

ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance

DOCUMENT NO.	D2024/1824
WORK DESCRIPTION	Routine Maintenance activities - Condition monitoring equipment maintenance
WPP Number	CMO13BWS 10002
SCOPE:	<p>Routine maintenance activities performed by Condition Monitoring Operations team.</p> <ul style="list-style-type: none"> on the Up Main and Down Main, Down Relief North lines between 16.951km to 17.019km 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:	<p>Protection Officer, ATWS Operator (Operator) & ATWS Installer (Installer):</p> <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 North line at 16.292 km Installed ATWS sensors on the Down Relief North line at 16.292 km Installed ATWS sensors on the Up Main North line at 18.059 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 sensors
FURTHER INFORMATION:	<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> <ul style="list-style-type: none"> NLA 300 Strathfield to Hornsby.

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 & Transmitter	6
Device Frame	Protective Frame	3
F500-AB Junction Box	Receiver Device	3
F500-SEN Train Sensor	Sensor	3
Housing for Aerial	Housing for Telescopic Aerial	3
KF5-5 Extension Cable	Extension Cable (5m) for F500-SEN to F500-AB	1
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'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.

ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance



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
Crossing live lines	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
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 and agree a safe path.	All
Approaching rail traffic	All points of entry have been validated and ATWS safety measures (sensors and point 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 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 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
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 and the worksite. Potential stopping points: Up – RS 22 N signal Down – Rhodes platforms 2 & 3, RS 17 HOME signal, RS 18 signal, RS 19 HOME signal	PO
Adjacent live lines	Remain within the tracks being protected by the ATWS	PO
Unsignalled movements in Yard limits	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
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 and 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
Obstructions to safe place	Agree on paths to reach designated safe places from the worksite.	PO
Electrical storms	Stop work immediately	All

ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance



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

Worksite Protection Plan – Lookout Working

Signaller details

Protection Officer details

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

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

<input type="text" value="7 sec"/>	+	<input type="text" value="3 sec"/>	+	<input type="text" value="10 sec"/>	=	Minimum Warning Time (MWT)	<input type="text" value="20 sec"/>	<input type="text" value="115 km/h"/>	<input type="text" value="639 metres"/>	Identify Line Up Main
<input type="text" value="7 sec"/>	+	<input type="text" value="3 sec"/>	+	<input type="text" value="10 sec"/>			<input type="text" value="20 sec"/>	<input type="text" value="115 km/h"/>	<input type="text" value="639 metres"/>	Identify Line Down Main
See Time (S)		Move Time (M)		Safe Time		(S+M+10 sec = MWT)		Track speed	Minimum Sighting Distance as calculated	

Dedicated Lookout

<input type="text" value="2 sec"/>	+	<input type="text" value="3 sec"/>	+	<input type="text" value="10 sec"/>	=	Minimum Warning Time (MWT)	<input type="text" value="15 sec"/>	<input type="text" value="25 km/h"/>	<input type="text" value="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 ATWS Operator, Lookouts and workers?

Lookouts:

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:

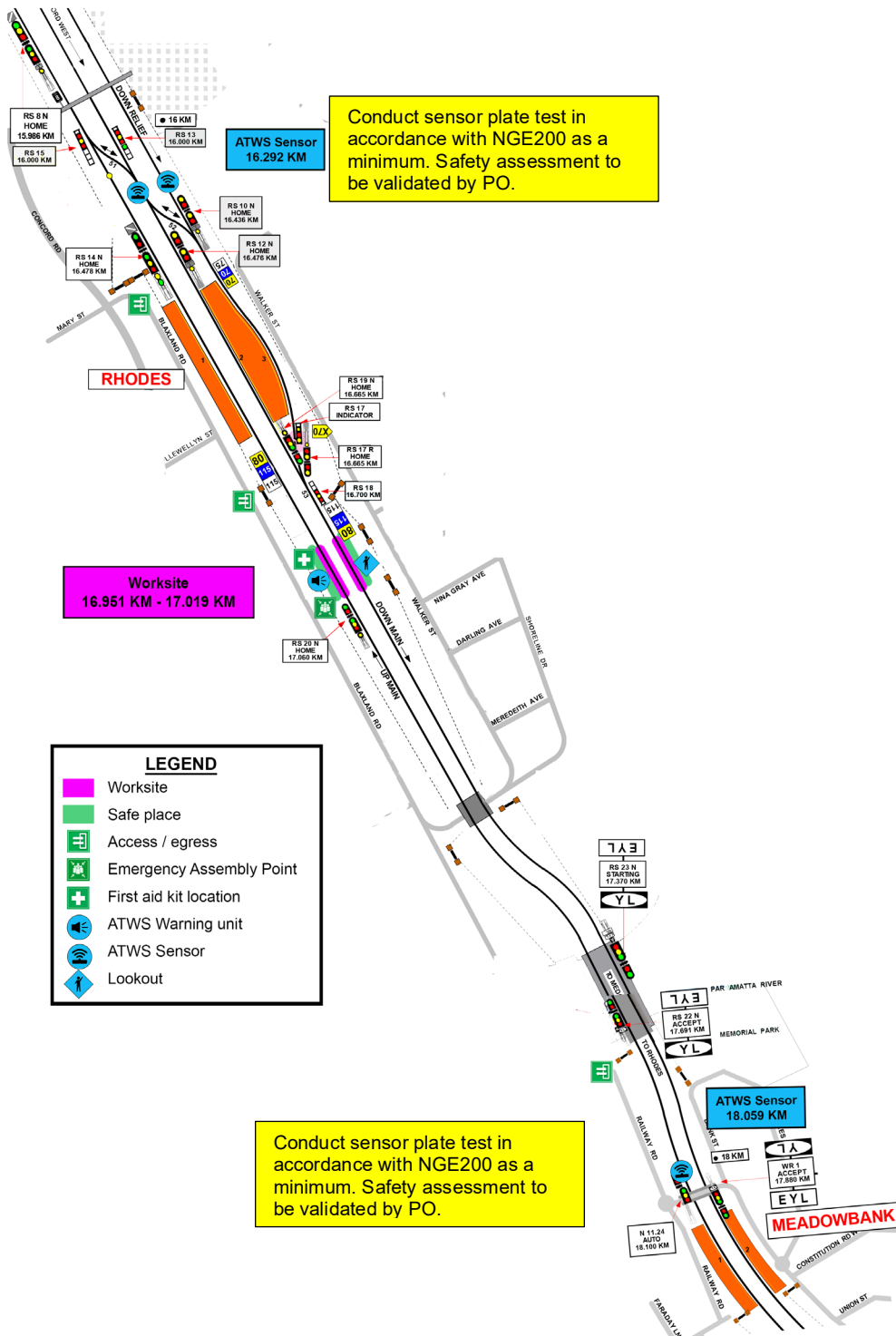
Record any potential stopping points e.g. (stations or signals) between the sensor(s) and worksite which could cause variable warning times:

Up - RS 22 N signal
Down - Rhodes platforms 2 & 3, RS 17 HOME signal, RS 18 signal, RS 19 HOME signal

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

ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance

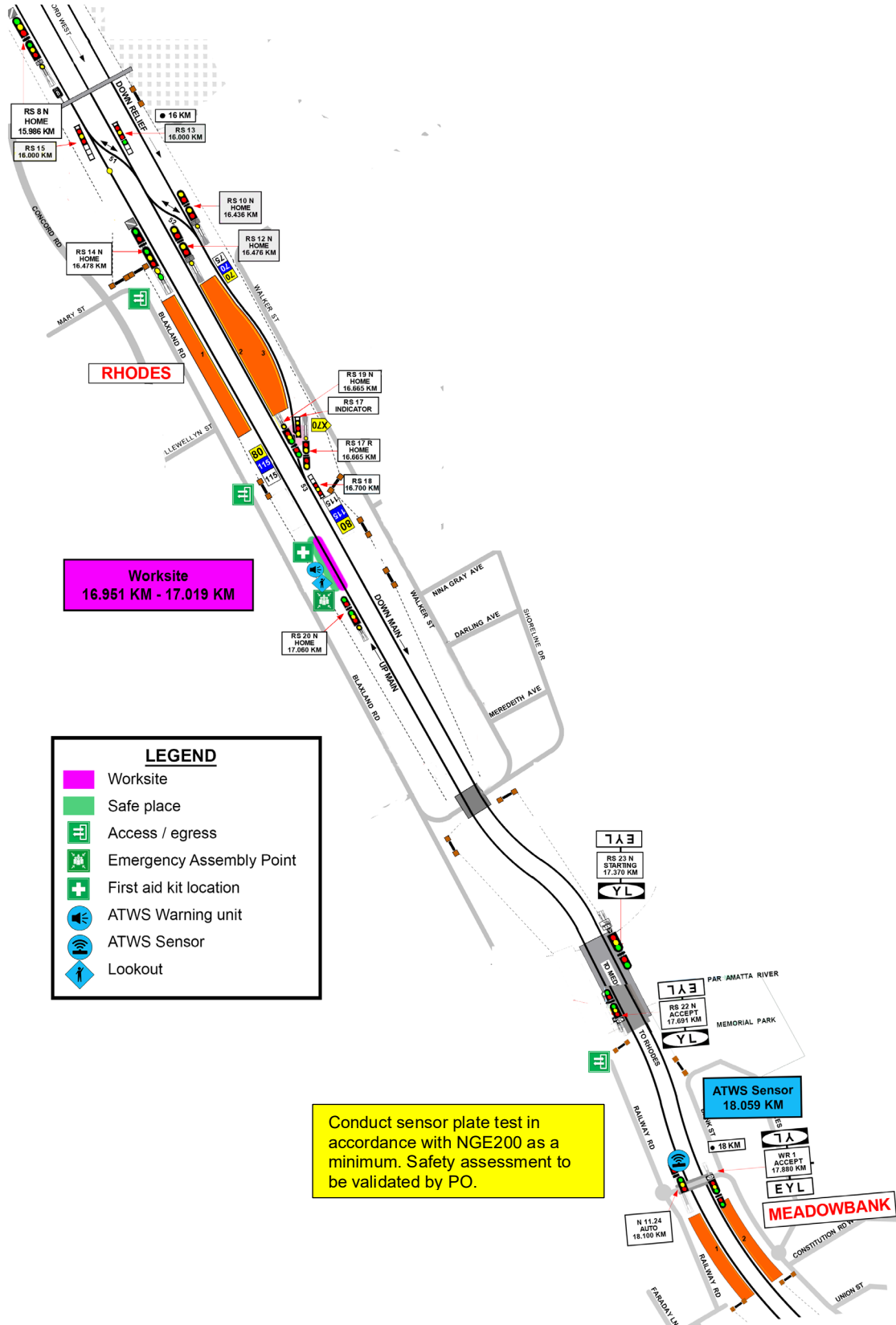
Tick if used Worksite on Up & Down Main lines



ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance

Tick if used

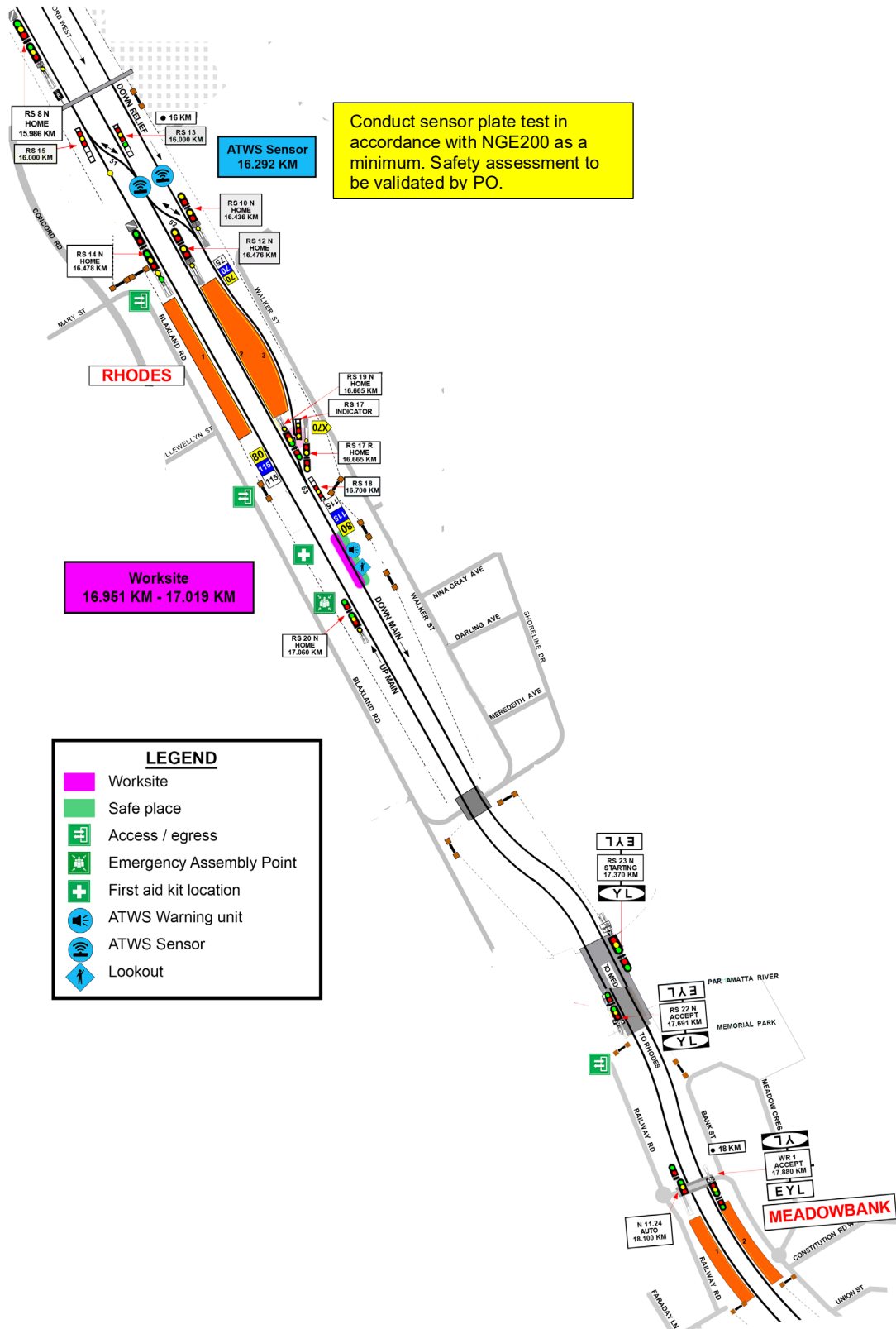
Worksite on Up Main line



ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance

Tick if used

Worksite on Down Main line



Conduct sensor plate test in accordance with NGE200 as a minimum. Safety assessment to be validated by PO.

Worksite
16.951 KM - 17.019 KM

LEGEND

- Worksite
- Safe place
- Access / egress
- Emergency Assembly Point
- First aid kit location
- ATWS Warning unit
- ATWS Sensor
- Lookout

ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance

INSTRUCTIONS:	<ol style="list-style-type: none"> Workers enter the rail corridor via access gate N00 16.795 U. Use assets to validate worksite location on Up Main and Down Main, Down Relief North lines between 16.951km to 17.019km Conduct WP Pre-work briefing to set-up ATWS. Tell Signaller at Epping Panel about the use of lookout working with ATWS.
Tick if used <input type="checkbox"/>	<ol style="list-style-type: none"> Access Up Cess 18.059 km, verify sensor label & connect to sensor cable, calibrate with test plate, connect and turn on the transmitter.
Tick if used <input type="checkbox"/>	<ol style="list-style-type: none"> Access Dn Cess 16.292 km, verify sensor label, connect to sensor cable, calibrate with test plate, connect and turn on transmitter.
	<ol style="list-style-type: none"> 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). Record first rail traffic movement test for each sensor on ATWS Check-sheet. Conduct WP Pre-work briefing for lookout working with ATWS and confirm workers have seen and heard the warning. Start work when advised by the PO, and move to the designated safe place when warned. When work is complete, and workers and equipment are in a safe place, turn off and pack up warning unit
Tick if used <input type="checkbox"/>	<ol style="list-style-type: none"> Access Up Cess to turn off and pack up transmitter unit(s).
Tick if used <input type="checkbox"/>	<ol style="list-style-type: none"> Access Dn Cess to turn off and pack up transmitter unit(s).
	<ol style="list-style-type: none"> Access Up Cess for all workers to leave the rail corridor via access gate N00 16.795 U. Tell Signaller at Epping Panel when work is completed and the workers and their equipment are clear of the Danger Zone.

Tick if used <input type="checkbox"/>	Position of ATWS transmitter and sensor on Down Main, Down Relief North line at 16.292 km
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Image 1: Transmitter and sensor installation location



Image 2: Sensor access gate **N00 16.482 U**

Tick if used <input type="checkbox"/>	Position of ATWS transmitter and sensor on Up Main North line at 18.059 km
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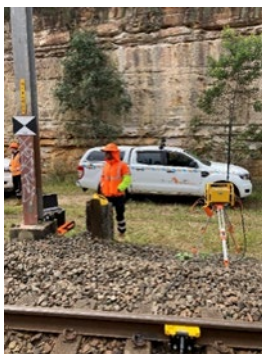


Image 1: Transmitter and sensor installation location



Image 2: Sensor access using access gate **N00 17.748 U**

ATWS Worksite Protection for Rhodes Condition and Monitoring Equipment Maintenance

(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	Book in ATWS sensor 3	
7	Perform Worksite Warning Test with all ATWS sensor	
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 & remove key	