ARTC

Division / Business Unit: Function: Document Type: Safety and Systems Track & Civil Work Instruction

Level Crossing Service Schedule

ETW-12-03

Applicability

ARTC Network Wide

Publication Requirement

Internal / External

Primary Source

Nil

Document Status

Version #	Date Reviewed	Prepared by	Endorsed	Approved
1.0	May 2025	Senior Track and Civil Standards Engineer	Principal Track Engineer	Manager Engineering Services 17/06/2025

Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
1.0	May 2025		First Issue - The service schedules list the tasks that are to be undertaken during general inspections specific to level crossing and pedestrian crossing.

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1 Introduction

1.1 Purpose

The purpose of this instruction schedule is to consolidate multiple Track and Civil Service Schedules (Ellipse Standards Jobs) into one document.

1.2 Scope

This work instruction is a listing of Track and Civil Service Schedules / Standard Jobs which cover the actions required when maintaining a specific item of equipment.

1.3 Document Owner

The Head of Engineering Standards is the Document Owner. Queries should be directed to <u>standards@artc.com.au</u> in the first instance.

1.4 Responsibilities

The Track Inspector is responsible for the completion and reporting of General Level Crossing and Pedestrian Crossing inspections in compliance with ETS-12-00 and ETS-12-01.

The Area Manager (or equivalent) is responsible for the scheduling of inspections in compliance with the TMP, supervising the inspection performance and management of defects found.

The Manager Asset Maintenance Services (or equivalent) is responsible for oversight of the inspection process and for the adequate resourcing of the Area Manager (or equivalent) with personnel, skills, tools and equipment.

1.5 Parent Document

This work instruction supports ETP-00-03 Civil Technical Maintenance Plan.

1.6 Definitions

Definitions relevant to this work instruction are defined in the parent procedure, ETP-00-03 Civil Technical Maintenance Plan

STANDARD JOB	STANDARD JOB DESCRIPTION	PAGE
LXNG01	GENERAL INSPECTION OF LEVEL CROSSINGS	5
LXNG01	GENERAL INSPECTION OF PEDESTRIAN LEVEL CROSSINGS	9

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GENERAL INSPECTION OF LEVEL CROSSINGS

ELLIPSE STANDARD JOB: LXNG01

PERSONNEL

TRACK EXAMINER & CERTIFIER

EQUIPMENT

TRACK GAUGE, A BAR TO CLEAN OUT FLANGES, 1M STRAIGHT EDGE, STEEL RULER, SPARE STOP/GIVEWAY SIGN

PREPARATION

- 1. OBTAIN LIST OF CURRENT DEFECTS
- 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 3. PERFORM PRE-WORK SAFETY BRIEF
- 4. FOR ACTIVE LEVEL CROSSING, CO-ORDINATING THIS TASK WITH SIGNALS TEAM MAY SAVE TIME AND IMPROVE OUTCOMES
- 5. RECOGNIZE TYPE OF LEVEL CROSSINGS AND RAIL/ROAD MAINTENANCE INTERFACE RESPONSIBILITIES BASED ON THE INDIVIDUAL STATE REQUIREMENTS

COMMENCE WORK

GENERAL TASKS

- 6. INSPECT FOR DAMAGED, LOOSE, MISSING, OR BROKEN COMPONENTS
- 7. CHECK TRACK GEOMETRY INCLUDING VERTICAL ALIGNMENT AND APPROACH INTO LEVEL CROSSINGS, MEASURE ANY SUSPECTED FAULTS
- 8. CHECK AND RECORD ANY MISSING OR INEFFECTIVE SLEEPERS AND FASTENINGS (WHERE VISIBLE). LOOK FOR INDICATORS OF SIGNS OF BACK CANTING (WHERE THE RAIL IS TILTED TO THE FIELD SIDE)
- 9. CHECK AND RECORD BALLAST CONDITION, FOULING AND PROFILE
- 10. CHECK FLANGEWAYS FOR OBSTRUCTIONS AND CLEAN OUT IF POSSIBLE

CIVIL TASKS

- 11. MEASURE AND RECORD ANY CURRENT DEFECTS AND UPDATE CONDITION
- 12. LOOK FOR SIGNS OF GAUGE WIDENING OR TIGHTENING, MEASURE AND RECORD ANY SUSPECTED FAULTS
- 13. CHECK AND RECORD CONDITION OF RAILS. LOOK FOR RCF, SHELLING, SQUATS, WHEEL BURNS, RAIL FLOW, CORROSION AND MECHANICAL DAMAGE ETC.

NOTE: IF THERE IS EVIDENCE OF RAIL CORROSION THEN THOROUGH INVESTIGATION OF THE RAIL WEB AND FOOT NEEDS TO BE UNDERTAKEN

- 14. LOOK FOR EVIDENCE OF MUD HOLE OR PUMPING OF THE CROSSING. CHECK TO ENSURE DRAINAGE PATH IS CLEAR AND DIVERTS WATER AWAY FROM TRACK AND RECORD IF DRAINAGE SYSTEM (CESS DRAIN, CROSS DRAIN, SUBSURFACE PIPES OR CUVERTS) IS BLOCKED/INEFFECTIVE
- 15. INSPECT FLANGEWAY WIDTH AND DEPTH THROUGH THE CROSSING . IF VISUAL ASSESSMENT IDENTIFIES INCONSISTENCY WITH FLANGEWAY WIDTH AND DEPTH THEN MEASURE AND RECORD THE WIDEST, NARROWEST AND SHALLOWEST LOCATION IDENTIFIED (IF UNSURE MEASURE EVERY 2M ENSURING ADEQUATE SAFETY PROTOCOLS HAVE BEEN IMPLEMENTED FOR E.G. TRAFFIC MANAGEMENT). LOOK FOR EVIDENCE OF WHEEL FLANGE CONTACT WITH CROSSING SURFACE

GENERAL INSPECTION OF LEVEL CROSSINGS

ELLIPSE STANDARD JOB: LXNG01

PARALLEL TO RAIL RUNNING FACE AND WHEEL FLANGE CONTACT WITH CROSSING SURFACE IN THE FLANGEWAY ON IN-SITU CONCRETE SURFACE, BITUMEN SURFACE, MODULAR SURFACE

NOTE: FLANGEWAY DEPTH MEASUREMENT IS MAINLY CRITICAL FOR IN-SITU CONCRETE SURFACE, BITUMEN SURFACE, MODULAR SURFACE. RESPONSE TO ANY ISSUES IDENTIFIED WITH FLANGEWAY CLEARANCE SHOULD BE CONSIDERED BASED ON SITE CONDITION (USAGE, TYPE OF CROSSING SURFACE, WHEEL FLANGE CONTACT ETC.). FOR E.G IF THE LEVEL CROSSING IS USED FOR PEDESTRIAN ACCESS, MEASURES SHOULD BE TAKEN TO PRIORITISE REPAIR. IF THE LEVEL CROSSING FLANGEWAY CONTAINS OBSTRUCTIONS SUCH AS DIRT, BALLAST, GREASE DEPOSIT ETC. CHECK OBSTRUCTION AND CLEAN OUT IF POSSIBLE

NOTE: FOR CROSSINGS USING GAP FILLER PRODUCTS (OR SIMILAR) THE MINIMUM FLANGE GAP MAY NOT APPLY

- 16. CHECK THE LEVEL OF TOP OF CROSSING SURFACE RELATIVE TO RAIL LEVEL (100MM FROM BACK OF FIELD SIDE OF RAIL). MEASURE AND RECORD IF THE VISUAL INSPECTION IDENTIFIES DIFFERENCE IN RAIL LEVEL AND TOP OF CROSSING SURFACE
- 17. CHECK AND RECORD FOR SIGNS OF WHEEL TREAD CONTACT WITH CROSSING SURFACE

SEALED/ UNSEALED CROSSING SURFACE TASK (WHERE APPLICABLE)

- 18. FOR SEALED CROSSING SURFACE, LOOK FOR POTHOLES LIFTING TIMBER (IF APPLICABLE) OR OTHER INEFFECTIVE COMPONENTS. MEASURE AND RECORD DEFORMATION DEPTH IF VISUAL INSPECTION IDENTIFIES DAMAGE TO THE CROSSING SURFACE USING A 1M STRAIGHT EDGE AND STEEL RULER
- 19. FOR UNSEALED CROSSING SURFACE, CHECK FOR DISPLACEMENT OF LOOSE MATERIALS EXPOSING RAIL HEAD TO ROAD USERS

NOTE: ANY OBSERVATIONS OUTSIDE ARTC MAINTENANCE RESPONSIBILITY – RECORD AND NOTIFY ROAD AUTHORITY

MODULAR CROSSING SURFACE TASKS (WHERE APPLICABLE)

- 20. CHECK FOR PANEL DAMAGE, CRACKS, OR ANY MOVEMENTS (LATERAL AND VERTICAL) ALONG THE TRACK(S)
- 21. MEASURE AND RECORD MODULAR PANEL GAPS AT LOCATIONS IDENTIFIED BY VISUAL INSPECTION (APPLIES ONLY FOR MULTIPLE PANELS)
- 22. CHECK THE CONDITION OF FASTENING SYSTEM

IF THE ROAD CROSSES MULTIPLE TRACKS, START WITH TRACK FURTHEST TO THE DOWN/LEFT, REPEAT STEP 6 TO STEP 23 FOR EACH TRACK TO THE UP/RIGHT. INSPECT THE ROAD SURFACE CONDITION BETWEEN THE ADJACENT RAILS OF THE 2 TRACKS AND CHECK THE LEVEL CROSSING SURFACE IS COPLANAR BETWEEN EACH ADJACENT PAIR OF RAILS, CONTINUE WITH THE NEXT TRACK UNTIL THE LAST CROSSING

23. CHECK AND RECORD FOR DRAG MARKS OR INDICATIONS OF ROAD VEHICLES BOTTOMING OUT ON THE APPROACH AND CROSSING SURFACE. FOR ANY ISSUES IDENTIFIED ON APPROACH ROAD SURFACES CONTACT ENGINEERING TEAM FOR FURTHER ASSESSMENT

GENERAL INSPECTION OF LEVEL CROSSINGS

ELLIPSE STANDARD JOB: LXNG01

BARRIERS/FENCES TASK (REPEAT FOR DOWN/LEFT AND UP/RIGHT) (WHERE APPLICABLE)

- 24. CHECK AND RECORD ANY DAMAGE TO EXISTING ROAD BARRIER(S)/ FENCE(S) AT OR AROUND LX, ADVICE ROAD AUTHORITY FOR BARRIERS/ FENCES OUTSIDE ARTC MAINTENANCE RESPONSIBILITY
- 25. LOOKOUT AND REPORT NON-FRANGIBLE MATERIALS USED FOR ARTC BARRIER /FENCING/ SIGNS WITHIN 5M OF THE EDGE OF THE ROAD (E.G. RAIL USED AS POST)

ROAD MARKING TASK (REPEAT FOR DOWN/LEFT AND UP/RIGHT) (WHERE APPLICABLE)

26. CHECK AND RECORD FOR FADED ROAD MARKINGS (E.G. STOP LINE, GIVEWAY LINE). ANY OBSERVATIONS OUTSIDE ARTC MAINTENANCE RESPONSIBILITY – RECORD AND NOTIFY ROAD AUTHORITY

NOTE: NOT APPLICABLE TO UNSEALED ROAD APPROACHES

SIGNS TASK (REPEAT FOR DOWN/LEFT AND UP/RIGHT)

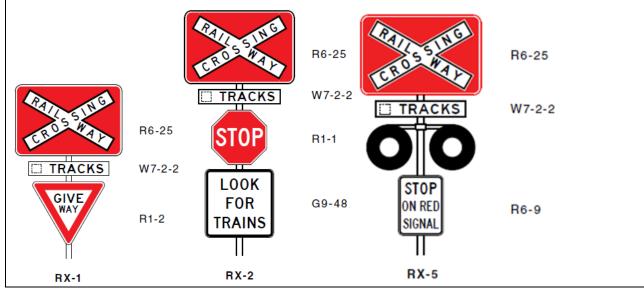
- 27. CHECK FOR OBSTRUCTIONS TO SIGNS (E.G. STOP/GIVE WAY) TO ROAD USERS. REMOVE OBSTRUCTION IF WITHIN ARTC MAINTENANCE RESPONSIBILITY, INFORM ROAD AUTHORITY OTHERWISE.
- 28. CHECK CONDITION AND EFFECTIVENESS OF SIGNS AT THE LEVEL CROSSING AND RECORD ANY FADED, DEFACED OR MISSING SIGNS. LOOK FOR DAMAGED OR MISSING RX ASSEMBLY PARTS

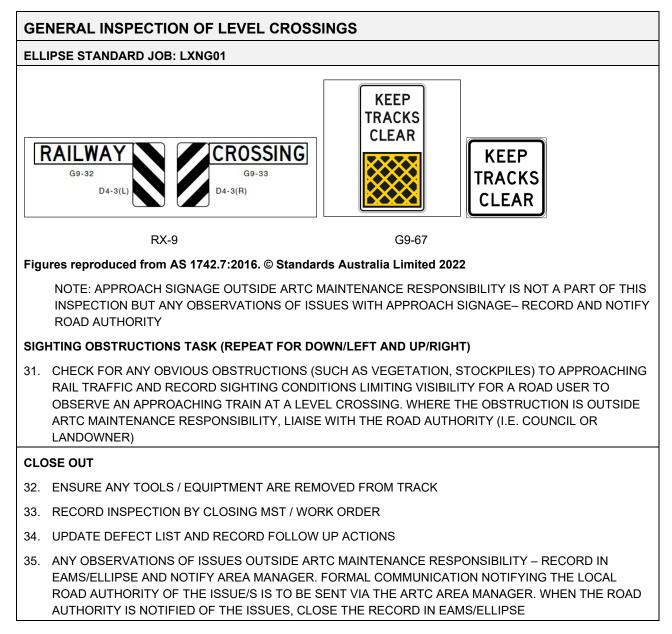
NOTE: IF STOP OR GIVE WAY SIGN IS MISSING OR UNREADABLE, NOTIFY NETWORK CONTROL TO APPLY CAN NOTIFICATION IMMEDIATELY AND APPLY ADDITIONAL CONTROLS E.G. RESTRICTED ROAD USAGE SUBJECT TO SITE RISK. IF THE SIGNS ARE NOT REPLACED OR REPAIRED WITHIN 24HRS APPLY 20KM/H TSR UNTIL REMEDIATION IS COMPLETED.

29. CHECK THAT SIGNS AT THE LEVEL CROSSINGS COMPLY WITH CURRENT AUSTRALIAN STANDARD

NOTE: STEP 28 TO 30 IS NOT APPLICABLE TO UNSIGNED PRIVATE / SERVICE LEVEL CROSSINGS

30. FOR UNSIGNED PRIVATE / SERVICE LEVEL CROSSINGS, CHECK AND RECORD MISSING SIGNAGES





GENERAL INSPECTION OF PEDESTRIAN LEVEL CROSSINGS

ELLIPSE STANDARD JOB: LXNG01

PERSONNEL

TRACK EXAMINER & CERTIFIER

EQUIPMENT

TRACK GAUGE, A BAR TO CLEAN OUT FLANGES, 1M STRAIGHT EDGE, STEEL RULER, TEMPORARY WARNING INDICATORS (E.G. HAZARD TAPE, TRAFFIC CONE ETC.)

PREPARATION

- 1. OBTAIN LIST OF CURRENT DEFECTS
- 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 3. PERFORM PRE-WORK SAFETY BRIEF
- 4. FOR ACTIVE PEDESTRIAN LEVEL CROSSING, CO-ORDINATING THIS TASK WITH SIGNALS TEAM MAY SAVE TIME AND IMPROVE OUTCOMES
- 5. RECOGNIZE TYPE OF LEVEL CROSSINGS AND RAIL/ROAD MAINTENANCE INTERFACE BOUNDARIES BASED ON THE INDIVIDUAL STATE REQUIREMENTS

COMMENCE WORK

GENERAL TASKS

- 6. INSPECT FOR DAMAGED, LOOSE, MISSING, OR BROKEN COMPONENTS
- 7. CHECK TRACK GEOMETRY INCLUDING VERTICAL ALIGNMENT AND APPROACH INTO LEVEL CROSSINGS, MEASURE ANY SUSPECTED FAULTS
- 8. CHECK AND RECORD ANY MISSING OR INEFFECTIVE SLEEPERS AND FASTENINGS (WHERE VISIBLE). LOOK FOR INDICATORS OF SIGNS OF BACK CANTING (WHERE THE RAIL IS TILTED TO THE FIELD SIDE)
- 9. CHECK AND RECORD BALLAST CONDITION, FOULING AND PROFILE
- 10. CHECK FLANGEWAYS FOR OBSTRUCTIONS AND CLEAN OUT IF POSSIBLE

CIVIL TASKS

- 11. MEASURE AND RECORD ANY CURRENT DEFECTS AND UPDATE CONDITION
- 12. LOOK FOR SIGNS OF GAUGE WIDENING OR TIGHTENING, MEASURE AND RECORD ANY SUSPECTED FAULTS
- 13. CHECK AND RECORD CONDITION OF RAILS. LOOK FOR RCF, SHELLING, SQUATS, WHEEL BURNS, RAIL FLOW, CORROSION AND MECHANICAL DAMAGE ETC.

NOTE: IF THERE IS EVIDENCE OF RAIL CORROSION THEN THOROUGH INVESTIGATION OF THE RAIL WEB AND FOOT NEEDS TO BE UNDERTAKEN.

- 14. LOOK FOR EVIDENCE OF MUD HOLE OR PUMPING OF THE CROSSING. CHECK TO ENSURE DRAINAGE PATH IS CLEAR AND DIVERTS WATER AWAY FROM TRACK AND RECORD IF DRAINAGE SYSTEM (CESS DRAIN, CROSS DRAIN, SUBSURFACE PIPES OR CUVERTS) IS BLOCKED/INEFFECTIVE
- 15. INSPECT FLANGEWAY WIDTH AND DEPTH THROUGH THE CROSSING. IF VISUAL ASSESSMENT IDENTIFIES INCONSISTENCY WITH FLANGEWAY WIDTH AND DEPTH THEN MEASURE AND RECORD THE WIDEST, NARROWEST, DEEPEST AND SHALLOWEST LOCATION IDENTIFIED (IF UNSURE MEASURE EVERY 2M ENSURING ADEQUATE SAFETY PROTOCOLS HAVE BEEN IMPLEMENTED). LOOK

GENERAL INSPECTION OF PEDESTRIAN LEVEL CROSSINGS

ELLIPSE STANDARD JOB: LXNG01

FOR EVIDENCE OF WHEEL FLANGE CONTACT WITH CROSSING SURFACE PARALLEL TO RAIL RUNNING FACE AND WHEEL FLANGE CONTACT WITH CROSSING SURFACE IN THE FLANGEWAY

NOTE: FLANGEWAY DEPTH MEASUREMENT IS MAINLY CRITICAL FOR IN-SITU CONCRETE SURFACE, BITUMEN SURFACE, MODULAR SURFACE. RESPONSE TO ANY ISSUES IDENTIFIED WITH FLANGEWAY CLEARANCE SHOULD BE CONSIDERED BASED ON SITE CONDITION (USAGE, TYPE OF CROSSING SURFACE, WHEEL FLANGE CONTACT ETC.), MEASURES SHOULD BE TAKEN TO PRIORITISE REPAIR AND MAKE THE CROSSING SAFE FOR USE BY TEMPORARY WARNING INDICATORS ((E.G. HAZARD TAPE, TRAFFIC CONE ETC.). IF THE PEDESTRIAN CROSSING FLANGEWAY CONTAINS OBSTRUCTIONS SUCH AS DIRT, BALLAST, GREASE DEPOSIT ETC. CHECK OBSTRUCTION AND CLEAN OUT IF POSSIBLE

NOTE: FOR CROSSINGS USING GAP FILLER PRODUCTS (OR SIMILAR) THE MINIMUM FLANGE GAP MAY NOT APPLY

FOOTPATH TASKS

- 16. CHECK THE LEVEL OF TOP OF CROSSING SURFACE RELATIVE TO RAIL LEVEL (100MM FROM BACK OF FIELD SIDE OF RAIL). MEASURE AND RECORD IF THE VISUAL INSPECTION IDENTIFIES DIFFERENCE IN RAIL LEVEL AND TOP OF CROSSING SURFACE
- 17. CHECK AND RECORD FOR SIGNS OF WHEEL FLANGE/TREAD CONTACT WITH CROSSING SURFACE. LOOK FOR SIGNS OF UNEVEN LEVEL OF CROSSING SURFACE RELATIVE TO RAIL LEVEL CREATING A TRIP HAZARD

SEALED CROSSING SURFACE TASK (WHERE APPLICABLE)

- 18. FOR SEALED CROSSING SURFACE, LOOK FOR POTHOLES LIFTING TIMBER (IF APPLICABLE) OR OTHER INEFFECTIVE COMPONENTS
- 19. MEASURE SEALED CROSSING SURFACE DEFORMATION DEPTH IF VISUAL INSPECTION IDENTIFIED DAMAGE TO THE CROSSING SURFACE USING A 1M STRAIGHT EDGE AND STEEL RULER

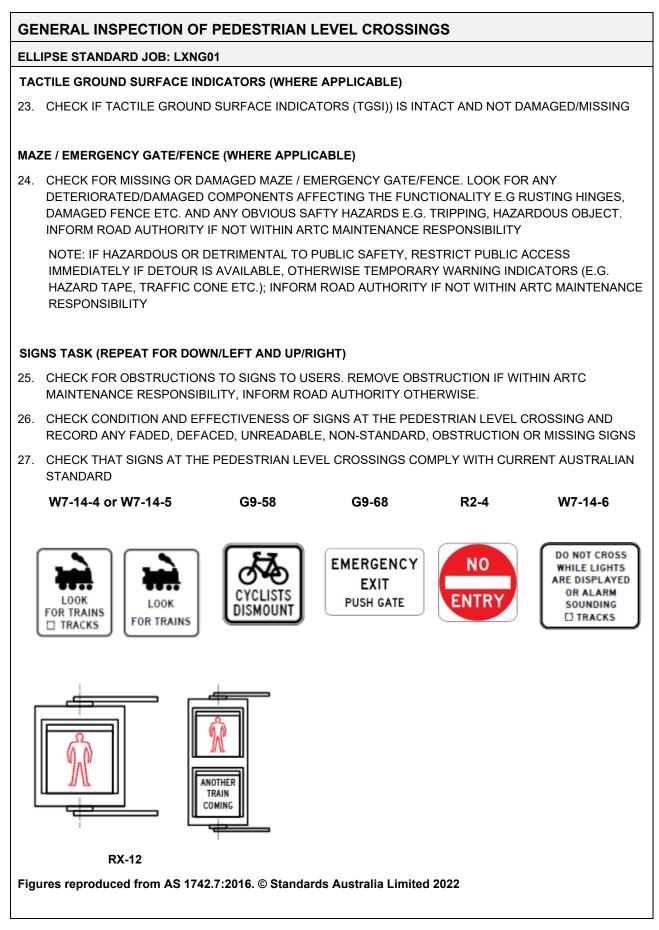
NOTE: ANY OBSERVATIONS OUTSIDE MAINTENANCE RESPONSIBILITY – RECORD AND NOTIFY ROAD AUTHORITY

MODULAR CROSSING SURFACE TASKS (WHERE APPLICABLE)

- 20. CHECK FOR PANEL DAMAGE, CRACKS, OR ANY MOVEMENTS (LATERAL AND VERTICAL) ALONG THE TRACK(S)
- 21. MEASURE AND RECORD MODULAR PANEL GAPS AT LOCATIONS IDENTIFIED BY VISUAL INSPECTION (IF APPLICABLE)
- 22. CHECK THE CONDITION OF FASTENING SYSTEM

IF THE CROSSING CROSSES MULTIPLE TRACKS, START WITH TRACK FURTHEST TO THE DOWN/LEFT, REPEAT STEP 6 TO STEP 22 FOR EACH TRACK TO THE UP/RIGHT. INSPECT THE CROSSING SURFACE CONDITION BETWEEN THE ADJACENT RAILS OF THE 2 TRACKS AND CHECK THE CROSSING SURFACE IS COPLANAR BETWEEN EACH ADJACENT PAIR OF RAILS, CONTINUE WITH THE NEXT TRACK UNTIL THE LAST CROSSING.





ETW-12-03

Table of Service Schedule / Standards Jobs

GENERAL INSPECTION OF PEDESTRIAN LEVEL CROSSINGS

ELLIPSE STANDARD JOB: LXNG01

SIGHTING OBSTRUCTIONS TASK (REPEAT FOR DOWN/LEFT AND UP/RIGHT)

28. CHECK FOR OBSTRUCTIONS WITHIN THE NORMAL AVAILABLE SIGHT DISTANCE AND RECORD SIGHTING CONDITIONS LIMITING VISIBILITY FOR A ROAD USER TO OBSERVE AN APPROACHING TRAIN AT A PEDESTRIAN LEVEL CROSSING. WHERE THE OBSTRUCTION IS OUTSIDE THE ARTC MAINTENANCE RESPONSIBILITY, LIAISE WITH THE ROAD AUTHORITY (I.E. COUNCIL OR LANDOWNER)

CLOSE OUT

- 29. ENSURE ANY TOOLS / EQUIPMENT ARE REMOVED FROM TRACK
- 30. RECORD INSPECTION BY CLOSING MST / WORK ORDER
- 31. UPDATE DEFECT LIST AND RECORD FOLLOW UP ACTIONS
- 32. ANY OBSERVATIONS OF ISSUES OUTSIDE ARTC MAINTENANCE RESPONSIBILITY RECORD IN EAMS/ELLIPSE AND NOTIFY AREA MANAGER. FORMAL COMMUNICATION NOTIFYING THE LOCAL ROAD AUTHORITY OF THE ISSUE/S IS TO BE SENT VIA THE ARTC AREA MANAGER. WHEN THE ROAD AUTHORITY IS NOTIFIED OF THE ISSUES, CLOSE THE RECORD IN EAMS/ELLIPSE