

# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance

<b>DOCUMENT NO.</b>	D2022/10985
<b>WORK DESCRIPTION</b>	Condition monitoring equipment maintenance
<b>WPP Number</b>	CMO8BWS 10119
<b>SCOPE:</b>	<p>This SWI is applicable for the worksite protection arrangements using ATWS for routine condition monitoring equipment maintenance activities performed by the Condition Monitoring Operations section.</p> <p>Work activities include but not limited to:</p> <ul style="list-style-type: none"> <li>• Condition monitoring equipment corrective maintenance</li> <li>• Condition monitoring equipment routine maintenance</li> <li>• Maintenance activities in line with NWT310 Lookout Working</li> </ul>
<b>AUTHORISATIONS:</b>	<p><b>Protection Officer/Operator:</b></p> <ul style="list-style-type: none"> <li>• Protection Officer Level 1 or higher, and</li> <li>• WATWS – Wireless Automatic Track Warning System</li> </ul> <p><b>Installer:</b></p> <ul style="list-style-type: none"> <li>• Protection Officer Level 1 or higher, and</li> <li>• WATWS – Wireless Automatic Track Warning System</li> </ul>
<b>SAFETY CONTROLS – Lookout Working (ATWS) arrangements:</b>	<p>The work is performed at a defined worksite outside yard limits, protected using Lookout Working arrangements with Automatic Track Warning System (ATWS) equipment:</p> <ul style="list-style-type: none"> <li>• Installed ATWS sensors for Down direction running on the <b>Down Main Illawarra 28.741 KM</b></li> <li>• Installed ATWS sensors for Up direction running on the on <b>Up Main Illawarra at 30.444 KM</b></li> </ul>
<b>PRESTART REQUIREMENTS:</b>	<p>Protection Officer/Operator assessment checklist must be completed before instructions in this SWI are followed.</p> <p>Tools and equipment required:</p> <ul style="list-style-type: none"> <li>• Protection Officer/Operator requires a phone to contact the Signaller</li> <li>• ATWS equipment (see Required ATWS equipment checklist)</li> <li>• Digital radios</li> </ul>
<b>FURTHER INFORMATION:</b>	<p><i>NWT 300 Planning work in the Rail Corridor</i></p> <p><i>NWT 310 Lookout Working</i></p> <p><i>NGE 200 Walking in the Danger Zone</i></p> <p><i>NPR 711 Using Lookouts</i></p> <p><i>NPR 751 Calculating Minimum Warning Time</i></p> <p><i>NPR 712 Protecting work from rail traffic on adjacent lines</i></p> <p><i>NPR 752 Using Wireless Automatic Warning Systems</i></p> <p><i>Lookout Working Prohibited Locations Register</i></p>

# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance

## Protection Officer/Operator assessment checklist

Protection Officer/Operator's name:		<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> </ul>		
The Protection Officer and Qualified Workers deploying the ATWS equipment and protecting the worksite have been inducted into the requirements of the ATWS protection method for the location.		
<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.

## Required ATWS Equipment

Item	Description	Quantity
Aerial	Telescopic Aerial	3
Assembly Kit	Orange Bag with Tools	1
Battery ZA24-2.9	Small battery for Junction Box and Transmitter	4
Device Frame	Protective Frame	2
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

# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance



## Worksite Protection Pre-work Briefing

Briefing date:

### Protection Officer details

<input type="text" value="name"/>	<input type="text" value="signature"/>	<input type="text" value="contact No."/>
-----------------------------------	--	--

Work location:

Scope of work:

Worksite protection:  Refer to Worksite Protection Plan for details

Hazards (e.g. Site specific hazards identified, including physical environment, human errors, plant and equipment)	Controls (to be implemented to eliminate or reduce the risk to the lowest practicable level)	Person responsible for Control
<b>Approaching rail traffic</b>	Lookout Working using ATWS Workers to remain within worksite limits. Workers to be within 50m of a warning device	Protection Officer/Operator
<b>Unidirectional running</b>	ATWS sensors placed for all entry points into the worksite	Protection Officer/Operator
<b>Unsignalled rail traffic movements</b>	Dedicated Lookouts placed watching for unsignalled movements in both directions	Lookout
<b>Miscount of multiple train warnings</b>	Protection Officer/Operator must call out to workers the: <ul style="list-style-type: none"> <li>number of train warnings, and</li> <li>clearing of each train warning.</li> </ul> Dedicated Lookouts must confirm with the Protection Officer/Operator when rail traffic has cleared the worksite and which train warning that rail traffic belonged to.	Protection Officer/Operator and Workplace Supervisor
<b>Electric shock</b>	Operators must make sure ATWS antennae length does not breach Safe Approach Distance (SAD) to overhead wiring.	All
<b>Mobile phone</b>	Mobile phone usage is not allowed in the Danger Zone. Mobile phones may be used only in a safe place after informing the Protection Officer.	All
<b>Digital radios</b>	Digital radios only to be used in a safe place. GRN radios must not be used.	All
<b>Obstructions or uneven surfaces in the exit path to a safe place</b>	Before commencing work, a route to the safe place is to be agreed upon taking obstructions and uneven surfaces into consideration.	Workplace Supervisor
<b>Exposure to excessive noise</b>	Workers must not stand directly in front of audible warning devices.	All
<b>Slips, trips, falls and hazards carrying ATWS equipment</b>	Areas of concern are marked and/or identified to all workers. Designated work areas to be established and kept free of hazards. Established walk areas to be utilised where established.	All



# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance



## Worksite Protection Plan – Lookout Working

### Signaller details

	<b>Sutherland Panel</b>	<b>8568 3454</b>
--	-------------------------	------------------

### Protection Officer details

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

Workplace Supervisor details:

Type of work: **Condition monitoring equipment maintenance**

**Worksite location**

On the

between  and

On the

between  and

### Worksite Assessment

Has the Lookout Working Prohibited Locations Register been consulted? Yes

### Warning method

### Minimum Warning Time Calculations

Maximum track speed

Number of ATWS Sensors used  Position of ATWS Sensors  and

Number of dedicated Lookouts used  Position of Lookouts  To

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

7 sec	+	3 sec	+	10 sec		20 sec		115 km/h	639 metres
7 sec	+	3 sec	+	10 sec	<b>= Minimum Warning Time (MWT)</b>	20 sec		115 km/h	639 metres
See Time (S)		Move Time (M)		Safe Time	(S+M+10 sec = MWT)			Track speed	Minimum Sighting Distance as calculated

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

Lookouts:

Workers:

Ensure the workers have been briefed about these work details Yes

Diagrams, notes and detailed instructions of worksite protection arrangements are over the next pages. These are to be read and followed as part of this worksite protection plan for Lookout Working with ATWS.

# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance



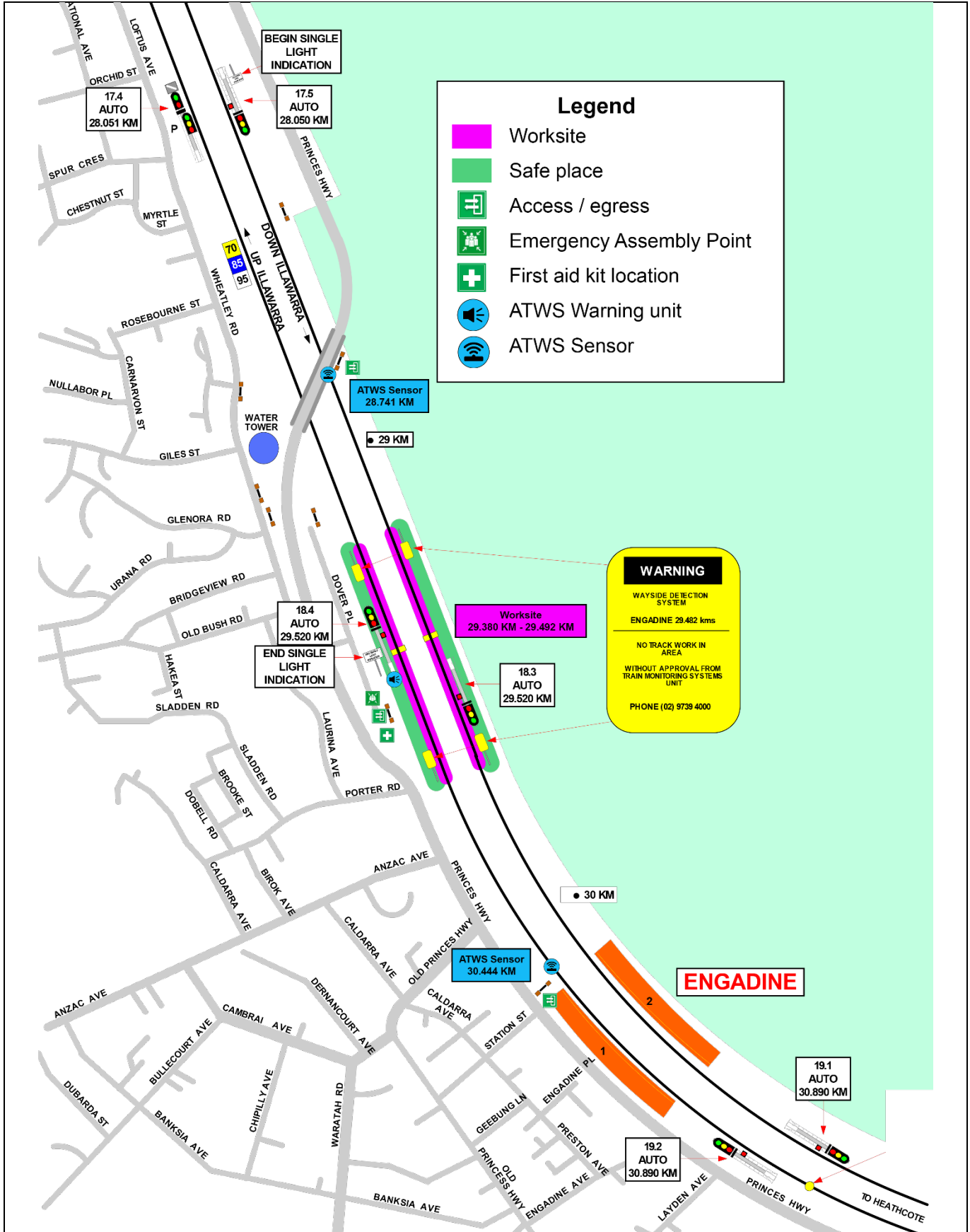
<b>INSTRUCTIONS:</b>	<ol style="list-style-type: none"> <li>1. Workers enter the rail corridor via access gate <b>I00 29.443 U</b>.</li> <li>2. Protection Officer conducts the worksite protection pre-work briefing.</li> <li>3. Protection Officer contacts Sutherland Panel to tell the Signaller about the use of ATWS.</li> <li>4. Setup ATWS Worksite Warning System as per installation instructions</li> <li>5. Install/calibrate/verify Down ATWS sensor at <b>28.741 KM</b> on the <b>Down Main Illawarra line</b>.</li> <li>6. Install /calibrate/verify Down ATWS sensor at <b>30.444 KM</b> on the <b>Up Main Illawarra line</b>.</li> <li>7. Test ATWS equipment.</li> <li>8. Perform first rail traffic movement activation test with each ATWS sensor.</li> <li>9. Workers start work.</li> <li>10. Once work is completed, workers move into a safe place.</li> <li>11. Turn off ATWS Warning unit.</li> <li>12. Turn off and remove all ATWS transmitter units.</li> <li>13. All workers egress the rail corridor via access gate <b>I00 29.443 U</b>.</li> <li>14. Protection Officer contacts the Signaller at Sutherland Panel to end ATWS.</li> </ol>
<b>ADDITIONAL DETAILS</b>	<p><u>ATWS Sensor plate test calibration</u>                  Whilst performing the plate test calibration, make sure to look for rail traffic approach.</p>

**Setup checklist for ATWS worksite warning unit on the Main Illawarra line at 29.450 KM**

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

# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance

Diagram







# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance

*(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 Illawarra line at 30.444 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	Sensor clamp (SK150) pre-adjusted according to the rail profile as per the Worksite Protection Diagram	
3	Sensor Direction is Installed as 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 (Strike In)	
9	Perform first rail traffic activation test	
10	Confirm Transmitter booked in to correct T-channel (T1-T4)	
11	Select and Confirm Channel for the Radio Transmitter	
12	Perform Worksite Warning Test using Test Plate	
13	Lock Device and Remove Key	



**Image 1:** Transmitter and sensor installation location



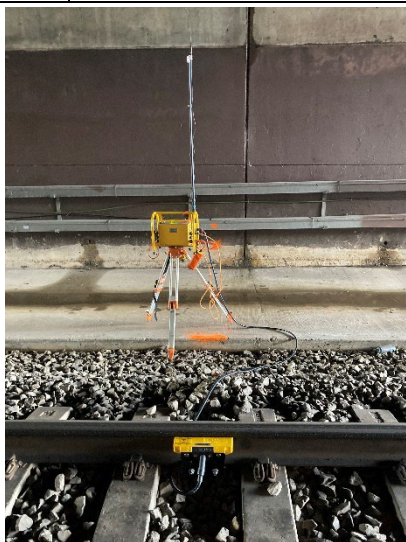
**Image 2:** Sensor access gate 100 30.475 U

# ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance

*(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 Illawarra line at 25.741 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	Sensor clamp (SK150) pre-adjusted according to the rail profile as per the Worksite Protection Diagram	
3	Sensor Direction is Installed as 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 (Strike In)	
9	Perform first rail traffic activation test	
10	Confirm Transmitter booked in to correct T-channel (T1-T4)	
11	Select and Confirm Channel for the Radio Transmitter	
12	Perform Worksite Warning Test using Test Plate	
13	Lock Device and Remove Key	



**Image 1:** Transmitter and sensor installation location



**Image 2:** Sensor access using access gate 100 28.985 U