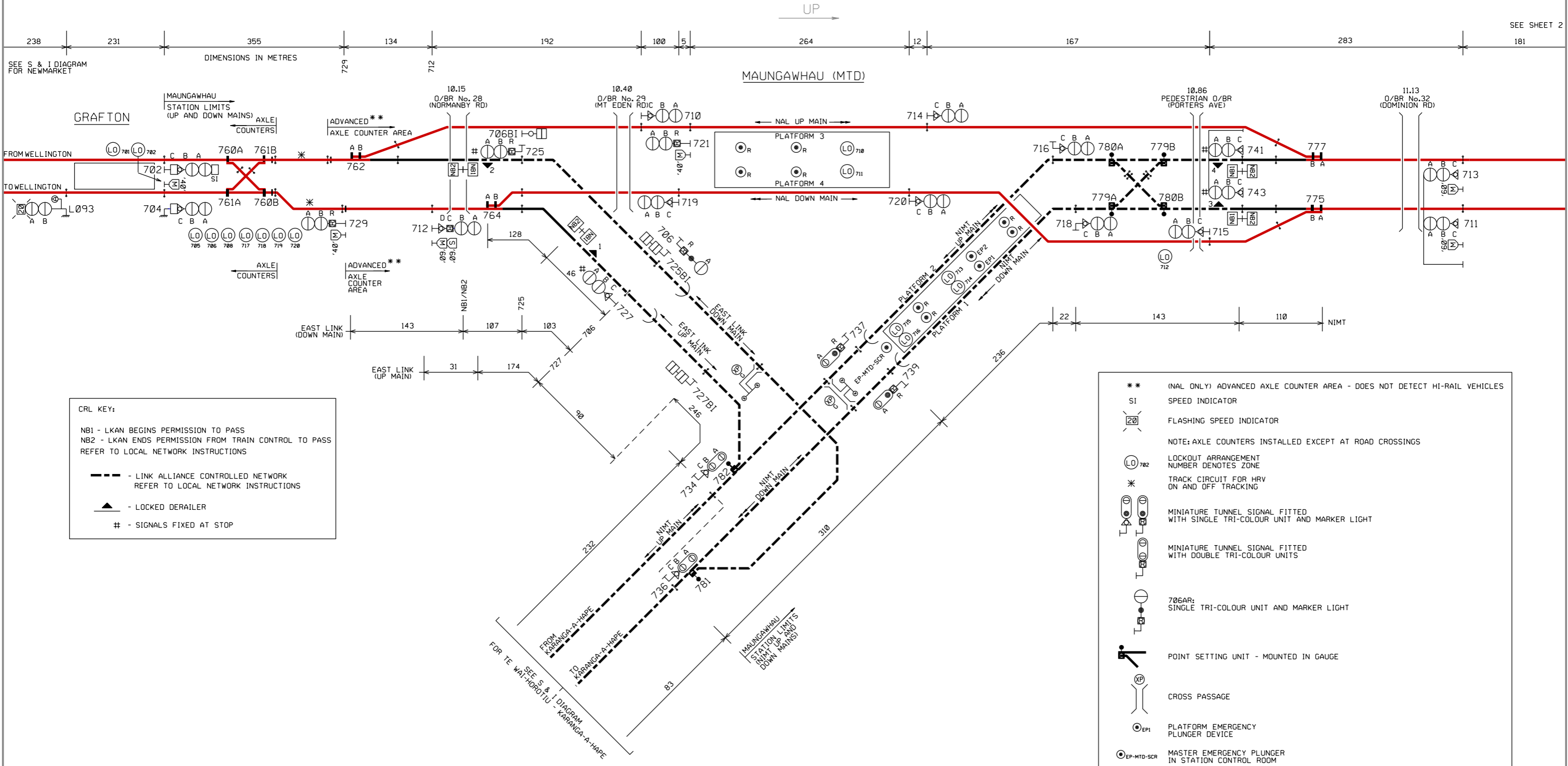


MAUNGAWHAU - MORNINGSID

SIGNALLING & INTERLOCKING ARRANGEMENTS

THESE ARRANGEMENTS WILL BE BROUGHT INTO USE AT A TIME AND DATE TO BE ADVISED BY SEMI-PERMANENT BULLETIN.
THIS CANCELS S&I No. 3401
THESE TO BE COMPLETED BY THE RECIPIENT OF THE S & I DIAGRAM

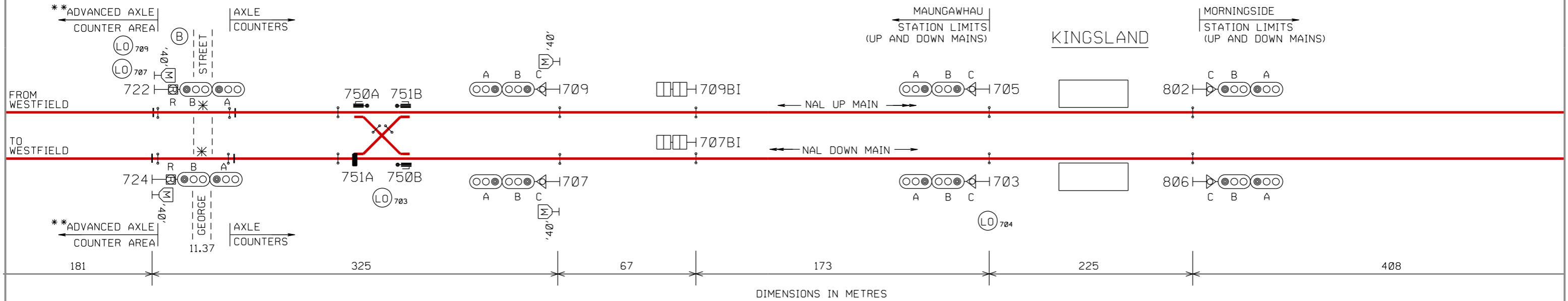


ALL SIGNALS FITTED WITH ETCS
ALL 'A' LIGHTS WILL BE NORMALLY EXTINGUISHED
FOR DESCRIPTION OF NAL & NIMT SIGNALS SEE PAGE 3

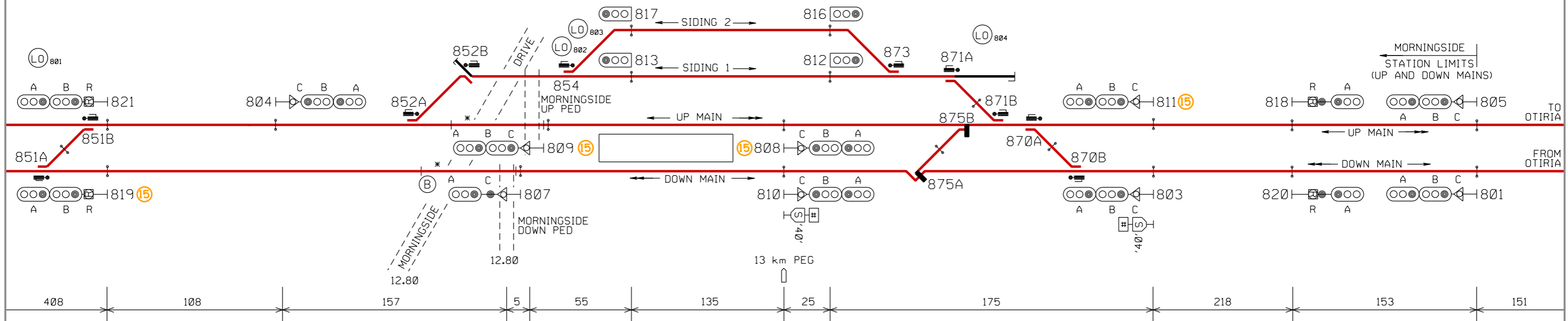
**NOTE: THIS IS A COLOUR DIAGRAM
RED LINES INDICATE ROUTE AVAILABLE FOR ELECTRIC TRAINS**

MAUNGAWHAU - MORNINGSIDE

SIGNALLING & INTERLOCKING ARRANGEMENTS



MORNINGSIDE (MNS)



SEE S & I DIAGRAM FOR AVONDALE

- NOTE: AXLE COUNTERS INSTALLED EXCEPT AT ROAD CROSSINGS
- Ⓛ₇₀₂ LOCKOUT ARRANGEMENT NUMBER DENOTES ZONE
 - 15 ETCS APPROACH SPEED (15 km/h)
 - * TRACK CIRCUIT FOR HRV ON AND OFF TRACKING
 - # SUBSIDIARY BOARD: 'TO DOWN MAIN'

- ALL SIGNALS FITTED WITH ETCS
- FOR DESCRIPTION OF SIGNALS SEE PAGE 3
- ** - ADVANCED AXLE COUNTER AREA - DOES NOT DETECT HI-RAIL VEHICLES

**NOTE: THIS IS A COLOUR DIAGRAM
RED LINES INDICATE ROUTE AVAILABLE FOR ELECTRIC TRAINS**

P. R. KING
SENIOR SIGNALS ENGINEER

MAUNGAWHAU - MORNINGSIDE

SIGNALLING & INTERLOCKING ARRANGEMENTS

DESCRIPTION OF SIGNALS

MAUNGAWHAU (MTD)

702ABC	UP HOME FROM NAL UP MAIN	# NORMAL SPEED (60km/h) TO NAL UP MAIN # MEDIUM SPEED (40km/h) TO NAL DOWN MAIN # MEDIUM SPEED (60km/h) TO EAST LINK DOWN MAIN LOW SPEED TO NAL UP MAIN, NAL DOWN MAIN OR EAST LINK DOWN MAIN	722ABR	UP DEPARTURE FROM NAL UP MAIN	NORMAL SPEED TO NAL UP MAIN MEDIUM SPEED TO NAL DOWN MAIN RESTRICTED SPEED TO NAL UP MAIN OR DOWN MAIN
703ABC	DOWN HOME FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN LOW SPEED TO NAL DOWN MAIN	724ABC	UP DEPARTURE FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN MEDIUM SPEED TO NAL UP MAIN RESTRICTED SPEED TO NAL UP MAIN OR DOWN MAIN
704ABC	UP HOME FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN MEDIUM SPEED TO NAL UP MAIN MEDIUM SPEED TO EAST LINK DOWN MAIN LOW SPEED TO NAL DOWN MAIN, NAL UP MAIN OR EAST LINK DOWN MAIN	729ABR	DOWN DEPARTURE FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN MEDIUM SPEED TO NAL UP MAIN RESTRICTED SPEED TO NAL UP MAIN OR DOWN MAIN
705ABC	DOWN HOME FROM NAL UP MAIN	NORMAL SPEED TO NAL UP MAIN LOW SPEED TO NAL UP MAIN	706AR	DOWN DEPARTURE FROM EAST LINK DOWN MAIN	NORMAL SPEED TO EAST LINK DOWN MAIN RESTRICTED SPEED TO EAST LINK DOWN MAIN
707ABC	DOWN DIRECTING FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN MEDIUM SPEED TO NAL UP MAIN LOW SPEED TO NAL DOWN OR UP MAIN	716ABC	UP DIRECTING FROM NIMT UP MAIN	NORMAL SPEED TO NAL UP MAIN MEDIUM SPEED TO NAL DOWN MAIN LOW SPEED TO NAL UP MAIN OR DOWN MAIN
709ABC	DOWN DIRECTING FROM NAL UP MAIN	NORMAL SPEED TO NAL UP MAIN MEDIUM SPEED TO NAL DOWN MAIN LOW SPEED TO NAL UP OR DOWN MAIN	718ABC	UP DIRECTING FROM NIMT DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN MEDIUM SPEED TO NAL UP MAIN LOW SPEED TO NAL UP MAIN OR DOWN MAIN
710ABC	UP DIRECTING FROM NAL UP MAIN	NORMAL SPEED TO NAL UP MAIN LOW SPEED TO NAL UP MAIN	725ABR	DOWN DEPARTURE FROM EAST LINK DOWN MAIN	NORMAL SPEED TO NAL UP MAIN MEDIUM SPEED TO NAL DOWN MAIN LOW SPEED TO NAL UP OR DOWN MAIN
711ABC	DOWN DIRECTING FROM NAL DOWN MAIN	NORMAL SPEED TO NIMT DOWN MAIN MEDIUM SPEED TO NAL DOWN MAIN LOW SPEED TO NAL DOWN MAIN OR NIMT DOWN MAIN	727ABC	DOWN DIRECTING FROM EAST LINK UP MAIN	NORMAL SPEED TO NAL DOWN MAIN LOW SPEED TO NAL DOWN MAIN
712ABC	UP DIRECTING TO NAL DOWN MAIN DOWN DEPARTURE TO NIMT UP MAIN	NORMAL SPEED TO NAL DOWN MAIN MEDIUM SPEED TO EAST LINK UP MAIN RESTRICTED SPEED TO EAST LINK UP MAIN LOW SPEED TO NAL DOWN MAIN	734ABC	UP HOME FROM UP MAIN	NORMAL SPEED TO NIMT UP MAIN MEDIUM SPEED TO EAST LINK UP MAIN LOW SPEED TO EAST LINK UP MAIN OR NIMT UP MAIN
713ABC	DOWN DIRECTING FROM NAL UP MAIN	NORMAL SPEED TO NIMT UP MAIN MEDIUM SPEED TO NAL UP MAIN LOW SPEED TO NAL UP MAIN OR NIMT UP MAIN	736ABC	UP HOME FROM DOWN MAIN	NORMAL SPEED TO NIMT DOWN MAIN MEDIUM SPEED TO EAST LINK DOWN MAIN LOW SPEED TO EAST LINK DOWN MAIN OR NIMT DOWN MAIN
714ABC	UP DIRECTING FROM NAL UP MAIN	NORMAL SPEED TO NAL UP MAIN LOW SPEED TO NAL UP MAIN	737AR	DOWN DEPARTURE FROM NIMT UP MAIN	NORMAL SPEED TO NIMT UP MAIN RESTRICTED SPEED TO NIMT UP MAIN
715ABC	DOWN DIRECTING FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN LOW SPEED TO NAL DOWN MAIN	739AR	DOWN DEPARTURE FROM NIMT DOWN MAIN	NORMAL SPEED TO NIMT DOWN MAIN RESTRICTED SPEED TO NIMT DOWN MAIN
719ABC	DOWN DIRECTING FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN LOW SPEED TO NAL DOWN MAIN	741ABC	DOWN DIRECTING FROM NIMT UP MAIN	NORMAL SPEED TO NIMT UP MAIN MEDIUM SPEED TO NIMT DOWN MAIN LOW SPEED TO NIMT DOWN MAIN OR NIMT UP MAIN
720ABC	UP DIRECTING FROM NAL DOWN MAIN	NORMAL SPEED TO NAL DOWN MAIN LOW SPEED TO NAL DOWN MAIN	743ABC	DOWN DIRECTING FROM NIMT DOWN MAIN	NORMAL SPEED TO NIMT DOWN MAIN MEDIUM SPEED TO NIMT UP MAIN LOW SPEED TO NIMT UP MAIN OR NIMT DOWN MAIN
721ABR	DOWN DEPARTURE FROM NAL UP MAIN	NORMAL SPEED TO NAL UP MAIN MEDIUM SPEED TO NAL DOWN MAIN RESTRICTED SPEED TO NAL UP MAIN OR DOWN MAIN			

AS DISPLAYED ON SPEED INDICATOR

DESCRIPTION OF ROUTE INDICATORS

SIGNAL	DISPLAY	ROUTE SET TO
702	D	NAL DOWN MAIN
	U	NAL UP MAIN
	L	EAST LINK DOWN MAIN
704	D	NAL DOWN MAIN
	U	NAL UP MAIN
	L	EAST LINK DOWN MAIN

 ETCS APPROACH SPEED (15 km/h)

MAUNGAWHAU - MORNINGSIDE

SIGNALLING & INTERLOCKING ARRANGEMENTS

DESCRIPTION OF SIGNALS

MORNINGSIDE (MNS)

801ABC	DOWN OUTER HOME FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN LOW SPEED TO DOWN MAIN
802ABC	UP HOME FROM UP MAIN	NORMAL SPEED TO UP MAIN LOW SPEED TO UP MAIN
803ABC	DOWN HOME FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN MEDIUM SPEED TO UP MAIN LOW SPEED TO DOWN MAIN, UP MAIN, SIDING 1 OR SIDING 2
804ABC	UP DIRECTING FROM UP MAIN	NORMAL SPEED TO UP MAIN LOW SPEED TO UP MAIN, SIDING 1 OR SIDING 2
805ABC	DOWN OUTER HOME FROM UP MAIN	NORMAL SPEED TO UP MAIN LOW SPEED TO UP MAIN
806ABC	UP HOME FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN MEDIUM SPEED TO UP MAIN LOW SPEED TO DOWN MAIN OR UP MAIN
807AC	DOWN DIRECTING FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN LOW SPEED TO DOWN MAIN
808ABC (15)	UP DIRECTING FROM UP MAIN	NORMAL SPEED TO UP MAIN MEDIUM SPEED TO DOWN MAIN LOW SPEED TO UP MAIN OR DOWN MAIN
809ABC (15)	DOWN DIRECTING FROM UP MAIN	NORMAL SPEED TO UP MAIN LOW SPEED TO UP MAIN
810ABC	UP DIRECTING FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN MEDIUM SPEED TO UP MAIN LOW SPEED TO DOWN MAIN OR UP MAIN
811ABC (15)	DOWN HOME FROM UP MAIN	NORMAL SPEED TO UP MAIN MEDIUM SPEED TO DOWN MAIN LOW SPEED TO DOWN MAIN, UP MAIN, SIDING 1 OR SIDING 2
812	UP SHUNT FROM SIDING 1	LOW SPEED TO UP MAIN OR DOWN MAIN
813	DOWN SHUNT FROM SIDING 1	LOW SPEED TO UP MAIN
816	UP SHUNT FROM SIDING 2	LOW SPEED TO UP MAIN OR DOWN MAIN
817	DOWN SHUNT FROM SIDING 2	LOW SPEED TO UP MAIN
818AR	UP DEPARTURE FROM UP MAIN	NORMAL SPEED TO UP MAIN RESTRICTED SPEED TO UP MAIN
819ABC (15)	DOWN DEPARTURE FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN RESTRICTED SPEED TO DOWN MAIN
820AR	UP DEPARTURE FROM DOWN MAIN	NORMAL SPEED TO DOWN MAIN RESTRICTED SPEED TO DOWN MAIN
821ABC	DOWN DEPARTURE FROM UP MAIN	NORMAL SPEED TO UP MAIN MEDIUM SPEED TO DOWN MAIN RESTRICTED SPEED TO UP MAIN OR DOWN MAIN

(15) ETCS APPROACH SPEED (15 km/h)