

# ATWS Worksite Protection for Sulphide Junction routine network maintenance activities

<b>DOCUMENT NO.</b>	D2022/10065		
<b>WORK DESCRIPTION</b>	Routine network maintenance activities		
<b>WPP Number</b>	<b>CC14BWS 10001</b>	<b>SAP Code</b>	<b>RWPP1017</b>
<b>SCOPE:</b>	<p>This SWI is applicable for the worksite protection arrangements using ATWS for routine network maintenance activities performed by the Central Coast Territory maintenance teams.</p> <p>Work activities include:</p> <ul style="list-style-type: none"> <li>• Points and Signals maintenance inspections</li> <li>• Track maintenance inspections</li> <li>• Overhead wiring maintenance inspections</li> <li>• Revised compliance date inspections</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 – 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 – Automatic Track Warning System</li> </ul>		
<b>SAFETY CONTROLS – Lookout Working (ATWS) arrangements:</b>	<p>The work is performed at a defined worksite in 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 North Main at 151.324 KM</b></li> <li>• Installed ATWS sensors for Up direction running on the on <b>Up North Main at 154.270 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> <p><i>NLA 316 Sulphide Junction</i></p>		

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## Protection Officer/Operator assessment checklist

Protection Officer/Operator's name:		<b>Yes</b> <i>(Tick if Yes)</i>
This document is still current at the time of its application? (up to 12 months from the document 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 hold WATWS accreditation.		
<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	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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## Worksite Protection Pre-work Briefing

Briefing date:

### Protection Officer Details

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>Rail traffic</b>	Lookout Working using ATWS Workers must remain within worksite limits. Workers must be within 50m of a warning device	Protection Officer/Operator
<b>Two-way 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

**Safe Work Instruction**

**ATWS Worksite Protection for Sulphide Junction routine network maintenance activities**



**Workplace Supervisor Details**

name  contact No.  
 Emergency assembly point:  SWMS/SWI Ref #:   
 First Aid kit location: **Vehicles** 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"> <li>1. have been inducted to the site</li> <li>2. are free from the effects of alcohol/drugs/fatigue</li> <li>3. hold the applicable and current Rail Safety Worker Authorisation, trade licence and/or induction record e.g. Construction Industry Induction</li> <li>4. wear the appropriate Personal Protective Equipment (PPE)</li> </ul> | <ul style="list-style-type: none"> <li>5. have been briefed on the contents of the Worksite Protection Plan</li> <li>6. have been shown the Worksite Protection Plan diagram</li> <li>7. understand the kinds and limits of worksite protection in place</li> <li>8. 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>)</li> </ul> |
|--|--|

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

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

# ATWS Worksite Protection for Sulphide Junction routine network maintenance activities

## Worksite Protection Plan – Lookout Working

### Signaller Details

	<b>Broadmeadow 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

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

7 sec	+ 3 sec	+ 10 sec	= Minimum Warning Time (MWT)	20 sec	85 km/h	473 metres	* Add an additional 5 seconds of See Time has been applied when using ATWS sensors  Note – Additional MWT calculations can be recorded in the Protection Officer's Diary.
See Time (S)	Move Time (M)	Safe Time		(S+M+10 sec = MWT)	20 sec	115 km/h	

### Dedicated Lookout

2 sec	+ 3 sec	+ 10 sec	= Minimum Warning Time (MWT)	15 sec	25 km/h	105 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 Sulphide Junction routine network maintenance activities

<b>INSTRUCTIONS:</b>	<ol style="list-style-type: none"> <li>1. Workers enter the rail corridor via access gate <b>N00 152.590 D</b>.</li> <li>2. Protection Officer conducts the pre-work briefing.</li> <li>3. Protection Officer contacts Broadmeadow 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>151.324 KM</b> on the <b>Down Main North line</b>.</li> <li>6. Install /calibrate/verify Up ATWS sensor at <b>154.270 KM</b> on the <b>Up Main North line</b>.</li> <li>7. Test ATWS equipment.</li> <li>8. Clip and lock 163 points to prevent rail traffic entry into the worksite.</li> <li>9. Place dedicated Lookout.</li> <li>10. Workers start work.</li> <li>11. Once work is completed, workers move into a safe place.</li> <li>12. Turn off ATWS Warning unit.</li> <li>13. Turn off and remove all ATWS transmitter units.</li> <li>14. All workers egress the rail corridor via access gate <b>N00 152.590 D</b>.</li> <li>15. Protection Officer contacts the Signaller at Broadmeadow Panel to end ATWS.</li> </ol>
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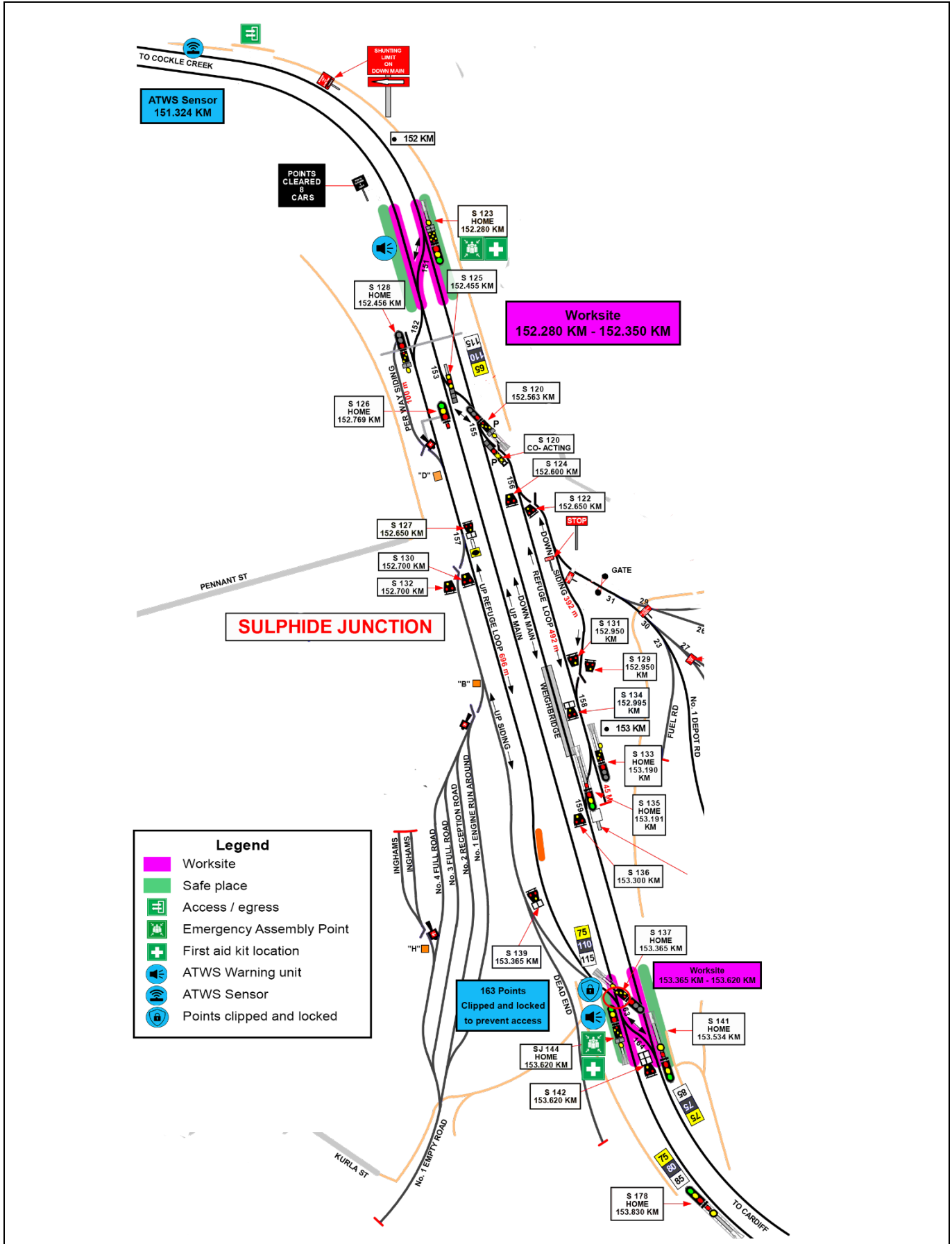
<b>ADDITIONAL DETAILS</b>	<p><u>ATWS Sensor plate test calibration</u></p> <p>Whilst performing the plate test calibration, make sure to look for rail traffic approach.</p> <p>Unsignalled rail traffic movements may occur on any line from any direction.</p> <p>Dedicated Lookouts must remain within sighting and hearing of workers whilst watching for unsignalled rail traffic approach.</p>
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**Setup checklist for ATWS worksite warning unit on the Main North line at 152.280 KM**

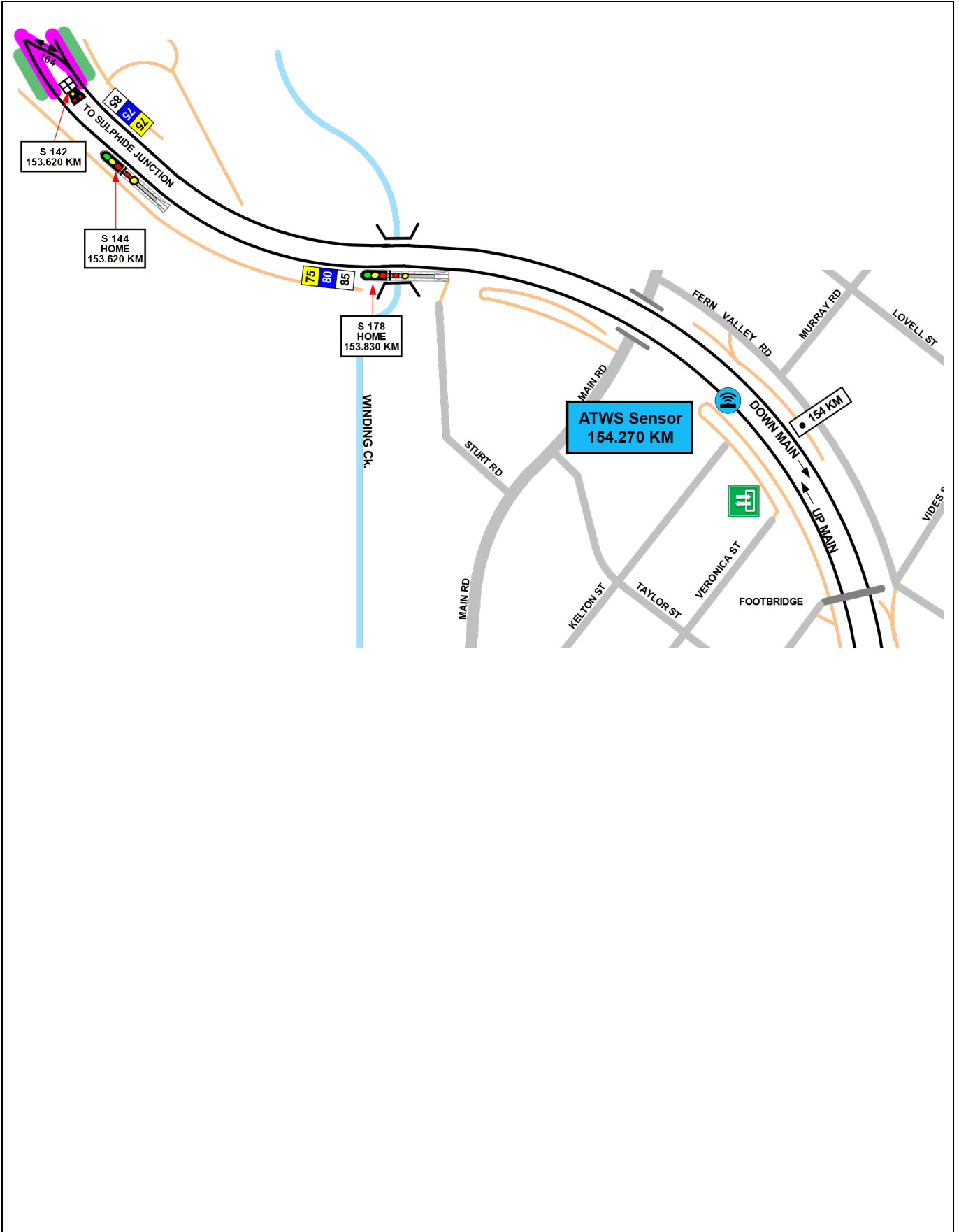
Installer name		
Step	Task Description	Installer Initials
1	Verify Worksite Start Location with Kilometres	
2	Confirm Audible Level	
3	Confirm and Set Radio Channel for Warning Unit	
4	Book in ATWS sensor 1	
5	Book in ATWS sensor 2	
6	Perform Worksite Warning Test with all ATWS sensors	
7	Ensure the 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 Sulphide Junction routine network maintenance activities

Diagram



# ATWS Worksite Protection for Sulphide Junction routine network maintenance activities







# ATWS Worksite Protection for Sulphide Junction routine network maintenance activities

*(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 North line at 154.270 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 N00 154.414 U

# ATWS Worksite Protection for Sulphide Junction routine network maintenance activities

*(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 North line at 151.324 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 N00 151.512 D