

ATWS Worksite Protection for Engadine condition and monitoring equipment maintenance

DOCUMENT NO.	D2024/10985
WORK DESCRIPTION	Routine Maintenance activities
WPP Number	CMO8BWS 10119
SCOPE:	<p>Routine maintenance activities performed by Conditions Monitoring Operations team.</p> <ul style="list-style-type: none"> on the Up and Down Illawarra lines between 29.380 km to 29.492 km 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 <p>Dedicated Lookout: (PO) Level 1 - 4, or Handsignaller 1 - 2</p>
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 ATWS sensor for Up direction running on the Up Illawarra line at 30.444 km ATWS sensor for Down direction running on the Down Illawarra line at 28.741 km Dedicated lookout(s) at the worksite for unsignalled movements. <p>IMPORTANT!</p> <ul style="list-style-type: none"> This document must not 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 410 Sutherland - Wollongong

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	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	2
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's name:		Yes (Tick if yes)
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.

Safe Work Instruction

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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: Lookout Working (ATWS) 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	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 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 always remain within sight and hearing of warning unit. 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.	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

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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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Worksite Protection Plan – Lookout Working

Signaller details

Sutherland Panel **02 8568 3454**

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 Illawarra line** ☐
 between **19.2 Auto Signal** and **17.4 Auto Signal**
 On the **Down Illawarra line** ☐
 between **17.5 Auto Signal** and **19.1 Auto Signal**

Worksite Assessment

Has the Lookout Working Prohibited Locations Register been consulted? Yes ☐

Warning method

ATWS

Minimum Warning Time Calculations

Maximum track speed **115 km/h**

Number of ATWS Sensors used **1/2** Position of ATWS Sensors **28.741 km** and **30.444 km**

Number of dedicated Lookouts used **1** Position of Lookouts **29.482 km** To **29.520 km**

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

<input type="text"/> 7 sec	+	<input type="text"/> 3 sec	+	<input type="text"/> 10 sec	= Minimum Warning Time (MWT)	<input type="text"/> 20 sec	<input type="text"/> 115 km/h	<input type="text"/> 639 metres	<input type="text"/> Up Illawarra line
<input type="text"/> 7 sec	+	<input type="text"/> 3 sec	+	<input type="text"/> 10 sec	$(S+M+10 \text{ sec} = \text{MWT})$	<input type="text"/> 20 sec	<input type="text"/> 115 km/h	<input type="text"/> 639 metres	<input type="text"/> Down Illawarra line
<small>See Time (S)</small>		<small>Move Time (M)</small>		<small>Safe Time</small>			<small>Track speed</small>	<small>Minimum Sighting Distance as calculated</small>	

Dedicated Lookout

<input type="text"/> 2 sec	+	<input type="text"/> 3 sec	+	<input type="text"/> 10 sec	= Minimum Warning Time (MWT)	<input type="text"/> 15 sec	<input type="text"/> 25 km/h	<input type="text"/> 105 metres
<small>See Time (S)</small>		<small>Move Time (M)</small>		<small>Safe Time</small>	$(S+M+10 \text{ sec} = \text{MWT})$		<small>Track speed</small>	<small>Minimum Sighting Distance as calculated</small>

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

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

Workers: **Up Cess for Up Main. Down Cess for Down Main.**

Confirm mandatory first train tests were completed for all sensors Yes ☐

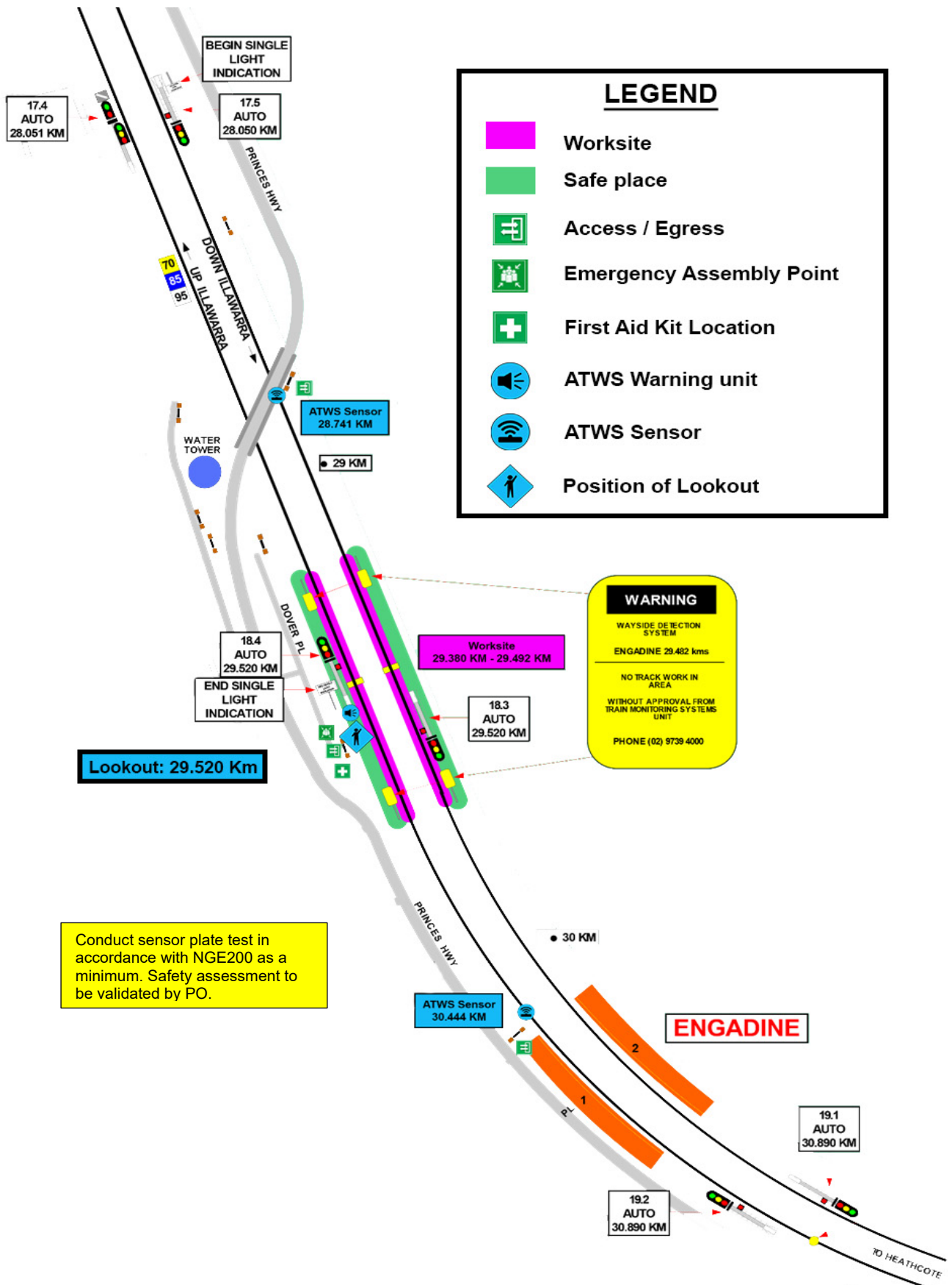
Ensure the workers have been briefed about these work details Yes ☐

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

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Tick if used ☐

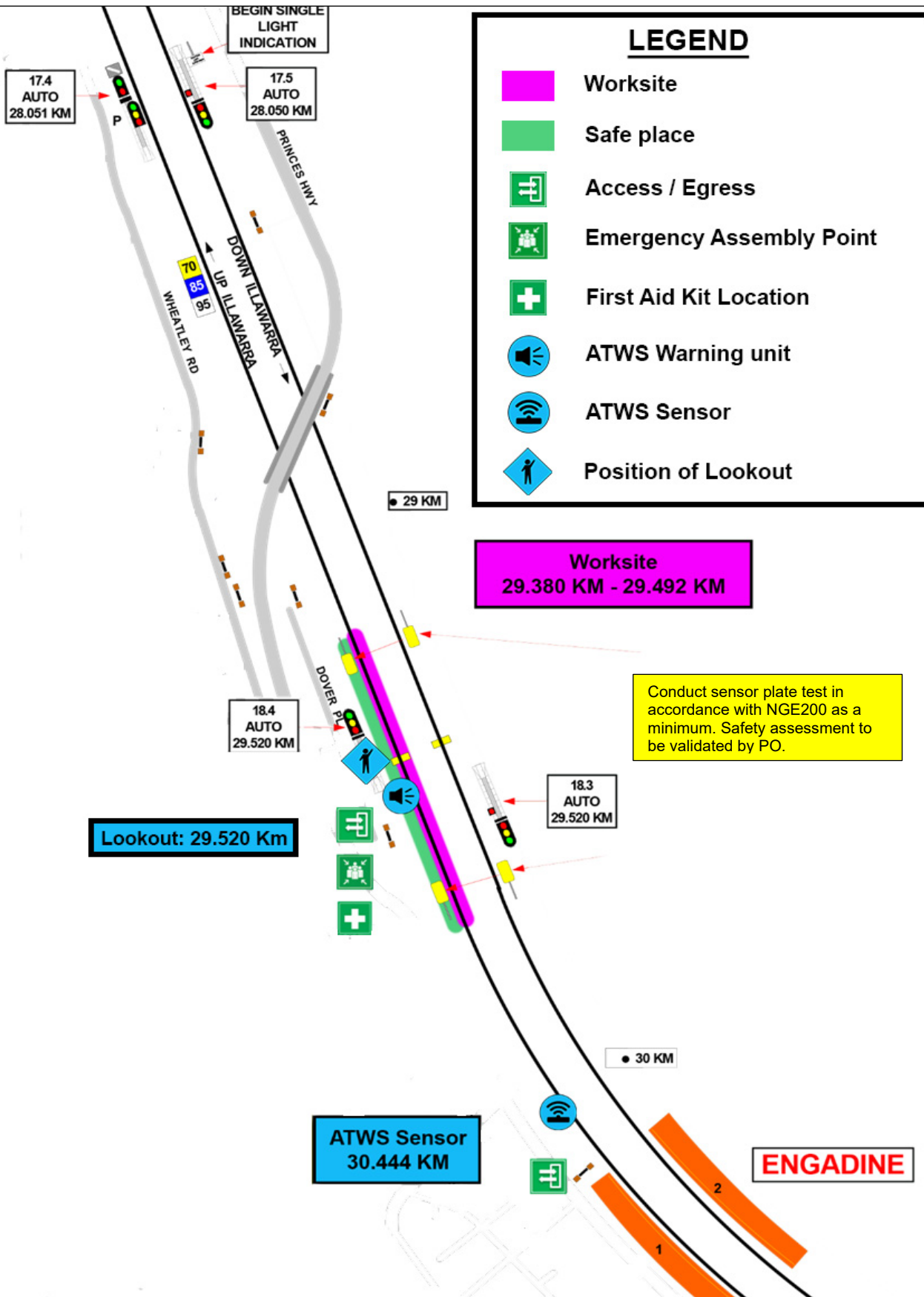
Worksite on Up & Down Illawarra lines



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Tick if used ☐

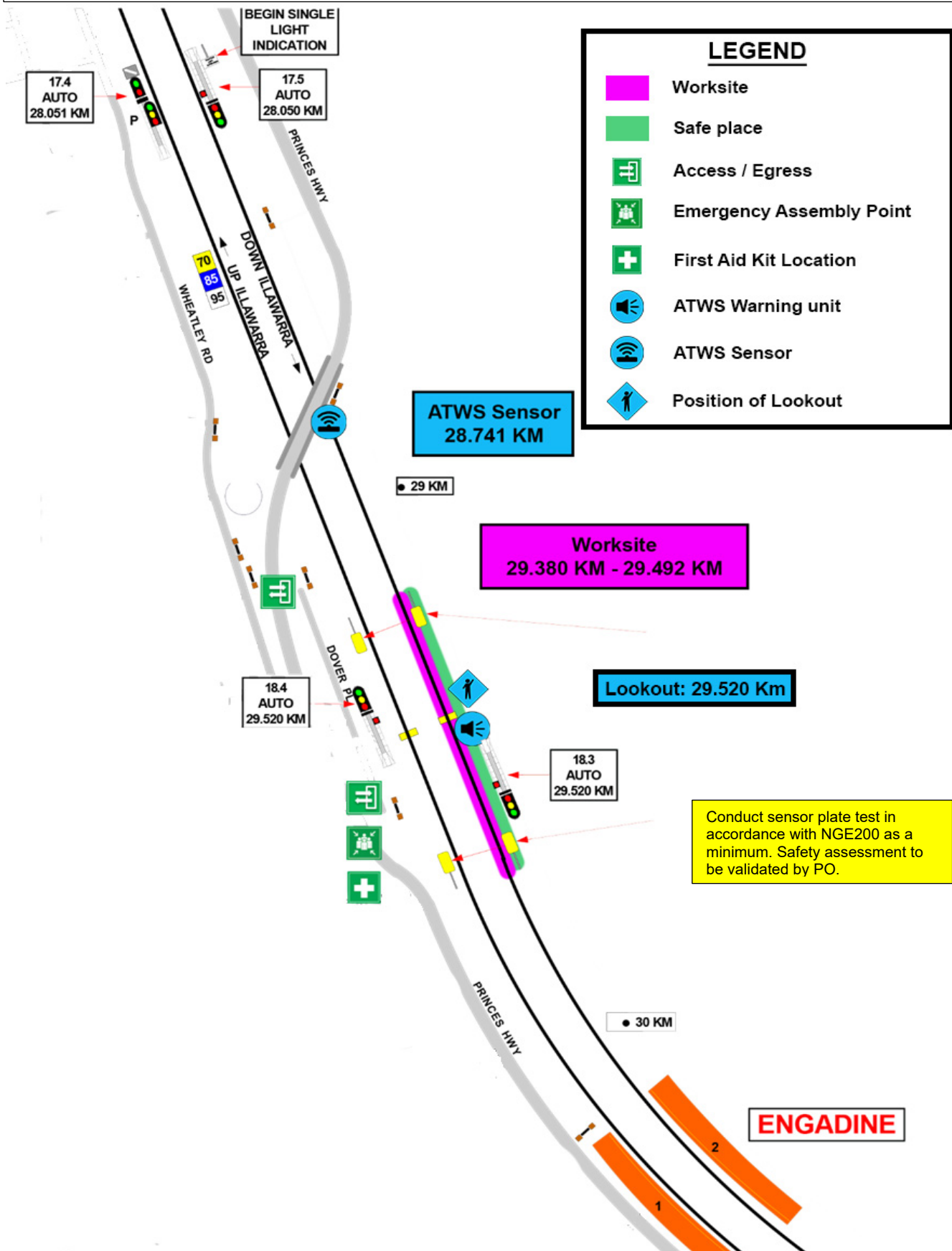
Worksite on the Up Illawarra line



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Tick if used ☐

Worksite on the Down Illawarra line



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INSTRUCTIONS:	<ol style="list-style-type: none"> Workers enter the rail corridor via access gate 100 29.443 U. Use assets to validate worksite location on Up Illawarra and Down Illawarra lines between 29.380 Km to 29.492 Km Conduct WP Pre-work briefing to set-up ATWS. Tell Signaller at Sutherland Panel about the use of lookout working with ATWS.
Tick if used <input type="checkbox"/>	<ol style="list-style-type: none"> Access Up Cess 30.444 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 Down Cess 28.741 Km, verify sensor label, connect to sensor cable, calibrate with test plate, connect & 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 Up 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 100 29.443 U Tell Signaller at Sutherland Panel when work is completed, and the workers and their equipment are clear of the Danger Zone.

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Tick if used ☐

Position of ATWS transmitter and sensor on Down Illawarra line at 28.741 KM



Image 1: Transmitter and sensor installation location



Image 2: Sensor access using access gate 100 28.985 U

Tick if used ☐

Position of ATWS transmitter and sensor on Up Illawarra line at 30.444 KM



Image 3: Transmitter and sensor installation location



Image 4: Sensor access using access gate 100 30.475 U



Protection Officer's diary

[illegible]

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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 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	
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	

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	