

ATWS Worksite Protection for Wentworth Falls routine network maintenance activities

DOCUMENT NO.	D2022/11006		
WORK DESCRIPTION	Routine Maintenance activities		
WPP Number	WT10BWS 10178	SAP Code	RWPP8007
SCOPE:	Routine maintenance activities performed by Network Maintenance Teams: <ul style="list-style-type: none"> on the Up Main and Down Main lines between 102.120km to 102.276km that does not involve the use of tools or equipment, or 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: 		
AUTHORISATIONS:	Protection Officer, ATWS Operator (Operator) & ATWS Installer (Installer): <ul style="list-style-type: none"> Protection Officer (PO) Level 1 - 4, and WATWS – Wireless Automatic Track Warning System 		
PERSONAL PROTECTIVE EQUIPMENT	<ul style="list-style-type: none"> High visibility vest, boots, high visibility lookout sleeve 		
SAFETY CONTROLS – Lookout Working (ATWS) arrangements:	<ul style="list-style-type: none"> Automatic Track Warning System (ATWS) - provides visual and audible warning for workers Installed ATWS sensors on the Down Main West line at 101.655 km Installed ATWS sensors on the Up Main West line at 103.980 km <p>IMPORTANT!</p> <ul style="list-style-type: none"> This document must not to be used to install or adjust the ATWS sensors. All sensors in the plan and shown on the diagram must be connected to transmit a warning. 		
PRESTART REQUIREMENTS:	<ul style="list-style-type: none"> Refer to D2015-45354 Wireless ATWS (Automatic Track Warning System) to install or remove the sensors. 		
FURTHER INFORMATION:	<i>Refer to “D2015-45354 Wireless ATWS (Automatic Track Warning System)” for detailed instructions to set-up, connect, test and operate the ATWS system with the pre-installed ATWS sensors.</i>		

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 & 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 & Warning Device	1

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Protection Officer/Operator assessment checklist

Protection Officer/Operator's name:		Yes <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"> • On-site safety assessment has been completed for relevancy of works being undertaken • The required protection details, environment and tasks are unchanged from the details of this SWI • All boxes have been ticked if applicable and crossed if not applicable All fields have been completed		
Corridor Safety Number	Protection Officer Signature	Date

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. 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
Crossing live lines	A qualified Protection Officer (PO) or Assess Corridor Safety (ACS) must make a safety assessment to cross live lines in accordance with NGE200 & supervise workers who do not hold the PO or ACS qualification.	Qualified PO/ACS
Accessing Danger Zone to conduct plate test	Use appropriate safety measures as validated by a PO. Refer to diagram for minimum safety assessment.	Qualified PO
Electricity	ATWS antennae not to encroach safe approach distance to overhead wiring.	Operator
Slips, trips, falls carrying ATWS equipment	Use correct manual handling techniques, secure safety boots, clear obstacles for work area & agree a safe path.	All
Approaching rail traffic	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
Ineffective ATWS warnings / Adjoining / surrounding worksites	Test & confirm workers can see & hear the warning in the noisiest environment. Explain the emergency warnings. Workers to be within 50m of warning device. Workers to remain within sight & hearing of warning unit at all times. Radios not to be used near ATWS.	PO
Train warning time longer than expected (stopping points or ATWS equipment fault)	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 & the worksite. Potential stopping points: 63.8 Signal, Wentworth Falls Station, 63.4 Signal	PO
Second train warning cancelled in error	Nominate a team member to confirm with the Operator when each rail traffic has completely passed the worksite. Tell the PO & workers about the second train warning. Cancel each warning after each train has completely passed the worksite.	Operator / nominated team member
Distraction	Obtain permission from PO to use electronic devices in the Danger Zone.	All
Obstruction to safe place	Agree on paths to reach designated safe places from the worksite.	PO
Electrical storms	Stop work immediately	All
Highway noise	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

	Katoomba Panel	9851 7401
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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

between and

On the

between and

Worksite Assessment

Has the Lookout Working Prohibited Locations Register been consulted? Yes

Warning method

ATWS

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

7 sec	+	3 sec	+	10 sec	=	20 sec		80 km/h		445 metres
7 sec	+	3 sec	+	10 sec	=	20 sec		80 km/h		445 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 ATWS operator, Lookouts and workers?

Lookouts:

Operator & Workers:

Record train ID# or type of train observed for all sensors

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.

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 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 Train 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

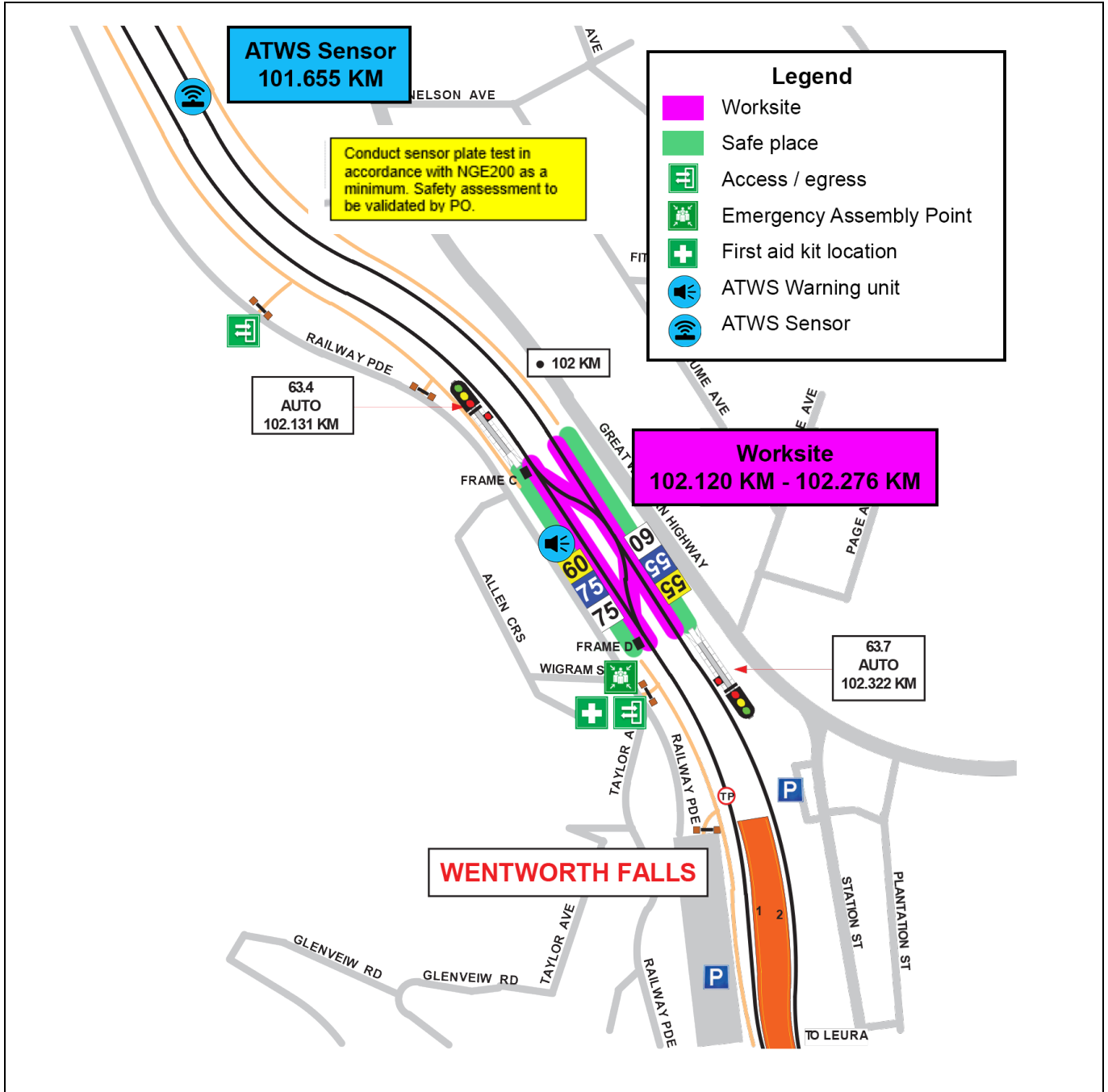
3. Identify potential stopping points affecting warning times:

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

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

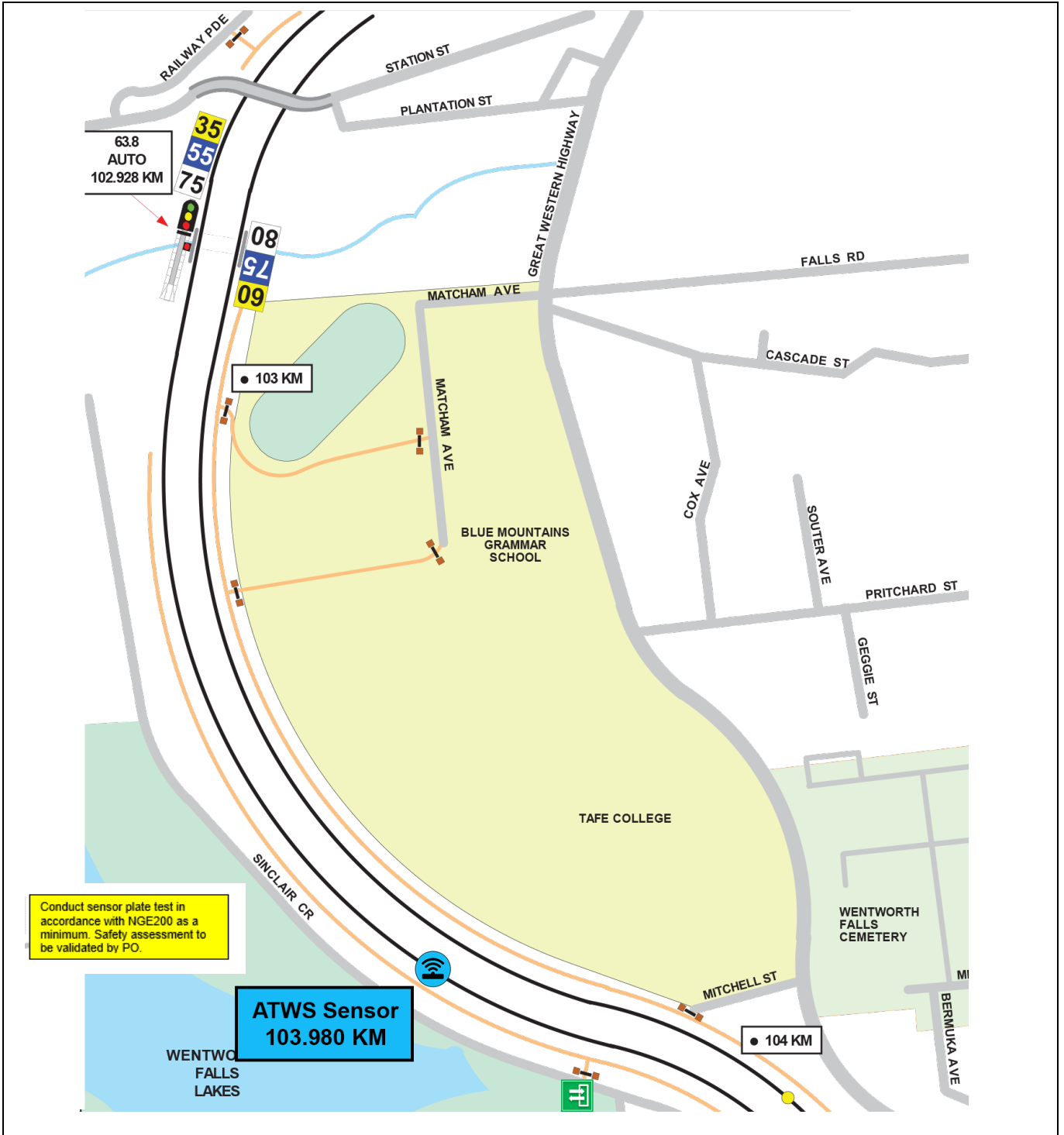
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Diagram



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Diagram



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INSTRUCTIONS:

1. Workers enter the rail corridor via access gate **W00 101.891 U**.
2. Use assets to validate worksite location on **Up Main and Down Main lines** between 102.120km to 102.276km
3. Conduct WP Pre-work briefing to set-up ATWS.
4. Tell Signaller at **Katoomba Panel** about the use of lookout working with ATWS.
5. Access Up Cess 101.655km, verify sensor label & connect to sensor cable, calibrate with test plate, connect and turn on the transmitter.
6. Access Up Cess 103.980km, verify sensor label, connect to sensor cable, calibrate with test plate, connect & turn on transmitter.
7. Place warning system on same side of tracks if working on one track only within sight & hearing of workers, conduct siren & light self test, & connect to transmitter(s).
8. Record first rail traffic movement test for each sensor on ATWS Check-sheet.
9. Conduct WP Pre-work briefing for lookout working with ATWS and confirm workers have seen and heard the warning.
10. Start work when advised by the PO, and move to the designated safe place when warned.
11. When work is complete, and workers and equipment are in a safe place, turn off and pack up warning unit
12. Access Up Cess 101.655km to turn off and pack up transmitter unit(s).
13. Access Up Cess 103.980km to turn off and pack up transmitter unit(s).
14. All workers to leave the rail corridor via access gate **W00 101.891 U**.
15. Tell Signaller at **Katoomba Panel** when work is completed and the workers and their equipment are clear of the Danger Zone.

Position of ATWS transmitter and sensor on the Up Main West line at 103.980KM

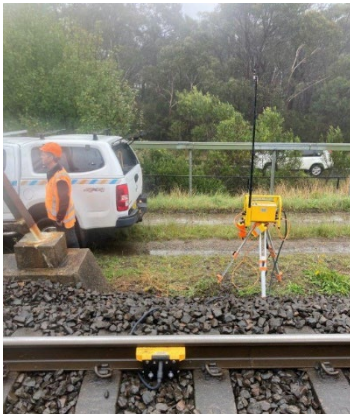


Image 1: Sensor and transmitter installation location



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

Position of ATWS transmitter and sensor on the Down Main West line at 101.655KM



Image 1: Sensor and transmitter installation location



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

Protection Officer's diary

Date	Time	Notes
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SWI Custodian: Maintenance Operations Manager Western Territory
 SWI Approver: Associate Director Network Operation

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(This page is optional and may be separated and given to the assigned operator to assist set-up of ATWS equipment. Refer also to Refer to "D2015-45354 Wireless ATWS (Automatic Trak Warning System)" for detailed instructions.)

Setup Stage 1: Checklist for ATWS transmitter and sensor

Step	Task Description	Installer Check
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	Confirm transmitter booked in to correct T- channel (T1-T4)	
10	Select & confirm channel for the radio transmitter (AU3 OR AU4)	
11	Perform worksite warning test using test plate	
12	Lock device & remove key	

Setup Stage 2: checklist for ATWS worksite warning unit

Step	Task Description	Operator Check
1	Confirm equipment is within inspection date	
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 sensor	
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 & remove key	