NEW EQUIPMENT & SYSTEM APPROVAL PROFORMA

Ref: *11/10956*

Note: the prompts given below are only a guide to the information required for approval. Dependent on the type of equipment or system that requires approval delete any section that is not applicable or include additional information if necessary. Mandatory fields are marked with an asterisk (*).

1 **Equipment or System to be approved** *

Temporary Take Off (to Thompsons-Byron Jackson drawing SB205620)

2 **Originator** *

Name: Katrina Li, Project Manager East/West Company: ARTC

3 **Introduction** *

Portable take off is in use on the ARTC system to allow track machines off the mainline when there are no sidings near by. Such device reduces the amount of downtime with regards to track works.

4 **Determination of Need** *

Due to the distance between sidings across ARTC, the utilisation of Portable Turnout is recommended to allow higher on-track availability of track machines during project work and avoid the high cost of using cranes to lift heavy machines off track.

5 **Significant Change or Not** *

This change in equipment or system is assessed as SIGNIFICANT as the system has been successfully used in the past.

6 **Review Panel** *

- John Furness – Manager Standards
- Greg Watson – National Rules Manager
- Katrina Li – Project Manager, East/West
- Denis Snowden – OHS Coordinator

7 **Safety**

Provided the work is carried out only by trained personnel in accordance with the Engineering (Track & Civil) Work Instruction ETW-03-01 (attached), there are minimal safety issues with the application of this type of portable turnout on the ARTC network.

Load capacity of this equipment is verified adequate for most track machines (up to 17 t.a.l.) - Refer to Janus Railway & Civil capacity review report dated December 2010. A SFAIRP Risk assessment was conducted to assess existing operating procedure ETW-03-01 and controls have been proposed to mitigate risks identified. See the attached Risk Assessment for details. Work Method Statement TRA–056 has also been compiled by the OHS Coordinator and endorsed by some General Managers.

8 **Performance and Suitability**

The portable take off consists two layer elements: running rails and support beams where the running rails are connected direct on the mainline and supported by supporting beams and rail-mounted brackets at switches. Permissible axle load of the beam sections is 17 tonnes which is adequate for most track machines.

The system of gauge bars supplies effective torsional and lateral restraint and the amount of continuity of beam elements provides considerable resistance to rotation about vertical axes. However, the unloaded areas adjacent to loaded areas will have tendency to lift due to the light weight of elements. Care must be taken to ensure the holding frame attaching both head section and mainline & fishplate connecting beam end support beam and temporary siding are secure.

The portable take off is to be installed and operated as per ARTC work method statement (WMS) TRA-056 and Work Instruction ETW-03-01.

(i) **Use in other rail networks**

Not known

(ii) **Use in the ARTC network**

TBJ portable take off was successfully used for tampers and regulators, etc on a regular basis some years ago on the Ulan Line.

(iii) **Issues arising from usage of the equipment/system**

Deign of TBJ portable take off is proven robust. There should be no risk of a derailment-inducing misalignment if installation & removal procedure is strictly followed.

(iv) **Changes required to infrastructure or systems for use of the equipment**

The temporary turnout is designed such that:

- Running rail will be removed to keep mainline clear for running of trains.

9	**Reliability** Capacity review report from Janus Track & Civil confirms suitability of TBJ portable take off for Broken Hill to Parkes resleepering project. The installation and removal of take off should be used according to Engineering Work Instruction ETW-03-01.						
10	**Maintainability** Aside from monitoring, there is no additional maintenance is required for this equipment, as the system will fit with existing maintenance regimes.						
11	**Approval** * Temporary take off as per Thompsons-Byron Jackson drawing SB205620, dated 28 June 1984, approved for use across the ARTC network, excluding the CRN.						
12	**Conditions of Approval** * • Device to be installed following the Engineering Work Instruction ETW-03-01 and Work Method Statement TRA-056. • Temporary take off to be clearly marked showing axle load limit of 17 tonnes and vehicle speed limit of 5 km/h • An individual procession/worksite protection must be in place before installation of running rail • The temporary take off top running rails must only be placed over the mainline for authorised movements. They must be removed at all other times.						
13	**Does the Originator accept the additional Conditions of Approval as set by the Review Panel:**	Yes	✓	No		N/A	

14	**Sign off**		***ARTC office use only***
	Review Panel:		
	John Furness	for Technical aspects	Date: 11/2/2011
	Greg Watson	See signed copy attached	Date: 6/2/
	Katrina Li	see email	Date: 3/2/2011
	Denis Snowden	See signed copy attached	Date: 4/2/2011

Type Approval updated 14/06/2013 to include the following Condition of Approval (in addition to those listed in section 12 above):

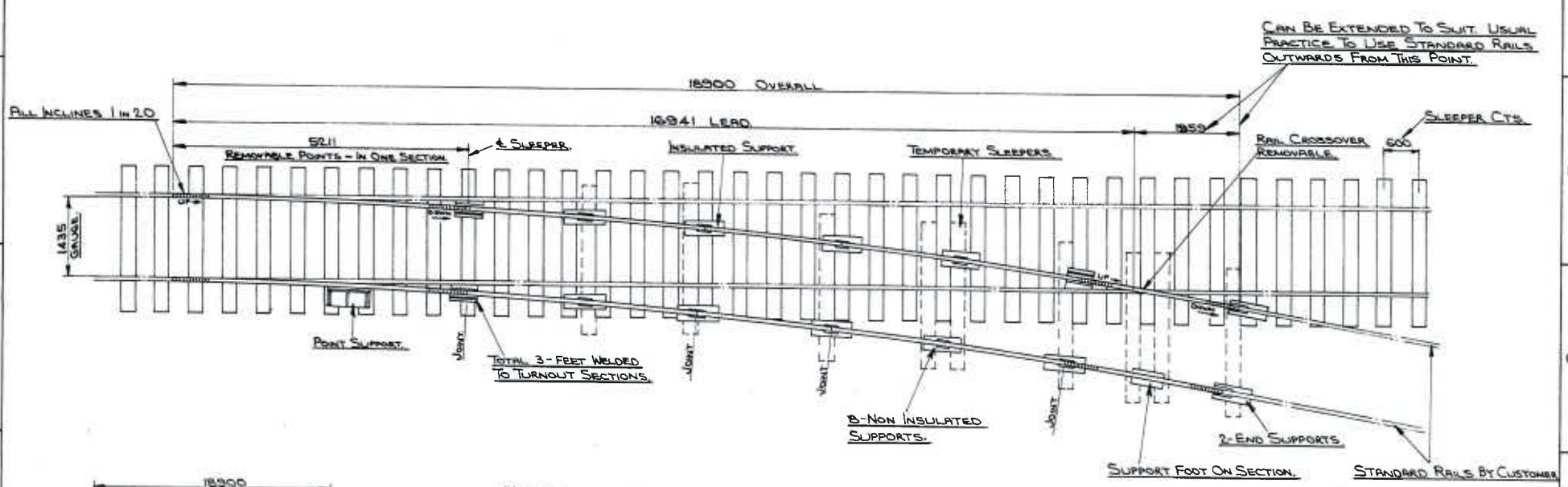
"The temporary take offs must not be used within the track circuit or predictor activation zone for a level crossing."

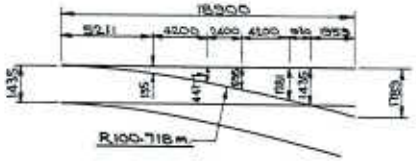
Updates approved by:

Phillip Campbell: P.D.C. Date: 14/6/2013

GM Technical Standards & Environment

SB20562O





SETTING OUT DETAILS

NOTES:-

1/. REMOVABLE POINTS & RAIL CROSSOVER ELEVATED 40mm ABOVE MAIN LINE RAILS, TAPERS 1 IN 20. THESE 3-SECTIONS REMOVED TO ALLOW TRAIN PASSAGE. TURNOUT SECTIONS 20mm ABOVE MAIN LINE RAILS, THEREFORE THE 3-SECTIONS BETWEEN THE MAIN LINE MAY ALSO BE REMOVED TO ALLOW TRAIN PASSAGE.

2/. SECTIONS LOCATED IN SUPPORTS BY Φ22 BOLTS & NUTS.

3/. LIFTING HANDLES PROVIDED ON EACH SECTION.

4/. HEAVIEST SECTION 320 Kg. LONGEST POINTS 5213 mm.

5/. DRAWN USING 250x150 STD. SLEEPERS AT 600mm. CTS.

6/. TURNOUT MADE TO SUIT 47 Kg. RAIL, AND IS PROVIDED WITH PACKERS UNDER SUPPORTS FOR USAGE WITH 53 & 60 Kg. RAILS.

7/. R.H. TURNOUT DRAWN, NOT USABLE FOR A L.H. TURNOUT.

FOR TENDERING PURPOSES ONLY.

CHG	DATE	ZONE	REVISION	DR.	CH'K

UNLESS OTHERWISE SPECIFIED THE FOLLOWING APPLY
DIMENSIONS ARE IN MILLIMETRES
DO NOT SCALE DRAWING

MACH. DECIMAL TOL. X to XXX±0.4, 0.X X.X ETC±0.04
MACH. ANGLE TOL. ±

N SURFACE ROUGHNESS GRADE

DRILLED HOLES AS DRILLED
TAPPED HOLES AS TAPPED

REMOVE ALL BURRS AND SHARP EDGES, EQUIVALENT TO 0,2/0,4 MACHINED CORNERS/FILLETS 0,3/0,5

THOMPSONS–BYRON JACKSON
DIVISION OF BORG-WARNER (AUSTRALIA) LTD.

TITLE
PORTABLE TURNOUT.-R.H. DRAWN.
1435 GAUGE. 20 TONNES AXLE LOAD

DRAWN G.J.B.	DATE 28 JUNE 84	DRAWING No. SB20562O	
CHECKED	DATE		
APP'D.	DATE	SCALE	FILE