable for communication between the Locomotive Engineer and the person assisting as follows:

1. The Locomotive Engineer asks the Train Controller for permission to activate the crossband link to talk to the person assisting.
2. When the Train Controller gives permission, the Locomotive Engineer removes the portable and gives a test call to Train Control on channel 4 in the usual manner.
3. The Locomotive Engineer advises the Train Controller from the portable that the channel is being changed to 3 to communicate with the person assisting.
4. Communication may then take place between the Locomotive Engineer and the person assisting, portable to portable on channel 3.

NOTE
The Train Controller will not hear their conversation. To talk to the Train Controller, use Channel 4.

The alert alarm will reset to 7 minutes each time portable is used to transmit.

The Train Controller must confirm with both the Locomotive Engineer and the person assisting about when they will call the Train Controller while the two UHF portable radios are in use.

The portable radio at Kaikoura must be kept in the charger when not in use. If in use for more than eight hours, the battery will require recharging.

6.10 Hapuku

Ballast wagons must be placed on the back road for loading. There can be high winds experienced in the area so additional handbrakes must be applied.

6.11 Use of UHF Portable Radio South side of Tunnel No.20

When a freight train is stopped with the locomotive in tunnel No.20 (at 217 km between Hapuku and Pines) and the Locomotive Engineer has left the cab with the UHF portable to proceed more than 500 metres south from the locomotive then it may be outside the tunnel radio repeater coverage range. In this case the portable alert timer in Train Control may activate if it cannot be updated by the portable PTT.

When this occurs and there is no response from the Locomotive Engineer, Emergency personnel must be called to locate the Locomotive Engineer.

6.12 Lake Grassmere

Extract from Wharanui - Taimate S&I Diagram

When access to 9 points at Lake Grassmere Siding is required, the TW key is placed into the WF releasing box located on a post nearby and turned.

This action locks the TW key into the housing and releases the two WF keys, one being used for each switch stand.

Inserting the WF key into the lock on the switch stand, turning the WF key and pulling the shaft, below the lock, out as far as possible, allows the points to be reversed, this also impounds the WF key which can only be removed when the points are returned to normal.

The TW can be recovered only when both WF keys are returned to the WF key releasing box.

This instruction also applies to 1 points using WG keys.

Network Signals, Indicators and Boards Manual, **7.5 High Column Switch Stands** and **Glossary**, **Sidings Points** are modified accordingly.

6.13 Seddon

Due to the location of Seddon, it is desirable that guidelines are provided to assist the Locomotive Engineers on trains which are required to stop at this station for train crossing or shunting purposes.

- when trains are to cross at Seddon the train expected to arrive first should be issued the Track Warrant to take the main line
- when trains are to shunt at Seddon then the train concerned is to berth on the crossing loop

IMPORTANT

Exception: When a crossing is to take place which involves a passenger train which is scheduled to pick up / set down passengers then the passenger train is to berth on the main line.

NOTE

In some circumstances the Train Controller may vary these arrangements.

6.14 Vernon

Signals are normally unlit and will light on the approach of a train, on the clearing of a signal or on the releasing of a switch lock.

Marker lights are permanently lit.

6.15 Slip Alarm (between Tuamarina and Para)

A slip detection array is located at 332.335 km (between Tuamarina and Para) at an existing slip.

The array comprises of:

- 2x tilt sensors installed on the edge of sleepers to record shifts in cant
- 1 x tilt sensor installed on the retaining wall
- 1 x extensometer to extend across the headscarp of the slip
- 1 x camera
- 1 x rain gauge

The tilt sensors will be activated when movement is detected and a sensor tilts beyond a pre-defined angle. The camera will take a series of photos during the day and an infrared photo of the slip at night if movement is detected.

When movement is detected, the sensors will:

- send an alarm to the Train Control signalling screen, and
- send an email to Operations Support and the Network Control Manager.

The Train Controller upon receiving activation of the slip warning system must:

- advise Operators of the slip alarm activation, and stop any train clear of the slip alarm area
- advise Operations Support to arrange Infrastructure personnel to undertake an inspection
- Infrastructure personnel will advise the Train Controller if it is suitable to run trains through the slip alarm area, and if a temporary speed restriction is required
- if a temporary speed restriction is required, the Train Controller will enter details into the Access Provider’s Speed Restriction system and advise any trains that are already running.

Upon receiving clearance from Infrastructure personnel to run trains, the Train Controller must not allow any trains to traverse the slip until:

- the slip warning system has been reset, or
- Infrastructure personnel are at the 332.335 km to pilot the train over the slip.

Operations Support will work with Harvest to reset the alarm and advise the Train Controller when the reset is complete.

6.16 Picton

6.16.1 Stop and Wait for Signal Board

There is a Stop and Wait for Signal board 110m in advance of No.4RAB signal. This is to reduce locomotive noise for residents adjacent to the signal. When Locomotive Engineers observe No.4RAB signal is at Stop, locomotives are to be stopped next to the Stop and Wait for Signal board and wait for the signal to display a proceed indication before moving.

6.16.2 Main Line All Trains Stop Board

All movements from the main line towards the Rail Ferry terminal must stop at the ATS board at the north end of the station platform unless hand signalled to proceed.

6.16.3 East Yard Storage Roads All Trains Stop Board

All movements entering the East Yard storage roads from the south direction must stop at the ATS board next to 10LA shunt and Down Starting signal unless hand signalled to proceed.

6.16.4 Arrival and Departure Roads All Trains Stop Boards

There are ATS boards at the north end of No.1 and No.2 Arrival and Departure roads next to No.12L and No.14L shunt signals. Any movement from No.1 and No.2 Arrival and Departure roads towards the Westshore backshunt must not pass the boards unless hand signalled to proceed.

6.16.5 Locomotive Depot Stop for Hand Signal Board

All movements along the running road from the Locomotive Depot must stop at the Stop for the Hand Signal board on the shelter unless hand signalled to proceed. This board is positioned 87m on the Locomotive Depot side of Lagoon Road level crossing.

6.16.6 Locomotive Run Around Road

Before C points are operated, the Train Controller must give authority.

6.16.7 Main Line Locomotive Headroom

A derailer and crossing gates have been installed to protect road traffic over Ferry Park Road.

There is sufficient headroom between the points and buffer stop for one locomotive to run around the train via the Passenger Road (East 1).

If two or more locomotives or a steam locomotive is required to run around the train, this must be piloted as per the Local Network Instructions.

A sand trap has been installed on the terminal side of Ferry Park Road; there is no access to the Ferry Wharf and No.2 berth road.

6.16.8 CT Road All Trains Stop Board

All movements from the main line to the CT road must stop at the ATS board positioned back-to-back with No.10LC signal on the No.2 Arrival Road.

When stopped at the board, the Team Leader or nominee in charge of berthing the train may set C points for the CT road and give verbal permission for the movement to pass the ATS board.

When clear of C points, the Team Leader or nominee must set the points back to normal.

IMPORTANT
This board only applies to movements that have been advised they will be berthing in the CT road.

7. Safe Working Arrangements

7.1 Scheduled Derusting

The following schedule applies to derust loops on the MNL.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Vernon			736				
Seddon				735			
Taimate					735		
Wharanui						735	
Parikawa							735
Pines			735				
Kaikoura	Regular Crossings						
Oaro	Regular Crossings						
Claverley	Points Isolated - No Requirement						
Ferniehurst	Points Isolated - No Requirement						
Spotswood	Points Isolated - No Requirement						
Tormore	Points Isolated - No Requirement						
Scargill						736	
Waipara	Regular Crossings						
Rangiora					735		
Belfast			736		736		

When the scheduled service does not run, an alternative service may be used at the Train Controller's discretion.

7.2 Underfoot Conditions

Rail personnel should be aware of the underfoot conditions when working between Claverley and Vernon.

7.3 Train Safety Procedures

7.3.1 Purpose

This instruction outlines the safety procedures that apply due to ongoing repair of earthquake damage in terrain that is susceptible to extreme weather conditions and slips. This instruction provides temporary safety procedures for train running.

7.3.2 Slip Alarms

A number of slip alarms between Oaro and Pines are connected to the Train Control CTC monitor. These alarms will activate with an audio / visual alert upon a tripwire being disturbed e.g., by rockfall or slip debris.

Upon a slip alarm activation, the Train Controller must immediately apply TARP #1 (see next page).

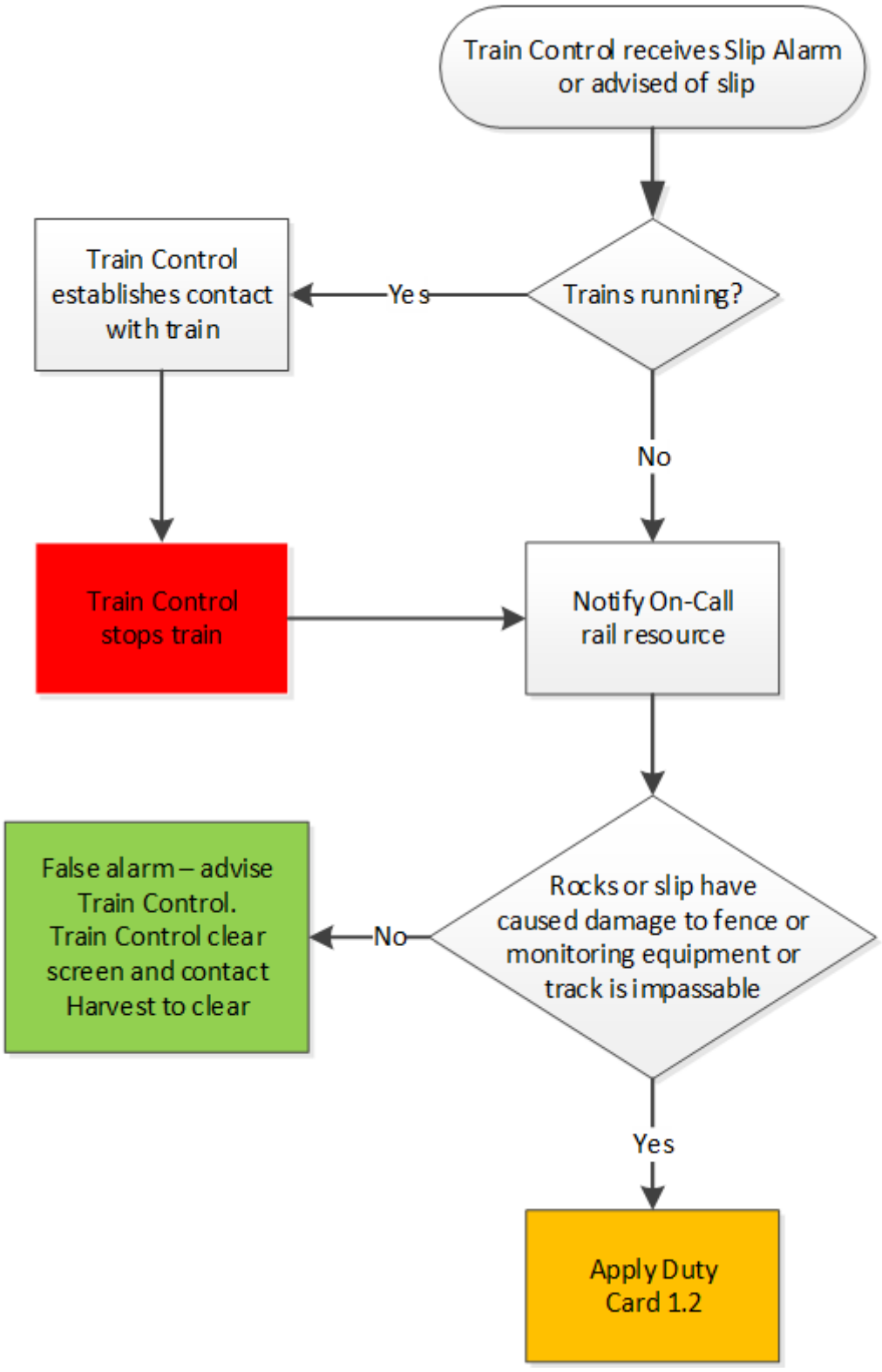
If a slip alarm activates, the process prescribed in the TARP's must be followed. Slip alarms that have been disconnected for planned work will be listed on the Information Bulletin or special bulletin.

Slip alarms are located at the following sites:

- 175.046 km (Tilt meter only)
- 176.420 km – 176.479 km

- 177.100 km – 177.265 km

TARP #1 – Slip Alarm Activation



DUTY CARD #1.1 – Operations Support

Slip Alarm activation

1. Confirm activation (email advice received) with the Train Controller, and
2. Contact On-Call Rail Resource advising to respond to location of slip alarm activation

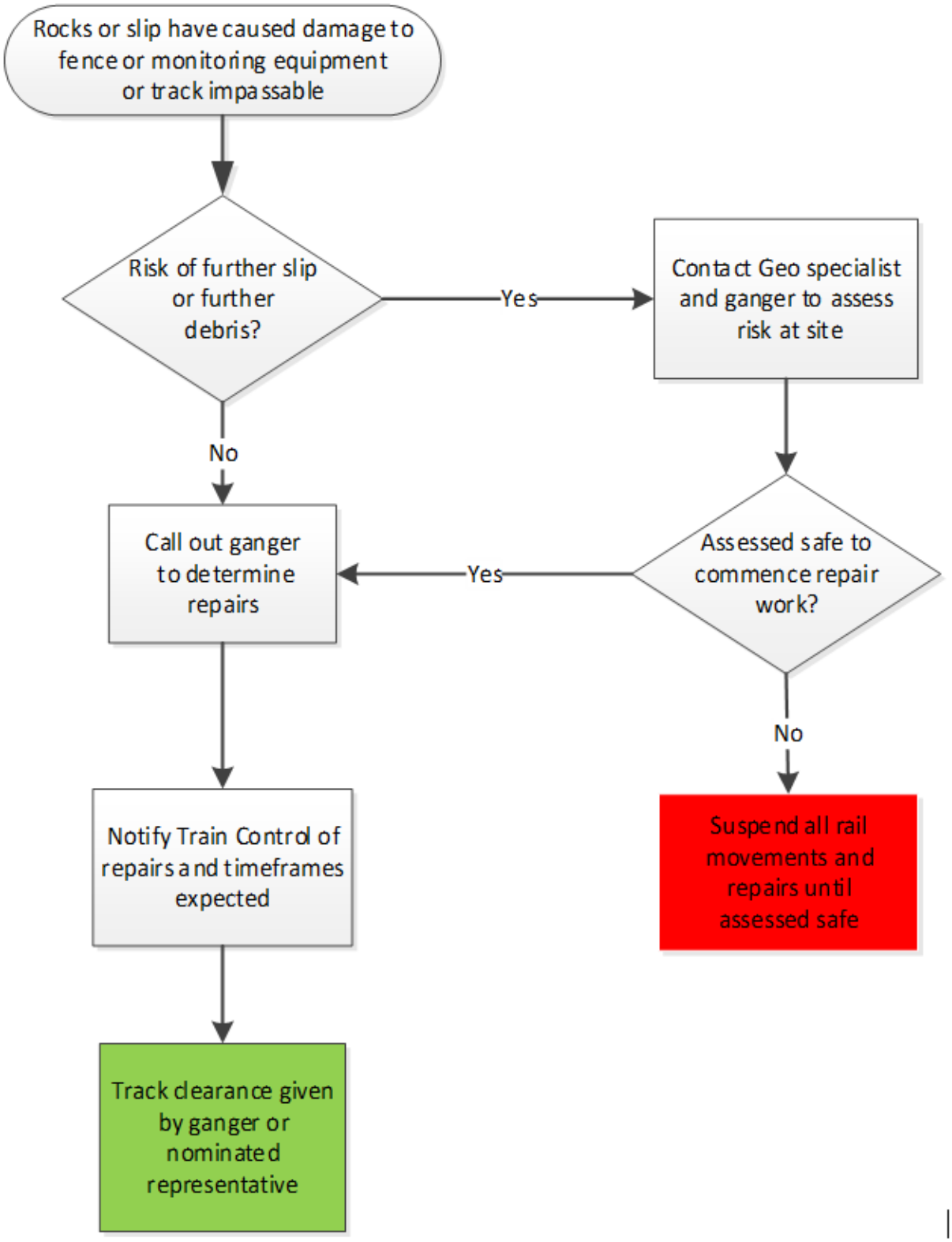
Reset slip alarm after clearance for site has been received

When the Train Controller have determined that an alarm should be reset, they will advise Operations Support who will take the following steps:

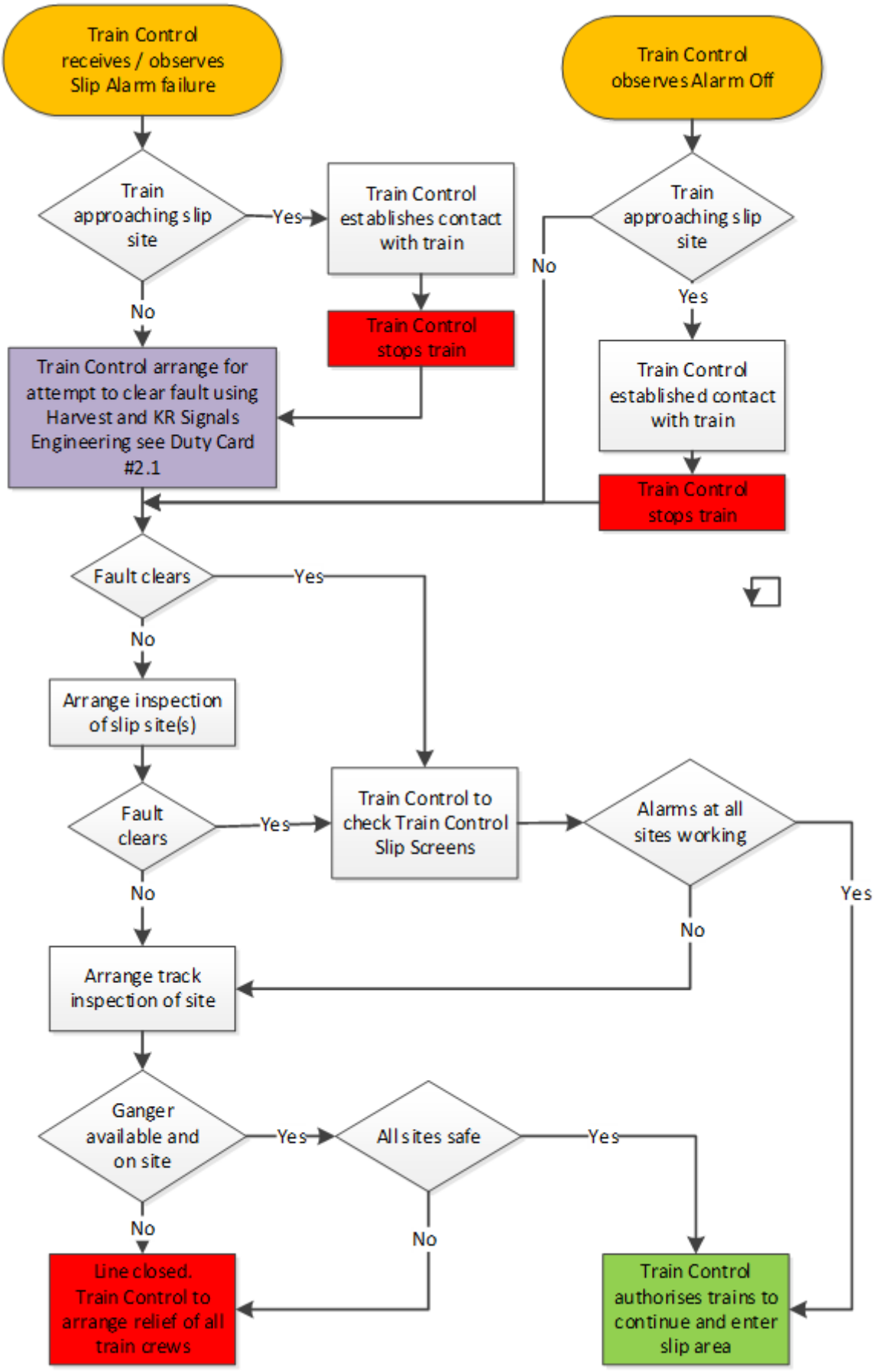
Contact Harvest Electronics - Available 24/7 Ph: 06 370 1991 then # 9

1. The call will be routed to the on duty Harvest technician.
2. The Operations Support Representative must clearly identify the site using the slip alarm location as shown in this document.
3. After the Harvest technician has determined that everything is operating correctly, they will reset the alarm. This will generally take a few minutes.
4. If the new level reported is higher or lower than prior to the alarm the Harvest technician will adjust the threshold before resetting the alarm.
5. Once the Harvest technician has reset the alarm, they will send an email and text message to Operations Support to confirm the task is complete.
6. The Operations Support Representative must confirm that the Train Control Slip Alarm screen reset has been completed.

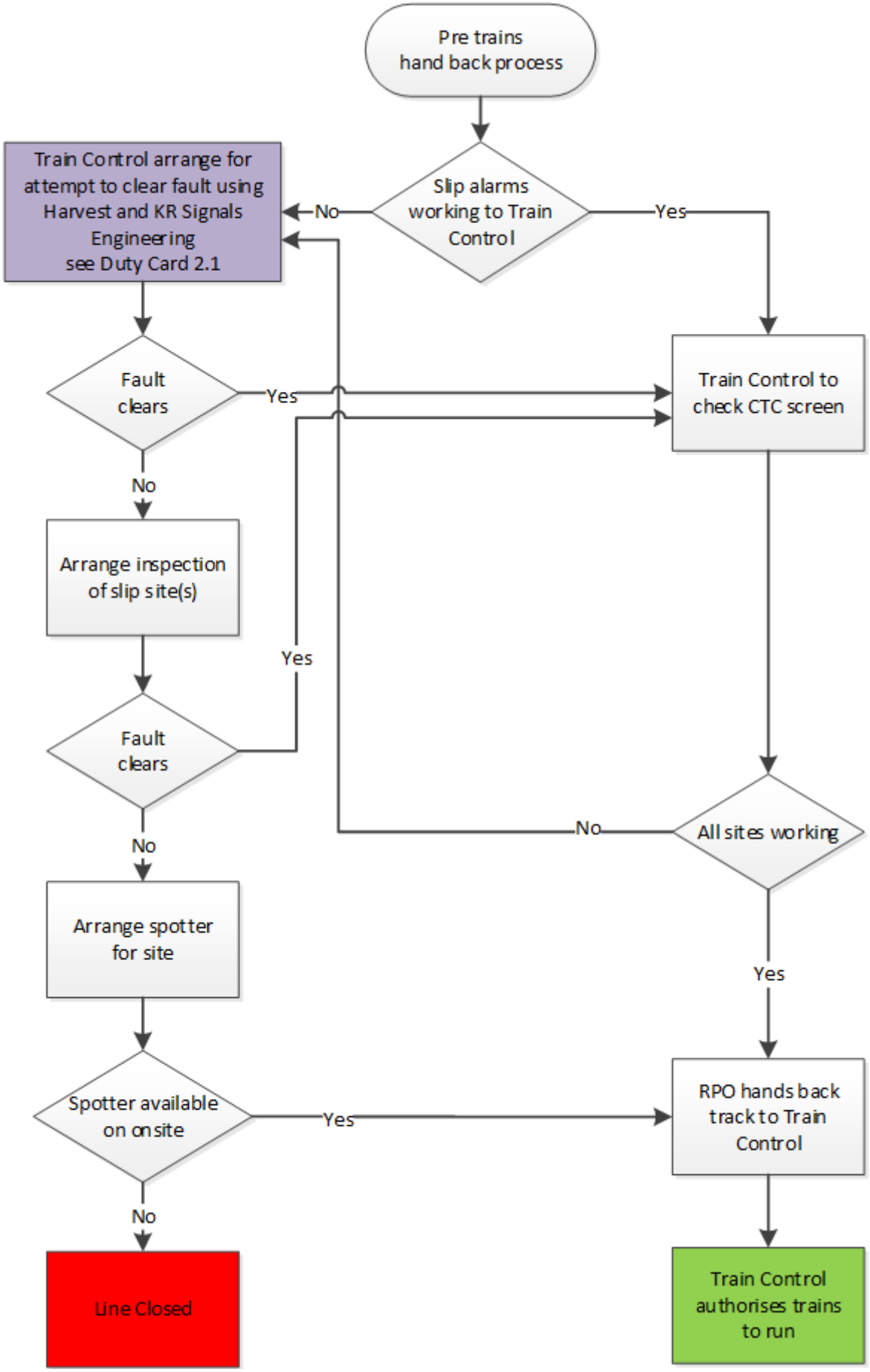
DUTY CARD #1.2 – Field Response



TARP #2 – Slip Alarm Failure

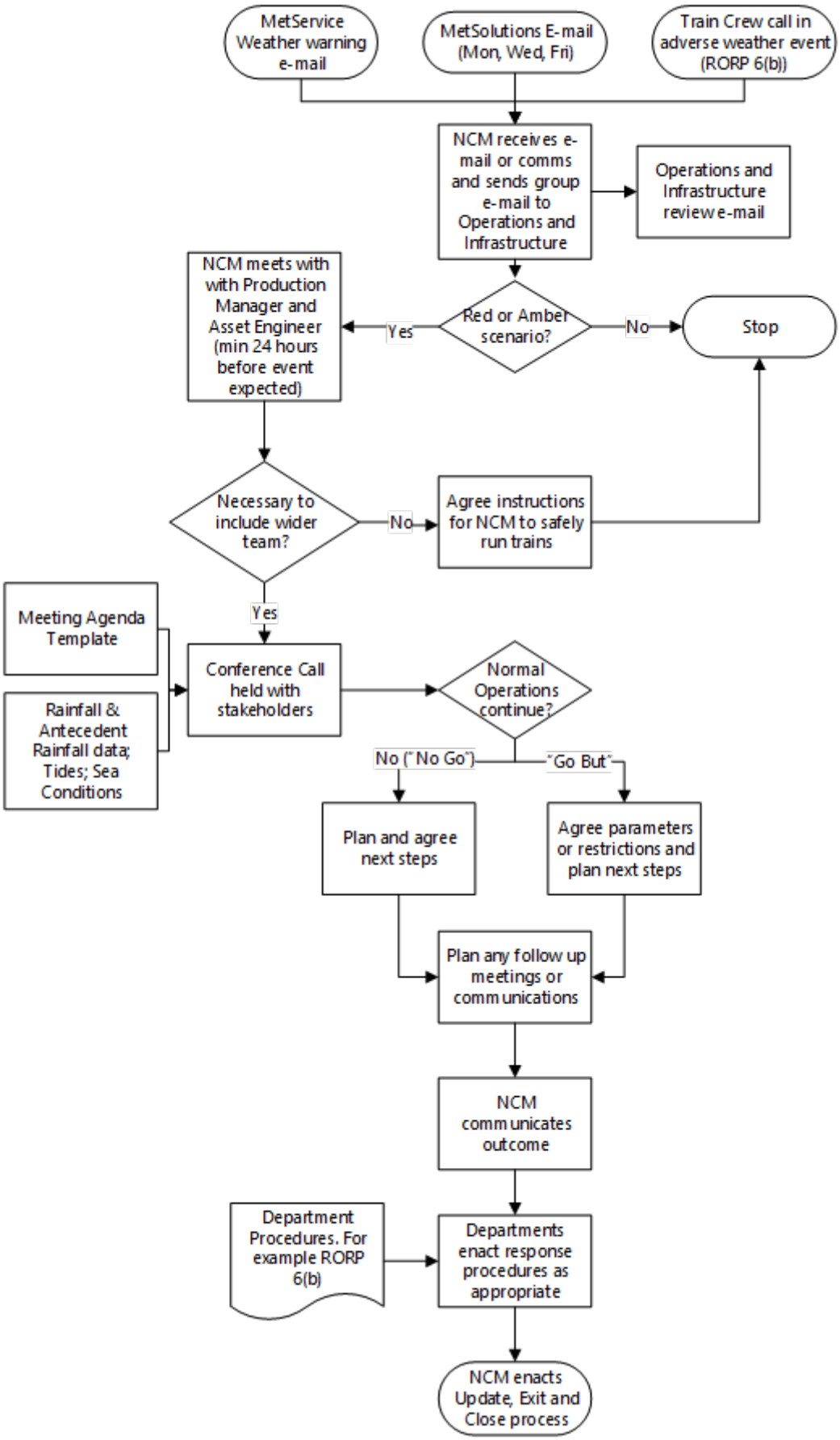

Train Control receives / observes Slip Alarm failure
Train approaching slip site
Yes
Train Control establishes contact with train
Train Control stops train
No
Train Control arrange for attempt to clear fault using Harvest and KR Signals Engineering see Duty Card #2.1
Train Control observes Alarm Off
Train approaching slip site
No
Yes
Train Control established contact with train
Train Control stops train
Fault clears
Yes
No
Arrange inspection of slip site(s)
Fault clears
Yes
Train Control to check Train Control Slip Screens
Alarms at all sites working
Yes
No
Arrange track inspection of site
Ganger available and on site
Yes
All sites safe
Yes
No
No
Line closed. Train Control to arrange relief of all train crews
Train Control authorises trains to continue and enter slip area

TARP #3 – Slip Alarm Hand Back

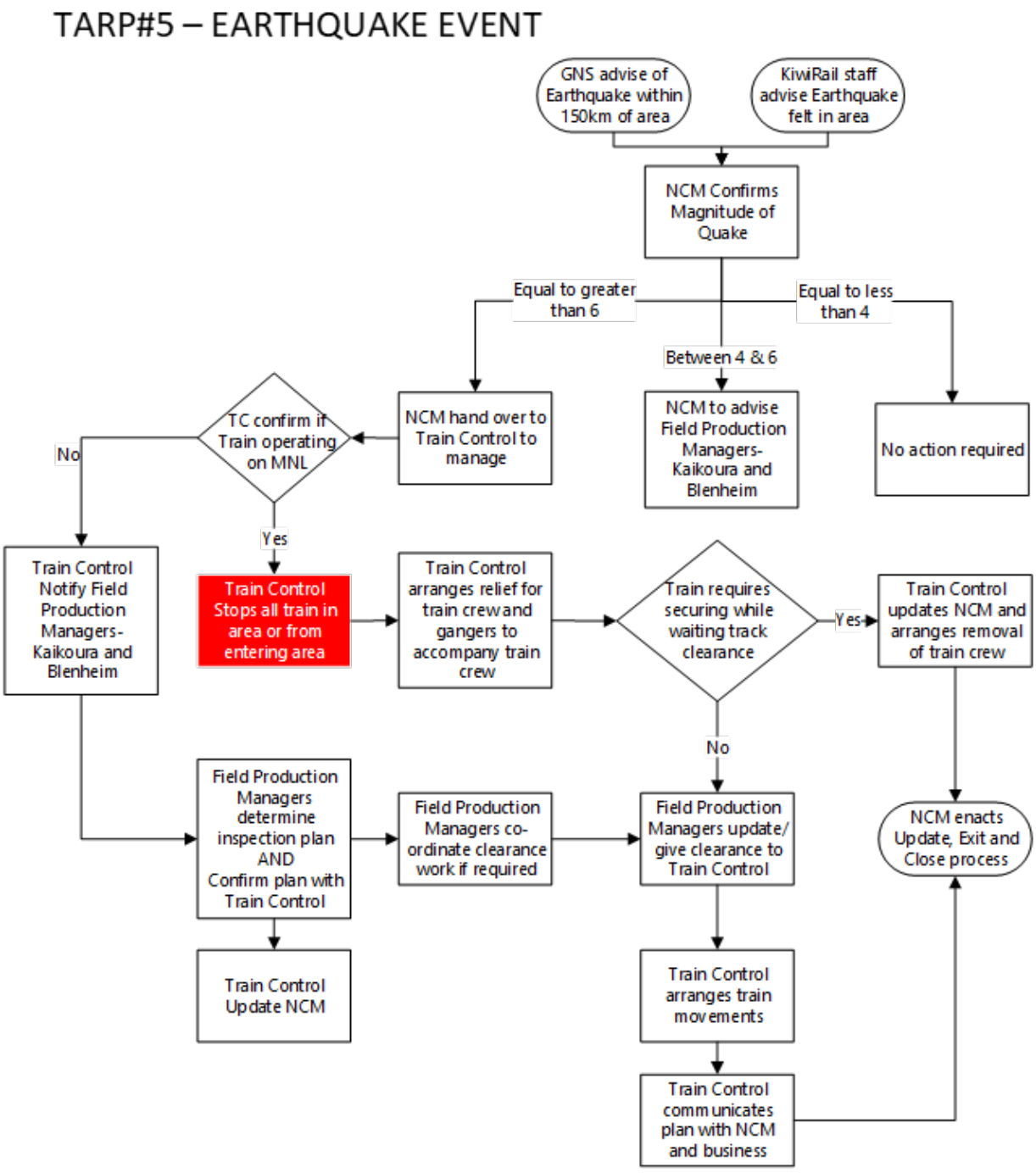

Pre trains hand back process
Slip alarms working to Train Control
No
Yes
Train Control arrange for attempt to clear fault using Harvest and KR Signals Engineering see Duty Card 2.1
Fault clears
Yes
No
Train Control to check CTC screen
Arrange inspection of slip site(s)
Yes
Fault clears
No
All sites working
No
Yes
Arrange spotter for site
Spotter available on on site
Yes
No
RPO hands back track to Train Control
Line Closed
Train Control authorises trains to run

TARP #4 – Weather Event

TARP#4 - Weather Event



TARP #5 –Earthquake Event



7.3.3 Rainfall TARP Track Inspections

When required by Rainfall TARP, an inspection of the line and slips must be conducted before trains enter the areas specified by the GM South Island or their delegate.

When the line inspections have been completed, a verbal confirmation will be given to the Train Controller that the track section inspected is clear, which will be endorsed on the train control diagram.

7.3.4 Personnel and Other Resources

A geo-specialist (engineering geologist or geotechnical engineer) will be called to any event that involves a possible slip / slope hazard.

A Track Maintenance Representative will initially lead the investigation and actions relating to any train or rail line incident that doesn't relate to slips.

7.3.5 Planned Work

Track Warrant clause 2 (after arrival / departure) must not be used for planned work using **SO08 Track Warrant Control, 6. Occupying the Same Limits** where the RPO is not on site.

7.4 Passenger Trains

7.4.1 Passenger Count

The Locomotive Engineer must advise the Train Controller the total number of passengers and onboard personnel on the train departing Rangiora northbound, Kaikoura both directions, and Blenheim southbound.

The Train Controller must record these numbers on the train control diagram.

7.4.2 Passenger Trains between Oaro - Peketa and Hapuku - Pines

For the duration a passenger train is travelling between Oaro and Peketa, and between Hapuku and Pines, the Train Control booth must be manned by a suitably qualified Train Control member.

8. Signalling and Interlocking

8.1 Main North Line

Picton

Current S&I Diagram No.3464

Blenheim Freight Centre

Current S&I Diagram No.3071

Seddon–Vernon

Current S&I Diagram No.3070

Amendments:

- Seddon – No.3 & 7 points machines are above the line, and the south end loop to yard points are the same as the north end (only 1 set of trap points and 1 target).

Wharanui–Taimate

Current S&I Diagram No.3170

Pines–Parikawa

Current S&I Diagram No.3156

Kaikoura–Hapuku

Current S&I Diagram No.3069

Ferniehurst–Oaro

Current S&I Diagram No.2732

Amendments:

- Move 8L Down Arrival Signal at Ferniehurst 80m north of current location.
- Change meterages Ferniehurst – 71 / 1426 to 151 / 1346

Tormore–Spotswood

Current S&I Diagram No.2696

Waipara–Scargill

Current S&I Diagram No.2931

Amendments:

- Change the first dimension on the S & I Diagram from 13474 to 16487 due to the removal of Amberley Intermediate Board.

NOTE
Intermediate signals approach two position Arrival signals at Scargill. **Network Signals, Indicators and Boards Manual, 3.4.1 Classes of Fixed Signals** is modified accordingly. The Intermediate signals will display a green indication when the Arrival signals display a yellow indication.

Rangiora

Current S&I Diagram No.3194

Belfast

Current S&I Diagram No.3068

9. Signalling and Interlocking Out of Use

Points at the following stations or sidings are bolted in normal and secured with a PS padlock pending removal.

If it is necessary to shunt any of these sidings both the Area Manager for the area, or their deputies must be in attendance. Unless otherwise stated the permission of the Train Controller must be obtained and if, in a Track Warrant area, a Track Warrant must be issued before the points are unlocked. The Officer from whom permission to unlock the points was obtained must be advised when the points are again padlocked.

Lake Grassmere Siding

No.1 points have been secured in normal. Reason: Frog has been removed and replaced with straight rail.

Claverley

The north end loop to siding points have been secured in normal.

Tormore

The south end loop to siding points have been secured in normal.

