Safe Work Instruction

ATWS Worksite Protection for Eraring routine network maintenance activities

DOCUMENT NO.	D2022/10060		
WORK DESCRIPTION	Routine network maintenance activities		
WPP Number	**CC11BWS 10001**	**SAP Code**	**RWPP1015**
SCOPE:	This SWI is applicable for the worksite protection arrangements using ATWS for routine network maintenance activities performed by the Central Coast Territory maintenance teams. Work activities include: • Points and Signals maintenance inspections • Track maintenance inspections • Overhead wiring maintenance inspections • Revised compliance date inspections • Maintenance activities in line with NWT310 Lookout Working		
AUTHORISATIONS:	**Protection Officer/Operator:** • Protection Officer Level 1 or higher, and • WATWS – Automatic Track Warning System **Installer:** • Protection Officer Level 1 or higher, and • WATWS – Automatic Track Warning System		
SAFETY CONTROLS – Lookout Working (ATWS) arrangements:	The work is performed at a defined worksite in yard limits, protected using Lookout Working arrangements with Automatic Track Warning System (ATWS) equipment: • Installed ATWS sensors for Down direction running on the **Down Main North** at **132.099 KM** • Installed ATWS sensors for Up direction running on the on **Up Main North** at **133.330 KM**		
PRESTART REQUIREMENTS:	Protection Officer/Operator assessment checklist must be completed before instructions in this SWI are followed. Tools and equipment required: • Protection Officer/Operator requires a phone to contact the Signaller. • ATWS equipment (see Required ATWS equipment checklist) • Digital Radios		
FURTHER INFORMATION:	*NWT 300 Planning work in the Rail Corridor* *NWT 310 Lookout Working* *NGE 200 Walking in the Danger Zone* *NPR 711 Using Lookouts* *NPR 751 Calculating Minimum Warning Time* *NPR 712 Protecting work from rail traffic on adjacent lines* *NPR 752 Using Wireless Automatic Warning Systems* *Lookout Working Prohibited Locations Register* *NLA 314 Gosford - Broadmeadow*		

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Protection Officer/Operator assessment checklist	
Protection Officer/Operator's name:	**Yes** *(Tick if Yes)*
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: • 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	
The Protection Officer and Qualified Workers deploying the ATWS equipment and protecting the worksite hold WATWS accreditation.	

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.

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

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**
Rail traffic	Lookout Working using ATWS Workers must remain within worksite limits. Workers must be within 50m of a warning device	Protection Officer/Operator
Two-way running	ATWS sensors placed for all entry points into the worksite	Protection Officer/Operator
Unsignalled rail traffic movements	Dedicated Lookouts placed watching for unsignalled movements in both directions	Lookout
Miscount of multiple train warnings	Protection Officer/Operator must call out to workers the: • number of train warnings, and • clearing of each train warning. 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
Electric shock	Operators must make sure ATWS antennae length does not breach Safe Approach Distance (SAD) to overhead wiring.	All
Mobile phone	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
Digital radios	Digital radios only to be used in a safe place. GRN radios must not be used.	All
Obstructions or uneven surfaces in the exit path to a safe place	Before commencing work, a route to the safe place is to be agreed upon taking obstructions and uneven surfaces into consideration.	Workplace Supervisor
Exposure to excessive noise	Workers must not stand directly in front of audible warning devices.	All
Slips, trips, falls and hazards carrying ATWS equipment	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

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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:

1. have been inducted to the site
2. are free from the effects of alcohol/drugs/fatigue
3. hold the applicable and current Rail Safety Worker Authorisation, trade licence and/or induction record e.g. Construction Industry Induction
4. wear the appropriate Personal Protective Equipment (PPE)
5. have been briefed on the contents of the Worksite Protection Plan
6. have been shown the Worksite Protection Plan diagram
7. understand the kinds and limits of worksite protection in place
8. have been briefed about any new hazards and controls identified during the final site inspection (*final site inspection must be conducted immediately before commencing work*)

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

- ☐ have been informed of the requirements of the electrical permit (if required)
- ☐ have been briefed on the SWMS/SWIs/documented safe work practice for the job
- ☐ have been instructed in the controls recorded in this document and SWMS/SWIs
- ☐ have been made aware of any hazardous materials/substances on site
- ☐ have been briefed on Safety Data Sheets (SDS)
- ☐ have been briefed on the WHS Management plan
- ☐ 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

	Broadmeadow Panel	**9851 7401**

Protection Officer Details

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

Workplace Supervisor details:

Type of work:

Worksite Location

On the	**Up Main North Line**		
between	**E8 Home Signal**	**and**	**88.80 Auto Signal**
On the	**Down Main North Line**		
between	**E1 Accept Signal**	**and**	**A1 Accept Signal**

Worksite Assessment

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

Warning method

ATWS

Minimum Warning Time Calculations

Maximum track speed: 80km/h

Number of ATWS Sensors used: 2 — Position of ATWS Sensors: 132.099 km and 133.330 km

Number of dedicated Lookouts used: 1 — Position of Lookouts: 132.622 km to 132.812 km

See Time (S)	+	Move Time (M)	+	Safe Time	= Minimum Warning Time (MWT) (S+M+10 sec = MWT)		Track speed	Minimum Sighting Distance as calculated
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

* 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.

Dedicated Lookout

See Time (S)	+	Move Time (M)	+	Safe Time	= Minimum Warning Time (MWT) (S+M+10 sec = MWT)		Track speed	Minimum Sighting Distance as calculated
2 sec	+	3 sec	+	10 sec		15 sec	25 km/h	105 metres

Where are the safe places identified for the Lookouts and the workers?

Lookouts: **Cess**

Workers: **Cess**

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.

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INSTRUCTIONS:	1. Workers enter the rail corridor at access gate **N00 137.306 U.** 2. Protection Officer conducts the worksite protection pre-work briefing. 3. Protection Officer contacts Broadmeadow Panel to tell the Signaller about the use of ATWS. 4. Setup ATWS Worksite Warning System as per installation instructions 5. Install/calibrate/verify Down ATWS sensor at **132.099 KM** on the **Down North line.** 6. Install /calibrate/verify Up ATWS sensor at **133.330 KM** on the **Up North line**. 7. Test ATWS equipment. 8. Clip and lock 52 points to prevent rail traffic entry into the worksite. 9. Place dedicated Lookout. 10. Workers start work. 11. Once work is completed, workers move into a safe place. 12. Turn off ATWS Warning unit. 13. Turn off and remove all ATWS transmitter units. 14. All workers egress the rail corridor at **N00 137.306 U.** 15. Protection Officer contacts the Signaller at Broadmeadow Panel to end ATWS.
ADDITIONAL DETAILS	ATWS Sensor plate test calibration Whilst performing the plate test calibration, make sure to look for rail traffic approach. Unsiginalled rail traffic movements may occur on any line from any direction. Dedicated Lookouts must remain within sighting and hearing of workers whilst watching for unsignalled rail traffic approach.

Setup checklist for ATWS worksite warning unit on the Main North line at 132.600 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	

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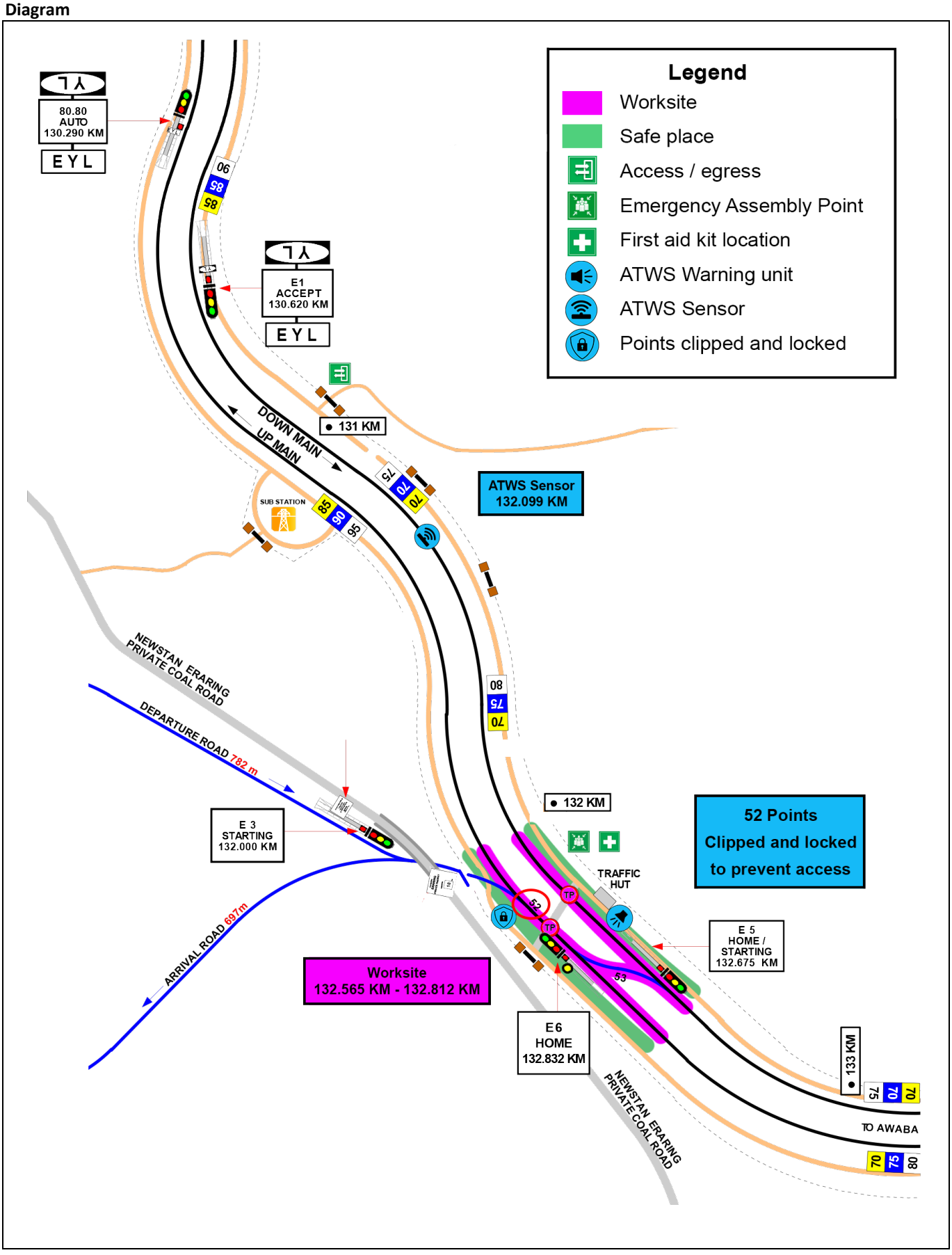
Diagram



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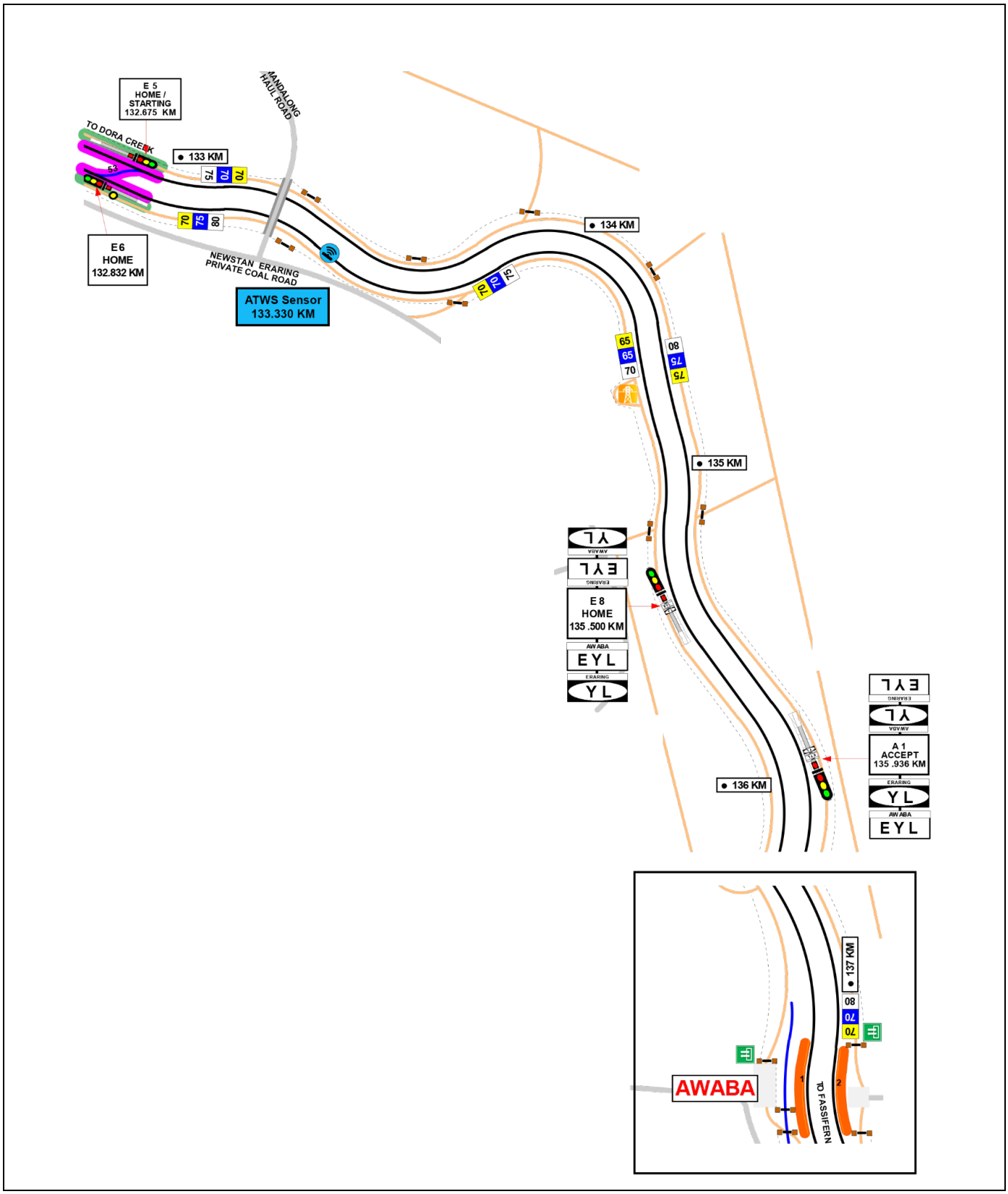

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Protection Officer Diary

Date	Time	Notes

(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 133.330 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 137.306 U**

(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 132.099 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 137.243 D**