

Safe Work Instruction

ATWS Worksite Protection for Lithgow routine network maintenance activities



DOCUMENT NO.	D2022/11003		
WORK DESCRIPTION	Routine Maintenance activities		
WPP Number	WT08BWS 10171	SAP Code	RWPP8005
SCOPE:	Routine maintenance activities performed by Western Territory maintenance teams: <ul style="list-style-type: none"> on the Up Main and Down Main lines between 153.124km to 153.433km 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 Dedicated Lookout: (PO) Level 1 - 4, or Handsignaller 1 - 2		
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 line at 152.710 km Installed ATWS sensors on the Up Main line at 153.988 km IMPORTANT! <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:	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. <ul style="list-style-type: none"> NLA218 		

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	4
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

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.

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 & ATWS safety measures (sensors & points clips) 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 & 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: 95.1, 6/7 FRB, 95.4	PO
Adjacent live lines	Remain within the tracks being protected by the ATWS	PO
Unsignalled movements in Yard limits	Position lookout(s) in a safe place Confirm minimum sighting distance can be achieved Test effective communication and be within sight & hearing of the workers	PO / lookouts
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

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

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Workplace Supervisor Details

name		contact No.	
Emergency assembly point:		SWMS/SWI Ref #:	
First Aid kit location:		First Aider:	

Workplace Supervisor Acknowledgement

The Workplace Supervisor acknowledges that all identified WHS and rail safety hazards have the appropriate controls in place to manage and/or eliminate the hazards.

Yes signature

Participant Acknowledgement

NOTE: Recipients of the briefing are to question the Briefer if they don't understand any part of this briefing.

All workers listed below acknowledge that they:

- | | |
|---|--|
| <ul style="list-style-type: none"> 1. have been inducted to the site 2. are free from alcohol and drugs 3. are free from the effects of fatigue 4. hold the applicable and current Rail Safety Worker Authorisation, trade licence and/or induction record e.g. Construction Industry Induction 5. must wear the appropriate Personal Protective Equipment (PPE) | <ul style="list-style-type: none"> 6. have been briefed on the contents of the Worksite Protection Plan 7. have been shown the Worksite Protection Plan diagram 8. understand the kinds and limits of worksite protection in place 9. have been briefed about any new hazards and controls identified during the final site inspection (<i>final site inspection must be conducted immediately before commencing work</i>) |
|---|--|

Mark each check box below with a tick if the item applies or a cross if the item does not apply.

- | | |
|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> have been informed of the requirements of the electrical permit (if required) <input type="checkbox"/> have been briefed on the SWMS/SWIs/documented safe work practice for the job <input type="checkbox"/> have been instructed in the controls recorded in this document and SWMS/SWIs | <ul style="list-style-type: none"> <input type="checkbox"/> have been made aware of any hazardous materials/substances on site <input type="checkbox"/> have been briefed on Safety Data Sheets (SDS) <input type="checkbox"/> have been briefed on the WHS Management plan <input type="checkbox"/> have been briefed on the hazards of adjoining worksites/processes. |
|--|---|

Name	Signature	Time of briefing: hh:mm	Amendment briefing: hh:mm and initial

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Worksite Protection Plan – Lookout Working

Signaller Details

Coal Stage Panel 02 6354 9524

Protection Officer Details

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

Workplace Supervisor details:

Type of work: Routine Maintenance Activities

Worksite Location

On the Up Main line between 95.4 4th Home Signal and 95.0 Starting Signal. On the Down Main line between 94.3 Accept Signal and 95.7 Home Signal.

Worksite Assessment

Has the Lookout Working Prohibited Locations Register been consulted? Yes

Warning method

ATWS

Minimum Warning Time Calculations

Maximum track speed 90 km/h

Number of ATWS Sensors used 2 Position of ATWS Sensors 152.710 km and 153.988 km. Number of Dedicated Lookouts used 1 Position of Lookouts 153.124 km to 153.433 km.

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

7 sec + 3 sec + 10 sec = Minimum Warning Time (MWT) 20 sec. 90 km/h 500 metres. 7 sec + 3 sec + 10 sec = Minimum Warning Time (MWT) 20 sec. 70 km/h 389 metres.

Dedicated Lookout

2 sec + 3 sec + 10 sec = Minimum Warning Time (MWT) 15 sec. 25 km/h 105 metres.

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

Lookouts: Up Cess for Up Main. Down Cess for Down Main.

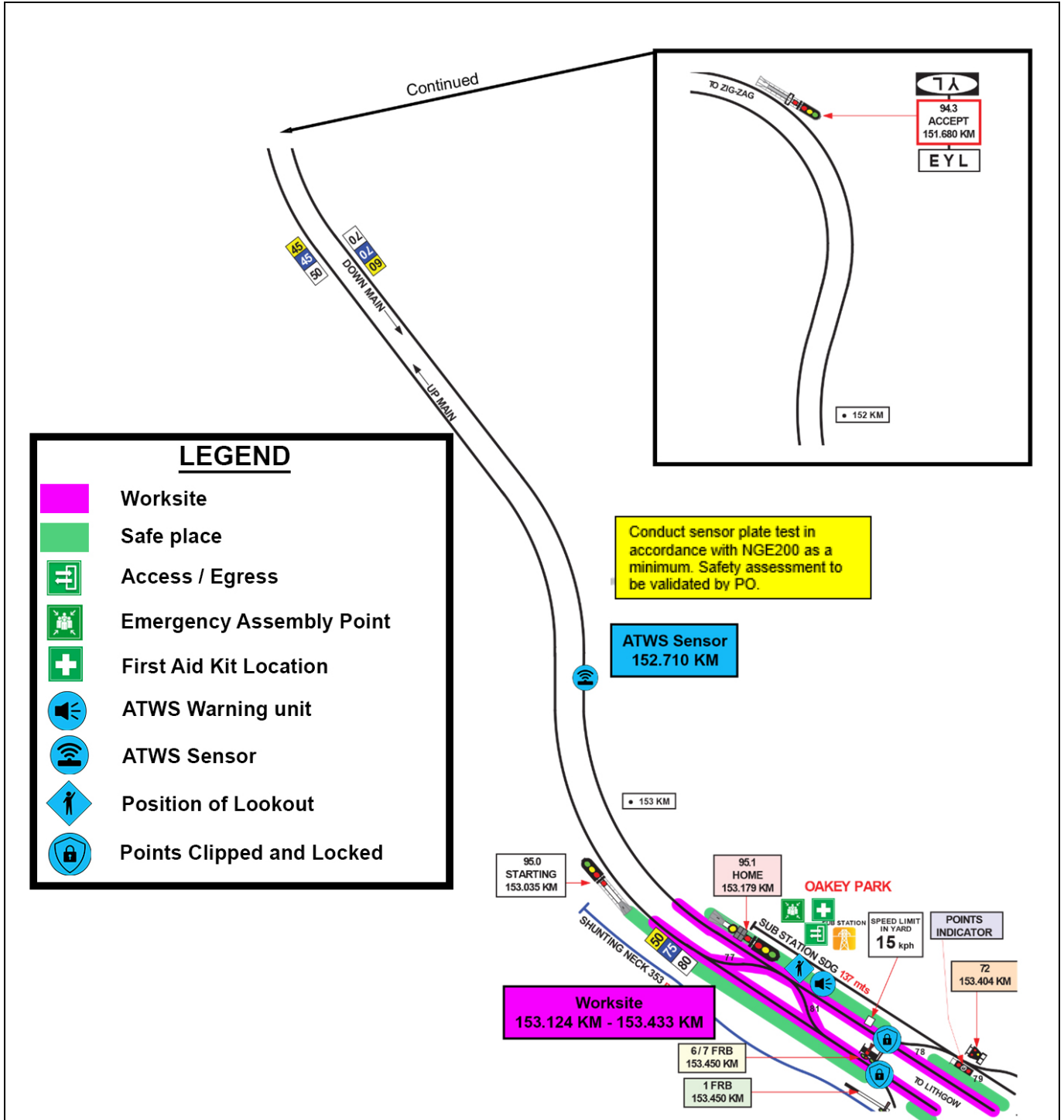
Operator & Workers: Up Cess for Up Main. Down Cess for Down Main.

Confirm mandatory first train tests were completed for all sensors Yes

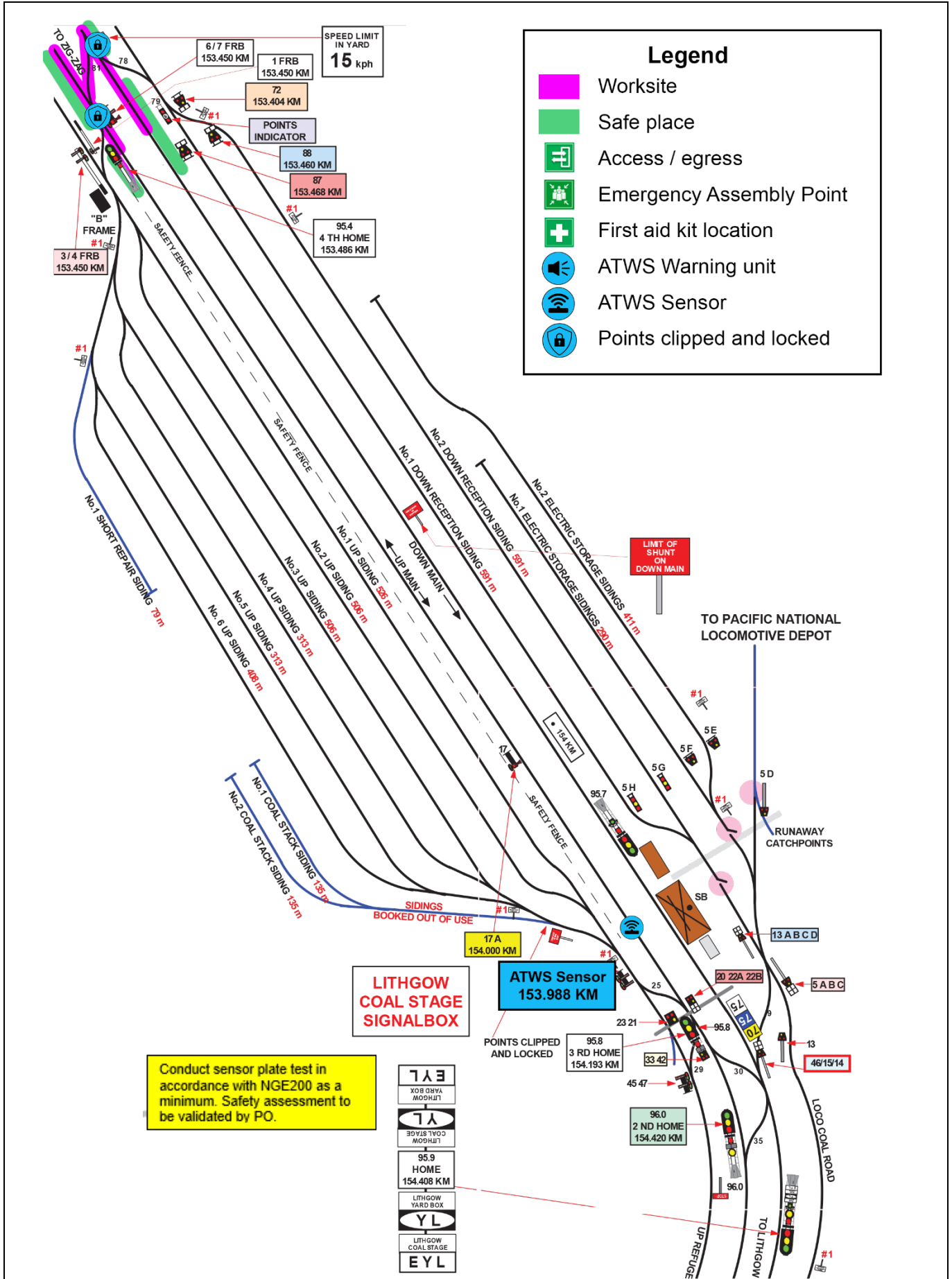
Ensure the workers have been briefed about these work details Yes

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

Diagram



Diagram



INSTRUCTIONS:

1. Workers enter the rail corridor at **W00 153.385 U**.
2. Use assets to validate worksite location on **Up Main and Down Main West lines** between 153.124km to 153.433km
3. Conduct WP Pre-work briefing to set-up ATWS.
4. Tell Signaller at Coal Stage Panel about the use of lookout working with ATWS.
5. Access Up Cess 153.988km verify sensor label & connect to sensor cable, calibrate with test plate, connect and turn on the transmitter.
6. Access Dn Cess 152.710km 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. Clip and lock **78 points** and **2FRB points (B Frame)** to prevent rail traffic entry into the worksite.
9. Record first rail traffic movement test for each sensor on ATWS Check-sheet.
10. Conduct WP Pre-work briefing for lookout working with ATWS and confirm workers have seen and heard the warning.
11. Establish dedicated Lookouts.
12. Start work when advised by the PO, and move to the designated safe place when warned.
13. When work is complete, and workers and equipment are in a safe place, turn off and pack up warning unit
Turn off ATWS Warning unit.
14. Access Up Cess 153.988km to turn off and pack up transmitter unit(s).
15. Access Dn Cess 152.710km to turn off and pack up transmitter unit(s).
16. All workers to leave the rail corridor via access gate **W00 153.385 U**.
17. Tell Signaller at Coal Stage 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 153.988KM



Image 1: Transmitter and sensor installation location



Image 2: Sensor access using access gate W00 153.037 U

Position of ATWS transmitter and sensor on the Down Main West line at 152.710 KM



Image 1: Transmitter and sensor installation location



Image 2: Sensor access using access point

(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	