

H2 Muswellbrook – Werris Creek

RAS HHN Section Page

Applicability

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SMS

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<https://www.artc.com.au/customers/standards/route/access/>

All changes in this document are highlighted with this colour

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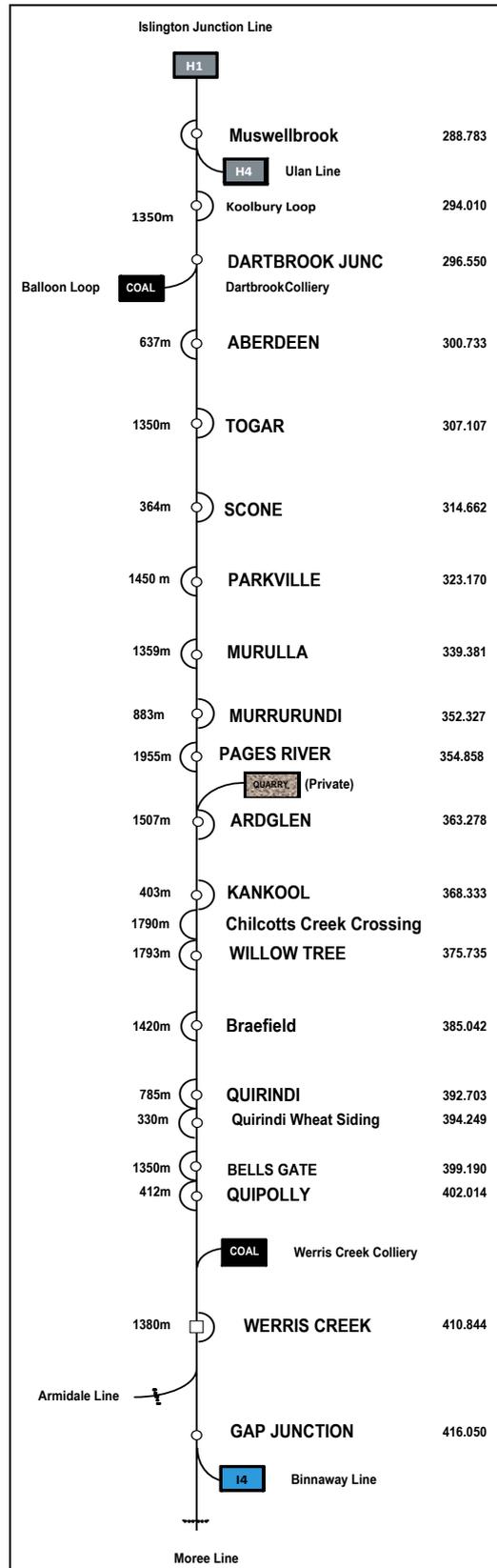
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1 Network Diagram

Note: These line maps are indicative only. For detailed diagrams, refer to relevant Network Information Book.



2 Route Capacity

NOTES TO BE READ IN CONJUNCTION WITH ROUTE CAPACITY TABLE BELOW

Route capacity applies where vehicle characteristics and conditions permit.

Express speeds are for passenger train types that are approved to run to “Express Speed Boards” by the ARTC Network Rules only (i.e. XPT, Xplorer, etc).

For all other passenger trains:

- a. Freight locomotive speed limits apply for diesel locomotive hauled passenger trains.
- b. Freight wagon speeds apply where freight wagons are marshalled as part of the train.
- c. DMU and rail motors are to adhere to carriage axle loads.

MUSWELLBROOK – WERRIS CREEK			
TRAIN TYPE	MAXIMUM SPEED (KM/H)	MAXIMUM AXLE LOAD (TONNES)	
FREIGHT		LOCOS	WAGONS
	115	22.8 (up to 134t GVM)	19.5
	100	22.8 (up to 134t GVM)	21
	100*	23.33	6.5
	80	23.33	25
	80**	30	6.5
	60	30	30
PASSENGER		LOCOS	CARRIAGES
EXPRESS	160#	N/A	19
LOCO HAULED	115	19	19

(Includes non-express DMU and rail motors)

ADDITIONAL NOTES APPLICABLE MUSWELLBROOK – WERRIS CREEK:

* Only in the Down direction. This is applicable for up to 140t locomotives to be operated with compatible hoppers in tare condition.

** Only in the Down direction. This is applicable for up to 180t locomotives to be operated with compatible hoppers in tare condition.

Only for vehicles approved to operate up to this maximum speed.

3 Special Access Conditions

3.1 Locomotives with axle load >22.8t and wagons with axle load > 25t

All locomotives with a gross mass greater than 137t (22.8TAL) must enter and exit Willow Tree Loop at a speed no greater than 20km/h. Locomotives with axle load >22.8t and wagons with axle load >25t are not permitted to use:

- Kankool Loop (Main Line remains OK to use)
- Werris Creek Yard (Main Line to 105pts, Main North West Line, Goods Loop and NW Loop remain OK to use)
- Quirindi Loop (Main Line remains OK to use)
- Quipolly Loop (Main Line remains OK to use)

Note: 140t locomotives (23.33TAL) may apply fuel reduction strategies to reduce the axle load to 22.8TAL.

3.2 Bank Locomotive Working

Bank Locomotive Working is where additional locomotive power is attached or brought online for part of a journey. Various modes of operation are utilised on this route to rationalise the number of locomotives required to haul services over the whole journey.

All banked services operating on this route must comply with the requirements of ARTC Route Access Standard General Information unless the requirement is altered by requirement of this section.

3.2.1 General Requirements:

1. The rear most locomotive of any bank locomotive set shall be arranged such that the cab faces away from the train that is to be banked, this is to assist with recovery if required.
2. Maximum speed for unattached / light engine Bank locomotive(s) is 50km/h between Ardglan and Willow Tree in both directions. Lower speed limits may be required for some trains, refer to RAS General Information Section 4.4 for details.

3.2.2 Assisting Head-End Hauled Trains from Chilcotts Creek (or Willow Tree) to Ardglan

The following conditions apply for loaded trains where bank engines assist trains from Chilcotts Creek (or Willow Tree) to Ardglan. This is the current accepted and approved ARTC practice, but operators may develop their own substitutional safe practices.

3.2.2.1 Operating Conditions:

1. Use of coupler lock pin latching devices:
 - When available, a remote-controlled automatic coupler lock pin lifter must be used on the leading bank locomotive.
 - Alternatively, the automatic coupler lock pin must be locked in the open position by means of the approved latching device.
 - If a remote-controlled automatic coupler lock pin lifter or an approved latching device is not available, trains must be banked per section 3.2.4 of this document.

2. The air hoses are not to be connected between the train and the bank locomotive(s).
3. An adaptor will be fitted on the rear of the last vehicle to accommodate the “End of Train Marker” (EOTM). This is to facilitate a mounting location that prevents damage to the marker and does not interfere with the operation of the automatic coupler.
4. Under normal conditions, bank locomotive(s) do not pass the Ardglen UP starting signals (09-12L and 09-12M).
5. If the banked service becomes disabled and is required to be recovered to Chilcotts Creek/Willow Tree:
 - The train is to be remarshalled to comply with section 3.2.4 of this document.
 - The bank locomotive crew is to lead and control the train from the rear most cab.
 - Any Proceed Authority or Order is to be issued to the Bank Locomotive Crew

3.2.2.2 Method of Operation:

An operator shall follow the procedure below unless they have sufficient and adequate alternative operational procedures that have assessed all risks associated with the amendment to operation and have endorsement from ARTC. This may require validation from an independent party.

1. The train shall be held in-clear at Chilcotts Creek with the automatic brake applied.
2. Bank locomotive(s) shall compress against the rear of the train standing in the loop.

*Note: The attachment process, including all activities between the loaded train coming to a stand and the Bank locomotive driver notifying the train driver as ready to assist, should be completed **within 10 minutes** from when the loaded train came to a stop at Chilcotts Creek.*

3. The bank locomotive driver shall notify the train driver by radio when ready to assist.
4. The train driver shall notify the bank locomotive driver when the starting signal is cleared, and the train is ready to proceed.
5. When acknowledgement is received, the train driver shall release the automatic brakes and the bank locomotive(s) shall commence pushing.
6. The train driver shall begin throttling up. When the load metre registers approximately 400 amps or 50% of the maximum tractive effort, the train driver shall release the locomotive brakes and allow the train to proceed.
7. The maximum speed when assisted from the rear must not exceed 50 km/h. Only the Train Driver shall control the speed of the train between Chilcotts Creek and Ardglen.
8. The Train Driver must advise the bank locomotive driver of all signal indications, any temporary speed restrictions, and other train working conditions to ensure the safe and efficient operation of the train.
9. Once the Bank Locomotive Driver is satisfied that the loaded train has sufficient load clear of the summit at Ardglen and the loaded train can haul itself through the Ardglen tunnel:
 - a. The bank locomotive(s) can be released from the loaded train.
 - b. The bank locomotive(s) will stop and stand at in-clear between the Ardglen starting signals and the adjacent level crossing at Ardglen.
 - c. The bank locomotive(s) will be secured.

- d. The Bank Locomotive Driver and Co-Driver will alight from the lead locomotive and walk to the rear locomotive activating any “F-type” level crossing at Ardglen in the process.
10. If the bank locomotive(s) fails to release from the rear vehicle at Ardglen, the train must proceed to Pages River where the bank locomotive(s) must be detached, if possible. On clearing the Ardglen tunnel, the Driver of the bank locomotive(s) must notify the train Driver and the Network Controller of the circumstances.
11. The trailing load (for marshalling restriction purposes) behind the rear train locomotive is calculated as the train load, less the sum of the full sectional loads for the operational bank locomotive(s) (for the sections Chilcotts Creek to Ardglen).
12. Under normal track operating conditions, the time taken to proceed from Chilcotts Creek to Ardglen **must meet the timetabled section runtimes**.

3.2.3 Assisting Distributed Power Trains from Chilcotts Creek (or Willow Tree) to Ardglen

For all Distributed Power Trains approved and listed in RAS HG above applies.

3.2.4 Operating Crewed Distribution Power Trains between Werris Creek and Parkville

Banked trains utilising the Crewed Distributed Power Trains operating mode may attach bank locomotive(s) to the rear of the train between Werris Creek (inclusive) and Chilcotts Creek (inclusive) or Parkville (inclusive) and Pages River (inclusive). These trains must comply with the following:

- Unless otherwise approved, limitations on the number of hauling locomotives in RAS GI 7.2 - General Train Marshalling Requirements, apply.
- Up to 12000 HP of bank locomotive(s) may be attached to the rear of the train
- Use of coupler lock pin latching devices and remote-controlled automatic coupler lock pin lifters is not permitted in this mode of operation.
- Per ARTC RAS GI section 4.11 – Train Crewing, Where a train is composed of more than one crewed locomotive, the drivers shall have effective radio communications with each other, and the driver of the leading locomotive shall have full control of train braking.
- When attaching the bank locomotive(s):
 - All automatic couplers shall be closed and locked.
 - For compliance with ARTC RAS GI section 4.11 – Train Crewing, the brake controller in the bank locomotive shall be configured to ensure the lead driver is the sole driver in control of the brake pipe.
 - All applicable tests listed in the ARTC RAS GI Section 8 – Train Inspection shall be completed and passed prior to proceeding from the attaching location.
- Detaching the Bank locomotive(s):
 - Detachment of the Bank locomotive(s) is not permitted between Pages River and Chilcotts Creek.
 - Train control may direct the train to proceed to an alternate location for detachment.

- All applicable tests listed in the ARTC RAS GI Section 8 – Train Inspection shall be completed and passed prior to proceeding from the detaching location.
- UP direction services proceeding beyond Pages River with Bank Locomotive attached:
 - Head-end locomotive power shall be limited to an equivalent of four (4) locomotives
 - The number of head end powering locomotives is to be reduced to comply with the maximum of four (4) as soon as practicable at or after Pages River. The train is not permitted beyond Murulla with more than four (4) locomotives powering at the head end.
 - Bank locomotive(s) engines are to be isolated or shutdown as soon as practicable at or after Pages River. The train is not permitted beyond Murulla with running bank locomotive(s).
- DN (down) direction services proceeding beyond Willow Tree with Bank Locomotive attached:
 - Head-end locomotive power shall be limited to an equivalent of four (4) locomotives
 - The number of head end powering locomotives is to be reduced to comply with the maximum of four (4) as soon as practicable at or after Willow Tree. The train is not permitted beyond Quirindi with more than four (4) locomotives powering at the head end.
 - Bank locomotive(s) engines are to be isolated or shutdown as soon as practicable at or after Willow Tree. The train is not permitted beyond Quirindi with running bank locomotive(s).

3.2.5 Trains operated with Bank Engines in a head-end hauled configuration

Banked trains utilising a head-end hauled configuration may attach bank locomotive(s) between Werris Creek (inclusive) and Chilcotts Creek (inclusive), however bank locomotives may also be attached throughout the journey if the configuration conforms with the requirements of the ARTC RAS, as supplemented by the ARTC TOC Manual. These trains must comply with the following:

- Unless otherwise approved, limitations on the number of hauling locomotives in RAS GI 7.2 apply.
- Per ARTC RAS GI section 4.11 – Train Crewing, where a train is composed of more than one crewed locomotive, the drivers shall have effective radio communications with each other, and the driver of the leading locomotive shall have full control of train braking.
- Where attaching the bank locomotive(s) is required:
 - All automatic couplers shall be closed and locked
 - For compliance with ARTC RAS GI section 4.11 – Train Crewing, the brake controller in the bank locomotive shall be configured to ensure the lead driver is the sole driver in control of the brake pipe.
 - All applicable tests listed in the ARTC RAS GI Section 8 – Train Inspection shall be completed and passed prior to proceeding from the attaching location.
- Detaching the Bank locomotive(s):
 - Detachment of the Bank locomotive(s) is not permitted prior to Pages River.

- Train control may direct the train to proceed to an alternate location for detachment.
- All applicable tests listed in the ARTC RAS GI Section 8 - Train Inspection shall be completed and passed prior to proceeding from the detaching location.
- Proceeding beyond Pages River with Bank Locomotive attached:
 - Head-end locomotive power shall be limited to an equivalent of four (4) locomotives.
 - The number of head end powering locomotives is to be reduced to comply with the maximum of four (4) as soon as practicable at or after Pages River. The train is not permitted beyond Murulla with more than four (4) locomotives powering at the head end.
 - Bank locomotive(s) engines are to be isolated or shutdown as soon as practicable at or after Pages River. The train is not permitted beyond Murulla with running bank locomotive(s).

3.2.6 Other banking scenarios

Unless otherwise specified in section 3.2 of this document, banking operations shall comply with all applicable sections of the ARTC RAS with supplemental requirements from the ARTC TOC Manual.

3.3 Requirements for trains with Grade Control Valves

For any trains with wagons that are fitted with Grade Control Valves, Grade control valves shall be set to the EX position on all wagons of all trains travelling in the Hunter Valley region with the following exceptions:

Sections of track requiring use of grade control valves:

- Down – Ardglen to Kankool
- Up – Ardglen to Murrurundi

Note: When traversing the above sections of track:

- Grade control valves shall be placed in the IP position only on loaded vehicles (i.e. those with empty/load valves in the loaded position).
- Vehicles without load compensation shall operate in the EX position unless the mass of the vehicle is 20 tonne or more, in which case the grade control valve shall be placed in the IP position.
- At least 50 per cent of the tonnage of the loaded vehicles must have operational grade control valves.

4 Permanent Speed Restrictions

MUSWELLBROOK – WERRIS CREEK					
LOCATION	KILOMETRAGE	DOWN DIRECTION (AWAY FROM SYDNEY)		UP DIRECTION (TOWARDS SYDNEY)	
		NORMAL	EXPRESS PASSENGER	NORMAL	EXPRESS PASSENGER
		MUSWELLBROOK	288.783		
UP MAIN	288.850	50	55	70	75
	289.400			50	55
	289.670	105	115		
	291.590			105	115
	292.050	90	95		
	292.670			90	95
	292.900	115	160		
	293.210	X70 (370 PTS)	X70 (370 PTS)		
DOWN LOOP	293.325	70	70	X70 (370 PTS)	X70 (370 PTS)
KOOLBURY	294.102				
DOWN LOOP	294.690	X70 (371 PTS)	X70 (371 PTS)	70	70
	294.740			115	160
	294.820			X70 (371 PTS)	X70 (371 PTS)
	295.110	80	95		
	295.430	100	110	80	95
	296.530			100	110
DARTBROOK COAL JUNCTION	296.549				
	296.830	115	160		
	300.050	X25 (51 PTS)	X50 (51 PTS)		
UP LOOP	300.150	50	50	X25 (51 PTS)	X50 (51 PTS)
ABERDEEN	300.733				
UP LOOP	300.850	X25 (52 PTS)	X50 (52 PTS)	50	50
	300.898			X25 (52 PTS)	X50 (52 PTS)
	301.900			115	160
	302.200	110	125		
	302.627			110	125
	302.897	115	160		
	306.020	X50 (51 PTS)	X50 (51 PTS)		
DOWN LOOP	306.140	50	50	X50 (51 PTS)	X50 (51 PTS)
	306.970			115	160
TOGAR	307.107				
DOWN LOOP	307.507	X25 (52 PTS)	X50 (52 PTS)	50	50
	307.610			X25 (52 PTS)	X50 (52 PTS)

MUSWELLBROOK – WERRIS CREEK					
LOCATION	KILOMETRAGE	DOWN DIRECTION (AWAY FROM SYDNEY)		UP DIRECTION (TOWARDS SYDNEY)	
		NORMAL	EXPRESS PASSENGER	NORMAL	EXPRESS PASSENGER
	307.720	115	160		
	308.557		120(LX)		160(LX)
	308.662		160(LX)		120(LX)
	311.680			115	160
	311.980	115	120		
	312.140			115	145
	312.576	80	80		
	313.160			110	110
	313.460	75	80		
	313.980			75	85
	314.180	X25 (51 PTS)	X25 (51 PTS)		
	314.278	50	55		
UP LOOP	314.356	25	25	X25 (51 PTS)	X25 (51 PTS)
SCONE					
	314.662				
UP LOOP	314.750	X25 (52 PTS)	X25 (52 PTS)	25	25
	314.810			X25 (52 PTS)	X25 (52 PTS)
	315.335			50	55
	315.450	115	160		
	317.091		120(LX)		160(LX)
	317.191		160(LX)		120(LX)
	320.000			90	160
	321.500			115	160
	321.540	X50 (51 PTS)	X50 (51 PTS)		
PARKVILLE					
UP LOOP	321.660				
UP LOOP	321.677	50	50	X50 (51 PTS)	X50 (51 PTS)
UP LOOP	323.090	X50 (52 PTS)	X50 (52 PTS)	50	50
	323.170			X50 (52 PTS)	X50 (52 PTS)
	323.500			115	160
	323.590		120(LX)		160(LX)
	323.694		160(LX)		120(LX)
	327.230		120(LX)		160(LX)
	327.330		160(LX)		120(LX)
	327.760			115	135
	328.060	105	115		
	330.540			105	115
	330.830	95	105		
	331.308			95	105

MUSWELLBROOK – WERRIS CREEK					
LOCATION	KILOMETRAGE	DOWN DIRECTION (AWAY FROM SYDNEY)		UP DIRECTION (TOWARDS SYDNEY)	
		NORMAL	EXPRESS PASSENGER	NORMAL	EXPRESS PASSENGER
	332.130	115	120	95	105
	338.330	X50 (51 PTS)	X50 (51 PTS)		
UP LOOP	338.408	50	50	X50 (51 PTS)	X50 (51 PTS)
	338.560			115	120
	338.825	95	105		
MURULLA	339.400				
	339.610			95	105
UP LOOP	339.827	X50 (52 PTS)	X50 (52 PTS)	50	50
	339.910	100	110	X50 (52 PTS)	X50 (52 PTS)
	340.520			100	110
	340.820	95	100		
	342.160			95	100
	342.460	115	135		
	342.990			115	135
	343.995			115	135
	344.290	100	110		
	344.810			100	110
	345.110	115	135		
	346.550			115	135
	346.850	110	120		
	347.277			110	120
	347.600	115	145		
	349.850			115	145
	350.138	115	125		
	350.490			115	125
	350.790	115	145		
	351.486	X40 (51 PTS)	X45 (51 PTS)		
	352.230			115	145
MURRURUNDI	352.327				
	352.530	70	85		
	352.562			X40 (52 PTS)	X45 (52 PTS)
	352.750			70	85
	353.850	X50 (51 PTS)	X50 (51 PTS)		
	353.950	75	80		
UP LOOP	353.950	50	50	X50 (51 PTS)	X50 (51 PTS)
PAGES RIVER	354.858				
	355.180			75	80

MUSWELLBROOK – WERRIS CREEK					
LOCATION	KILOMETRAGE	DOWN DIRECTION (AWAY FROM SYDNEY)		UP DIRECTION (TOWARDS SYDNEY)	
		NORMAL	EXPRESS PASSENGER	NORMAL	EXPRESS PASSENGER
	355.480	115	120		
UP LOOP	355.760	X50	X50	50	50
	355.865			X50 (52 PTS)	X50 (52 PTS)
	356.610			115	135
	356.910	55	60		
	362.294	60	65	55	60
ARDGLEN TUNNEL START	362.329				
ARDGLEN TUNNEL END	362.816				
	363.020	X25 (51 PTS)	X25 (51 PTS)		
DOWN LOOP	363.094	40	45	X25 (51 PTS)	X25 (51 PTS)
ARDGLEN	363.278				
	363.280			60	65
	363.580	55	60		
ARDGLEN QUARRY JUNCTION	363.933				
DOWN LOOP	364.643	X40 (52 PTS)	X45 (52 PTS)	40	45
	364.807			X40 (52 PTS)	X45 (52 PTS)
	366.060			55	60
	366.360	50	55		
	367.010			50	55
	367.310	60	65		
KANKOOL	368.333				
	368.440			60	65
	368.740	80	85		
	370.120			80	85
	370.420	70	80		
	370.860			70	80
	371.160	105	115		
	371.220	X50 (51 PTS)			
UP LOOP	371.330	50		X50 (51 PTS)	
	371.590			105	115
	371.890	115	120		
CHILLCOTTS CREEK	372.300				
UP LOOP	373.280	X50 (52 PTS)		50	
	373.280			115	120
	373.395	X50 (53 PTS)		X50 (52 PTS)	

MUSWELLBROOK – WERRIS CREEK					
LOCATION	KILOMETRAGE	DOWN DIRECTION (AWAY FROM SYDNEY)		UP DIRECTION (TOWARDS SYDNEY)	
		NORMAL	EXPRESS PASSENGER	NORMAL	EXPRESS PASSENGER
ENGINE SIDING	373.505			X50 (53 PTS)	
	373.580	115	115		
	375.000			115	115
	375.345				140
	375.350	X45 (51 PTS)	X45 (51 PTS)		
UP LOOP	375.515	40	45	X40 (51 PTS)	X45 (51 PTS)
WILLOW TREE					
	375.735				
	376.440	105	120	115	120
	377.335	115	115	105	120
UP LOOP	377.335	X50 (52 PTS)	X50 (52 PTS)	50	50
	377.462			X50 (52 PTS)	X50 (52 PTS)
	379.460			115	150
	379.760	115	135		
	380.000			115	135
	380.160	115	160		
	382.818			115	160
	384.251	X50 (51 PTS)			
UP LOOP	384.380	50		X50 (51 PTS)	
BRAEFIELD					
	385.000				
UP LOOP	385.756	X50 (52 PTS)		50	
	385.830			X50 (52 PTS)	
	386.297		120(LX)		160(LX)
	386.397		160(LX)		120(LX)
	387.267	115	160		
	387.963		120(LX)		160(LX)
	388.063		160(LX)		120(LX)
	388.920			115	160
	389.220	95	100		
	390.557			95	100
	390.860	85	95		
	391.300			85	95
	391.600				
	391.620	95-80	140 80		
	391.920			95	110
	392.220	115	135		
	392.280	X40 (51 PTS)	X45 (51 PTS)		
QUIRINDI					
	392.703				

MUSWELLBROOK – WERRIS CREEK					
LOCATION	KILOMETRAGE	DOWN DIRECTION (AWAY FROM SYDNEY)		UP DIRECTION (TOWARDS SYDNEY)	
		NORMAL	EXPRESS PASSENGER	NORMAL	EXPRESS PASSENGER
	393.415			X40 (52 PTS)	X45 (52 PTS)
QUIRINDI GRAIN SIDING	394.523				
	394.640	115	135	100	100
	397.160			115	135
	397.460	110	115		
	398.250	X50 (51 PTS)	X50 (51 PTS)		
UP LOOP	398.400	50	50	X50 (51 PTS)	X50 (51 PTS)
BELLS GATE					
UP LOOP	400.151	X50 (52 PTS)	X50 (52 PTS)	50	50
	400.255			X50 (52 PTS)	X50 (52 PTS)
	400.520			110	115
	400.820	115	155		
QUIPOLLY					
	402.014				
	408.300	105	105	115	150
	409.207	X25 (101 PTS)			
	409.320			65	65
WERRIS CREEK COAL JUNCTION					
	409.470				
WERRIS CREEK SOUTH SIGNAL BOX					
	409.635				
	410.495	X25 (105 PTS)	X25 (105 PTS)		
NORTH WEST MAIN	410.758	35	35		
WERRIS CREEK					
	410.844				