

CITY OF MELBOURNE TRAMWAYS.

HAWTHORN HORSE TRAMWAY.

CONTRACT No. 52.

1. *SPECIFICATION of MATERIALS to be supplied, and Works to be performed, in the Construction of the Hawthorn Tramway.*

2. The works are to be carried out as shown in the Contract drawings, and as directed in this Specification, and in accordance with such other directions as may be given from time to time as the work proceeds, and to be under the inspection and direction and to the satisfaction of the Engineer of the Tramways Trust.

Extent of Contract.

3. The Contract embraces the excavation, laying down of permanent way, metalling, paving, and every detail complete as shown in the drawings.

The Contract commences at the Hawthorn Terminus of the Richmond Cable Tramway, and extends along Burwood Road, Power Street, Riversdale Street, and terminates at its intersection with Glenferrie Road, a total length of 1 mile, 52 chains, and 25 links.

Explanation of Drawings.

4. In drawings, Sheet No. 1, shows the route and mileage of the Tramway. Sheet No. 2, shows plans, sections, and details of the Tramway.

Materials which shall be supplied by the Trust

5. The rails, fish plates, tie-rods, bolts, dog spikes, and paving setts, shall be supplied by the Tramways Trust at their Dudley Street Yards, corner of Dudley and Adderly Streets, and the Contractor shall cart all these materials at his own cost to the works where required to be laid down, and the Contractor shall be held responsible for any damage or loss that may accrue to any of these materials after taking delivery, and shall have to replace any that may be broken or lost at his own expense.

Materials to be provided by Contractor.

6. The Contractor shall provide all cement, screenings, 2in metal, sand, drain pipes sleepers, and together with all labour, tools, cartage and other plant and materials, necessary to complete the works in accordance with the Contract requirements.

Excavation.

7. The excavation shall be taken out to the dimensions shown in drawings, and Contractor shall carry it out exactly to the alignment and levels laid down by the Engineer, any excavation removed beyond the requirements, shall be filled in with metal at the Contractor's expense

The macadamised portion of the roadway shall be first excavated, and the metal which is the property of the Trust, shall be removed and stacked in sites provided by Contractor convenient to the works, where it shall remain until it has to be again laid down on the Tramway.

The earth portion of the excavations shall be carted from the works by the Contractor, and he shall leave all the roads clear and in good order, leaving both sides of the street open for traffic.

In the portions of the streets already paved, or where pitches may exist, either on the surface or below the macadam, they shall become the property of the Trust, and shall be stacked along with the metal as already specified.

Gas and
Water Pipes

8. The gas and water mains and services which come into contact, or interfere with the construction of the Tramway, shall be altered and removed by the Melbourne Tramways Trust, but the Contractor shall be held liable for any damage that may be caused to such gas or water pipes which have been exposed by him in the excavations until such time as the permanent alterations are effected.

MATERIALS.

Cement

9. The whole of the Portland cement used in the works shall be provided to the Contractor by the Tramways Trust at the rate of Twelve shillings and five pence (12s. 5d.) per cask, and he shall take delivery of the cement at the stores of Messrs. McLean Bros. and Rigg, in and about the City of Melbourne, and cart it to the works when required.

Cement Con-
crete.

10. The whole of the cement concrete used throughout the contract shall be composed of one measure of Portland cement, four measures of 2-inch metal, one measure of washed sand, and two measures of the best blue stone chips or screenings. The screenings and metal shall be thoroughly clean and free from dust. In making the concrete, the metal and screenings shall first be measured out and deposited on suitable wooden platforms, after which the sand and cement shall be measured, and the whole shall be incorporated by turning over at least twice with suitable shovels; water shall then be added from a fine rose in such quantities only as shall give the concrete the necessary consistency, and during the process of watering, the whole of the material shall again be turned over and thoroughly mixed. It shall then be laid so as to form foundations for pavings to the dimensions and form shown in drawings, and shall be well rammed, so as to allow of its becoming thoroughly consolidated. None of the old macadam from the excavation shall, under any conditions be allowed in the preparation of the concrete.

Sleepers.

11. The sleepers to be provided by Contractor shall be 8 feet long and 7 inches by 5 inches in section, except those required at the terminal switches, which shall be of the dimensions shown. They shall be of heart red gum, sawn square, and sound throughout.

Metal and
Screenings.

12. The new metal and screenings shall be of the best bluestone obtainable, clear and free of all quarry rubbish, and the metal to be broken to a gauge of 2 inches. Any measurement of the metal or screenings that may be required shall be taken from the drays as delivery is given.

LAYING DOWN OF PERMANENT WAY.

Metal, Rails &
Screenings.

13. After the excavation is taken out to dimensions shown in drawings, the Contractor shall lay down the sleepers, spacing them at distances shown in drawings. The rails shall then be laid down and secured to each sleeper, with two spikes, the holes being bored to receive same.

The tie rods shall then be inserted, and the rails accurately adjusted to the gauge of 4ft. 8½ inches.

The Contractor shall punch all the rails for receiving the tie rods at his own expense.

After the rails and sleepers are satisfactorily laid, the Contractor shall raise the rail to its permanent level by packing the metal securely below the sleepers by means of beaters. The metal shall then be laid down between and over the sleepers to the dimensions shown. The metal bed shall then be covered with screenings to a depth of one (1) inch and width of seventeen (17) feet.

The old metal which has been stacked as ordered under clause 7 of this specification shall be laid down along with the new metal at a depth which shall exceed 4 inches below the street level.

Contractor shall provide new 2-inch metal to the extent of thirty (30) cubic yards per chain, and any deduction or addition to this quantity which may be required, shall be valued at the schedule rate of tender.

After the metalling of the tramway is completed, the Contractor shall again gauge the tracks and make any adjustment required by the tie rods, before the screenings are laid down. The screenings on being laid down shall be well watered.

CROSSINGS AT HAWTHORN BRIDGE. AND RAILWAY CROSSINGS.

The ~~Victoria~~ Bridge throughout its length shall be constructed as shown in the section for crossings, the concrete shall be laid down as specified under clause 11 of this specification. The fine cement concrete or rendering on which the blocks are laid, shall be ½ inch thick, and be of the consistency of one of cement to three of stone dust, and shall extend the whole width of the paving.

The paving sets shall be laid with different size blocks placed so as to break joint as shown in the drawings, and they shall be laid transversely with joints close together and longitudinal joints ¾-inch thick. The paving to be grouted with cement grout, of the consistency of one cement to three of stone dust. Three (3) mastic joints shall

be inserted in the width of the tramway similar to those laid in the cable ways now being constructed in the City of Melbourne. The Contractor to insert the expansion lips between the joints and clean out same and the Trust to make the mastic joints.

Drainage. 16. Contractor shall provide in his tender for the quantity of drainage pipes to be laid down shown in schedule, and if not required, they shall be deducted from the Contract. The trench for pipes to be taken, with a uniform inclination in bottom, and the pipes laid with close joints, set in cement mortar of 3 of sand to 1 of cement. The pipes to be glazed vitrified pipes, and perfectly sound throughout.

Switch Lines. 17. At the Hawthorn and Glenferrie Termini Switch lines shall be laid down. The rails, crossings, and switches shall be supplied and fixed to sleepers by the Trust. and Contractor shall find the sleepers and metal for same.

Fencing and Lighting. 18. The Contractor shall securely fence off the portion of the street in use for the construction of the Tramway, which shall not exceed ten (10) feet from the centre of the street, and he shall not break up more than one hundred yards of the street at one time, unless with the written consent of the Engineer. If found necessary in any portion of the route, Contractor shall construct only one track at the one time, and he shall follow all directions which shall be given by the Engineer regarding the fencing and opening out of the streets. All material must be stacked within the portion fenced, and the balance of the roadway left clear for traffic. The works shall be well lighted by Contractor, and he shall be held liable for any accidents, &c., that may be caused through such operations as specified in clause 7 of the General Conditions attached.

Completion of the work. 19. The whole of the works included in the Contract shall be completed within 4 months from the date of acceptance of tender, and the Contractor shall carry on the construction of the tramway in as many different portions of the route as may be directed by the Engineer, and so that the works may be completed within the specified time.

Date when Tenders must be deposited.

GEO. S. DUNCAN,
Engineer.