

# ATWS Worksite Protection for Wentworth Falls routine network maintenance activities

<b>DOCUMENT NO.</b>	D2022/11006
<b>WORK DESCRIPTION</b>	Routine network maintenance activities
<b>WPP Number</b>	WT10BWS 10178
<b>SCOPE:</b>	<p>Routine maintenance activities performed by Western Territory maintenance teams.</p> <ul style="list-style-type: none"> <li>on the UP and Down Main lines between 102.120 km to 102.276 km</li> <li>that does not involve the use of tools or equipment, or</li> <li>using tools which can be easily and immediately removed from the track by one person and are light, non-powered hand tools, or light battery powered tools or devices.</li> </ul>
<b>AUTHORISATIONS:</b>	<p><b>Protection Officer, ATWS Operator (Operator) &amp; ATWS Installer (Installer):</b></p> <ul style="list-style-type: none"> <li>Protection Officer (PO) Level 1 – 4, and</li> <li>WATWS – Wireless Automatic Track Warning System</li> </ul> <p><b>Dedicated Lookout: (PO) Level 1 - 4, or Handsignaller 1 - 2</b></p>
<b>SAFETY CONTROLS – Lookout Working (ATWS) arrangements:</b>	<ul style="list-style-type: none"> <li>Automatic Track Warning System (ATWS) - provides visual and audible warning for workers</li> <li>ATWS sensor for DN direction running on the <b>Down Main West</b> line at <b>101.655 km</b></li> <li>ATWS sensor for UP direction running on the <b>Up Main West</b> line at <b>103.980 km</b></li> <li>Dedicated lookout(s) at the worksite for unsignalled movements.</li> <li><b>IMPORTANT!</b></li> <li>This document must not be used to install or adjust the ATWS sensors</li> <li>All sensors in the plan and shown on the diagram must be connected to transmit a warning</li> </ul>
<b>PRESTART REQUIREMENTS:</b>	<ul style="list-style-type: none"> <li>Refer to D2015-45354 Wireless ATWS (Automatic Track Warning System) to install or remove sensors</li> </ul>
<b>FURTHER INFORMATION:</b>	<p>Refer to “D2015-45354 Wireless ATWS (Automatic Track Warning System)” for detailed instructions to set-up, connect, test and operate the ATWS system with pre-installed ATWS sensors</p>

Required ATWS Equipment		
Item	Description	Quantity
Aerial	Telescopic Aerial	3
Assembly Kit	Orange Bag with Tools	2
Battery ZA24-2.9	Small battery for Junction Box and Transmitter	8
Device Frame	Protective Frame	3
F500-AB Junction Box	Receiver Device	2
F500-SEN Train Sensor	Sensor	2
Housing for Aerial	Housing for Telescopic Aerial	3
KF5-5 Extension Cable	Extension Cable (5m) for F500-SEN to F500-AB	0
Mobile Backpack	Harness for Device	0
Pouch	Pouch for small battery	4
Tripod	Tripod for Device	3
ZFS Radio Transmitter	Radio Transmitter Device	2
ZPW Warning Unit	Control and Warning Device	1

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**Protection Officer/Operator assessment checklist**

<b>Protection Officer's name:</b>		<b>Yes</b> <i>(Tick if Yes)</i>
This document has not expired 12 months beyond the issue date.		
SWI details and protection arrangements have been reviewed and validated for the assessed worksite location, including: <ul style="list-style-type: none"> <li>• On-site safety assessment has been completed for relevancy of works being undertaken</li> <li>• The required protection details, environment and tasks are unchanged from the details of this SWI</li> <li>• All boxes have been ticked if applicable and crossed if not applicable</li> <li>• All fields have been completed</li> </ul>		
<b>Corridor Safety Number</b>	<b>Protection Officer Signature</b>	<b>Date</b>

**Warning**



*If an above item does not apply, the Protection Officer must not use this Safe Work Instruction. A new worksite protection plan must be completed in accordance with NRF 014 Worksite Protection Pre-work briefing and NRF 015 Worksite Protection Plan.*

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## Worksite Protection Pre-work Briefing

Briefing date: 

### Protection Officer details

name  signature  contact No.

Work location: Scope of work: Worksite protection:  Refer to Worksite Protection Plan for details

Hazards (e.g. environment, plant, equipment, human error)	Controls (to be implemented to eliminate or reduce the risk to the lowest practicable level)	Person responsible for Control
<b>Crossing live lines</b>	A qualified Protection Officer (PO) or Access Corridor Safety (ACS) must make a safety assessment to cross live lines in accordance with NGE200 and supervise workers who do not hold the PO or ACS qualification.	Qualified PO/ACS
<b>Accessing Danger Zone to conduct plate test</b>	Use appropriate safety measures as validated by a PO. Refer to diagram for minimum safety assessment.	Qualified PO
<b>Electricity</b>	ATWS antennae not to encroach safe approach distance to overhead wiring	Operator
<b>Slips, trips, falls carrying ATWS equipment</b>	Use correct manual handling techniques, secure safety boots, clear obstacles for work area and agree a safe path.	All
<b>Approaching rail traffic</b>	Lookout Working using approved ATWS as assessed in the plan & diagram. All points of entry have been validated and ATWS safety measures (sensors) have been installed. Confirm with the Operator that the ATWS has been tested and is operational. Workers immediately move to the designated safe place when warned. Provide ALL CLEAR handsignal after workers and equipment are in a safe place. After the warning has been cancelled, confirm there is no approaching rail traffic between the sensors and the worksite before allowing work to resume.	PO
<b>Ineffective ATWS warnings / Adjoning / surrounding worksites</b>	Test and confirm workers can see and hear the warning in the noisiest environment. Explain the emergency warnings. Workers to be within 50m of warning device. Workers to remain within sight and hearing of warning unit at all times. Radios not to be used near ATWS.	PO
<b>Train warning time longer than expected (stopping points or ATWS equipment fault)</b>	Workers to remain in a safe place until confirmed the ATWS is working correctly. Contact the Signaller or visually confirm the line is clear between the sensors and the worksite. Potential stopping points: 63.4 Signal, Wentworth Falls Station Platform 1, 63.8 Signal.	PO
<b>Adjacent live lines</b>	Remain within the tracks being protected by the ATWS	PO
<b>Unsignalled movements in Yard limits</b>	Position lookout(s) in safe place. Confirm minimum sighting distance can be achieved. Test effective communication and be within sight and hearing of the workers.	PO / lookouts
<b>Second train warning cancelled in error</b>	Nominate a team member to confirm with the Operator when each rail traffic has completely passed the worksite. Tell the PO and workers about the second train warning. Cancel each warning after each train has completely passed the worksite.	Operator / nominated team member
<b>Distraction</b>	Obtain permission from PO to use electronic devices in the Danger Zone.	All
<b>Obstructions to safe place</b>	Agree on paths to reach designated safe places from the worksite.	PO
<b>Electrical storms</b>	Stop work immediately	All
<b>Highway noise</b>	Increase ATWS Warning volume to be above ambient highway noise that can be heard from the entire worksite. Adjust accordingly to conditions.	Protection Officer/Operator





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## Worksite Protection Plan – Lookout Working

### Signaller details

	<b>Katoomba Panel</b>	<b>9851 7401</b>
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### Protection Officer details

name	signature	contact No.
RSW or RIW No.	designation	Planned duration

Workplace Supervisor details:

Type of work:

### Worksite location

On the	<b>Up Main</b>	
between	<b>Platform 1 Wentworth Falls station</b>	and <b>63.4 Auto Signal</b>
On the	<b>Down Main</b>	
between	<b>62.3 Auto Signal</b>	and <b>63.7 Auto Signal</b>

### Worksite Assessment

The Lookout Working Prohibited Locations Register has been consulted Yes

### Warning method

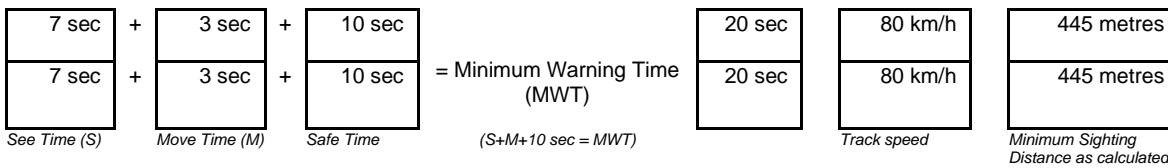
### Minimum Warning Time Calculations

Maximum track speed

Number of ATWS Sensors used  Position of ATWS Sensors  and

Number of additional Lookouts\* used  Position of Lookouts  to

**Note** - Lookouts are relocated to positions within these KMs as workers move along the worksite.



### Where are the safe places identified for the ATWS Operator, Lookouts and workers?

Lookouts:

Operator & Workers:

Confirm mandatory first train tests were completed for all sensors Yes

Ensure the workers have been briefed about these work details Yes

NOTE: Diagrams and instructions that follow form part of this worksite protection plan.

**ATWS Check-sheet**

~~Planning~~

~~1. How will the installed location of sensor(s) be verified?~~

- The PO will have direct line of sight to the sensor from the worksite location
- The installer will travel from the sensor location to the worksite location on the same side of track
- The ID no. of the first train will be verified between the operator and installer

Train ID # observed:

Verified by installer:  (tick to confirm)

**Testing**

**2. Record evidence of mandatory First Trains Tests:**

a. Record Train ID # or type of train observed for all sensors:

b. Confirm mandatory first train tests are complete for all sensors installed  (tick to confirm)

**Pre-work Briefing**

**3. Identify potential stopping points affecting warning times:**

Record any potential stopping points e.g. (stations or signals) between the sensor(s) and worksite which could cause variable warning times:

63.4 Signal, Wentworth Falls Station Platform 1, 63.8 Signal.

Note: Factors affecting warning times should be highlighted to staff during the pre-work brief

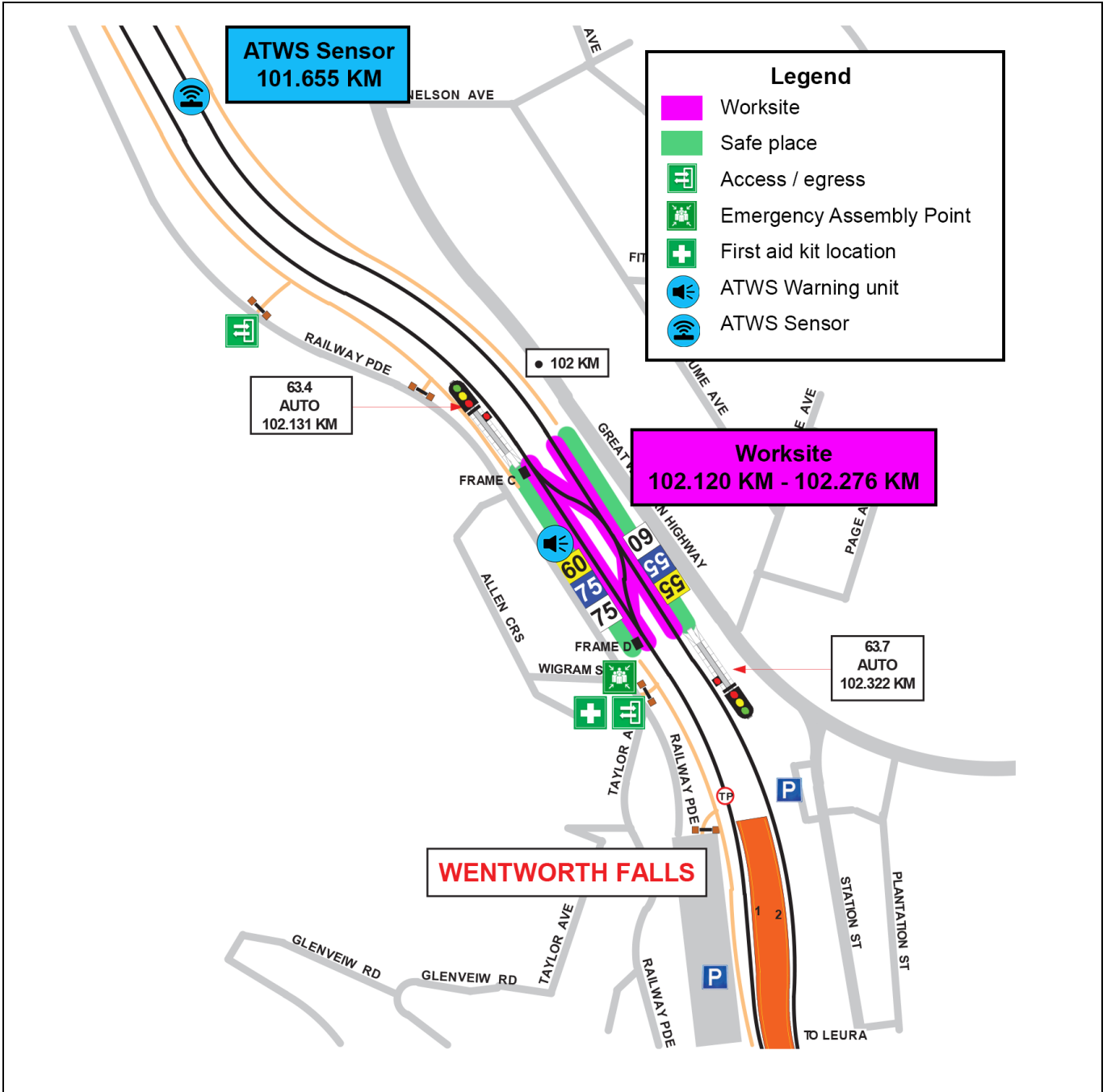
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<b>INSTRUCTIONS:</b>	<ol style="list-style-type: none"> <li>1. Workers enter the rail corridor via access gate <b>W00 101.891 U</b>.</li> <li>2. Use assets to validate worksite location on p and Down Main lines between 102.120 km to 102276 km</li> <li>3. Conduct WP Pre-work briefing to set-up ATWS.</li> <li>4. Tell Signaller at Katoomba Panel about the use of lookout working with ATWS.</li> <li>5. Access Up Cess <b>103.980 KM</b>, verify sensor label &amp; connect to sensor cable, calibrate with test plate, connect and turn on the transmitter.</li> <li>6. Access Down Cess <b>101.655 KM</b> km, verify sensor label, connect to sensor cable, calibrate with test plate, connect &amp; turn on transmitter.</li> <li>7. Place warning system on same side of tracks if working on one track only within sight &amp; hearing of workers, conduct siren &amp; light self test, &amp; connect to transmitter(s).</li> <li>8. Record first rail traffic movement test for each sensor on ATWS Check-sheet.</li> <li>9. Conduct WP Pre-work briefing for lookout working with ATWS and confirm workers have seen and heard the warning.</li> <li>10. Start work when advised by the PO, and move to the designated safe place when warned.</li> <li>11. When work is complete, and workers and equipment are in a safe place, turn off and pack up warning unit</li> <li>12. Access Dn Cess to turn off and pack up transmitter unit(s).</li> <li>13. Access Up Cess to turn off and pack up transmitter unit(s).</li> <li>14. Access Up Cess for all workers to leave the rail corridor via access gate <b>W00 101.891 U</b>.</li> <li>15. Tell Signaller at Katoomba Panel when work is completed and the workers and their equipment are clear of the Danger Zone.</li> </ol>
<b>ADDITIONAL DETAILS</b>	<p><u>Emergency Crossovers Frame C and Frame D</u></p> <p>Frame C and Frame D are emergency cross overs that are clipped and XL locked in the normal running position. Lookout Working ATWS must be ended if these points are to be used.</p>

Setup checklist for ATWS worksite warning unit on the Main West line at 102.200 KM		
Installer name		
Step	Task Description	Installer Initials
1	Confirm equipment is within inspection date	
2	Verify Worksite Start Location with Kilometres	
3	Confirm Audible Level	
4	Confirm and Set Radio Channel for Warning Unit	
5	Book in ATWS sensor 1	
6	Book in ATWS sensor 2	
7	Perform Worksite Warning Test with all ATWS sensors	
8	Ensure the workers have seen the visual warning and heard the audible warning	
9	Select and Confirm Channel for the Radio Transmitter	
10	Confirm worksite warning unit is operational with Installers and advise them to lock devices and remove key Lock device and remove key	

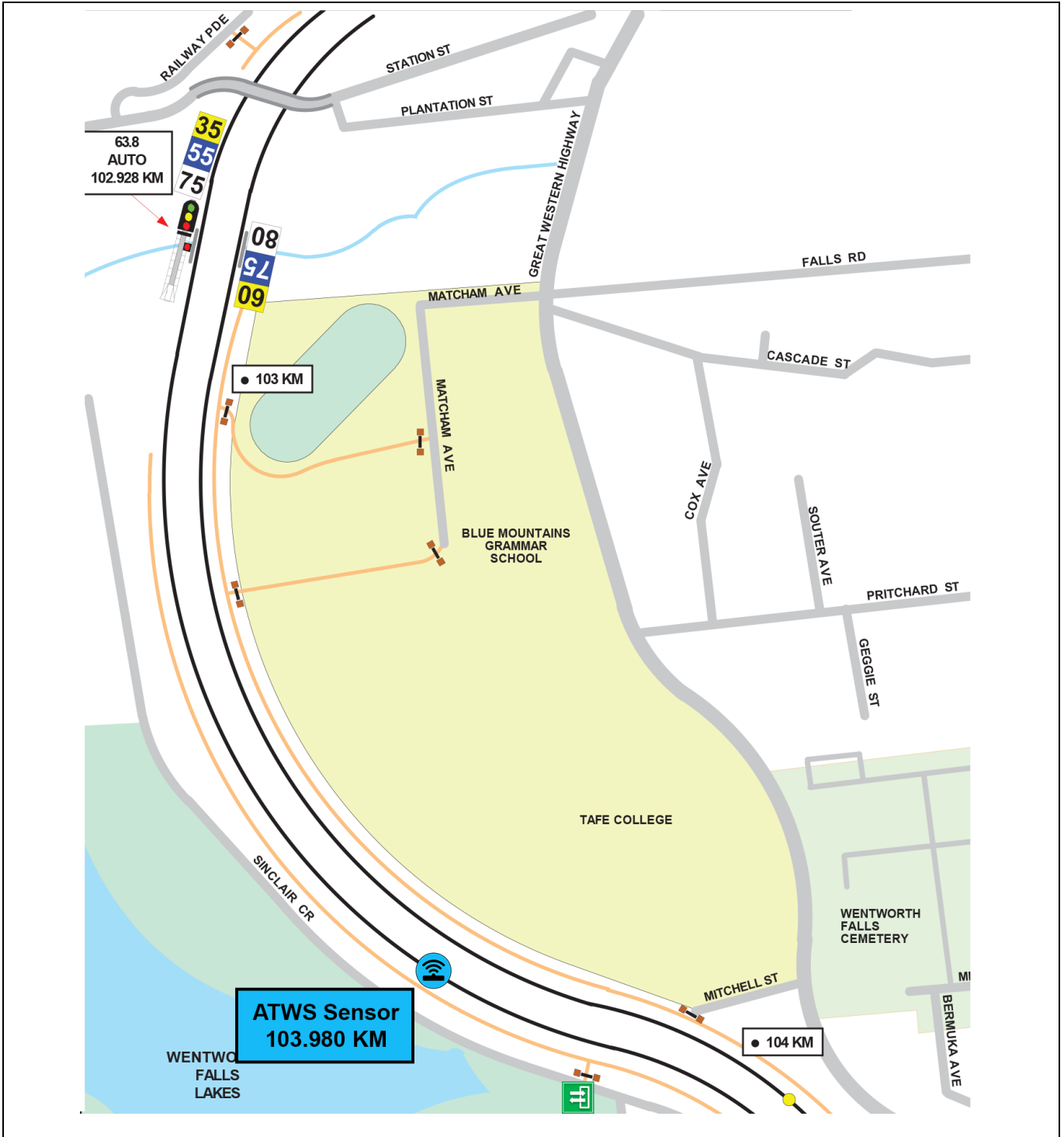
# ATWS Worksite Protection for Wentworth Falls routine network maintenance activities

Diagram



# ATWS Worksite Protection for Wentworth Falls routine network maintenance activities

Diagram





*(This page can be separated from the worksite protection plan to be given to the assigned installer)*

**Installation checklist for ATWS transmitter and sensor on Up Main West line at 103.980KM**

Installer name		
Step	Task Description	Installer Initials
1	Verify Track Label for location of sensor as per the Protection Diagram and Photos in this document	
2	Confirm equipment is within inspection date	
3	Sensor direction is per Worksite Protection Diagram and photos in this document	
4	Connect sensor cable to junction box	
5	Confirm all batteries are fully charged	
6	Connect junction box to ZFS using channel T1-T4	
7	Commence calibration and automatic self- test	
8	Perform function test using test plate	
9	Perform first rail traffic activation test	
10	Confirm transmitter booked in to correct T- channel (T1-T4)	
11	Select & confirm channel for the radio transmitter (AU3 OR AU4)	
12	Perform worksite warning test using test plate	
13	Lock device & remove key	



**Image 1:** Sensor and transmitter installation location



**Image 2:** Sensor access using access gate **W00 104.058 U**

*(This page can be separated from the worksite protection plan to be given to the assigned installer)*

**Installation checklist for ATWS transmitter and sensor on Down Main West line at 101.655 KM**

Installer name		
Step	Task Description	Installer Initials
1	Verify Track Label for location of sensor as per the Protection Diagram and Photos in this document	
2	Confirm equipment is within inspection date	
3	Sensor direction is per Worksite Protection Diagram and photos in this document	
4	Connect sensor cable to junction box	
5	Confirm all batteries are fully charged	
6	Connect junction box to ZFS using channel T1-T4	
7	Commence calibration and automatic self- test	
8	Perform function test using test plate	
9	Perform first rail traffic activation test	
10	Confirm transmitter booked in to correct T- channel (T1-T4)	
11	Select & confirm channel for the radio transmitter (AU3 OR AU4)	
12	Perform worksite warning test using test plate	
13	Lock device & remove key	



**Image 1:** Sensor and transmitter installation location



**Image 2:** Sensor access using access gate **W00 101.891 U**