
Part C1.4 Adjudicator's Contract

“PREVIEW COPY ONLY”

CONTRACT DATA

- Statements given in all contracts**
- The *contract between the Parties* is **To be advised**.....
 - The *period of retention* is ...**N/A**..... weeks.
 - The *law of the contract* is the law of **the Republic of South Africa**
 - The *language of this contract* is **English**.....
 - The amount of the advanced payment is **N/A**.....
 - The Adjudicator's *fee* is...**To be advised**.....per hour.
 - The *interest rate* is **2%** per annum above the prime lending rate of the **Standard Bank of South Africa.**
 - The *currency of this contract* is **ZAR**.....
 - The Adjudicator's appointment terminates on **(To be advised)**.....

Optional statements **If the period for payment of invoices is not three weeks**

- The period for payment of invoices is **.four**.....weeks.

If additional conditions of contract are required

- The *additional conditions of contract* are

To be advised

.....

.....

.....

“PREVIEW COPY ONLY”

Part C2: Pricing Data

“PREVIEW COPY ONLY”

PART C2
PRICING DATA

CONTENTS

Section	Description
C2.1	PRICING INSTRUCTIONS
C2.2	PRICE LIST

“PREVIEW COPY ONLY”

PART C2 PRICING DATA

MAINTENANCE OF PERMANENT WAY COUNTRY WIDE WITH ON TRACK DRAIN CLEANING MACHINE

CONTENTS

- C2.0 General
- C2.1 Pricing Instructions
- C2.2 Schedule of machines and labour for Drain cleaner
- C2.3 Schedule of Quantities for Drain cleaner

“PREVIEW COPY ONLY”

MAINTENANCE OF PERMANENT WAY COUNTRY WIDE WITH ON TRACK DRAIN CLEANING MACHINE

Pricing Instructions

2.0 General

- 2.0.1 The agreement is based on the NEC Term Service Contract. The contract specific variables are as stated in the contract data. Only the headings and clause numbers for which allowance must be made in the Price List are recited.
- 2.0.2 Preliminary and general requirements are based on part 1 of SANS 1921, Construction and management requirements for works contracts. The additions, deletions and alterations to SANS 1921 as well as the contract specific variables are as stated in the contract data. Only the headings and clause numbers for which allowance must be made in the Price List are recited.
- 2.0.3 It will be assumed that prices included in the Price List are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders.
- 2.0.4 The Price List is not intended for the ordering of materials. Any ordering of materials, based on the Price List, is at the Contractor's risk.
- 2.0.5 The prices and rates in these Price Lists are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the scope of work and shall cover liabilities and obligations set forth or implied in the Contract data, as well as profit.
- 2.0.6 The quantities set out in these Price Lists are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in these Price Lists.
- 2.0.7 The short descriptions of the items of payment given in this Price List are only for purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work.
- 2.0.8 For each item in the Price List, the Contractor shall provide in the appropriate column the portion of the tendered sum (inclusive of labour and material) which has been sourced locally (Republic of South Africa).
- 2.0.9 The Contractor shall provide information related to imported content, i.e. equipment to be imported, value and applicable exchange rates. This information shall be provided as an Annexure to the Price Lists.
- 2.0.10 The total in the Price List shall be exclusive of VAT, and shall be transferred to form C1.1 (Form of Offer and Acceptance).

C2.1 PRICING INSTRUCTIONS

General Requirements of payment clauses.

- i) This part C2.1 of the specification as well as any reference in part C3 and C3.24 will apply to determine conditions under which payments for this contract are to be made. Any requirement in this part C2.1 and the Particular specifications part C2.24.2 shall take preference over any contradictory requirement in this specification.
- ii) The basis for payment for drain cleaning shall be the guaranteed TO day and the time actually worked (Tw) on removing material from storm water drains in cuttings along railway track sections.
- iii) All time of machine utilization shall be recorded to determine actual utilization constraints of the machine and to determine productivity and availability of the machines.
- iv) Availability (A) = $T_o - T_b / T_o$
- v) Record of production.
The Contractor shall provide Transnet Freight Rail with the daily production statistics of the work. The production data shall be in an agreed on format providing the following basic type of information:
 - T_o , T_w , T_t , T_s , T_b , T_{ww} etc. of each machine applicable.
 - Length of work completed for the day.
 - Start & final km and GPS coordinate of length and line description / name.
 - Reasons / comments on production shortfall.
 - Graphical presentation of data as and where agreed on.
- vi) The data shall be e-mailed daily to the Technical officer at the depot as well as the Project Manager or his representative.
- vii) Where problems exist of actually transmitting the data, the Tenderer shall state what measures shall be taken to ensure transmission of data as soon as possible.
- viii) All data shall be summarized per week and then per month. Data may be used as a preliminary indication of payment but shall not be used specifically for payment purposes.

Measurement and payment

2.1 ITEM 1 Establishment

An establishment payment will be made after the machine first attains a minimum availability of 80% over a period of 2 months

2.2 ITEM 2

Item 2.1: Machine and standard equipment:

(Guaranteed workdays as per the schedule of quantities)

Payment for operation of the machine with standard equipment will be:

Monthly payment = [availability (A)] x {rate for item 2.1}.

Item 2.2: Additional TO days

The additional TO days will only be paid once the guaranteed number of TO day has been worked. The intention is to cover the contractor's variable cost under this item for work that may be done over and above the guaranteed number of TO days per year.

Item 2.3: Temporary Stoppage of work (Idle Time)

Payment for temporary stoppage of work, idle time (Ti), will be made for each calendar day that the machine is not required. The tendered rates shall include for all costs incurred by the Contractor. The Intention is to cover the fixed cost portion of the contractors cost and therefore should be a proportion of the Item 2.1. The Ti days and To days will be added together to make up the guaranteed To days for a year.

2.3 ITEM 3: Working Hours

Payment for work done shall be as follows:

Payment will be made for each hour of working time (Tw). Only work that was required and accepted will be included in the production measurement and payment under item 3. The intention is to cover the contractor's variable cost under this item.

2.4 ITEM 4: Overtime

Item 4.1: Overtime Hours

a) Overtime payments will be made for occupation time during week days (Monday to Friday) in excess of the hours of maximum occupation time (TOM) of 8 (eight) hours per day.

b) Overtime payment will also be made for work performed on a Saturday when in excess of 5 consecutive days out of every 7 days or in excess of 10 consecutive days out of every 14 days.

c) Overtime payment will also be made for work performed on a Saturday shift day when work is performed in excess of 8 hours for the day.

d) Only TO occupation time allocated will be considered for the calculation of overtime. This implies excluding preparation time outside of To time.

Item 4.2: Overtime Hours (Sundays and PPH)

- a) Sunday time payment will be made for work performed on a Sunday or Paid Public Holiday when in excess of 5 consecutive days out of every 7 days or in excess of 10 consecutive days out of every 14 days.
- b) Sunday time payment will also be made for work performed on a Sunday shift day when work is performed in excess of 8 hours for the day.
- c) Only To occupation time allocated will be considered for the calculation of overtime. This implies excluding preparation time outside of To time.

2.5 ITEM 5: Shift Allowance

Item 5.1: Shift Payment (Saturdays)

A shift allowance payment will be made for work performed on a Saturday when working five days out of every seven days or ten days out of every fourteen days.

Item 5.2: Shift Payment (Sundays & PPH)

A shift allowance payment will be made for work performed on a Sunday or Paid Public Holiday when working five days out of every seven days or ten days out of every fourteen days.

Item 5.3: Night Shift payment

A night shift allowance payment will be made when a 8 hour occupation or part thereof falls between 18h00 and 06h00, and will be paid in addition to any other shift or overtime payments.

2.6 ITEM 6: Emergency Work

If the machine is required to work for a breakdown or emergency call out during the December break, payment will be made for the use of each day the machine is called out to work, whether the machine is actually working or standing. This call out rate only applies to the December break period and will not apply for any call outs during the year. Call outs during the year shall form part of the travel and volume as per items 2.1 and 2.2.

2.7 ITEM 7. Special Labour for machine alterations.

When technological development required by Transnet Freight Rail necessitates modifications to the machine, an assessment of the time and cost of such modifications shall be submitted to the Project Supervisor as soon as possible.

Modifications in the field shall only be done on instruction by the Project Supervisor, for which the following shall apply:

- for labour, the rates in item 7 of the Price list and prices.
- a mark-up of 25% will be allowed on landed prices of imported parts or the delivered prices of locally manufactured parts and will be excluded from price adjustment described in Option X1 of the Contract Data (i.e. clause 23 of the old E160).

2.8 ITEM 8: Day labour

The rates for labour in the "Day Labour Payment Schedule" will be incorporated as item 7 in the Schedule of Quantities and Prices and will apply in respect of additional labour approved by the Technical Officer. The labour rate shall include for:

- The housing of the labour if applicable.
- The transport of the labour to the start-off point.
- Training applicable.

The amount of labour required, and the amount of work to be done is to be agreed to before any written approval is given for the additional labour.

2.9 ITEM 9. Plant hire.

Refer clause 2.8 of the particular specification.

Payment for plant hire will be paid under this item in accordance with clause 2.8 of the particular specification

2.10 ITEM 10. Move of Machine.

- a) Payment will be made per track kilometre for moving the machinery between work sites. (Also, see definitions of "Machinery" and "Moving time"-E160 Definitions).
- b) Tendered rates shall include for fuel as well as wear and tear while moving.
- c) When moving is part of the day's work process, no move payment will be made.
- d) Movement payment will only be made for actual moves of the machine when To time is required to move the machine because of a camp move. This is when the machine will travel in time other than Tt Travel time used for a normal workday.
- e) The kilometre distance is to be to be paid for a move.
- f) For long moves such as from one depot to another, the machine shall move separately under its own power or be moved by Low bed (Earthmoving type).
- g) The drain cleaner wagon or attachment may then be required to be moved by crane truck or small low bed.

2.11 ITEM 11. Lump sum.

- a) Lump sum for approved material and minor sub contracts. Refer clause 2.9. Payment for material will only be made for pre-agreed on purchases made by the Contractor. The payment shall be made on the actual amount of the invoice plus the 5% surcharge on the total amount as per any qualification of the tender.
- b) Surcharges will payable for any invoiced item approved. The percentage payable shall be as per this item allowing for this. Also, refer clause 2.9 of the particular specification.

2.12 ITEM 12: Provisional Sum (Excess for Cell Phone)

Additional Cell phone costs: Payment will be made for the actual excess minutes used by authorised Transnet Freight Rail personnel for official use over and above the initial free minutes allowed on the Cell-phone contract as specified in the Schedule of the Cell-phone Contract.

SCHEDULE OF MACHINES AND EQUIPMENT AND LABOR

2.13 DRAIN CLEANER : Type of Drain cleaning Machine unit and spoil removal wagon system **(Description)**

1.1	Type of machine. (Description, year of manufacture, Engine output, other facilities apart from attachments) (Brochure preferably to be attached) Excavating unit Spoil removal unit	
1.2	Carrying capacity (Size and Tonnage) Weight (Empty, Weight (loaded)	
1.3	Loading of spoil: Rate at which machine can excavate in standard drain and load, ready to transport away for spoil. (Bucket size offered and bucket loads per time unit) a) Capacity to load (m3 h average) b) Load capacity before travel to spoil. c) Estimated portion of working time Twl, loading. d) Historic average m3 / Tw hour (Loading & Offloading per Tw hour Provide data if available) e) Reach - m from track center. f) Describe method to adjust for excavation around mast poles and rock outcrops. g) Estimated period to load wagon and cycle time to re-start loading. h) Describe method of trimming / shaping soil drains i) Any other additional description and or quantities related to capacity and rate machine can work	
1.4	Spoil removal & Offloading: Method of spoil loading, volume and method of travel to spoil and site and process of spoil dumping.– describe in detail) a) Describe method of offloading. (Bags, m3, wagon/ trailer, cranes? Tip or conveyor system) b) Capacity of spoil loaded before removal. c) Off-load rate d) Reach for offload – m	

	e) Describe method of trimming / shaping spoiled soil. f) Any other additional description and or quantities related to capacity and rate machine can work	
1.5	Spoil disposal: Part or independent of Spoil excavation. Describe	
1.6	Speed machine can travel on normal track (60 km/h min required) a) Machine alone. b) Machine with drain cleaner unit & wagon (Unloaded) c) Machine, Drain clean wagon (Loaded) d) Travel (Empty to new staging)	
1.7	No of workers machine can transport – how will workers be moved to site.	
1.8	Speed machine can travel on 1:40 up-grade: a) Machine alone b) Machine & wagon c) Machine & wagon loaded	
1.9	Describe all operating restrictions	
1.10	Other	

2.14. DRAIN CLEANER: SCHEDULE OF LABOUR FOR OPERATION AND SUPPORT OF DRAINCLEANER.

Staff allowed for assistance of drain cleaning	
A) Labor and plant provided full time with machine	
1.	Operator
2.	Technician / assistant for mechanical Machine support
3.	Track master / Supervisor.
4.	Skilled Laborers
4.1	Track man / Work team leader
4.2	Bonder.
4.3	Flagmen

5. Unskilled Labor.

	Description of vehicle	Capacity of vehicle
6. Standard Vehicle allowed for, for the Transport all staff. Specify		
7. Any other allowed for (Provide full description separately)		

B) Describe type / size/ capacity of plant hire items allowed for as provisional Items

1. Additional LDV
2. TLB / Loader
3. Tippers

4. DRAIN CLEANER : Cell Phone schedule (Description of contract supplied with machine.)

Name of Service Provider (e.g. Vodacom / MTN) & Type of Contract (e.g. Talk 500 / Procall 600)

Cellular Telephone

ITEM	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
1	Establishment	--	sum		
2	Regulating payment				
2.1	Machine Hire (First 235 TO days)	0	day		
2.2	Additional TO Days	0	day		
2.3	Idle Time		day		
3	Working hours Tw		hours		
4	Overtime				
4.1	Overtime hours outside Tom of 8 hours per day & Overtime payment for Saturdays when in excess of 5 out of 7 or 10 out of 14 days are worked consecutively & OT on shift days in excess of 8 h		Hour		
4.2	Overtime payment for Sundays & PPH when in excess of 5 out of 7 or 10 out of 14 days are worked consecutively & ST for shift days on Sunday & PPH in excess of 8h.		Hour		
5	Shift allowance				
5.1	Shift payment for Saturdays when working 10 out of 14 days		Hour		
5.2	Shift payment for Sundays & PPH when working 10/14 shifts.		Hour		
5.3	Night shift payment for night shifts between 19h00 and 06h00. (This shift payment is in addition to shift payments in items 4.1 and 4.2 and 5.1 – 5.3)		hour		
6	Emergency Work (Standby)(Provisional)	Provisional	day		
7	Special Labour Rates - Normal hours (Provisional)				
7.1	Artisan	Provisional	hour		--
7.2	Skilled labour	Provisional	hour		--
7.3	Unskilled labour	Provisional	hour		--
8	Additional Day Labour Rates - Normal hours (Provisional)				
8.1	Artisan	Provisional			
8.2	Skilled labour	Provisional			
8.3	Unskilled labour	Provisional			
9	Plant Hire	Provisional	Km		
10	Moving Machine				
11	Lump Sum		ITEM		250000
12	Provisional sum: Excess for Cell phone				
TOTAL AMOUNT (EXCLUDING VAT)					

Lo = _____ Do= _____ Po= _____ Mo= _____

Date:

Part C3: Scope of Works

“PREVIEW COPY ONLY”

PART C3

SERVICE INFORMATION

MAINTENANCE OF RAILWAY TRACK WITH ON-TRACK MACHINERY

CONTENTS

SECTION	DESCRIPTION
3.1	Client's / employers objectives
3.2	Description of the Works
3.3	Extent of the Works
3.4	Location of the Works
3.5	Care of material supplied by Transnet Freight Rail
3.6	Property provided by Transnet Freight Rail
3.7	To be provided by the Contractor
3.8	Machinery and equipment required
3.9	Compliance with standards of workmanship and accuracy
3.10	Procurement : Definitions
3.11	Availability
3.12	Non-availability
3.13	Unsatisfactory performance of machines
3.14	Machine movements
3.15	Measurement and payment
3.16	Payment certificates
3.17	Daily records and Instruction books
3.18	Format of communications
3.19	Key personnel
3.20	Management meetings
3.21	Forms of contract administration
3.22	Professional indemnity insurances
3.23	Health and Safety requirement and procedure
3.24	Particular specifications
Annexes:	Annexure 1 Sheet 1 of 5 (Amendment) Horizontal clearances
	Annexure 1 Sheet 2 of 5 (Amendment) Vertical clearances
	Annexure 1 Sheet 5 of 5 (Amendment) Clearances
	Annexure 2 Sheet 1 of 2 (Amendment) Vehicle gauge 1065mm
	Annexure 2 Sheet 2 of 2 (Amendment) Vehicle gauge 610mm
	Annexure 4 Sheet 1 of 1 (Amendment) Formation and ballast
	Annexure 16 Sheet 3 of 5 (Amendment) Destressing and working temperature ranges.
	Annexure 16 Sheet 4 of 5 (Amendment) Destressing and working temperature ranges.
	Annexure 16 Sheet 5 of 5 (amendment) Destressing and working temperature ranges.

MAINTENANCE OF RAILWAY TRACK WITH ON-TRACK MACHINERY

3.1. EMPLOYERS OBJECTIVE

Permanent track, Country-wide are to be maintained by mechanized means and or on-track machinery to ensure safe, reliability and stability of permanent way infrastructure.

Any clause in this specification contradictory to requirements elsewhere in this contract except for particular specifications part **C3.24.2**, shall take preference.

Any reference in this Specification to "Contractor" will imply the Principal Machine Contractor, any subcontractor appointed by the Principal contractor for support of the contractor.

Where reference is made to any output which may be subcontracted by the principal contractor or Labour controlled by the principal contractor, this will also imply to the control of the output, performance or labour from a nominated sub contractor where and if such a nominated subcontractor is separately appointed for support service for a principal machine contractor.

3.2 DESCRIPTION OF THE WORK

The contract covers the maintenance of permanent track by the Contractor with on-track machinery, which he shall provide, maintain and operate subject to the terms of the succeeding clauses, and the specifications and schedules embodied in the contract.

3.3 EXTENT OF THE WORK

The Contractor would be required to maintain the permanent track anywhere in the Country on any lines owned or maintained by Transnet Freight Rail for the period as specified in the Contract Data. Maintenance of permanent track will be required on open lines, tunnels, platform lines, and loop and yard lines. It will be required that all different types of activities are performed as prescribed in the various particular specifications.

3.4 LOCATION OF THE WORKS

3.4.1 The Technical Officer where the Work shall be performed. Maintenance of permanent track will be required on open lines, tunnels, platform lines, and loop and yard lines. This shall include, but not limited to, the Coalline, Ore line, Natal mainline, Western mainline, Eastern mainline, Cape mainline, Port Elizabeth mainline, Beitbridge corridor, and any branch line.

3.4.2 The Contractor may be required to work in areas where varying degrees and types of security situations are prevailing such as may occur in remote rural areas through to densely populated metropolitan areas. This could require the contractor to work inside any of the Infrastructure Depot areas at any time of the year for any period of time.

3.4.3 The Technical Officer shall make the necessary arrangements to move the machinery by rail from one work site to another, and shall give the Contractor written notice of the date and time of departure. Major movements will be planned and the time allowed should be a minimum of 14 days or such shorter period as agreed.

3.4.4 Any delay to an announced move caused by the Contractor will render the machinery non-available for the period of such delay, excluding overnight stops.

3.5 CARE OF MATERIAL SUPPLIED BY TRANSNET FREIGHT RAIL

3.5.1 Any material supplied by Transnet Freight Rail shall be used in the most economical way, and the Contractor shall take all reasonable care to prevent loss or damage thereof. Any material lost or damaged through negligence on the part of the Contractor or his employees shall either be made good by the Contractor or Transnet Freight Rail will replace it.

3.5.2 The value of the material replaced by Transnet Freight Rail, including the cost of transport at normal tariffs applicable to the public, will be deducted from any money due to the Contractor or recovered in any other way.

3.5 PROPERTY PROVIDED BY TRANSNET FREIGHT RAIL

Transnet Freight Rail will provide the following free of charge: -

3.6.1 Water to operate the machinery, where available. The quality of water cannot be guaranteed.

3.6.2 Where available, at campsites as in clause 3.6.1, water for drinking and domestic purposes and hot water for ablutions.

3.6.3 Free traffic consignment notes for the conveyance by rail from one area of operation to another or from the Contractor's workshop or depot to the area of operation and vice versa will be issued for the machine (whether under own power, coupled to a train or loaded onto a railway truck), spares, caravans used with the machine and either of one spares trailer or one light delivery vehicle.

3.6.4 Transnet Freight Rail will be responsible for the safety of the machinery in so far as train working is concerned and will provide a qualified employee for each machine or group of machines, who will be in charge and who will -

- travel in the cab of the machinery whenever it moves as a train outside occupation areas.
- arrange protection for and supervise the operation of the machinery within the zone of protection, whether it is working, moving or standing idle.
- supervise all on-tracking and off-tracking operations and ensure that the machinery is made secure when parked at the staging point.
- The Contractor shall appoint one suitably qualified person as his representative at each occupation.

- 3.6.5 Before work is commenced, the Technical Officers Deputy's will enter in the work book the approximate positions of underground or hidden electrical conductors that may affect, or be affected by, the Work to be done under the Contract, or alternatively, endorse in the work book that no such conductors exist.
- 3.6.5 Nothing contained here in shall detract from the Contractor's obligation to exercise care in all respects in carrying out his duties under the Contract.
- 3.6.6 Any rail wagons that may be provided by Transnet Freight Rail will provide in terms of any specific requirement as specified I the Particular Specifications C3.24.2

3.7 TO BE PROVIDED BY THE CONTRACTOR

- 3.7.1 Except where otherwise specified the Contractor shall at his own cost provide all machinery, labour, transport, consumable stores, equipment, tools, services, materials, spare parts and ingredients of every description required for the performance and completion of his contractual obligations.
- 3.7.2 The Contractor shall provide and deliver to the place of Work all fuels and water required for the machine operations.
- 3.7.3 The Contractor shall maintain and operate the machinery, direct his own personnel and perform all work required.
- 3.7.4 During track occupations, the Contractor shall ensure that sufficient mechanics, operators and labour are present to ensure efficient operation of the machinery.
- 3.7.5 At least one qualified and experienced mechanic shall be in attendance at all times during track occupations and when the machinery travels as a train.
- 3.7.6 The Contractor shall appoint one suitably qualified person as his representative at each occupation.
- 3.7.7 The Contractor and the Technical Officer shall notify each other in writing of the names of their representatives who will be present during track occupations. These, as well as any changes in the personnel, shall be recorded in the workbook.
- 3.7.8 Failure to comply with the provisions of 3.7.1 to 3.7.7 shall render the machinery non-available.

3.8 MACHINERY AND EQUIPMENT REQUIRED

- 3.8.1 Mechanical and motive aspects
- 3.8.1.1 All machinery provided by the Contractor shall be in good mechanical condition and he shall maintain the machinery in good mechanical condition for the duration of the Contract.

- 3.8.1.2 Axle loads shall not exceed 20 tons.
- 3.8.1.3 The machine shall be self-propelled.
- 3.8.1.4 The machine shall have service brakes and independent emergency brakes capable of providing minimum retardation of 12,5% and 6% of gravitational acceleration respectively, on dry rail.
- 3.8.1.5 At the start of each occupation the Contractor shall, in the presence of the Technical Officer's Deputy's, perform the daily tests laid down by the Technical Officer. The brakes shall be briefly applied at low speed when traveling on level track or upgrade. If in the opinion of the Technical Officer's Deputy the brakes do not function satisfactorily, the machinery shall be removed immediately to a staging point. Machinery staged due to defective brakes will be regarded as non-available.
- 3.8.1.6 At approximately one-month intervals, the Technical Officers Deputy will test the brakes with a brake efficiency test meter and record the results in the workbook.
- 3.8.1.7 The machine shall actuate all signalling equipment used by Transnet Freight Rail for traffic control.
- 3.8.1.8 Regular checks shall be made for pressure loss on brake cylinders and circuits, wear and set of brake shoes, proper functioning of sirens and mechanical locks on hydraulic components.
- 3.8.1.9 The machine shall have an adequate lighting system for operation at night. Lights shall be provided for traveling in both forward and reverse directions. The trailing end headlights and leading end red lights shall not be switched on during motion.
- 3.8.1.10 The machine shall be capable of being hauled in both directions as the last vehicle of a train if required to clear the section after breakdown. The Contractor shall provide towing equipment.
- 3.8.2 Wheel flanges, tyres and axles
- 3.8.2.1 The condition of the flanges and treads of wheels of all machines shall be carefully examined. Should any appear to be excessively worn, they shall be tested by means of the wheel flange thickness and skid limit gauge and the tyre wear limit gauge.
- 3.8.2.2 Wheels shall comply with the following requirements:
- The thickness of a flange shall not be less than the minimum indicated by the wheel flange thickness gauge.
 - Hollow wear on the tread shall not exceed 6mm.
 - The flange height shall not exceed 35mm.
 - The angle of the flange shall not be less than 15° and the radius at the tip of the flange not less than 6mm.

3.8.2.3 Axles shall comply with the following requirements:

- Ultrasonic testing: to specifications laid down by Transnet Freight Rail, done for new axles and every time an axle is replaced after fitting new wheels.
- Distance between wheel flanges: 988mm \pm 2mm.

3.8.3 Fuelling and maintenance

3.8.3.1 The Contractor shall not re-fuel, service or repair the machinery, during track occupations.

3.8.3.2 The Contractor may repair and adjust the machinery during stoppages caused by Transnet Freight Rail. The machinery will be regarded as available during such repairs or adjustments, provided that the required working of the machine is not delayed thereby.

3.8.4 Recording instruments

3.8.4.1 Each machine shall be fitted with an approved tachograph, a mechanically operated event recorder and a speedometer.

3.8.4.2 The Contractor shall be responsible for inserting recording cards in the tachograph and event recorders, and for synchronising these instruments.

3.8.4.3 The Technical Officers Deputy will be responsible for setting the event recorder.

3.8.4.4 The Technical Officers Deputy will test the tachograph and event recorders at least once a week in the presence of the Contractor. The Contractor shall either repair or replace any device, which is inaccurate by more than 1%. Failure to repair or replace an inaccurate device within 72 hours of the test will render the machinery non-available.

3.8.4.5 Should the tachograph or the event recorder break down, the Technical Officers Deputy will keep a complete written record of the starting and ending times of all events occurring during a track occupation. The Contractor shall sign this record if he agrees, and if he disagrees, he shall indicate on the record the reasons for the disagreement and then sign the document. Such disagreement shall be settled by negotiation between the Technical Officer and the Contractor.

3.8.5 Radio equipment

3.8.5.1 During track occupations the Contractor shall provide a cellular telephone for communication between the Work place and the controlling office on either side of the Work place or the area CTC office.

The cell-phone for the official use of Transnet Freight Rail shall be provided with a talk time contract of not less than 500 talk minutes per month. If this allowed talk time is exceeded, Transnet Freight Rail shall pay the excess. This excess shall only be paid after all previous monthly account credits

have been brought into consideration. The Technical Officers Deputy shall certify detail account excess.

This Cell-phone shall also be available for the use of the Transnet Freight Rail signal's or electrical technician involved if required for work directly related to the tamping work. Use of this phone by any other Transnet Freight Rail official than the Track inspector with the machine, may only be with his permission. The Track inspector with the machine shall be responsible for controlling the number of calls on this phone.

- 3.8.5.2 The Contractor shall provide and maintain walkie-talkie radio transceivers with a minimum range of 5km in open country. The Technical Officer, in consultation with the Contractor, will allocate suitable frequencies within the 450MHz to 470MHz band for configuration of the radio equipment. The Contractor will be given seven day's written notice when additional radios are required.
- 3.8.5.3 All of the above-mentioned radio equipment shall operate on 12,5kHz channel spacing, and shall comply with specification SABS-1069.
- 3.8.5.4 The Contractor may operate the radio equipment only for trackside protection. The use of the allocated frequencies must be terminated when the contract expires.
- 3.8.5.5 When walkie-talkie communication fails due to faulty equipment, the machinery will be deemed as non-available.
- 3.8.5.6 When radio and or cellular telephone communication between the place of Work and the controlling stations or the protection flagmen fails, the Contractor shall remove the machinery from the track as soon as possible.
- 3.8.5.7 Transnet Freight Rail will provide, install and maintain a radio in the cab of the machine for train control purposes. The Contractor shall indicate the position in which the radio shall be installed, and provide a suitable power supply point for the radio equipment when requested. The machine will not be allowed to operate without this radio.
- 3.8.6 Warning devices
- 3.8.6.1 The machine shall be fitted with a hooter for use during traveling.
- 3.8.6.2 The machine shall be fitted with a separate warning system used solely for and on the approach of a train. The pitch and intensity shall make it discernable from other sounding devices and easily heard above the working of the machine anywhere within 100m from the machine. The warning system shall be activated by an appointed employee of the Contractor.
- 3.8.6.3 The Contractor's appointed employee shall be in continuous radio communication with Transnet's protection flagmen who will warn the Contractor's employee of approaching trains on adjacent lines.

- 3.8.6.4 A rotating amber flashing light shall be fitted to the top of the machine's cab, for use during travel.

3.8.7 Machinery Specifications

Machinery shall be suitable for use under the following conditions and dimensional limitations:

- 3.8.7.1 Vehicle gauge: 1,065mm gauge track shown in Annexure 2 (Sht 1 of 2). Should the machinery exceed the vehicle gauge in any respect, this shall be clearly indicated by the Contractor by means of suitable drawings.
- 3.8.7.2 Track gauge: nominal 1,065mm, with a range of - 10mm to + 45mm.
- 3.8.7.3 Minimum structure gauges: as shown in Annexure 1 (Sht 1, 2, 3 and 5 of 5).
- 3.8.7.4 Single lines or multiple lines with a minimum distance of 4m between track centres.
- 3.8.7.5 Maximum track gradient: 1 in 30.
- 3.8.7.6 Minimum curve radius: 125m.
- 3.8.7.7 Work place altitude range: 0 to 2,000m above sea level.
- 3.8.7.8 Ambient temperature range: - 5°C to + 50°C.
- 3.8.7.9 Mass of rail: 60kg/m, 57kg/m, 48kg/m, 40kg/m, 30kg/m or 22kg/m.
- 3.8.7.10 Maximum mass per sleeper: Sets - 750kg; other - 300kg.
- 3.8.7.11 Types of sleepers in track: timber, steel, monolithic or tie-bar concrete.
- 3.8.7.12 Sleeper-spacing: 500mm to 900mm.

3.8.8 Unknown / Alternative / Substitute Machines

- 3.8.8.1 Transnet Freight Rail will, in the case where alternative or substitute machines or machines with characteristics which are unknown to Transnet Freight Rail are offered by Tenderers or the Contractor, require that such machines, before they are accepted, be subjected to trials under the prevailing working conditions of the contract area(s) to demonstrate their compliance with the contract specifications. Machines that do not comply with the specifications will not be accepted.

3.9 COMPLIANCE WITH STANDARDS OF WORKMANSHIP AND ACCURACY

- 3.9.1 The Contractor shall work to the track dimensions required by the Technical Officers Deputy. These dimensions shall either be marked with chalk marks on the sleepers by the measurement gang of the contractor or by means of the approved measurement system operated on the high speed machines.

- 3.9.2 The Contractor shall continuously monitor and evaluate measurements of the track and shall ensure compliance with the specified standards of workmanship and accuracy.
- 3.9.3 Where, in the opinion of the Contractor, the condition of the track or any site condition is such that the specified performance standards cannot be achieved, he should record all relevant information before and after working in conjunction with the Technical Officers Deputy. The Technical Officers Deputy may, if he concurs with the Contractor's contentions, adapt the specified standards of workmanship and conformance to suit the track and/or site conditions.

3.10 PROCUREMENT

3.10.1 Definitions and interpretation

In this Contract, unless inconsistent with the context: -

ACTUAL PREPARATION TIME (T_p) means the period between the actual commencement of the track occupation and the actual commencement of the work by the machinery, plus the period of time between the actual end of the work by the machinery and the actual time when the machinery is secured at its staging point, clear of the occupied track. Preparation time excludes all periods of delay by Transnet Freight Rail.

ANNUAL HOLIDAYS means the annual holiday with duration of 15 consecutive working days plus statutory public holidays, Saturdays and Sundays that may fall within in this period, when no Work will be performed by the Contractor.

AVAILABLE means when required to do work, a machine is able to produce work to the standards specified.

BREAKDOWN TIME (T_b) means all periods during which the machinery is non-available.

CANT means the difference in elevation between the running surfaces of the two rails.

CURVE LOCATION POINTS means the four points, which locate the transitions of the curve, or the two points, which locate the circular curve, where no transitions are provided.

DAY shall mean a calendar day. Where a specific number of days is allowed in the Contract for the performance of any act or is stipulated for the extinction of any right or the duration of any event or circumstance the days between the commencement and last day of the Annual Holidays (both days included) and the day from which the period is stated or agreed to commence, shall be excluded from the calculation of the number of days concerned.

DOUBLE SHIFT WORKING means the working of two consecutive shifts of 8 hours, which may each be non-continuous and scheduled at any times during a 24 hour day.

EXECUTIVE OFFICER means the person appointed by Transnet Freight Rail from time to time as the EXECUTIVE OFFICER to act according to the rights, powers held by, and obligations placed upon him in terms of the Contract. In terms of this contract the EXECUTIVE OFFICER is the employer representative.

FREE-ON-RAIL implies allowing the contractor to move an On Track machine from one track destination to another with no track usage cost levied on the contractor. Transnet provides the right of passage and the pilot required for the machine to the contractor, without cost and at times whereby such a passage and pilot can be made available by Transnet. Free-on-rail passage will normally be allowed for at the start of a contract to deliver a machine to the starting place of work and at the end of the contract to return a machine to the contractor's depot if required or by the contractor. Free-on-Rail movement of a machine during a contract for major workshop repairs required of a machine may only occur if specifically agreed to by the Project Manager. Such a move shall then occur in the contractor's time.

IDLE TIME (T_i) means all periods of 15 consecutive days or longer during which Transnet Freight Rail does not require work to be performed by the machinery. This excludes the stoppage of work during the annual holiday.

JOINT ASSEMBLIES means all types of joints, including flash-butt and thermit welded, fishplate and block-joints.

LINE means the maximum rate of deviation of the running edge of one rail from a straight line between two points on the same rail of tangent track. Measurements will be taken 15mm below the top of the rail, against the gauge side of the rail used by the machine as a datum for aligning.

MACHINERY means the on-track machinery provided complete with all fittings, accessories and ancillary equipment including trailers, caravans and spare parts, as may be required to comply with the requirements of the specifications.

MAXIMUM OCCUPATION TIME (T_{om}) means the total occupation time, non-continuous, on a normal working day, not exceeding a total net period stated in the particular specifications.

MONTH means the continuous period from the first day to the last day of any calendar month, both days included.

MONTHLY WORKING TIME (T_{wm}) means the targeted average monthly working time.

MOVING TIME (T_m) means the period required to move the machinery from work site to work site as a train, as part of or on a train. Moving time will commence at the announced time of departure and will end when the staging point at the new work site is reached. Periods of overnight stops when the machinery is traveling as a train, as part of or on a train will be excluded from moving time. Moving time will be included in occupation time for payment purposes.

NIGHT SHIFT ALLOWANCE means an allowance paid for any time worked between 18h00 and 06h00 (Night shift allowance is additional to either overtime or normal shift time, if applicable)

NON-AVAILABLE means when required to do work, the machinery or the operation thereof is unsafe, or the machinery is not able to produce work to the standards specified, due to any reason other than a stoppage of work caused by Transnet Freight Rail.

NORMAL WORKING DAY means a total shift of 8 hours, which may be non-continuous, out of every 24 hours for 5 consecutive days out of every 7-day period, or for 10 consecutive days out of every 14-day period. The Technical Officers Deputy will determine the daily starting time, which may vary to suit seasonal changes or train timetables.

The Technical Officers Deputy shall decide when 10/14-day work shifts will be worked. When a machine works further than 600km away from the machine's base depot, the contractor may request working a 10/14-day shift if occupation conditions allow. Transnet Freight Rail will consider such working shifts and the additional Saturday and Sunday shift payments will then apply.

OCCUPATION means a closure of the line on which work is to be performed for a specified period.

OCCUPATION DAY (To-day) means any day that the machinery will be required by the Technical Officers Deputy to be available.

OCCUPATION TIME (To) means the period(s) between the announced commencement time of an occupation and the time when the machinery is secured at its staging point for the last time.

OVERTIME means any time worked in excess of the hours of a normal working day and any time worked on Saturdays, Sundays and statutory public holidays in excess of 5 consecutive days out of 7-day period or in excess of 10 consecutive days out of 14-day period, all on the written instruction of, or as approved by the Technical Officers Deputy.

PLAIN TRACK means all track excluding sets and restricted track.

SERVICE MANAGER means the person appointed by Transnet Freight Rail from time to time as the Service Manager to administer the Contract according to the powers and rights held by and obligations placed upon him in terms of the Contract. Any reference made in any document of this contract of Project Manager shall imply or refer to the Service Manager.

PARTICULAR SPECIFICATION means any document titled Particular Specification, Special Conditions and Specifications, or Special Conditions, forming part of the documents constituting the Contract and which stipulates the special contract provisions and specifications pertaining to the Contract.

QUOTED PREPARATION TIME (T_q) means the combined period, as quoted by the Contractor in the Schedule of Machinery (for one complete cycle), to move the machinery from its staging point, travel to the point of work, to prepare it for work, and on completion of the work to return and secure it at the staging point, clear of the occupied track.

RESTRICTED TRACK means that portion of plain track where locking bars, guard rails and check rails are not removed prior to working or where sleepers are skewed by more than 75mm (measured at the rail's centre line) or where Dowty retarders and boosters are fitted which prevent the machine from producing work at the scheduled rates as defined in the Special Conditions and Specifications.

SETS mean all types of turnouts, including crossings, single and double slips.
SHIFT ALLOWANCE (normal) means an allowance paid for time worked on a Saturday, Sunday or statutory paid public holiday when working 5 consecutive days out of 7-day period or 10 consecutive days out of 14-day period (Payment for shift allowance ceases when overtime is paid)

SPLICE JOINT means a prefabricated rail expansion device. The thermit welds at either end demarcate the extremities of the splice joint.

SPLIT OCCUPATION means an occupation on any one-day, divided into 2 periods, the sum of which does not exceed 9 hours, with a 2 hour break in between and the total period not exceeding 11 hours.

STANDING TIME (T_s) means a stoppage of work caused by Transnet Freight Rail.

TECHNICAL OFFICER means the person appointed by the SERVICE MANAGER from time to time as the Service Manager's representative on a depot to administer the Contractor's performance and execution of the Work according to the powers and rights held by and obligations placed upon the Technical Officer in terms of the Contract.

TECHNICAL OFFICERS DEPUTY or **TECHNICAL OFFICER** means the person appointed by Transnet Freight Rail under the control of the TECHNICAL OFFICER from time to time to take occupations for the machines for the contract, pilot machines to and from site and to supervise the execution of the workload and ensure safe and quality work being done by the contractor and the machine..

TIME WORKED IN (T_{wi}) means any day a machine is agreed to be available and works outside of and in lieu of a normal working day. Such T_{wi} as well as production statistics and all relevant times must be reflected against the day for which the time was worked in.

TOP means a change of gradient of one or both rails.

TRACK means and includes plain track, restricted track, sets, splice joints and all joint assemblies.

TRAVELLING TIME (T_t) means the time for the machinery to travel between work site and staging point.

TWIST means the algebraic difference between adjacent cant measurements.

VERSINE means the offset measurement at midpoint of a 10m chord taken at any location on curved track. Measurements will be taken 15mm below the top of the rail, against the gauge side of the rail used by the machine as a datum for aligning.

WORK means the work to be carried out in terms of the Contract.

WORKING TIME (T_w) means the periods during which the machinery is actually engaged on the operation or function for which it was provided.

3.10.2 Subcontracting procedures

No part of the contract may be sub-contracted without written approval from Transnet Freight Rail

3.11. AVAILABILITY

3.11.1 The machinery shall be available, warmed up and at the place of Work on the date and at the time indicated by the Technical Officers Deputy.

3.11.2 Machinery will be regarded as available when moving from one Work place to another.

3.11.3 Moving to effect initial delivery, and final removal after completion of the Work, as well as moving requested by the Contractor (i.e. for maintenance or temporary storage of the machine at locations other than the Work place) will not be included when determining availability.

3.11.4 The Technical Officers shall give the Contractor a minimum of 14 days written notice to stop work temporarily for a period exceeding 14 consecutive days and a minimum of 14 days written notice to resume work after such temporary stoppage. Such idle time shall not be included in measurements for availability.

3.12. NON-AVAILABILITY

3.12.1 The Contractor shall advise the Technical Officers as soon as possible when any machinery is not available for work at its appointed place of Work and shall indicate the estimated time when it will be available for work.

3.12.2 Should any of the specified components or functions of the machine be non-available, the machine will be regarded as non-available.

3.12.3 Machinery will be regarded as available after breakdown when it is declared available and placed on the track for the purpose of testing, resetting or working, unless after the period of testing and resetting the machinery is still non-available. In the latter case, breakdown time will commence from the time that the machinery previously became non-available.

- 3.12.4 The provisions regarding productivity and standards of workmanship and accuracy shall apply during periods of testing or resetting.
- 3.12.5 When the machine is not available at all for Work on a day because of a breakdown on the previous day, occupation time and non-availability will both be equal to Tom hours.
- 3.12.6 Should a single stoppage of Work due to a breakdown of a machine exceed or be likely to exceed 60 minutes, the Technical Officers Deputy may require the machine to be removed to a staging point as soon as possible. Such traveling, whether from or returning to the point of breakdown, will not be included in Tt, but will be included in Tb.
- 3.12.7 If the Contractor is instructed to work either overtime or more than Twm, non-availability due to breakdown occurring in such time will not be penalised. Occupation time will also not be measured during such breakdown.

3.13 UNSATISFACTORY PERFORMANCE OF THE MACHINERY

- 3.13.1 The Service Manager or Technical Officers may terminate the Work and/or order the machinery to be moved to another place of Work and/or order the removal of mechanic(s) and/or operator(s), and/or order the temporary or permanent removal and replacement of a machine under the following conditions:
- When the output of the machinery is less than 70% of the required minimum productivity for a period of two consecutive months, or
 - when the percentage availability of the machinery (as described in the Special Conditions of Contract and Specifications) is less than 75% for a period of two consecutive months.
- 3.13.2 The Contractor may substitute, either temporarily or for the duration of the Contract, other machinery in place of that listed in the Schedule of Machinery offered. The substitute machinery shall be subject to all the terms and conditions of the Contract and shall in no way be inferior to the original machinery. The Service Manager and Technical Officers shall be advised of any proposed substitution, which shall be subject to his approval.
- 3.13.3 Should the Service Manager or Technical Officers at any time, be of the opinion that the machinery provided by the Contractor is performing defectively or is incapable of achieving the specified output and availability the Service Manager or Technical Officers may notify the Contractor in writing, but the Contractor shall not be relieved of any of his contractual obligations if such notification is not given.
- 3.13.4 The Contractor shall there-upon take steps to improve the output and availability of the machinery to specified performance levels or to replace the machinery with machinery capable of achieving the specified performance, failing which the Employer may act in terms of **Clause Z.5.9 of Contract Data**.

3.14 MACHINE MOVEMENTS

- 3.14.1 The Contractor shall deliver the machinery in full operational condition, with all operatives, to the initial place of Work, as directed by the Service Manager or Technical Officer.
- 3.14.2 The Contractor shall not place the machinery onto the track or remove it there from, or use it in any way, except when authorised to do so by the Technical Officer or his deputy.
- 3.14.3 The Contractor is responsible for movement of his machines in the occupation area.
- 3.14.4 Machinery shall not be operated as a train unless a representative of Transnet Freight Rail, appointed by the Technical Officer, who is authorised to give instructions regarding the movement of the machinery, travels on the machinery to its destination. The Contractor shall assist Transnet Freight Rail in all matters concerning the safety of trains, persons and the machinery.
- 3.14.5 The Contractor shall ensure that the off-tracking rails are correctly placed and fastened before lowering or moving the machinery onto them.
- 3.14.6 The Contractor shall point out to the Technical Officers deputy any part of the track or off-track stand where conditions may constitute a danger to the machinery and its ancillary equipment, and record this in the work book. The Contractor shall however repair off-track platforms where work can reasonable be expected to be done by the labour provided with the machine as per the schedule of labour.
- 3.14.7 The Contractor shall load and unload all machinery to be transported by rail truck and shall be responsible to properly secure all machinery to be so transported.

3.15 MEASUREMENT AND PAYMENT

- 3.15.1 The quantities in the Price List are estimated and may be more or less than stated. The Technical Officer will measure all the work done and certify payment therefore in accordance with the Price List. The absence of stated quantities is no guarantee that none will be required.
- 3.15.2 Payment for establishment of a machine at the commencement of the Contract will only be made after the machine has attained the required minimum availability over a period of one month.
- 3.15.3 Should the Contract not be completed for any reason whatsoever, due to the Contractor, he shall refund to Transnet Freight Rail a percentage of the establishment cost. The refund shall be proportional to the uncompleted period of the Contract.
- 3.15.4 In the case of unknown, alternative or substitute machines, establishment payments will only be made after successful completion of the trials and only for the initial machine establishment.

3.15.5 Measurement and payment for the hire and operation of the machinery will be made as specified in the Particular Specification. The following general payment provisions shall apply:

3.15.5.1 A machine-hire rate per day for each production machine that is available and operational. The rate shall include for all accessory labour, tools, equipment, etc., and every thing whatsoever pertaining to the operation and maintenance of the machine.

3.15.5.2 A production-rate for each unit of time worked or work produced by the machine during actual working time. The rate shall include for all labour, fuels, consumables, materials, etc. and every thing whatsoever, pertaining to the production output of the machine. The rate shall apply to all work performed on a "normal working day" as defined and to all Double-Shift working.

3.15.5.3 An extra-over payment will be made for overtime worked or production units produced during overtime working, i.e. time worked in excess of the maximum daily occupation time (Tom) on a normal working day and on Saturdays, Sundays and statutory public holidays. The overtime payment will not apply to Double Shift working.

3.15.5.4 Contractor shall submit, with their tenders, full particulars of the labour task crews, allowed for in the rates tendered in respect of **clause 3.15.5.1 and 3.15.5.2**, to undertake the tasks and functions specified in the Particular Specifications. Such particulars shall include the details of crew strengths i.e. numbers of labourers and supervisors or technicians, etc. Additional payment will be made when the machine is required to work outside the contract area described in the particular specifications.

3.15.5.5 No payment whatsoever will be made for periods of non-availability.

3.15.5.6 No payment will be made if a machine is unable to work as a result of an accident to the machine, regardless of the cause of such accident.

3.15.5.7 When two or more machines work in tandem and as an interdependent production system, the entire group of machines will be deemed to be non-available if the non-availability of one or more machines renders the entire production system substantially unproductive.

3.15.5.8 The Contractor shall be paid at the hourly rates in the Labour Payment Schedule when the Technical Officer approves a temporary increase in labour to perform the tasks and functions specified in the particular specification, at particular workplaces.

3.16. PAYMENT CERTIFICATES

3.16.1 On or about the last day of each month, the Technical Officer will make a progress measurement of the work done in conjunction with the Contractor.

- 3.16.2 Thereafter the Service Manager will issue a certificate authorising payment of such sum of money as he may consider represents the value of the work referred to in **clause 3.16.1**.
- 3.16.3 The Contractor shall be entitled to receive payment of the amount authorised in the said certificate within 30 days from the date of measurement or receipt of the Contractor's VAT-invoice, whichever is the later. Such payment will be regarded as an open payment, and both the certificate and payment will be subject to revision and adjustment by the Service Manager if at any time he is of the opinion that the certificate does not represent accurately the value of work completed or to correct previous over or under payments.
- 3.16.4 In the event of failure by Transnet Freight Rail to make payment within the time stipulated in **clause 3.16.3**, he shall pay to the Contractor interest at prime overdraft rate as certified by the Contractor's bankers upon all overdue payments of such certified amounts, from the date on which such payments should have been made. Interest payments shall not be applicable to corrections made in respect of previous over- or underpayments.
- 3.16.5 The Service Manager shall, within 28 days after completion of the Contract, authorise the release of Performance Bond, and submit for approval by the Employer a final payment certificate which, after approval by the latter, shall be issued to the Contractor, thereby certifying both the final completion of the Contract Work and the amount due to the Contractor. The Service Manager may deduct from the Final Payment Certificate any money then due by the Contractor to Transnet Freight Rail under the Contract, and for such provisions for the resolution of any disputes which may at the time exist between the Contractor and Transnet Freight Rail, as is deemed necessary by him.
- 3.16.6 The Service Manager shall, within 14 days after approval by the Employer and subject to **clause 3.16.5**, send the final payment certificate to the Contractor who, by countersigning thereof, shall certify his acceptance of the amount shown due to him as being full and final payment, subject only to the resolution of outstanding disputes.
- 3.16.7 Within 30 days after the receipt of the Contractor's certification, Transnet Freight Rail will remit to the Contractor the balance of all money so due under the Contract in terms of the final payment certificate.
- 3.16.8 Where the Contractor fails to certify the final payment certificate or has not disputed the correctness thereof within three months after its receipt by him, Transnet Freight Rail will deem the Contractor to be in agreement with the final payment certificate and will effect payment in terms thereof.
- 3.16.9 Transnet Freight Rail will not consider or admit any claim arising from the final payment certificate or in connection with the Contract, which has not been lodged with the Service Manager within a period of three months after receipt by the Contractor of the final payment certificate, and the Contractor accepts and acknowledges that by his failure to lodge a claim within the above-stipulated period of three months, he waives such claim and relieves Transnet Freight Rail of responsibility for such claim.

- 3.16.10 Neither the issue of the final payment certificate nor any payment made there under shall release the Contractor from any liability to indemnify Transnet Freight Rail against, and to reimburse it in respect of, any claim made or to be made against it by a third party for damage or loss sustained by such third party in consequence of any wrongful act or omission of the Contractor, or his employees or agents.

3.17 DAILY RECORDS AND INSTRUCTION BOOK

The Contractor shall submit such returns as may be required by the Technical Officer. He shall also provide and keep on each machine a duplicate carbon copy book, A4 size, the Workbook, in which instructions and events concerning the contract work shall be recorded, signed and dated by the Technical Officer or his deputy, and the Contractor.

3.18 FORMAT OF COMMUNICATION

- 3.18.1 The Contractor and the Technical Officer shall notify each other in writing of the names of their representatives who will be present during track occupations. These, as well as any changes in the personnel, shall be recorded in the workbook.
- 3.18.2 Before work is commenced, the Technical Officer's deputy will enter in the work book the approximate positions of underground or hidden electrical conductors that may affect, or be affected by, the Work to be done under the Contract, or alternatively, endorse in the work book that no such conductors exist.
- 3.18.3 The Technical Officer shall make the necessary arrangements to move the machinery by rail from one work site to another, and shall give the Contractor written notice of the date and time of departure. Major movements will be planned and the time allowed should be a minimum of 14 days or such shorter period as agreed.
- 3.18.4 The Technical Officer shall give the Contractor a minimum of 14 days written notice to stop work temporarily for a period exceeding 14 consecutive days and a minimum of 14 days written notice to resume work after such temporary stoppage. Such idle time shall not be included in measurements for availability.
- 3.18.5 The Contractor shall point out to the Technical Officer any part of the track or off-track stand where conditions may constitute a danger to the machinery and its ancillary equipment, and record this in the work book. The Contractor shall however repair off-track platforms where work can reasonable be expected to be done by the labour provided with the machine as per the schedule of labour
- 3.18.6 Should the tacho-graph or the event recorder break down, the Technical Officer's deputy will keep a complete written record of the starting and ending times of all events occurring during a track occupation. The Contractor shall sign this record if he agrees, and if he disagrees, he shall indicate on the record the reasons for the disagreement and then sign the document. Such disagreement shall be settled by negotiation between the Technical Officer and the Contractor.

- 3.18.7 The Contractor shall provide and maintain walkie-talkie radio transceivers with a minimum range of 5km in open country. The Technical Officer, in consultation with the Contractor, will allocate suitable frequencies within the 450MHz to 470MHz band for configuration of the radio equipment. The Contractor will be given seven day's written notice when additional radios are required.

3.19 KEY PERSONNEL

- 3.19.1 Service Manager is the person appointed by the Employer (Transnet Freight Rail) from time to time to administer the Contract according to the powers and rights held by and obligations placed upon him in terms of the Contract.
- 3.19.2 Machinery shall not be operated as a train unless a representative of Transnet Freight Rail, appointed by the Technical Officer, who is authorised to give instructions regarding the movement of the machinery, travels on the machinery to its destination. The Contractor shall assist Transnet Freight Rail in all matters concerning the safety of trains, persons and the machinery.
- 3.19.3 At least one qualified and experienced mechanic shall be in attendance at all times during track occupations and when the machinery travels as a train.
- 3.19.4 The Contractor shall appoint one suitably qualified person as his representative at each occupation.
- 3.19.5 The Contractor and the Technical Officer shall notify each other in writing of the names of their representatives who will be present during track occupations. These, as well as any changes in the personnel, shall be recorded in the workbook.
- 3.19.6 At the start of each occupation the Contractor shall, in the presence of the Technical Officer's deputy, perform the daily tests laid down by the Technical Officer. The brakes shall be briefly applied at low speed when traveling on level track or upgrade. If in the opinion of the Technical Officer's deputy the brakes do not function satisfactorily, the machinery shall be removed immediately to a staging point. Machinery staged due to defective brakes will be regarded as non-available.
- 3.19.7 The warning system shall be activated by an appointed employee of the Contractor. The Contractor's appointed employee shall be in continuous radio communication with Transnet's protection flagmen who will warn the Contractor's employee of approaching trains on adjacent lines.

3.20 MANAGEMENT MEETINGS

- 3.20.1 On or about the last day of each month, the Technical Officer will make a progress measurement of the work done in conjunction with the Contractor.

3.21 FORMS OF CONTRACT ADMINISTRATION

- 3.21.1 The Service Manager shall, within 28 days after completion of the Contract, authorise the release of Performance Bond, and submit for approval by the Employer a final payment certificate which, after approval by the latter, shall be

issued to the Contractor, thereby certifying both the final completion of the Contract Work and the amount due to the Contractor. The Service Manager may deduct from the Final Payment Certificate any money then due by the Contractor to Transnet Freight Rail under the Contract, and for such provisions for the resolution of any disputes which may at the time exist between the Contractor and Transnet Freight Rail, as is deemed necessary by him.

3.22 PROFESSIONAL INDEMNITY INSURANCES

- 3.22.1 The Contractor shall take every precaution not to cause damage to property or injury to any person as a result of his execution of the work.
- 3.22.2 Transnet will insure in the joint names of Transnet Freight Rail and the Contractor against all legal liabilities which may arise from the accidental death of or injury to third party persons and/or accidental loss of, or damage to third party property in the course of the Contractor's execution of the Work.
- 3.22.3 The insurance policy will be for an indemnity limit as stated in the policy and will be maintained in force during the entire period of the Contract.
- 3.22.4 The Contractor shall in the case of a liability arising out of a negligent act or omission on the part of the Contractor is responsible for payment of the amount(s) stated in the policy as being the deductible.
- 3.22.5 The insurance to be provided in terms clause 6.2.2 of Contract Data will have a cross liabilities cover in respect of which each party shall be separately indemnified in respect of claims made by any one of them against the other as though a separate policy has been issued to each of them.
- 3.22.6 The Contractor shall insure against loss of or damage to his own machinery, tools, equipment, materials and site establishments and any consequential financial losses arising from such damage. This insurance is to be maintained in force during the entire period of the Contract. The Contractor shall likewise arrange his own insurances in respect of motor vehicle liabilities and employer's common law liabilities of the Contractor.

3.23 HEALTH AND SAFETY REQUIREMENT AND PROCEDURE

- 3.23.1 The Contractor shall comply with all applicable legislation and the Transnet safety requirements. The cost of such compliance shall be borne by the Contractor and shall be deemed to have been allowed for in the rates and prices in the Contract.
- 3.23.2 The Contractor shall, in particular, comply with the following Acts: -
- 3.23.2.1 The Compensation for Occupational Injuries and Diseases Act, (Act 130 of 1993); The Contractor shall produce proof of his registration and good standing with the Compensation Commissioner in terms of the Act.
- 3.23.2.2 The Occupational Health and Safety Act (Act 85 of 1993); The Contractor is in terms of section 37(2) of Act 85 of 1993, deemed to be an employer in his own right with duties as prescribed in the Act and agrees to ensure that

all work will be performed or machinery and plant used in accordance with the provisions of the Act in respect of all persons in his employ, other persons on the premises or the site or place of the Work or on the Work to be executed by him and under his control in terms of the Contract. The agreements in this Contract and all documents attached or referred to, form an integral part of the arrangements and procedures stipulated in the aforementioned section.

3.23.3 The Contractor shall comply with the current Transnet Specification E.4E, Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act, Act 85 of 1993 and Regulations as applicable, and shall, before commencement with the execution of the Contract, submit to the Technical Officer,

- documentary proof of his procedural compliance with the Act and
- particulars of his Health and Safety Policy and Programme to be implemented on the Work in accordance with Specification E.4E.

The Contractor's Health and Safety Policy and Programme will be subject to the agreement of the Technical Officer, who may order supplementary and/or additional safety arrangements and/or different safe working methods to ensure compliance by the Contractor with his obligations as an employer in terms of the Act.

3.23.4 The Contractor shall comply with the current Specification for Work On, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment - E7/1, where applicable, and shall take particular care of the safety of his employees working on or in close proximity to a railway line during track occupations as well as under normal operational conditions.

3.23.5 He shall also comply with all other safety requirements, regulations and guidelines of Transnet applicable to the nature of Work carried out under the Contract and shall obtain the particulars thereof from the Technical Officer.

3.23.6 In addition to compliance with clause 3.23.2 hereof, the Contractor shall report all incidents contemplated by Section 24 of the Act in writing to the Technical Officer. Any incident resulting in the death of or injury to any person on the WORK shall be reported within 24 hours of its occurrence and any other incident shall be reported within 48 hours of its occurrence.

3.23.7 The term "safety rules" is used in a generic sense and refers to all Transnet arrangements, procedures and requirements, pertaining to safety, specified or incorporated by reference in the contract documents, such as the Specification for Work On, Over, Under or Adjacent to Railway Lines and near High Voltage Equipment, E7/1, the Electrical Safety Instructions - High Voltage Equipment. (Copies of these documents are available for inspection at the offices of Transnet Freight Rail.)

3.24 PARTICULAR SPECIFICATIONS

Works specification

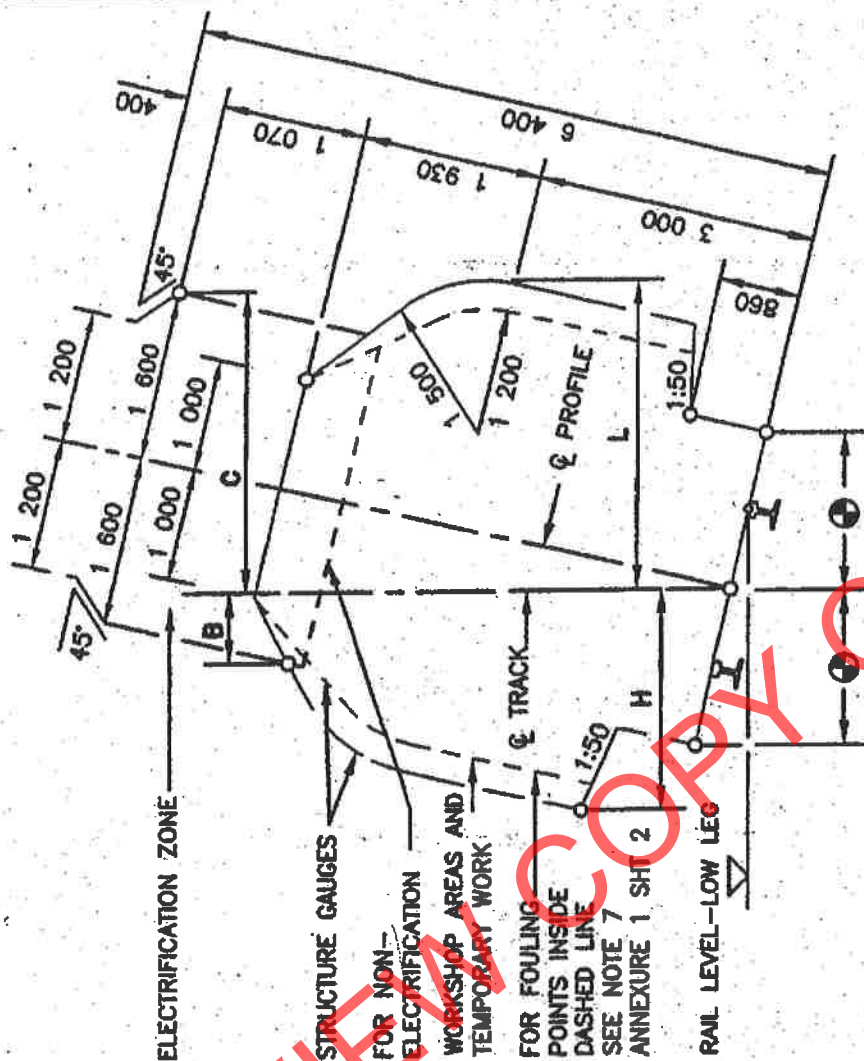
3.24.1 Generic specifications:

- E4B(November 1996): Minimum communal health requirements in areas outside the jurisdiction of Local Authority.
- E4E(August 2006) – Safety Arrangements and Procedural Compliance with the Occupational Health and Safety Act.
- Addendum No.1 to the E7/1 (July 1998) specification.
- Specification E7/1(July 1998) for works on, over, under or adjacent to railway lines and near high voltage overhead lines.

3.24.1 Project specifications

- Particular specifications for Machines and service required

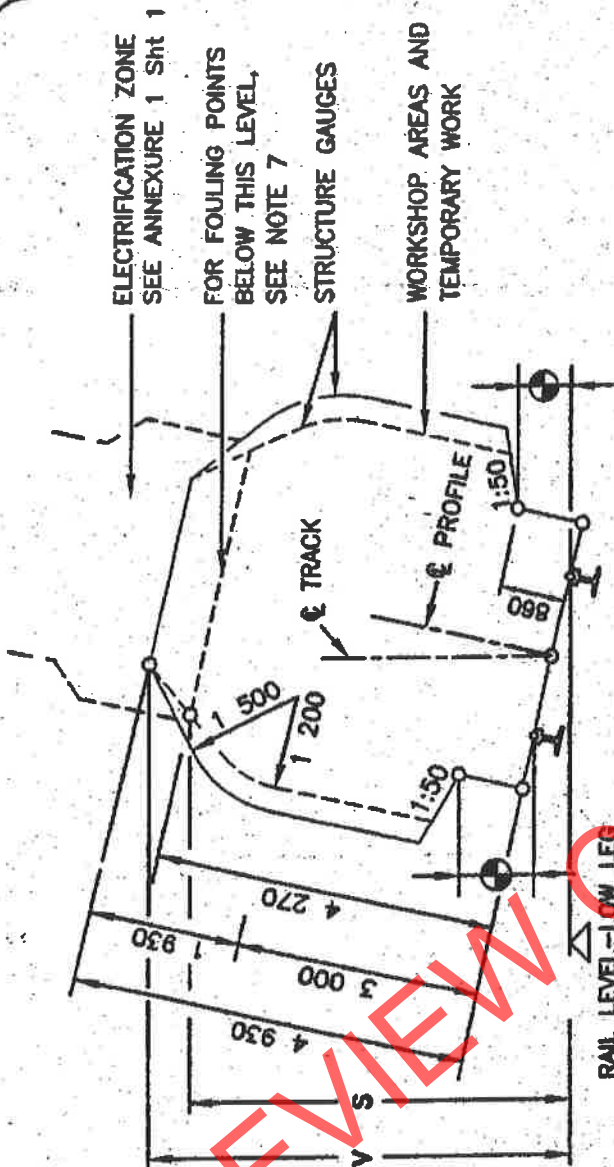
“PREVIEW COPY ONLY”



RADIUS (m)	WITH CANT		NO CANT		WITH CANT	
	H (mm)	L (mm)	H & L		B (mm)	C (mm)
90	2 730	3 090	2 780		1 130	2 100
100	2 700	3 030	2 750		1 140	2 050
120	2 650	2 970	2 700		1 160	2 010
140	2 620	2 920	2 660		1 175	1 980
170	2 590	2 870	2 630		1 190	1 970
200	2 570	2 820	2 600		1 205	1 950
250	2 550	2 790	2 580		1 230	1 920
300	2 540	2 760	2 560		1 250	1 900
350	2 530	2 730	2 540		1 270	1 890
400	2 520	2 710	2 530		1 290	1 875
500	2 510	2 680	2 520		1 320	1 850
600	2 500	2 660	2 510		1 340	1 830
800	2 480	2 620	2 500		1 365	1 790
1 000	2 480	2 600	2 490		1 380	1 780
1 200	2 480	2 580	2 490		1 200	1 730
1 500	2 480	2 550	2 480		1 415	1 700
2 000	2 480	2 500	2 480		1 440	1 660
3 000	2 470	2 470	2 470		1 500	1 600
>5 000	2 460	2 460	2 460		1 600	1 600

REMARKS:

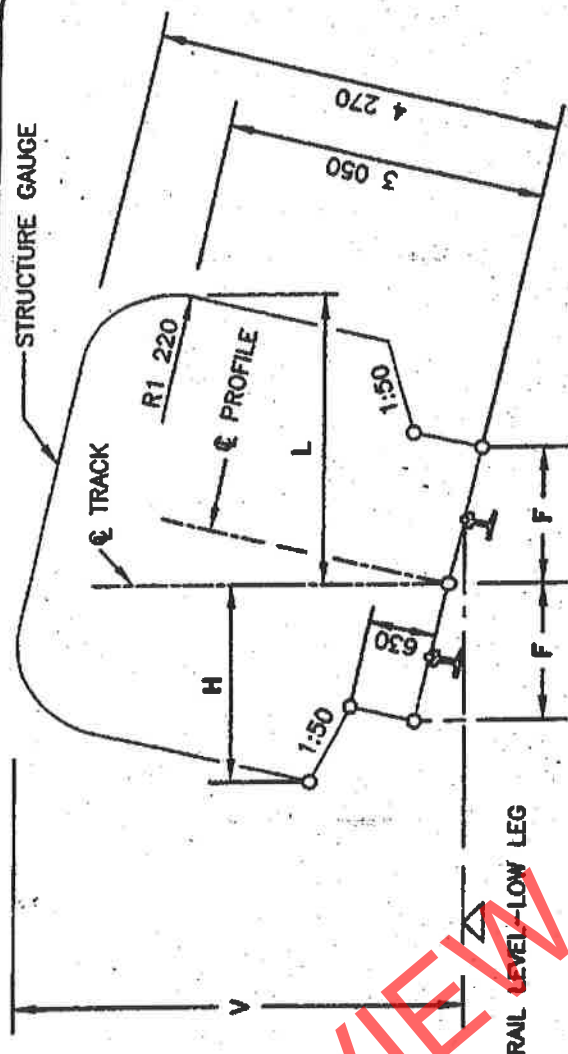
1. H AND B IS THE REQUIRED HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. L AND C IS THE REQUIRED HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR WORKSHOP AREAS AND TEMPORARY WORK, CLEARANCES H AND L MAY BE REDUCED BY 300mm.
5. SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.
6. ALSO REFER TO REMARKS 4 TO 8 OF ANNEXURE 1 SHEET 2.



LOCATION	NOT ELECTRIFIED	ELECTRIFIED (PRESENT OR FUTURE)		
		3KV & 25KV	50KV	
ALL AREAS OTHER THAN THOSE INDICATED BY * BELOW	RADIUS (mm)	S (mm)	V (mm)	V (mm)
	100	4 470	5 050	5 400
	300	4 410	5 020	5 370
	600	4 370	5 000	5 350
	1 000	4 350	4 990	5 340
	1 500	4 310	4 960	5 310
	2 000	4 290	4 940	5 290
	>3 000	4 270	4 930	5 280
* OVER OR NEAR POINTS AND CROSSING IF REQUIRED BY ELECTRICAL IRRESPECTIVE OF RADIUS			5 650	6 000

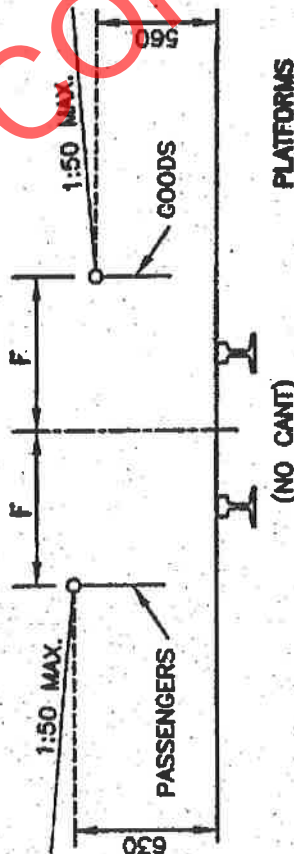
REMARKS:

1. V IS THE REQUIRED VERTICAL CLEARANCE EXCEPT WHERE REDUCED CLEARANCE S APPLIES.
2. S IS THE MINIMUM VERTICAL CLEARANCE FOR STRUCTURES AND TEMPORARY WORK OVER NON-ELECTRIFIED LINES.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR APPLICATION AT CURVES
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 3m BEYOND THE ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 15m ALONG STRAIGHTS.
5. NEW STRUCTURES: SEE BRIDGE CODE.
6. TUNNELS: SEE DRAWING BE 82-35.
7. FOULING POINTS: SEE CLAUSE 8.1.
8. CLEARANCES ARE BASED ON 15m BOGIE CENTRES AND 24.2m VEHICLE BODY LENGTH.
9. SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.



RADIUS (m)	F (mm)
50	1 550
60	1 510
80	1 480
100	1 430
120	1 410
140	1 390
170	1 380
200	1 370
250	1 360
300	1 350
600	1 330
1 000	1 320
>2 000	1 320
STRAIGHT	1 310

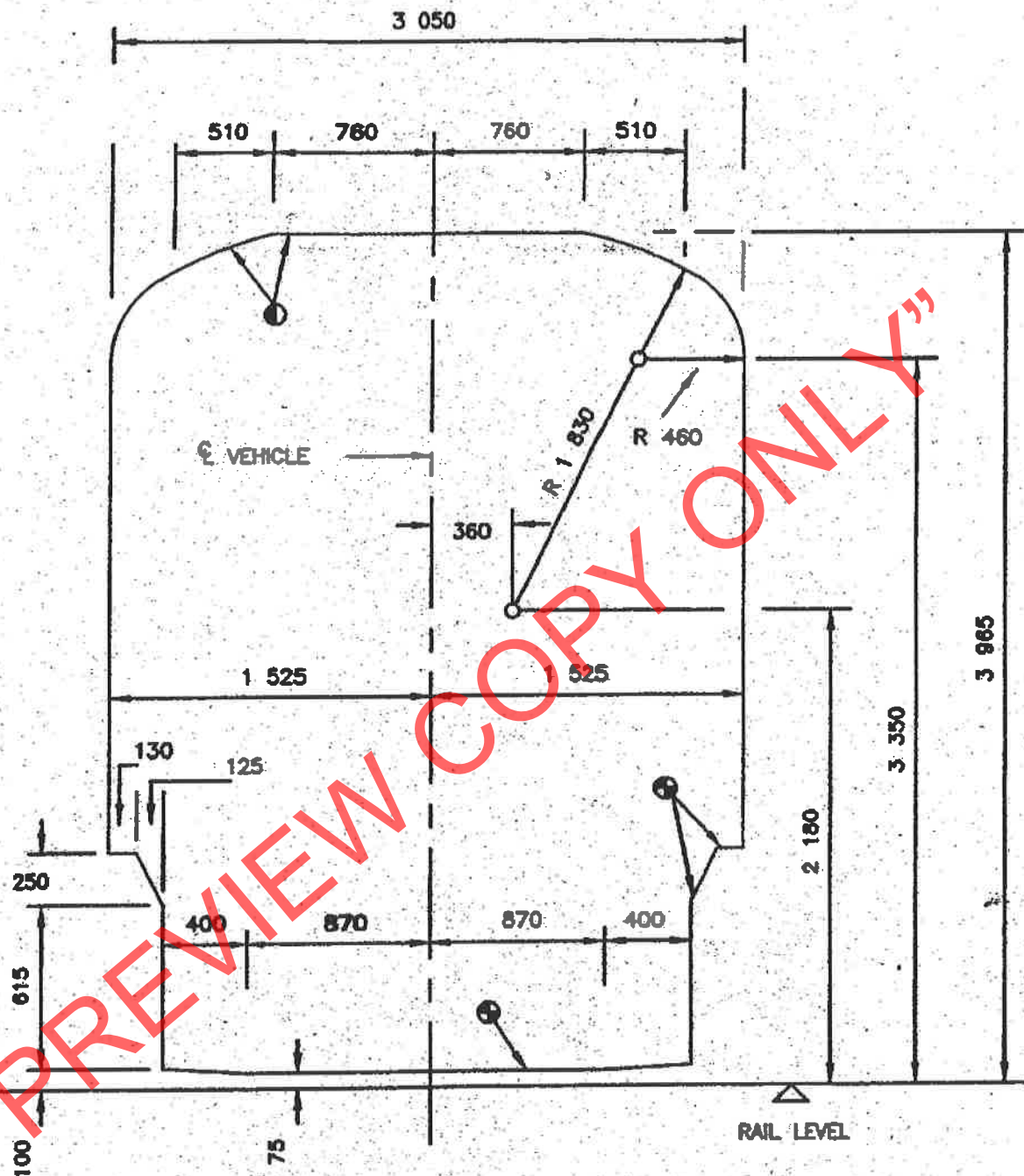
CLEARANCES



RADIUS (m)	WITH CANT		NO CANT	V (mm)
	H (mm)	L (mm)		
50	2 370	2 490	2 400	4 320
70	2 310	2 420	2 330	4 310
100	2 260	2 370	2 280	4 310
140	2 220	2 340	2 250	4 310
200	2 200	2 300	2 220	4 300
300	2 190	2 270	2 200	4 300
500	2 180	2 230	2 190	4 290
700	2 170	2 200	2 180	4 270
1 000	2 170	2 170	2 170	4 270
>2 000	2 160	2 160	2 160	4 270

REMARKS:

1. H IS THE MINIMUM HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. L IS THE MINIMUM HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. V IS THE MINIMUM VERTICAL CLEARANCE.
4. FOR APPLICATION AT CURVES:
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 2m BEYOND THE ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 18m ALONG STRAIGHTS.
5. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
6. ALSO REFER TO REMARKS 5, 6 AND 7 OF ANNEXURE 1 SHEET 2.
7. CLEARANCES ARE BASED ON 9 700mm BOGIE CENTRES AND 13 700mm VEHICLE BODY LENGTH.
8. SEE ANNEXURE 1 SHEET 3 FOR STRUCTURES ON PLATFORMS.



VEHICLE

1. 525

525

130

125

250

615

1001

78

40

870

870

100

360

830

R 460

2 180

350

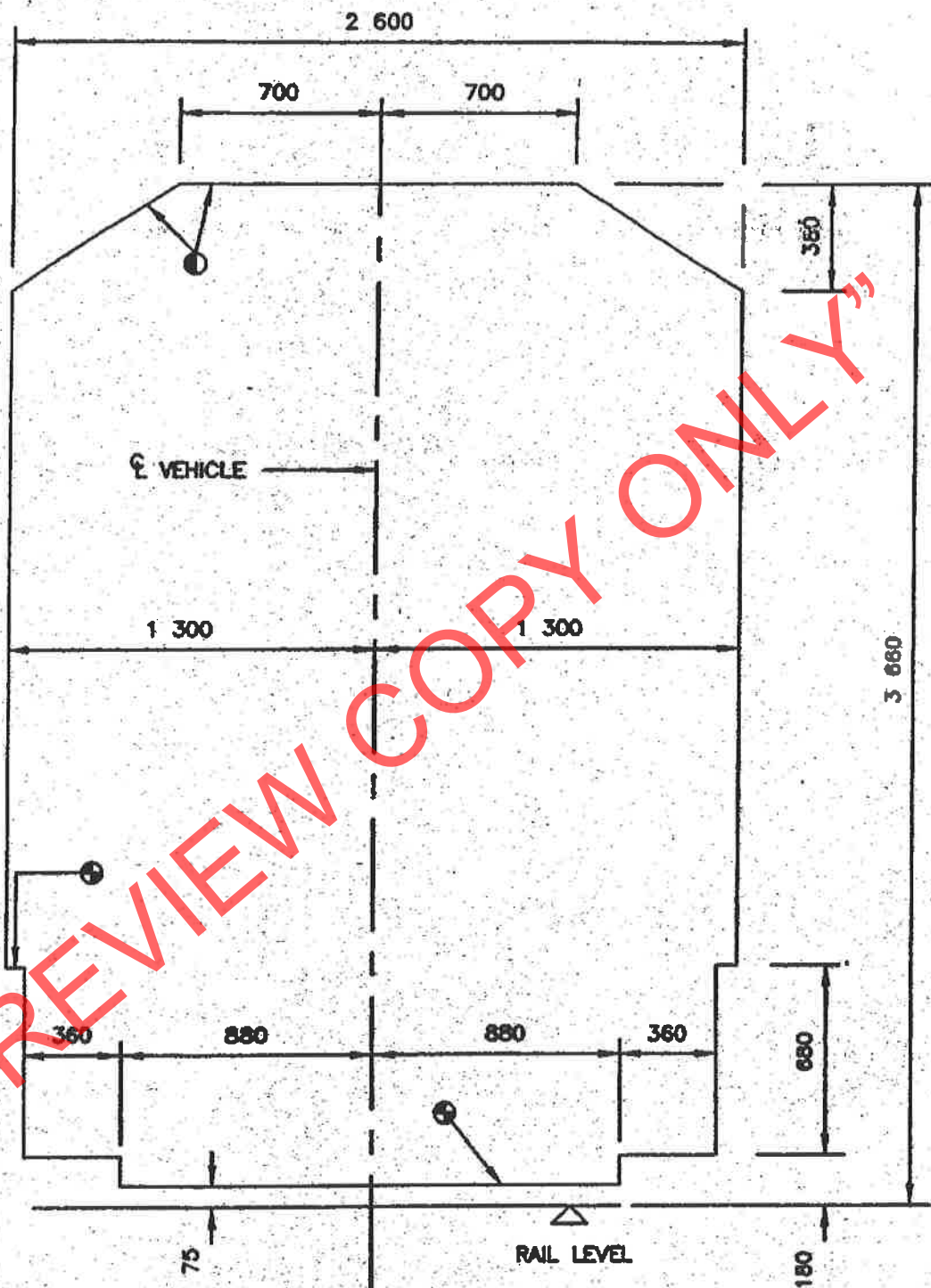
985

RAIL LEVEL

REMARKS:

- REMARKS:
1. Ⓢ WITHOUT LOAD AND WITH NEW TYRES, VEHICLE MUST NOT BE HIGHER THAN THIS OUTLINE.
 2. Ⓢ WITH FULL LOAD AND WORN TYRES, VEHICLE MUST NOT BE LOWER THAN THIS OUTLINE.

2. ⊕ WITH FULL LOAD AND WORN TYRES, VEHICLE MUST NOT BE LOWER THAN THIS OUTLINE.



700

700

အမည်

VEHICLE

1 300

1 300

3 660

36

820

850

360

080

75

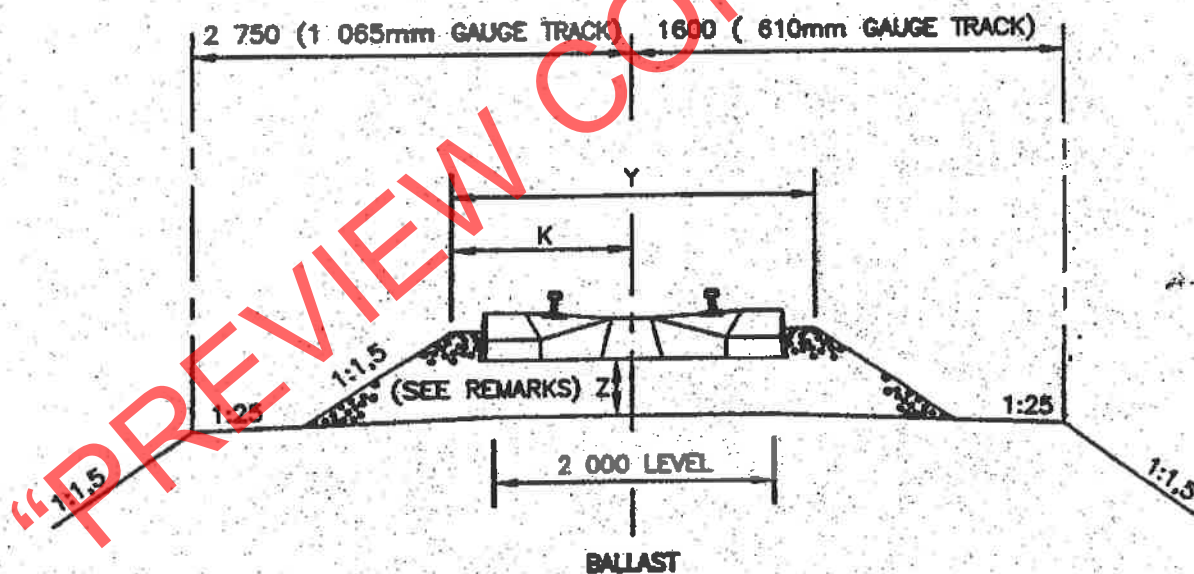
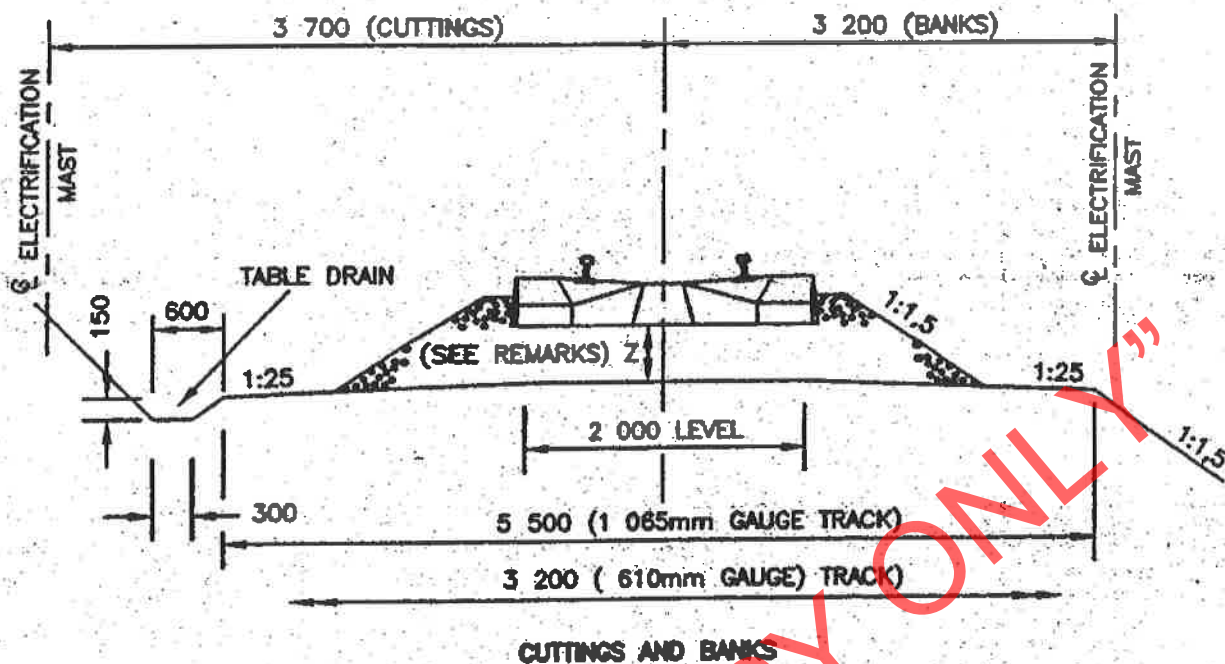
RAIL LEVEL

081

REMARKS:

1.  WITHOUT LOAD AND WITH NEW TYRES, VEHICLE MUST NOT BE HIGHER THAN THIS OUTLINE.
2.  WITH FULL LOAD AND WORN TYRES, VEHICLE MUST NOT BE LOWER THAN THIS OUTLINE.

2. WITH FULL LOAD AND WORN TYRES, VEHICLE MUST NOT BE LOWER THAN THIS OUTLINE.



CLASS OF LINE	Z (mm)	Y (mm)	K (mm)	QUANTITY (m ² /km)		
				PY/FY	P2/F4	WOOD
S	300	2 800	1 400	1 600	—	—
N1	280	2 700	1 350	1 500	1 400	—
N2	200	2 700	1 350	—	1 200	1 100

REMARKS:

1. Z TO BE MEASURED UNDER THE LOW LEG RAIL ON CURVES.
2. DEPTH OF BALLAST (Z) ARE TO BE MEASURED IN THE CONSOLIDATED STATE, THAT IS AFTER 100 000 GROSS TON TRAIN TRAFFIC.

ANNEXURE 16
SHEET 3 of 5
AMENDMENT

DESTRESSING AND WORKING
TEMPERATURE RANGES

SECTION	DESTRESSING RANGES		WORKING RANGES FOR RAIL LAYING	
	THROUGH LINES	YARD TRACKS	B	C
	A	D		
CAPE TOWN - BELLVILLE	20 - 50	25 - 45	15 - 55	15 - 60
* BELLVILLE - WORCESTER	25 - 45	30 - 40	20 - 50	20 - 60
* WORCESTER - DE AAR	25 - 40	25 - 35	20 - 50	20 - 55
HUTCHINSON - CALVINIA	25 - 35	25 - 30	20 - 40	20 - 50
KOOTJIESKOLK - SAKRIMER	25 - 35	25 - 30	20 - 40	20 - 50
KRAAIFONTEIN - BITTERFONTEIN	25 - 45	30 - 40	20 - 50	20 - 60
KALBASKRAAL - SALDANHA	25 - 45	30 - 40	20 - 50	20 - 60
HERMON - PORTERVILLE	25 - 45	30 - 40	20 - 50	20 - 60
WOLSELEY - PRINCE ALFRED HAMLET	25 - 45	30 - 40	20 - 50	20 - 60
PAARL - FRANCHHOEK	25 - 45	30 - 40	20 - 50	20 - 60
EERSTERVIER - BREDASDORP	25 - 45	30 - 40	20 - 50	20 - 60
VAN DER STEL - STRAND	25 - 45	30 - 40	20 - 50	20 - 60
KLIPDALE - PROTEM	25 - 45	30 - 40	20 - 50	20 - 60
EERSTERVIER - MULDERSVLEI	25 - 45	30 - 40	20 - 50	20 - 60
* WORCESTER - RIVERSDALE	25 - 40	30 - 35	20 - 45	20 - 55
KENTEMADE - ATLANTIS	25 - 45	30 - 40	20 - 50	20 - 60
TABLE BAY HARBOUR - SIMONSTOWN	20 - 50	25 - 45	15 - 55	15 - 60
CAPE TOWN CENTRAL METRO AREA	20 - 50	25 - 45	15 - 55	15 - 60
* DE AAR - * KIMBERLEY	25 - 35	25 - 30	20 - 40	20 - 50
* KIMBERLEY - MAKWASSIE	25 - 40	30 - 40	20 - 50	20 - 55
* MAKWASSIE - * KLERKSDORP	20 - 40	25 - 35	15 - 50	15 - 55
* KIMBERLEY - * POSTMASBURG	25 - 35	25 - 30	20 - 40	20 - 50
POSTMASBURG - HOTAZEL	25 - 40	30 - 35	20 - 45	20 - 55
DE AAR - NAKOP	25 - 40	30 - 35	25 - 45	25 - 55
GROVEPUT - COPPERTON	25 - 40	30 - 35	25 - 45	20 - 55
UPINGTON - KAKEMAS	25 - 40	30 - 35	25 - 45	20 - 55
BELMONT - DOUGLAS	25 - 40	30 - 35	20 - 45	20 - 55
VEERTIENSTROME - MAFIKENG	25 - 40	30 - 35	20 - 45	20 - 55
PUDIMOE - COLIGNE	25 - 40	30 - 35	20 - 45	20 - 55
* MAKWASSIE - VERMAAS	20 - 40	25 - 35	15 - 45	15 - 55
OTTOSDAL - * KLERKSDORP	20 - 40	25 - 35	15 - 45	15 - 55
LICHTENBURG - WELVERDIEND	20 - 40	25 - 35	15 - 45	15 - 55
PORT ELIZABETH - ALICEDALE	25 - 45	30 - 40	20 - 50	20 - 60
* ALICEDALE - NOUPOORT	25 - 40	30 - 35	20 - 45	20 - 55
NOUPOORT - DE AAR	25 - 40	30 - 35	20 - 45	20 - 55
SWARTKOPS - KLIPPLAAT	25 - 45	30 - 40	20 - 50	20 - 60
KLIPPLAAT - ROSMEAD	25 - 45	30 - 40	20 - 50	20 - 60
ADDO - KIRKWOOD	25 - 45	30 - 40	20 - 50	20 - 60
RIVERSDALE - * MOSSELBAAI	25 - 45	30 - 40	20 - 50	20 - 60
MOSSELBAAI - GEORGE	20 - 45	25 - 40	15 - 50	15 - 60
* GEORGE - OUDTSHOORN	25 - 45	30 - 40	20 - 50	20 - 60
* OUDTSHOORN - * KLIPPLAAT	25 - 40	30 - 35	20 - 45	20 - 55
OUDTSHOORN - CALITZDORP	25 - 45	30 - 40	20 - 50	20 - 60
* GEORGE - KNYSNA	25 - 45	30 - 40	20 - 50	20 - 60
* PORT ELIZABETH - AVONTUUR	25 - 40	30 - 35	20 - 45	20 - 55
GANTOOS - PATENSIE	25 - 45	30 - 40	20 - 50	20 - 60
COOKHOUSE - SOMERSET EAST	25 - 40	30 - 35	20 - 45	20 - 55
* ALICEDALE - PORT ALFRED	30 - 40	30 - 35	25 - 45	25 - 55
BARKLEY BRIDGE - ALEXANDRIA	25 - 45	30 - 40	20 - 50	20 - 60
EAST LONDON - DOHNE	20 - 45	25 - 40	15 - 50	15 - 60
* DOHNE - QUEENSTOWN	25 - 40	30 - 35	20 - 50	20 - 55
* QUEENSTOWN - BURGERSDORP	20 - 35	25 - 30	15 - 45	15 - 50
* BURGERSDORP - SPRINGFONTEIN	20 - 40	25 - 40	15 - 50	15 - 55
COOKHOUSE - BLANEY	25 - 40	30 - 35	20 - 45	20 - 55
AMABELE - UMATA	25 - 40	30 - 35	20 - 45	20 - 55
IMVANI - QAMATA	25 - 40	30 - 35	20 - 45	20 - 55
* ROSMEAD - STORMBERG	20 - 30	20 - 25	15 - 35	15 - 45
SCHOOMBEE - HOFMEYR	20 - 30	20 - 25	15 - 35	15 - 45
STERKSTROOM - MACLAER	20 - 30	20 - 25	15 - 35	15 - 45
MOLTENO - JAMESTOWN	20 - 30	20 - 25	15 - 35	15 - 45
BURGERSDORP - BARKLEY EAST	20 - 35	25 - 30	15 - 40	15 - 50

REMARKS:

1. FOR REMARKS SEE ANNEXURE 16 SHEET 5.

ANNEXURE 16
SHEET 4 of 5
AMENDMENT

DESTRESSING AND WORKING
TEMPERATURE RANGES

SECTION	DESTRESSING RANGES		WORKING RANGES FOR RAIL LAYING	
	THROUGH LINES	YARD TRACKS	B	C
	A	D		
NOUPOORT - SPRINGFONTEIN	20 - 40	25 - 35	15 - 45	15 - 55
* SPRINGFONTEIN - BLOEMFONTEIN	20 - 35	25 - 30	15 - 40	15 - 50
BLOEMFONTEIN - THEUNISSEN	20 - 35	25 - 30	15 - 40	15 - 50
* THEUNISSEN - KROONSTAD	20 - 40	25 - 35	15 - 45	15 - 55
KROONSTAD - VEREENIGING	20 - 40	25 - 35	15 - 45	15 - 55
BETHLEHEM - ARLINGTON	15 - 35	20 - 30	10 - 40	10 - 50
* ARLINGTON - * KROONSTAD	15 - 40	20 - 35	10 - 45	10 - 55
KIMBERLEY - EMMAUS	25 - 40	25 - 35	20 - 45	20 - 55
* EMMAUS - BLOEMFONTEIN	20 - 35	25 - 30	15 - 40	15 - 50
SPRINGFONTEIN - KOFFIEFONTEIN	25 - 40	30 - 35	20 - 45	20 - 55
ALMAL NORTH - SANNASPOS	20 - 40	25 - 35	15 - 45	15 - 55
GROOTVLEI - * BETHLEHEM	20 - 35	25 - 30	15 - 40	15 - 50
* BETHLEHEM - BLOEMFONTEIN	20 - 35	25 - 30	15 - 40	15 - 50
HARRISMITH - BETHLEHEM	15 - 35	20 - 30	10 - 40	10 - 50
VREDEFORT - DOVER	20 - 40	25 - 35	15 - 45	15 - 55
WOLWEHOEK - ARLINGTON	20 - 40	25 - 35	15 - 45	15 - 55
* ARLINGTON - MARQUARD	20 - 40	25 - 35	15 - 45	15 - 55
ORKNEY - WESLEIGH	20 - 40	25 - 35	15 - 45	15 - 55
VIERFONTEIN - BULTFONTEIN	20 - 40	25 - 35	15 - 45	15 - 55
ANCONA - WHITES	20 - 40	25 - 35	15 - 45	15 - 55
THEUNISSEN - WINBURG	20 - 40	25 - 35	15 - 45	15 - 55
WARDEN - * HARRISMITH	20 - 40	25 - 35	15 - 45	15 - 55
MASERU - MARSAILLES	20 - 40	25 - 35	15 - 45	15 - 55
LADYBRAND - MODDERPOORT	20 - 40	25 - 35	15 - 45	15 - 55
VIRGINIA - GLEN HARMONY	20 - 40	25 - 35	15 - 45	15 - 55
WONDERFONTEIN - BROODSNYERSPLAAS	15 - 40	20 - 35	10 - 45	10 - 55
ERMELO - MACHADODORP	20 - 40	25 - 35	15 - 45	15 - 55
BUHRMANNSKOP - LOTHAIR	15 - 35	20 - 30	10 - 40	10 - 50
ROSSBURG - * DASSENHOEK	20 - 45	25 - 40	15 - 50	15 - 60
DASSENHOEK - CATO RIDGE	25 - 40	30 - 35	20 - 45	20 - 55
CATO RIDGE - PIETERMARITZBURG	25 - 40	30 - 35	20 - 45	20 - 55
* PIETERMARITZBURG - * VOLKSRUST	20 - 40	25 - 35	15 - 45	15 - 55
ROSSBURG - HILLCREST	20 - 45	25 - 40	15 - 50	15 - 60
* HILLCREST - CATO RIDGE	25 - 40	30 - 35	20 - 45	20 - 55
DURBAN - PORT SHEPSTONE	20 - 50	25 - 45	15 - 60	15 - 65
KELSO - UMZINTO	20 - 50	25 - 45	15 - 60	15 - 65
DURBAN - HLUHLWE	20 - 50	25 - 45	15 - 60	15 - 65
* HLUHLWE - GOLELA	25 - 45	30 - 40	20 - 55	20 - 60
EMPANGENI - NKWALINI	25 - 50	30 - 45	20 - 55	20 - 60
DUFFSROAD - KWAMASHU	25 - 50	30 - 45	20 - 55	20 - 60
THORNVILLE - RICHMOND	25 - 40	30 - 35	20 - 45	20 - 55
THORNVILLE - PENTRICH	25 - 40	30 - 35	20 - 45	20 - 55
* PIETERMARITZBURG - KOKSTAD	25 - 35	25 - 30	20 - 40	20 - 50
DONNYBROOK - UNDERBERG	20 - 35	25 - 30	15 - 40	15 - 50
FRANKLIN - MATATIELE	20 - 35	25 - 30	15 - 40	15 - 50
PIETERMARITZBURG - DALTON	25 - 40	30 - 35	20 - 45	20 - 55
* DALTON - KRANSKOP	20 - 40	25 - 35	15 - 45	15 - 55
SCHROEDERS - BRUYNSHILL	25 - 40	30 - 35	20 - 45	20 - 55
* DALTON - GLENSIDE	20 - 40	25 - 35	15 - 45	15 - 55
GREYTOWN - MOUNT ALIDA	20 - 40	25 - 35	15 - 45	15 - 55
ENNERSDALE - BERGVILLE	25 - 40	30 - 35	20 - 45	20 - 55
GLENCOE - VRYHEID	20 - 40	20 - 35	15 - 50	15 - 55
NEWCASTLE - UTRECHT	20 - 40	25 - 35	15 - 45	15 - 55
LADYSMITH - HARRISMITH	20 - 40	25 - 35	15 - 45	15 - 55

REMARKS:

1. FOR REMARKS SEE ANNEXURE 16 SHEET 5.

ANNEXURE 16
SHEET 5 of 5
AMENDMENT

DESTRESSING AND WORKING
TEMPERATURE RANGES

SECTION	DESTRESSING RANGES		WORKING RANGES FOR RAIL LAYING	
	THROUGH LINES	YARD TRACKS	B	C
	A	D		
KLERKSDORP - * POTCHEFSTROOM	20 - 35	25 - 30	20 - 40	15 - 50
POTCHEFSTROOM - * KRUGERSDORP	20 - 40	25 - 35	15 - 45	15 - 55
KRUGERSDORP - JOHANNESBURG	15 - 40	20 - 35	10 - 45	10 - 55
JOHANNESBURG - OLIFANTSFONTEIN	15 - 40	20 - 35	10 - 45	10 - 55
POTCHEFSTROOM - VEREENIGING	20 - 40	25 - 35	15 - 45	15 - 55
VEREENIGING - GERMISTON	20 - 40	25 - 35	15 - 45	15 - 55
VOLKSRUST - * STANDERTON	15 - 35	20 - 30	10 - 40	10 - 50
STANDERTON - * HEIDELBERG	20 - 35	25 - 30	15 - 40	15 - 50
HEIDELBERG - GERMISTON	20 - 40	25 - 35	15 - 45	15 - 55
BALFOUR NORTH - * GROOTVLEI	20 - 35	25 - 30	15 - 40	15 - 50
GROOTVLEI - REDAN	20 - 40	25 - 35	15 - 45	15 - 55
FIRHAM - VREDE	20 - 35	25 - 30	15 - 40	15 - 50
VOLKSRUST - BREYTEN	15 - 40	20 - 35	10 - 45	10 - 55
BETHAL - SPRINGS	20 - 40	25 - 35	15 - 45	15 - 55
SPRINGS - KAYDALE	20 - 40	25 - 35	15 - 45	15 - 55
MIDWAY - HOUTHELMEL	20 - 35	25 - 30	15 - 40	15 - 50
BANK - LANGLAAGTE	20 - 35	25 - 30	15 - 40	15 - 50
MAFIKENG - * KRUGERSDORP	25 - 40	30 - 35	20 - 45	20 - 55
APEX - WITBANK	20 - 35	25 - 30	15 - 40	15 - 50
DELMAS - HAWEKUP	20 - 35	25 - 30	15 - 40	15 - 50
SEINTRARAND AREA	15 - 35	20 - 30	10 - 40	10 - 50
JOHANNESBURG CENTRAL METRO AREA	15 - 40	20 - 35	10 - 45	10 - 55
OLIFANTSFONTEIN - * IRENE	15 - 40	20 - 35	10 - 45	10 - 55
IRENE - PRETORIA	20 - 40	25 - 35	15 - 45	15 - 55
PRETORIA - * WARMBATHS	20 - 40	25 - 35	15 - 45	15 - 55
WARMBATHS - * POTGIETERSRUS	20 - 45	25 - 40	15 - 55	15 - 60
POTGIETERSRUS - BEITBRIDGE	20 - 45	25 - 40	15 - 50	15 - 50
* PRETORIA - * WATERVAL BOVEN	20 - 40	25 - 35	15 - 50	15 - 55
WATERVAL BOVEN - * NELSPRUIT	20 - 45	25 - 40	15 - 55	15 - 60
NELSPRUIT - KOMATIPOORT	25 - 45	30 - 40	20 - 55	20 - 60
HERCULES - MAGALIESBURG	20 - 40	25 - 35	15 - 45	15 - 55
PRETORIA - BRITS	20 - 40	20 - 35	15 - 45	15 - 55
BRITS - RUSTENBURG	20 - 40	25 - 35	15 - 45	15 - 55
RUSTENBURG - * THABAZIMBI	20 - 40	25 - 35	15 - 45	15 - 55
THABAZIMBI - ELLISRAS	25 - 40	30 - 35	20 - 45	20 - 55
BRITS - ATLANTA	20 - 40	25 - 35	15 - 45	15 - 55
NYLSTROOM - VAALWATER	20 - 40	25 - 35	15 - 45	15 - 55
NABOOMSPRUIT - ZEEDELA	20 - 40	25 - 35	15 - 45	15 - 55
PIENAARSRIJVER - MARBLE HALL	25 - 40	30 - 35	20 - 45	20 - 55
RAYTON - CULLINAN	20 - 40	25 - 35	15 - 45	15 - 55
GROENBULT - KAAPMUIDEN	25 - 45	30 - 40	20 - 50	20 - 60
HOEDSPRUIT - PHALABORWA	25 - 45	30 - 40	20 - 50	20 - 60
* KAAPMUIDEN - BARBERTON	20 - 45	25 - 40	15 - 50	15 - 60
* NELSPRUIT - GRASKOP	20 - 35	25 - 30	15 - 40	15 - 50
CITRUS - PLASTON	20 - 45	25 - 40	15 - 50	15 - 60
BELFAST - STEELPOORT	20 - 40	25 - 35	15 - 45	15 - 55
DERWENT - ROOSSENEKAL	20 - 40	25 - 35	15 - 45	15 - 55
PRETORIA CENTRAL METRO AREA	20 - 40	25 - 35	15 - 45	15 - 55
SALDANHA - BAMBOESBAAI	20 - 50	25 - 45	15 - 55	15 - 60
* BAMBOESBAAI - SISHEN	25 - 40	30 - 35	20 - 45	20 - 55
RICHARDSBAY - ULUNDI	20 - 45	-	20 - 55	-
* ULUNDI - PIET RETIEF	20 - 40	25 - 35	20 - 50	15 - 55
PIET RETIEF - * SHEEPMORE	20 - 40	25 - 35	20 - 50	15 - 55
SHEEPMORE - ERMELO	15 - 35	20 - 30	15 - 45	10 - 50
* ERMELO - BROODSNYERSPLAAS	15 - 40	20 - 35	15 - 50	10 - 55
BROODSNYERSPLAAS - OGIES	15 - 40	20 - 35	15 - 50	10 - 55

REMARKS:

1. RAIL TEMPERATURES IN DEGREE CELSIUS.
2. USE A RAIL TENSOR WHEN THE DIFFERENCE IN THE 'A' RANGE IS 10° CELSIUS OR SMALLER.
3. * DENOTES "EXCLUDED".

PART C3.24.2

PARTICULAR SPECIFICATIONS

MAINTENANCE OF PERMANENT WAY COUNTRY WIDE WITH AN ON-TRACK DRAIN CLEANING MACHINE

CONTENTS

1.	SCOPE OF THE WORKS	
1.1	Nature of work	2
1.2	Contract area	2
1.3	Duration of Contract	3
1.4	Off-periods	3
1.5	Definitions	3
2.	MACHINERY AND EQUIPMENT REQUIRED	
2.1	Maintenance Machine & Motive aspects	5
2.2	Hoisting equipment	5
2.3	Tamping Unit	5
2.4	Drain cleaner	6
2.5	Additional equipment	7
2.6	Requirements for additional equipment.	8
2.7	Labour & transport requirements	9
3.	TO BE PROVIDED BY TRANSNET FREIGHT RAIL	
3.1	Labour and or Supervision	11
3.2	Transport between machine and depot	11
3.3	Perway Material and Power Tools	11
4.	Planning	13
5.	Training	13
6.	AVAILABILITY	18

MAINTENANCE OF TRACK WITH ONE ON-TRACK DRAIN CLEANING MACHINE

1. SCOPE OF THE WORKS

1.1 Nature of work.

- a) This Contract includes the maintenance of track by the Contractor with an on-track drain cleaning machine capable of the mechanised cleaning of cuttings under live OHTE (Electric Overhead track equipment), working between trains.
- b) The drain cleaning shall include the clearing of all soil, silt and vegetative growth from earth drains as well as the profiling and trimming of the side slopes of cuttings and drains. It will also include the loading of the material and the removal thereof on track, as well as the spoiling and levelling of the cleared and dumped soil.
- c) The drain cleaning may also include a limited amount of repair work to drains to ensure effective drainage.
- d) Additional provisional track repair support such as tamping support may provisionally be required, which also may include tamping of rail joints.
- e) The machine provided shall include an operator and the supply of diesel and other fuels, oils and other consumables necessary for the execution of the contract.
- f) The capacity or capable spoil removal rate of the machine to clean cuttings will be considered in the award of the contract.
- g) Drain cleaning will include a variation of the removal of a low volume of material per meter of drain as well as a high volume (Variation is probably from 0.01 m³ / m up to 1 m³ / m cleaned – Average is \pm 0.1m³ / m)
- h) The total estimated volumes of drain cleaning required are as per the estimated quantities listed in table 1 below. As the variability of quantity is extremely high, the quantities used in the table 1 and the quantities in the schedule of quantities shall form the basis of the tender.
- i) Drain cleaning will also include removal of obstacles such as rocks, sleepers and short sections of rail.
- j) The drain cleaning shall consist of all support and equipment required to clear, transport, dispose and level spoil clear of track without spoiling any material on track or disturbing track ballast profiles.

1.2 Contract area.

The Contract area will be track owned or maintained by Transnet Freight Rail. The machine will be required in the following areas:

The machine is intended to be used mainly as indicated but placement shall be dependant on machine capability and work load priorities. The machines will mainly be used for the cleaning of cuttings.

Machine and/or type of output required	Planned contract area	Estimated TO (Track Occupation Days) days per year (excluding travel days)	Estimated Track occupation time per month (TO)(hrs)	Required Standard rate of material removal (m3/hr) from drain/cutting
Mechanised on track drain cleaning machine.	Country wide	230 days	140 hours	Minimum 10 m3/hr

Table 1. Contract area, estimated work time and volume of work required.

1.3 Duration of Contract.

- 1.3.1 This contract is intended to commence as soon as possible after the award of the contract and as soon as occupations for work and delivery of the machine can be done. The bidder shall specify in his tender submission the earliest commencement date after the award of contract. The actual Contract commencement date shall then be arranged by Transnet Freight Rail and be as stated in the letter of acceptance of tender.
- 1.3.2 The contract period shall be for five years (60 Months).
- 1.3.3 The planned work days for the machine including travel days shall be 235 TO-days per year over a 12 month period, including travel days to new work sites.
- 1.3.4 The Bidder shall specify in his tender submission the earliest commencement dates after award of the contract.

1.4 Off-periods

The annual break shall be for a period of at least 15 work days and shall normally be arranged for over the December holiday period.

1.5 Definitions

The following definition shall apply in addition to those of the E.160 General Conditions of Contract:

Restricted track: That portion of plain track where locking bars, guard rails and check rails are not removed prior to working or where sleepers are skewed by more than 75mm (measured at the rail's centre line) or where Dowty retarders and boosters are fitted.

2. MACHINERY AND EQUIPMENT REQUIRED.

2.1 Drain Cleaning machine and Motive aspects of machine.

2.1.1 The machine shall be able to:

- Transport personnel, material and equipment to and from the work site.
- Perform on-track and off track work with standard and additional equipment, if required.

- c) Function effectively as a drain cleaning and cutting cleaning unit.
- d) Spoil cleared material clear of track on shoulders of banks outside cuttings.
- e) Lift and clear obstacles such as rocks, sleepers and short rails.
- f) Work safely under live OHTE (Electric Overhead track equipment).
- g) The machine shall be capable of cleaning drains on both sides of the track and be able to extend cleaning of drains up to 3m from the centre line of the track. Disposal of spoil must also be possible on both sides of the track without having to turn the machine around.

2.1.2 The machine must be able to travel in both directions at a sustainable speed of 60km/h on zero gradients and at 40 km/h on a 1:40 gradient when moving. The machine with the drain cleaner unit attached should also be able to travel at this speed. If fully loaded with spoil, the speed should not differ by more than 10% of this requirement.

2.1.3 Off-tracking will normally not be required as the machine will mostly be required to work as a drain cleaner where more than one linked on-track vehicle will be involved. Work will also be done mostly on lines where off-tracking platforms do not exist. Bidders shall however qualify tenders stating what off-tracking capacity is available with the equipment offered. Where off tracking equipment is provided, the equipment shall be in accordance with applicable clause in the Spec C3 (Old E.160)

2.1.4 The machine must be able to transport the operator, a pilot, and eight people in a cabin(s) suitably protected against inclement weather. People may be transported close to the worksite by road if so desired by the Contractor. Service roads are however not available to many work sites. Bidders shall qualify how support labour shall be transported.

2.1.5 In addition to the personnel, the machine will be required to have the capacity to simultaneously load and haul material and some equipment. The following may be required:

- a) 5 Tons of material, with dimensions of the biggest component being 6m long and 750mm wide.
- b) Optional equipment: Hand tools, such as two track jacks and ballast Spades, forks and crowbars (Number to suit number of labour used) (Beaters only provisional).
- c) Provisional Hand equipment: (Only if pre arranged to provide): Two Poinjar tampers or hydraulic driven from machine. (To be conveyed in the upright position)
- d) The standard hand tools required for the cleaning of cuttings and the off-loading of the spoil shall be carried all the times with the machine. Tools required to assist when the tamping is to be done with the machine, such as track jacks, shall only be available if required and agreed on.
- e) Other tools such as Poinjars, etc shall only be provided as provisional equipment if and when required. For the provision of this additional provisional small-mechanised equipment, at least two weeks notice shall be given.

2.2 Hoisting equipment.

No separate hoisting equipment will be required provided that the lifting capacity of the hoist is provided for in the drain cleaning unit. Lifting capacity will be required to remove items such as rocks, sleepers or short loose rails.

2.2.1 Bidders shall qualify their tenders stating what lifting capacity will be provided. (Lifting moment – ton x metre)

2.2.2 If a crane is provided as part of the machine offered the following specification would be desirable: Hydraulic crane with a seven ton-metre capacity with a reach of 7.8m from the centre of the track. It would also be desirable for the crane to be able to winch permanent way material lying 20m from the centre line of the track to a position in which it can be hoisted.

2.2.3 Lifting cables and slings with clamps and attachments capable of lifting permanent way material currently used by Transnet Freight Rail will also be required. This shall apply whether lifting of material is to be done by either the crane or the drain cleaning excavator.

2.2.4 Woven cable net must also be provided as standard standby equipment to pick up rocks

2.2.5 The crane or drain cleaning unit shall be equipped with height limit switches to enable working under live OHTE wires.

2.3 Tamping unit attached to machine. (Optional & Provisional)

2.3.1 The purpose of this unit is to lift and tamp slacks where mud has been cleared from mud spot areas during drainage repair or tamp the odd dipped joints. This implies that the machine should preferably do the tamping. Hand tamping with Poinjars shall also be acceptable. Bidders must qualify how tamping can be done where required and what conditions shall apply.

2.3.2 If the tamping unit is provided attached to the machine the one single head-tamping unit shall be capable of tamping both rails (on both track as well as turnouts) with a minimum tamping rate of 4 sleepers (i.e. both rails) per minute.

2.3.3 Tamping assembly for one sleeper shall consist of 8 tines per rail seat when tamping plain track and 4 tines per rail seat when tamping turnouts.

2.3.4 Lifting or aligning of the tamping unit is desirable but not a requirement. Bidders shall qualify their tenders stating what is offered in this regard.

2.3.5 If required to tamp turnouts, the machine shall tamp at least 95% of the tamping positions of every turnout, and all other tamping positions. The Technical Officer will arrange to tamp the remaining positions by means of hand-held tamping equipment.

2.3.6 The machine shall be capable of tamping between 230mm and 440mm below rail level with the top of the tines adjusted to be 10mm below the underside of the sleeper.

2.3.7 The tamping tines shall be in the ballast for not less than 1,5 seconds per tamp. Provision shall be made for the outer rows of tines to be replaced by cranked tines for tamping steel sleepers.

- 2.3.8 The method of tamping shall provide an equal positive horizontal force to opposing tines. The tine vibration frequency shall be between 35 and 61 Hz with amplitude of about 10mm. The closing force shall be applied hydraulically to the tines and the system shall be fitted with an adjustable pressure control.
- 2.3.9 The tamping cycle shall be automatic. Manual operation shall be through the use of by-pass switches.
- 2.3.10 Tamping tines shall not be used after they reach the maximum wear.
- 2.3.11 Individual tamping tines minimum tip-size (frontal surface area) shall be:
Using 16 tines /sleeper: 7000mm²
Using 8 tines /sleeper: 9000mm²
- Measurement shall be by calculation from a trace on graph paper.
- 2.3.12 The Contractor's operator/mechanic shall operate the tamping unit.
- 2.3.13 The tamping unit, if supplied, will be paid for as a separate item per Tw worked by the tamping unit. .
- 2.4 Drain cleaner unit shall be provided as part of the machine or as an additional wagon linked to the machine.
- 2.4.1 The drain cleaner or cutting cleaning capacity of the machine shall be provided full time for this contract.
- 2.4.2 The drain cleaner or cutting cleaning capacity of the machine offered shall in addition to the pricing instructions, be described and provided as a qualification to this tender, clearly stating how the capacity is to be measured. Bidders shall quote at what rate and under what soil conditions the drain cleaner can excavate and load spoil material. If equipment used on previous contracts is offered, Transnet Freight Rail may use the historic production capacity achieved to confirm the cycle capacity of the equipment. If other or modified equipment is provided, Bidders shall qualify what is provided so as to allow proper evaluation of the capacity.
- 2.4.3 The total spoil clearing cycle shall be fully described in the tender offered. The capacity to unload or tip the spoil, together with the output required in terms of the number of labourers or other means to dispose or level the spoil, shall be provided clearly in the tender.
- 2.4.4 Bidders shall also qualify tenders stating whether any Transnet Freight Rail wagons will be required for the spoil removal process. The capacity of the spoil removal wagon offered by the bidder shall also be specified. A wagon with a capacity of at least 10 tons is required.
- 2.4.5 The drain cleaning equipment shall be capable of removing rocks and scrap Perway material. The necessary slings and or nets shall be provided to allow for this.
- 2.4.6 The drain cleaner may also be required to haul in crusher run, backfill material or ballast from selected points to backfill cleaned mud hole areas in cuttings. Bidders shall qualify tenders stating how this shall be done. (E.g. material in load area or per 0.4m³ polysulfide bag)
- 2.4.7 Drains shall be shaped and profiled neatly to approved profiles.

- 2.4.8 The Technical Officer may require the provision and installation of drain pipes where required. The machine and labour with the machine shall assist if such work is required. The provision of the drainpipes, if required by the Technical Officer, may either be provided by Transnet Freight Rail or alternatively be provided as per clause 2.9 below.
- 2.4.9 The number of labourers required to assist with both the finalisation of the shape of the cleaned drain as well as the clearing up of the spoil area shall be qualified. The minimum number of labourers required for these tasks shall form part of the tender.
- 2.4.10 Labourers shall be equipped with the necessary picks, spades, ballast forks and crowbars to enable them to assist the drain cleaning operation so as to ensure that properly finalised drain cleaning is achieved.
- 2.4.11 The Contractor may be required to provide additional labour for the boxing out of mud contaminated ballast in some mud spots and the boxing in of new cleaned ballast in such a spot. These areas shall be tamped after such an action. The placing of some drainage pipes in the formation at such a spot may be required.
- 2.4.12 The boxing out of ballast such as described in the clause above may be done by others. In such an event, the drain cleaner may only be required to haul in crusher run or ballast as required and then later remove the spoil.
- 2.4.13 Where site conditions require additional labour, such additional labour may be arranged as day labour with the permission of the Technical Officer and approval of the Project Manager. The notice period for the additional labour shall be sufficient and shall be agreed on between the Contractor and the Technical Officer. A notice period of two weeks shall apply unless qualified differently in the submitted tender. The period may be shorter if agreed upon by both parties.
- 2.4.14 Bidders shall also qualify under what conditions additional transport will be required for the additional labour.
- 2.4.15 In the event that the machine is to be used for an extended period of more than two weeks for tamping of joints or other track maintenance where less labour is required than the minimum fixed labour allowed for in the contract in terms of clause 2.4.9 above, the Technical Officer may then request the Contractor to reduce the number of labourers for this period of time. Bidders shall either qualify their tenders stating what reduction rate per labourer per day shall apply. Alternatively, the day rate tendered for labour shall be used to calculate this reduction.
- 2.5 Additional Optional (Provisional) equipment that may be required.
The equipment required is as listed in the attached schedule of additional equipment:
(Provisional)
- 2.5.1 Sleeper changer, (Provisional)
 - 2.5.2 10-ton rail wagon. (Provisional)
 - 2.5.3 Hydraulic grab to be fitted to crane for loading of rocks, concrete sleepers and other items. (Provisional)
- 2.6 Requirements for the additional equipment.
- 2.6.1 The Drain cleaning equipment, as per clause 2.4 shall be provided for the full duration of the contract but will be used as planned per the work program determined by TFR

- 2.6.2 The other equipment called for as provisional equipment may not be required at all. Bidders may qualify tenders stating what price advantage could be offered to Transnet Freight Rail should the provisional additional equipment not be included in the tender at all.
- 2.6.3 A program may be provided for the use of the provisional additional equipment with other machines on other depots and other zones. If this is required, the additional equipment will only be used with a similar machine on another contract on another depot.
- 2.6.4 The Project Manager will provide an annual program for the use of the equipment which will not be changed with a notice period shorter than one month. At least one month's notice will also be given to return the equipment to this contract's area.
- 2.6.5 The Technical Officer will give the Contractor at least 14 days notice when a unit, available at the depot, is required for use. At least 48 hours notice will be given if a unit is no longer required and will have to be removed from the machine.
- 2.6.6 Transport of equipment to any other site will only apply if the basic power machine unit (E.g. UV machine) cannot move the equipment and the Contractor is required to move the equipment. Rates allowed for in the schedule of quantities shall apply for such moves.
- 2.6.7 A maximum of one unit of additional equipment will be required at any time. If required, the rail wagon may be required together with the sleeper changer.
- 2.6.8 The additional equipment shall work as bolt-on units of the machine (not separate machines). Fitting and removal of the units shall be possible in the field.
- 2.6.9 The fitting and removal of a unit will be paid for, as an event only if a technician other than the operator has to fit the unit and this is done outside of working time. Alternatively, the operator shall fit the unit either during normal time or as overtime. Bidders shall qualify under what conditions a unit will not be able to be fitted or removed by the operator.
- 2.6.10 The Contractor may offer other (self-powered) equipment of equivalent specification and work output if the bolt-on equipment is temporarily not available. Payment will then be as for the specified additional equipment.
- 2.6.11 If the drain cleaning unit is non-available, the entire machine including the drain cleaner will be regarded as non-available, unless the Technical Officer approves the use of the machine on another productive maintenance action.
- 2.6.12 If any of the other additional equipment is required and the equipment becomes non-available or is not in full working condition, the additional equipment shall be regarded as non-available for the first 48 hours. After 48 hours, the whole machine shall be regarded as non-available. The availability payment of the machine in the first 48 hours will also only be payable if the machine can be used, with the approval of the Technical Officer, in another acceptable way.
- 2.6.13 When additional equipment is not used, the Contractor will remain responsible for the safe keeping thereof and ensure the availability thereof for use on short notice. The Contractor may leave such equipment at his own risk at any Infra Maintenance depot with the approval of the Technical Officer.
- 2.7 Labour and transport required for this contract.

- 2.7.1 Permanent labour and flagmen are to be provided full time as part of the drain cleaning operation.
- 2.7.1.1 The operator for the machine and his personal assistants (if required) as per clause 2.6.9
- 2.7.1.2 A labour gang to assist with the drain cleaning operation. Bidders to specify the number of labour required to assist with the drain cleaning operation. A minimum of 6 (six) workers is envisaged. Two of which can take up relief flagmen duties. Bidders are to qualify what labour strength is required full time with the machine.
- 2.7.1.3 Two flagmen for protection duties. (Flagmen must also do track work when not required to do protection duties)
- 2.7.2 Transport of permanent labour.
Transport of the permanent labour from their pick-up point to where the machine shall depart to work for the day, shall be provided for by the Contractor. If labour is to be transported to site by road vehicle, bidders shall qualify this and qualify how labour strength and vehicles are part of the offer submitted.
- 2.7.3 Provisional day-labour required on an "as and when required" basis.
Additional labour will only be permitted if authorised by the Project manager.
A minimum period of two weeks will apply for the hire of such labour. Deviation from these notice periods will only apply if agreed on between the Contractor and Technical officer.
- 2.7.4 Transport of provisional day labour.
Transport of the day-labour from their pick-up point to where the machine shall depart to work for the day, shall be provided for by the Contractor. Where the machine will not have the capacity to transport the additional labour, the Contractor shall qualify his tender to this effect. Separate transport shall be provided for this event. This shall also be qualified in the submission of the tender and may form part of the contract if agreed on with the award of the contract.
- 2.8 Earth moving equipment for drainage repair. (Provisional: On an "as-and-when required" basis)
- 2.8.1 Where some minor earthmoving is required so as to repair drainage in a specific area by using earth moving equipment, the Technical Officer may require the provision of the plant hire items against the rates as per the schedule of quantities and prices.
The following types of work are possible.
- a) Removal of excessive erosion material from cuttings where excess is more conveniently and easily removable by earth moving equipment.
 - b) Opening up of drainage outlets away from the track formation, in material types that a TLB or excavator can remove more effectively.
 - c) Repairs to intercepting cut off drains where erosion or silting up caused breakthrough or leakage into a cutting, causing cutting face erosion and blockage of drainage canals.
 - d) Other drainage repair work.

2.8.2 The following types of plant hire items are possible:

- a) Tractor - Tractor Loader Backhoe (TLB)
- b) Tipper. - Single axel 3-4m³ – 7 ton. and or
- c) Tipper. - Double rear axel 6 - 8m³ – 10 - 12 ton

2.8.3 Where plant is required, the plant shall be provided in good working condition, and will include an operator and fuel sufficient for 9 hours of work per day. Running time for road worthy plant items to and from site shall be part of the 9 hours per day where agreed on between the Technical Officer and the Contractor.

2.8.4 Because of the variability of the requirement for plant hire and the terms on which the Contractor will be able to hire plant, all plant hire to be done, will only be done by agreement between Technical Officer & Contractor.

2.8.5 The period of hire for an item shall normally not be less than one day per item. The period of hire will however be agreed on between the Technical Officer and the Contractor.

2.8.6 Low bed for delivery of plant to and from site.

- a) If a low bed truck is required to deliver and remove plant to and from site, the use of the low bed shall be paid for under the items in the schedule of quantities and prices.
- b) This implies payment for delivery and removal separately.
- c) Payment for the variable cost per km will be made for one direction only. This implies no payment for the empty leg.
- d) Where it is quite difficult to obtain a low bed for a delivery, the Contractor may approach the Project Manager to consider a variation of the rate. This will only apply if a delivery rate can be proven by the Contractor to vary more than 20% of that tendered.

2.8.7 Safety & control of plant hire.

- a) The Contractor shall take all precautions to ensure that any earth moving equipment used on the contract does not work closer than 3m from the side of the track without working under occupation conditions, protected by flagmen.
- b) The earthmoving equipment shall not work within 3m of live electrified lines.
- c) The excavating and loading earthmoving equipment shall not be used on cable servitudes. The Technical officer shall be requested to arrange for the appropriate Transtel and Signaling Maintenance Managers to beforehand provide data of where not to excavate because of cables. Where cables are to be expected, trail tests are to be made and some form of marker is to be provided to mark cables to prevent damage to cables.
- d) The Contractor shall arrange for his own protection and security of plant to prevent theft or damage.

2.8.8 The depot shall do larger earth moving projects separately.

2.9 Material required for drainage repair. Provisional sum allowed for this event.

- 2.9.1 The Contractor may be required by the Technical officer to do certain repairs to allow for the effective functioning of the drainage and to ensure that the drain cleaning will last. This may include work such as the installation of some concrete pipes, PVC pipes, gabions and certain minor concrete repair. This may require the provision of material required for this purpose.
- 2.9.2 Work such as this may also require the use of a small sub-Contractor with the necessary skill. Where required, the Technical Officer may require that the Contractor hire such a sub-Contractor to do this work.
- 2.9.3 Where such material or minor work is required, the Contractor shall obtain a quote for approval by the Technical Officer for this or alternatively with prior approval obtain a telephonic indication of the cost of the material and then obtain the Technical officers approval for the purchase thereof. Payment for such material will then be made with the claim from the Contractor, substantiated by the approved invoice, including the handling mark-up allowed for in the tender for this item. Labour, supervision, LDV use and plant hire used for this work, which is part of the standard allowance for labour or part of agreed day labour, will not form part of the payment under this item.
- 2.9.4 Bidders shall qualify tenders stating what percentage surcharge shall apply to such an invoice for the obtaining of the quote, purchase and delivery of the material or small service. This surcharge shall also be paid for under the provisional lump sum item.
3. TO BE PROVIDED BY TRANSNET FREIGHT RAIL
- 3.1 Labour and or supervision.
- Transnet Freight Rail will provide a track master for supervision and piloting of the machine.
- 3.2 Transport between machine and depot
- a) No transport of the contract gang will be provided.
- b) The Contractor shall however arrange his own transport when the operator has to remain at the machine to undertake major servicing or repairs.
- 3.3 Perway material and Power tools.
- a) Transnet Freight Rail will provide all perway material.
- b) Transnet Freight Rail may provide drainage pipes and other material. Alternatively, refer clause 2.9 above.
- c) If power tools such as Poinjars or other perway tools are required for short periods, Transnet Freight Rail shall supply these tools. Alternatively, the Technical Officer may request the Contractor to provide the tools as per the Schedule of prices.
- 3.4 Accommodation wagons will not be provided by TFR. The contractor shall therefore make alternate arrangements to house employees associated with the machine. Essential work wagons may be supplied by TFR for use in executing work of this contract provided that bidders motivate and qualify the need for work wagons.
- 3.5 Bidders are required to clarify tenders to clearly indicate what cost has been allowed for and the difference in cost to Transnet of all possible options included in the pricing for any of the following or any other allowed for wagon usage options allowed for in the submitted tenders:
- 3.6 Transition period for some non essential wagons: Wagons which are Transnet owned and maintained.

If any, what cost change will occur, when wagons are withdrawn and no longer allowed. This option only allows for wagons supplied and maintained by Transnet as on previous similar contract. (Transition period only)

- 3.7 Transition period for some non essential wagons: Wagons which are Transnet owned but day to day maintenance is done by the contractor :
(This option may only be valid if an agreement for standard of safety and accreditation of the contractors' technician is agreed to by TFR wagon fleet maintaining management.) Cost of wagons as per qualified list, if continued to be supplied by Transnet as on previous similar contract, but part of wagon maintenance be done by contractor, excluding wheel replacement or wheel cutting. (Transition period only)
- 3.8 Full time use of some wagons supplied by contractor:
Wagons supplied and maintained by the contractor. Full time use of some wagons supplied by Transnet: Wagons supplied by Transnet and partly maintained by Contractor as in ii) above. The cost of maintenance arranged by the contractor may be paid for by:
a) An allowance by the contractor and included as part of price tendered, or
b) Provisional lump sum item in the contract and paid for by Transnet on approved invoice.
- 3.9 This clause on wagon usage shall replace any other reference to the supply or use of wagons mentioned or specified elsewhere in this specification.
- 3.9.1.1 Bidders may offer different options to Transnet for the use or not of wagons which they consider important or critical to execute the contract.
- 3.9.1.2 All intended wagon use shall be clearly qualified in an annexure covering wagon requirements. From any submission, it must also be clearly qualified what costs will be involved. It must also be qualified clearly when no wagon and traction will be required to move the camp of the contractor. This clause therefore implies that bidders shall allow for provision of certain facilities such as accommodation without the use of wagons
- 3.9.1.3 Bidders shall also qualify tenders stating what costs shall be involved if one or more wagons allowed for in the offer is later withdrawn or is not provided.
- 3.9.1.4 Where wagons are used as part of a contract, the contractor will under all circumstances be required to keep the wagon clean and safe and control security of the wagon. This shall include preparing basic safety cases for all types of wagons used and ensuring the proper management thereof.
- 3.9.1.5 Any wagon supplied by Transnet and used by the contractor remains the property of Transnet and shall be returned to Transnet after the expiry of the contract.

4. PLANNING

- 4.1 The following will be determined and recorded jointly by the Technical Officer's deputy and the Contractor at a monthly site meeting, scheduled to suit both parties and shall include:
- (a) A detailed programme for the next month and the necessary inspections required.
- (b) The type of earthwork support equipment that will be required and the workplace it is required at.

- (c) Material requirements e.g. perway material required or turnout components or ballast.
- (d) Where additional earthwork equipment material was used, the reference number and invoice value of each invoice shall be recorded and presented to the technical officer for payment.
- (e) Planning of occupations.
- (f) The previous month's production and quantities for planning revision and payment purposes.

5. Training of contractors staff and compliance with safety requirements

5.1 General.

- a) The Contractor shall ensure that all staff working on or with the contract are adequately qualified and trained, so as to comply with any relevant safety and qualification requirements. This applies to both the contractors own staff or any staff of a sub contractor employed by the contractor.
- b) The responsibility of the Contractor to ensure that his staff is qualified and trained implies that:
 - I. Specific graded staff shall be qualified and sufficiently experienced and in possession of a qualified certificate for the required position or responsibility.
 - II. All staff shall also possess any other relevant induction or safety qualifications.
 - III. The contractor shall ensure that a complete and updated record is kept of safety qualifications or training and certification of all staff for all the relevant qualifications and safety requirements.
 - IV. The record of the qualifications and or training kept by the contractor shall be available on site.
 - V. All relevant requirements for refresher training shall be adhered to and the contractor shall ensure that the refresher training and certification required is provided for the relevant staff.
- c) At the commencement of the contract, Transnet Freight Rail shall assist the contractor with the initial on-the-job training for the staff as specified below, so as to assist the Contractor to qualify the worker's / staff. The assistance for training shall apply only for the types of training listed in the Training Table 2, inserted below.
- d) The contractor shall ensure that all qualifications, training, and certification for all other requirements such as Machine Operators, Technicians / Fitters, Track Masters or Machine Track maintenance supervisors, Drivers, Crane and Earthmoving operators, Rail disc cutter operators, etc. are in place and are valid and that a record is kept of such qualifications. This implies that the contractor shall supply proof of qualifications when requested by the Technical officer.
- e) Where training is required by the Contractor for other than normal track work functions and Transnet Freight Rail has undertaken to provide this training, the following shall apply:
 - The number of staff requiring training for a specific qualification or activity is to be provided by the contractor in good time to allow for arranging such training.
 - Training will normally only be provided only at a depot or Esselen park.
 - Arrangements for the training and/or testing must be made with the appropriate depot, Technical officer or Transnet Freight Rail depot Production manager (Perway or Electrical)

- f) For critical work outputs as well as specific activities, the contractor shall ensure that he has a core group of workers with sufficient previous experience to take the lead in undertaking maintenance tasks to ensure safe and productive working.
- g) Where any training is provided by Transnet at a depot or centrally at Esselen Park, the contractor shall be responsible for transport, accommodation and meals. Where the training is provided by Transnet, the lecture hall with facilities and handout material will be provided by Transnet.
- h) Where the contractor will be required to provide an accredited trainer, paid for by Transnet under the "Day Labour" rate, or where the contractor arranges training or refresher training for his staff, Transnet will make available, free of charge, any of the existing depot venues if so required by the contractor. Arrangements for the venue for training shall be made by the contractor with the depot through the Technical Officer.
- i) When training is conducted by a representative of the contractor, the basic specifications and content of what is required to conduct the training, will be supplied by Transnet. Where Transnet cannot supply duplicate copies of this content, the copies may be duplicated by the contractor with the approval of the Technical Officer. The cost of the copies will then be re-funded to the contractor after the approval of the invoice. Payment will be made under the Lump Sum item in the contract.

5.2 Training to be provided by Transnet Freight Rail or by hired accredited trainers:

- a) The intention is that Transnet shall provide, where required, the training for the qualifications or certification as listed below at the start of this contract. Where Transnet cannot provide the training, the required accredited trainer shall be hired by the contractor and be paid for under the provisional day labour item.
- b) During the course of the contract any required, alternative, follow up or refresher training for new recruits or replacement staff, shall be undertaken by the contractor as part of the contractors responsibility his own cost.
- c) For the purpose of pricing, where an accredited trainer is required to be provided by the contractor, the following assumption must be used:
 - The content of Training course material required by Transnet will be provided by Transnet.
 - The trainer will need to be sufficiently qualified and then be tested by Transnet and be accredited by Transnet to conduct the training and testing and certification of candidates trained. Such a testing of a trainer shall be done by Transnet free of charge as part of a group of contracts but transport and accommodation cost of such a trainer shall be for the account of the contractor.
 - Depot facilities such as venues for training may, by arrangement with the depot, be used free of charge by such a trainer to conduct training for the contract.
 - For any training, the Transport, accommodation and meals of any candidates being trained, shall be for the account of the contractor. This shall also apply at the start of the contract.

Type of Training	Staff required to undergo training	Estimated duration of training	Location of training	Trainer to conduct training at start of contract	Alternative trainer to conduct training at contract start	Future Refreshment training
Induction	All contract staff including new entrants. Start of work at any new depot	+/- 2 hours	Depot where work starts	TFR Technical officer or Track inspector	New recruits: Contractors accredited representative	Contractors accredited representative.
Electrical awareness	All contract staff including new entrants	+/- 2 hours	Depot where work starts	TFR Depot's electrical officer or accredited trainer	New recruits: Contractors accredited representative	Contractors accredited representative.
PWC (Electrical)	Supervisors, Operators, fitters, Technicians & Workers supporting fitters, working in risky OHTE areas.	2 days	Depot where work starts	TFR, Esselen Park or Depot accredited trainer, or TFR hired accredited trainer : By appointment at depot*	Replacement new staff: Contractors accredited representative	Contractors accredited representative.

Competency (Electrical)	Supervisors (Follow up training in PWC)	1 day	Depot where work starts	TFR, Esselen Park or Depot accredited trainer, or TFR hired accredited trainer : By appointment at depot*	Replacement/new staff: Contractors accredited representative	Contractors accredited representative.
Flagmen Training	Flagmen and standby flagmen	5 days		TFR, Depot neighbouring depot accredited trainer, or TFR hired accredited trainer : By appointment at depot	Replacement/new staff: Contractors accredited representative	Contractors accredited representative.
Bonder Training	Bonder	5 days		TFR, Esselen Park or Depot accredited trainer, or TFR hired accredited trainer : by appointment at depot*	Replacement/new staff: Contractors accredited representative	Contractors accredited representative.

Table 2: Training on TFR contracts: List of types of training

5.2.1 Track maintenance (Workers):

If required at the commencement of the contract, assistance with the training, to qualify the Contractors workers to perform the following tasks shall be given. This assistance shall be limited to showing the contractors Track master how work is to be done. Tools and repeat training must be provided by the contractor

- a) Track work as mentioned in the appropriate clause (Level crossing's and blocks, cattle guards, sleeper & Clip replacement / fastening, lubricators, ballast boxing etc.).
- b) Quality measurements as required per the quality control clause.

5.2.2 Training of Track Inspectors, Track Masters and or Trade hands (Perway):

- a) This training shall be solely the responsibility of the contractor. Only qualified people, qualified for the type of work required for the support required for the contract, shall be used by the Contractor for these positions. The Contractor shall ensure that staff used, do comply with requirements for the industry for the type of work required for the contract.
- b) The Contractor's Track Master/Track Inspector shall take full charge of the Contractor's resources on the work site. Such a contractor's Track Master or Track Inspector shall be responsible to ensure the execution of Track work safely and to the standard of the industry for the relevant type of work and line traffic conditions. An employee / agent appointed by the contractor, will not act as, or be allowed to take on any responsibility as, the person-in-charge-of-the-occupation. The function of person-in-charge-of-the-occupation is restricted to any current standard Transnet policy in place at the time of the work being performed. At present this is restricted to competent Transnet Freight Rail Track Masters or Track Inspectors used for on-track contract work.
- c) The person-in-charge-of-the-occupation for an On Track machine shall be a competent Transnet Freight Rail employee, reporting to the Transnet Freight Rail Depot Engineer. This person shall be responsible for the following on a work site:
 - Taking occupations
 - Placing and controlling the flagmen
 - Declaring the track safe for the passage of trains
 - Cancelling the occupation and recalling the flagmen
 - Communication with train traffic control with regard to occupation matters.
 - The issue and control of all flags, warning boards and detonators

5.2.3 Training of Flagmen:

- a) Flagmen used, may be either Transnet Freight Rail employees or employees of the Contractor.
- b) For this contract, flagmen are required to be provided by the contractor.
- c) Any flagmen provided will be subject to control testing by the Track Inspector of the section to ensure compliance of protection duties relevant for the section of track to be worked as well as the activity required to be performed, e.g. protection of Tamper work. The testing of flagmen proficiency by Transnet Freight Rail Track Inspectors is only a safety and quality control and does not exonerate the contractor of the responsibility to ensure the proficiency of the any flagmen used.

- d) The appropriate training for the flagmen can be provided once off for the contract by Transnet Freight Rail. Any extra training of Flagmen as well as any refresher training required shall be paid for or be provided by the contractor.
- e) Where Transnet Freight Rail requires flagmen to be trained, the pre-requisites for such persons to qualify to be trained, shall be basic literacy skills and basic English language ability as well as any physical requirements required for this work such as good sight and hearing ability.
- f) Flagmen must be officially trained, evaluated and certified competent, (Transnet Freight Rail 407 – Item Number 37/270451 - "Certificate of Competency") by a designated competent person, before being used on protection duties. This certificate of competency shall remain valid for one (2) years only after, which re-testing and re-certification of competency will be required. TFR safety regulations must always be complied with regarding all aspects of the competency certificate.
- g) In cases where a person was not performing flagmen duties for a period of 6 months or longer, he must be re-tested and again be re-certified competent, before he may be re-used for Protection Duties.
- h) The Transnet Freight Rail Depot Engineer remains ultimately responsible in terms of the requirements of Act 85 for the safe working environment of his own personnel as well as contractor's personnel within the track maintenance environment on his depot.

The Depot Engineer is therefore also responsible for ensuring that any changes in the protection procedures that may occur over time are effectively communicated to any flagmen prior to them being used for protection duties. Where such a change occurs and is communicated to a contractor, the contractor shall ensure that flagmen used by him are informed and trained to comply with all the changed requirements.

5.2.4 Training of bonders.

- a) Bonders removing, replacing or repairing damaged bonds, shall be trained to ensure that only work, which they are trained and allowed to do, is done by them.
- b) The initial initialization training of bonders for this contract can be arranged for with the Transnet Freight Rail accredited electrical trainer, through the technical officer as specified above in this clause.
- c) Bonders shall be required to be trained for Electrical Permanent Way Competency and be trained to do WHAM bonding and bonding according to electrical specifications, instructions and drawings manual CEE 0059.84 and CEE0060.84, where applicable.
- d) Follow up training of bonders shall be responsibility of the contractor.

5.2.5 Electrical awareness, Educational and competency training:

a) The following training shall be arranged for the following Contractors staff:

Course	Objective	Duration & trainer	Grade to attend
A) Awareness (Electrical)	To inform all contractors staff working near a machine and on the line on electrified sections of the dangerous situations of high voltage OHTE	Two-hour on-the-job lecture and training. Accredited Electrical trainer / Depot's Electrical technical officer.	<ul style="list-style-type: none"> All workers and staff working on the contract
B) PWC Educational (Electrical)	For the safe working on and with On-track machinery in the vicinity or near exposed High voltage OHTE.	Lecture room training = 1,25 d On-the-job training = 0,25 d Criterion test = 0,5 d Total = 2 days Accredited Electrical trainer	<ul style="list-style-type: none"> Workers working on a machine (High risk area's) Operators Machine fitters Area supervisors Contract supervisors
C) COM Competency (Electrical) (to follow A) (PWC)	Work permits safe working procedures under the direct supervision of a responsible representative.	Lecture room training = 0,25 d On-the-job training = 0,25 d Criterion test = 0,50 d Total = 1 day Accredited Electrical trainer	Supervisor (Responsible person in charge at machine working)

b) The electrical awareness training must be arranged for beforehand on-the-job.

c) The electrical educational and competency training may be arranged for at either a depot's lecture room's (Transnet Freight Rail property), or at a venue of the Contractors choice (Contractors cost).

d) The Accredited Electrical trainer from Transnet Freight Rail required at the start of the contract, will be provided by Transnet Freight Rail at Transnet Freight Rail cost, provided that an arrangement for the training session required, is done beforehand and will fit in with the trainers training program for the year. This shall not include transport, accommodation and meals for candidates to be trained

6. AVAILABILITY

6.1 The availability factor (A) of the machine shall be calculated as follows for purposes of monitoring the production rate with the tendered rate.

$$\text{Availability } A = \frac{T_o - T_b}{T_o}$$

Where T_o and T_b are the totals for the month.

8. Record of production.

8.1 The Contractor shall provide Transnet Freight Rail daily with the daily production statistics of the work.

- 8.2 The production data shall be in an agreed on format providing the following basic type of information:
- To, Tw, Tt, Ts, Tb, Tww etc. of each machine applicable.
 - Length of work completed for the day.
 - Start & final km and GPS coordinate of length and line description / name.
 - Reasons / comments on production shortfall.
 - Graphical presentation of data as and where agreed on.
- 8.3 The data shall be e-mailed daily to the Technical officer at the depot as well as the Project Manager or his representative.
- 8.4 Where problems exist of actually transmitting the data, the bidder shall state what measures shall be taken to ensure transmission of data as soon as possible.
- 8.5 All data shall be summarized per week and then per month. Data may be used as a preliminary indication of payment but shall not be used specifically for payment purposes. Payment data shall be dealt with as specified elsewhere.

oo0oo

“PREVIEW COPY ONLY”

TRANSNET



(REGISTRATION NO.1990/000900/30)
TRADING AS
TRANSNET FREIGHT RAIL

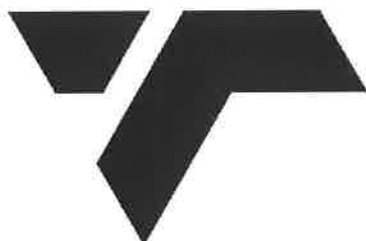
**ADDENDUM NO. 1 TO THE SECONDARY SPECIFICATIONS AND GENERAL SPECIFICATIONS
TO THE CONTRACT**

- 1) Wherever the word "Spoornet" appears in the secondary specifications, please replace it with "Transnet Freight Rail".
- 2) Wherever the word "Technical Officer" appears in the secondary specifications, please replace it with "Service Manager's Deputy".
- 3) Wherever the word "Project Manager" appears in the secondary specifications, please replace it with "Service Manager".

TRANSNET



TRANSNET



(REGISTRATION NO.1990/000900/30)

**TRADING AS
TRANSNET FREIGHT RAIL**

MINIMUM COMMUNAL HEALTH REQUIREMENTS IN AREAS OUTSIDE THE JURISDICTION OF A LOCAL AUTHORITY: TEMPORARY FACILITIES FOR CONTRACTOR'S PERSONNEL

1. CAMPS

- 1.1 Prior to the erection of any camp, the Contractor shall submit to the Technical Officer, for his approval, details of his proposals as to the site, water supply, sanitation, and size and type of buildings. Where the site is on private land, the Contractor shall submit the written approval for the use of the site of the relevant statutory authority and of the owner and occupier of the land (as applicable).
- 1.2 Camps must not be erected on land infested with field rodents.
- 1.3 Adequate drainage shall be provided to carry off storm and waste water.
- 1.4 Buildings shall be built to a neat and orderly pattern.
- 1.5 All buildings shall have smooth, hard, impervious floors, graded to provide effective drainage and to permit washing.
- 1.6 Camps shall be maintained by the Contractor at his own expense in a clean and tidy condition. The Contractor shall take such steps as the Technical Officer and landowner/occupier may demand to prevent the creation of a nuisance.
- 1.7 When so instructed by the Technical Officer, the Contractor shall, at his own expense, erect suitable screens between the camp and any public road, thoroughfare or railway line.
- 1.8 After removal of a camp, the Contractor shall, at his own expense, restore the site to its original condition to the satisfaction of the Technical Officer and of the landowner and occupier where the site is on private land.

TRANSNET



2. **HOUSING**

- 2.1 Every living room shall have cross ventilation, both constant and occasional. Where only one window is provided, it shall not be in the same wall as the door.
- 2.2 Dimensions of living rooms shall be sufficient to allow 3.5 square metres of floor area and 11 cubic metres of air space for each person over the age of 10 years. The floor area of any living room shall not be less than 7,8 square metres.
- 2.3 Flat-roofed quarters shall have a minimum roof height of 3 metres above floor level. For quarters with pitched roofs, the wall height shall be not less than 2,6 metres above the floor with a minimum height above floor of 3 metres at the top of the pitch.
- 2.4 Doors shall not be less than 2m x 0,75m and must be halved.
- 2.5 Windows of each living room shall have an area not less than one twelfth of the floor area and shall be capable of opening to at least half their full area.
- 2.6 In areas where malaria is prevalent, doors and windows must be fitted with gauze screens.
- 2.7 Cooking shelters shall comprise roofed structures, three sides of which shall be enclosed by a weatherproof material, approved by the Technical Officer to a height of at least 1m above ground level.
- 2.7.1 Sleeping quarters shall not accommodate more than 8 persons per room.
- 2.7.2 Pegboards shall be carried on metal or concrete supports and shall be separated by partitions not less than 0,4 metres high extending to within 150mm of the end of the bunk. Pegboards shall be removable for cleaning.

3. **WATER SUPPLY AND ABLUTION FACILITIES**

- 3.1 The Contractor shall ensure that an adequate and conveniently situated supply of potable water is provided.
- 3.2 Separate buildings for ablution facilities shall be provided. Where approval has been obtained for the housing of both males and females, separate facilities for each sex shall be provided. The proportion shall be 1 cubicle for 20 persons.
- 3.3 Waste water shall be hygienically disposed of.

4. **SANITATION**

- 4.1 Separate buildings for latrine facilities shall be provided. Where housing are provided for both males and females, separate facilities for each sex shall be provided. The proportions shall be at least one squatting seat for every 15 persons or less in the case of pit latrines, or one for every 10 persons or less in case of pail latrines.

SPECIFICATION E4.B
(November 1996)

Latrines shall be fly proof and sited at least 10 metres from any other building, and shall not face on any public road, thoroughfare, railway line or residential property. Pits shall not be less than 2,5 metres deep and sited not less than 120 metres from nearest underground water source.

- 4.2 Latrines shall be so constructed, situated and maintained, and night soil so disposed of as to prevent access by animals, breeding of flies, pollution of streams and domestic water supplies, and other nuisances. Where a night soil removal service is operated by a competent authority, use of such service shall be obligatory, and the use of pit latrines and atria pits will not be permitted.
- 4.3 At least one refuse bin of adequate size with close fitting lid shall be provided for each building. Refuse bins shall be emptied and cleaned out daily.
- 4.4 Labour shall be employed on camp sanitation duties on the following basis:-
- 4.4.1 Where the number of persons living at the camp is 20 or less - one unit.
- 4.4.2 For additional numbers over 20 living at the camp - one unit per 100 or part thereof.
- 4.5 Unless refuse is removed by a competent authority, it shall be disposed of in pits and covered over daily with a layer of earth or ash of sufficient thickness to prevent depredations by rodents and the breeding of flies.
- 4.6 Adequate measures shall be taken against all vermin and insects responsible for the spread of disease. Any instructions of a competent health authority shall be carried out promptly and implicitly.
- 4.7 Buildings and bed boards shall be treated whenever necessary with an approved insecticide.
- 4.8 The Contractor shall permit and facilitate inspection of the camp and structures on the site by the staff of Transnet or any other competent authority, and shall comply with any reasonable request by such staff or any other competent authority to eliminate any unsanitary condition.
- 4.9 Any outbreak of infectious disease shall immediately be reported telephonically and confirmed in writing to the Technical Officer.
- 4.10 The keeping of animals of any sort is not permitted.
- 4.11 The Contractor shall have on hand at the camp the necessary tools, disinfectants and cleaning materials to maintain and clean the sanitary facilities.

5. **RATIONS**

Rations, where supplied by the Contractor, shall be stored in a suitable and rodent proof building with sufficient shelving.

ooOoo

“PREVIEW COPY ONLY”

TRANSNET SOC LTD

(Registration no. 1990/000900/30)

SAFETY ARRANGEMENTS AND PROCEDURAL COMPLIANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND APPLICABLE REGULATIONS

1. General

- 1.1 The Contractor and Transnet Limited (hereinafter referred to as "Transnet") are individual employers, each in its own right, with their respective duties and obligations set out in the Occupational Health and Safety Act, Act 85 of 1993 (the Act) and applicable Regulations.
- 1.2 The Contractor accepts, in terms of the General Conditions of Contract and in terms of the Act, his obligations as an employer in respect of all persons in his employ, other persons on the premises or the Site or place of work or on the work to be executed by him, and under his control. He shall, before commencement with the execution of the contract work, comply with the provisions set out in the Act, and shall implement and maintain a Health and Safety Plan as described in the Construction Regulations, 2003 and as approved by Transnet, on the Site and place of work for the duration of the Contract.
- 1.3 The Contractor accepts his obligation to complying fully with the Act and applicable Regulations notwithstanding the omission of some of the provisions of the Act and the Regulations from this document.
- 1.4 Transnet accepts, in terms of the Act, its obligations as an employer of its own employees working on or associated with the site or place of work, and the Contractor and Project Manager or his deputy shall at all times, co-operate in respect of the health and safety management of the site, and shall agree on the practical arrangements and procedures to be implemented and maintained during execution of the Works.
- 1.5 In the event of any discrepancies between any legislation and this specification, the applicable legislation will take precedence.

2. Definitions

- 2.1 In this Specification any word or expression to which a meaning has been assigned in the Construction Regulations, shall have the meaning so assigned to it, unless the context otherwise indicates: -
- 2.2 The work included in this Contract shall for the purposes of compliance with the Act be deemed to be "**Construction Work**", which, in terms of the Construction Regulations, 2003 means any work in connection with: -
 - (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;

- (b) the installation, erection, dismantling or maintenance of fixed plant where such work includes the risk of a person falling;
 - (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
 - (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;
- 2.3 **“competent person”** in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered as per the South African Qualifications Authority Act, 1995 these qualifications and training shall be deemed to be the required qualifications and training;
- 2.4 **“contractor”** means principal contractor and **“subcontractor”** means contractor as defined by the Construction Regulations, 2003.
- 2.5 **“fall protection plan”** means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods applied to eliminate the risk;
- 2.6 **“health and safety file”** means a file, or other record in permanent form, containing the information required to be kept on site in accordance with the Act and applicable Regulations;
- 2.7 **“Health and Safety Plan ”** means a documented plan which addresses the hazards identified and include safe work procedures to mitigate, reduce or control the hazards identified;
- 2.8 **“Risk Assessment”** means a programme to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;
- 2.9 **“the Act”** means the Occupational Health and Safety Act No. 85 of 1993.
- 3. Procedural Compliance**
- 3.1 The Contractor who intends to carry out any construction work shall, before carrying out such work, notify the Provincial Director in writing if the construction work:-
- (a) includes the demolition of a structure exceeding a height of 3 metres; or
 - (b) includes the use of explosives to perform construction work; or
 - (c) includes the dismantling of fixed plant at a height greater than 3m,
- and shall also notify the Provincial Director in writing when the construction work exceeds 30 days or will involve more than 300 person days of construction work and if the construction work:-

- (a) includes excavation work deeper than 1m; or

- (b) includes working at a height greater than 3 metres above ground or a landing.
- 3.2 The notification to the Provincial Director shall be on a form similar to Annexure A of the Construction Regulations, 2003, also shown in Annexure 1 of this Specification. The Contractor shall ensure that a copy of the completed notification form is kept on site for inspection by an inspector, Project Manager or employee.
- 3.3 The Contractor shall, in accordance with the Act and applicable Regulations, make all the necessary appointments of competent persons in writing on a form similar to Annexure 2 of this Specification and deliver copies thereof to the Project Manager. Copies should also be retained on the health and safety file.
- 3.4 Subcontractors shall also make the above written appointments and the Contractor shall deliver copies thereof to the Project Manager.
- 3.5 In the case of a self-employed Contractor or any subcontractor who has the appropriate competencies and supervises the work himself, the appointment of a construction supervisor in terms of regulation 6.1 of the Construction Regulations, 2003 will not be necessary. The Contractor shall in such a case execute and sign a declaration, as in Annexure 3, by which he personally undertakes the duties and obligations of the "Chief Executive Officer" in terms of section 16(1) of the Act.
- 3.6 The Contractor shall, before commencing any work, obtain from the Project Manager an access certificate as in Annexure 4 executed and signed by him, permitting and limiting access to the designated site or place of work by the Contractor and any subcontractors under his control.
- 3.7 Procedural compliance with Act and Regulations, as above, shall also apply to any subcontractors as employers in their own right. The Contractor shall furnish the Project Manager with full particulars of such subcontractors and shall ensure that they comply with the Act and Regulations and Transnet's safety requirements and procedures.

4. Special Permits

Where special permits are required before work may be carried out such as for hotwork, isolation permits, work permits and occupations, the Contractor shall apply to the Project Manager or the relevant authority for such permits to be issued. The Contractor shall strictly comply with the conditions and requirements pertaining to the issue of such permits.

5. Health and Safety Programme

- 5.1 The Tenderer shall, with his tender, submit a Health and Safety Programme setting out the practical arrangements and procedures to be implemented by him to ensure compliance by him with the Act and Regulations and particularly in respect of: -
- (i) The provision, as far as is reasonably practical, of a working environment that is safe and without risk to the health of his employees and subcontractors in terms of section 8 of the Act;

- (ii) the execution of the contract work in such a manner as to ensure in terms of section 9 of the Act that persons other than those in the Contractor's employment, who may be directly affected by the contract work are not thereby exposed to hazards to their health and safety;
- (iii) ensuring, as far as is reasonably practical, in terms of section 37 of the Act that no employee or subcontractor of the Contractor does or omits to do any act which would be an offence for the Contractor to do or omit to do.

5.2 The Contractor's Health and Safety Programme shall be based on a risk assessment in respect of the hazards to health and safety of his employees and other persons under his control that are associated with or directly affected by the Contractor's activities in performing the contract work and shall establish precautionary measures as are reasonable and practical in protecting the safety and health of such employees and persons.

5.3 The Contractor shall cause a risk assessment contemplated in clause 5.2 above to be performed by a competent person, appointed in writing, before commencement of any Construction Work and reviewed during construction. The Risk Assessments shall form part of the Health and Safety programme to be applied on the site and shall include at least the following:

- (a) The identification of the risks and hazards that persons may be exposed to;
- (b) the analysis and evaluation of the hazards identified;
- (c) a documented Health and Safety Plan, including safe work procedures to mitigate, reduce or control the risks identified;
- (d) a monitoring and review plan.

5.4 The Health and Safety Plan shall include full particulars in respect of: -

- (a) The safety management structure to be instituted on site or place of work and the names of the Contractor's health and safety representatives and members of safety committees where applicable;
- (b) the safe working methods and procedures to be implemented to ensure the work is performed in compliance with the Act and Regulations;
- (c) the safety equipment, devices and clothing to be made available by the Contractor to his employees;
- (d) the site access control measures pertaining to health and safety to be implemented;
- (e) the arrangements in respect of communication of health and safety related matters and incidents between the Contractor, his employees, subcontractors and the Project Manager with particular reference to the reporting of incidents in compliance with Section 24 and General Administrative Regulation 8 of the Act and with the pertinent clause of the General Conditions of Contract forming part of the Contract and

- (f) the introduction of control measures for ensuring that the Safety Plan is maintained and monitored for the duration of the Contract.
- 5.4 The Health and Safety programme shall be subject to the Project Manager's approval and he may, in consultation with the Contractor, order that additional and/or supplementary practical arrangements and procedures be implemented and maintained by the Contractor or that different working methods or safety equipment be used or safety clothes be issued which, in the Project Manager's opinion, are necessary to ensure full compliance by the Contractor with his obligations as an employer in terms of the Act and Regulations. The Project Manager or his deputy shall be allowed to attend meetings of the Contractor's safety committee as an observer.
- 5.5 The Contractor shall take reasonable steps to ensure that each subcontractor's Health and Safety Plan is implemented and maintained on the construction site. Provided that the steps taken, shall include periodic audits at intervals mutually agreed to between the them, but at least once every month.
- 5.6 The Contractor shall stop any subcontractor from executing any construction work, which is not in accordance with the Contractor's, and/or subcontractor's Health and Safety Plan for the site or which poses a threat to the health and safety of persons.
- 5.7 The Contractor shall ensure that a copy of the Health and Safety Plan is available on site for inspection by an inspector, Project Manager, agent, subcontractor, employee, registered employee organisation, health and safety representative or any member of the health and safety committee.
- 5.8 The Contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the Risk Assessment.
- 5.9 The Contractor shall ensure that all employees under his control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the Risk Assessment.
- 5.10 The Contractor shall ensure that all subcontractors are informed regarding any hazard as stipulated in the Risk Assessment before any work commences, and thereafter at such times as may be determined in the Risk Assessment.
- 5.11 The Contractor shall ensure that all visitors to a construction site undergoes health and safety induction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment.
- 6. Fall Protection Plan**
- 6.1 In the event of the risk and hazard identification, as required in terms of clause 5.3 of this Specification, revealing risks relating to working from an elevated position the contractor shall cause the designation of a competent person, responsible for the preparation of a fall protection plan;

6.2 The Contractor shall implement, maintain and monitor the fall protection plan for the duration of Contract. The Contractor shall also take such steps to ensure the continued adherence to the fall protection plan.

6.3 The fall protection plan shall include:-

- (a) A Risk Assessment of all work carried out from an elevated position;
- (b) the procedures and methods to address all the identified risks per location;
- (c) the evaluation of the employees physical and psychological fitness necessary to work at elevated positions;
- (d) the training of employees working from elevated positions; and
- (e) the procedure addressing the inspection, testing and maintenance of all fall protection equipment.

7. Hazards and Potential Hazardous Situations

The Contractor and the Project Manager shall immediately notify one another of any hazardous or potentially hazardous situations which may arise during performance of the Contract by the Contractor or any subcontractor and, in particular, of such hazards as may be caused by the design, execution and/or location and any other aspect pertaining to the contract work.

8. Health and Safety File

- 8.1 The Contractor shall ensure that a health and safety file is opened and kept on site and shall include all documentation required as per the Act and applicable regulations, and made available to an inspector, the Project Manager, or subcontractor upon request.
- 8.2 The Contractor shall ensure that a copy of the both his Health and Safety Plan as well as any subcontractor's Health and Safety Plan is available on request to an employee, inspector, contractor or the Project Manager.
- 8.3 The Contractor shall hand over a consolidated health and safety file to the Project Manager upon completion of the Construction Work and shall in addition to documentation mentioned in the Act and applicable Regulations include a record of all drawings, designs, materials used and other similar information concerning the completed structure.

ANNEXURE 1

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

Regulation 3(1) of the Construction Regulations

NOTIFICATION OF CONSTRUCTION WORK

1(a) Name and postal address of principal contractor:

(b) Name and tel. no of principal contractor's contact person:

2. Principal contractor's compensation registration number:

3.(a) Name and postal address of client:

(b) Name and tel no of client's contact person or agent:

4.(a) Name and postal address of designer(s) for the project:

(b) Name and tel. no of designer(s) contact person:

5. Name and telephone number of principal contractor's construction supervisor on site appointed in terms of regulation 6(1).

6. Name/s of principal contractor's construction sub-ordinate supervisors on site appointed in terms of regulation 6(2).

7. Exact physical address of the construction site or site office:

8. Nature of the construction work:

9. Expected commencement date: _____

10. Expected completion date: _____

11. Estimated maximum number of persons on the construction site:

12. Planned number of contractors on the construction site accountable to the principle contractor:

13. Name(s) of contractors already chosen.

Principal Contractor

Date

Client

Date

* THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF LABOUR PRIOR TO COMMENCEMENT OF WORK ON SITE.

* ALL PRINCIPAL CONTRACTORS THAT QUALIFY TO NOTIFY MUST DO SO EVEN IF ANOTHER PRINCIPAL CONTRACTOR ON THE SAME SITE HAD DONE SO PRIOR TO THE COMMENCEMENT OF WORK.

“PREVIEW COPY ONLY”

ANNEXURE 2

(COMPANY LETTER HEAD)

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) :

SECTION/REGULATION: _____

REQUIRED COMPETENCY: _____

In _____ terms of I, _____

representing the Employer) do hereby appoint _____

As the Competent Person on the premises at _____

(physical address) to assist in compliance with the Act and the applicable Regulations.

Your designated area/s is/are as follows :-

Date : _____

Signature :- _____

Designation :- _____

ACCEPTANCE OF DESIGNATION

I, _____ do hereby accept this Designation and acknowledge that I understand the requirements of this appointment.

Date : _____

Signature :- _____

Designation :- _____

ANNEXURE 3

(COMPANY LETTER HEAD)

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) :

DECLARATION

In terms of the above _____ am personally assuming the
Act I, _____ duties
and obligations as Chief Executive Officer, defined in Section 1 of the Act and in terms of
Section 16(1), I will, as far as is reasonably practicable, ensure that the duties and obligations
of the Employer as contemplated in the above Act are properly discharged.

Signature :- _____

Date : _____

“PREVIEW COPY ONLY”

ANNEXURE 4

(LETTER HEAD OF BUSINESS DIVISION OR UNIT OF TRANSNET LIMITED)

SITE ACCESS CERTIFICATE

Access to : _____ (Area)
Name _____ of _____
Contractor/Builder :- _____
Contract/Order No.: _____

The contract works site/area described above are made available to you for the carrying out of associated works

In terms of your contract/order
with
(company
) _____

Kindly note that you are at all times responsible for the control and safety of the Works Site, and for persons under your control having access to the site.

As from the date hereof you will be responsible for compliance with the requirements of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) as amended, and all conditions of the Contract pertaining to the site of the works as defined and demarcated in the contract documents including the plans of the site or work areas forming part thereof.

Signed : _____ **Date :** _____

PROJECT MANAGER

ACKNOWLEDGEMENT OF RECEIPT

Name _____ **of** _____ **I,**
Contractor/Builder :- _____

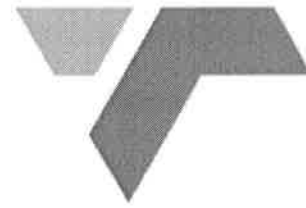
**do hereby acknowledge and accept
the duties**

**and obligations in respect of the Safety of the site/area of Work in terms of the
Occupational Health and Safety Act; Act 85 of 1993.**

Name : _____ **Designation :** _____

Signature : _____ **Date :** _____

TRANSNET



Transnet SOC Limited Registration Number 1990/00900/06

TRANSNET SPECIFICATION

E7/1 - SPECIFICATION FOR GENERAL WORK AND WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

(This specification shall be used in network operator contracts)



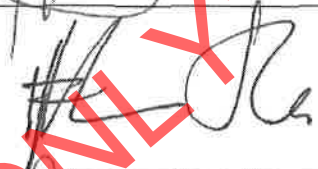





“PREVIEW COPY ONLY”

Circulation Not Restricted

© This document as a whole is protected by copyright. The information herein is the sole property of Transnet SOC Ltd. It may not be used, disclosed or reproduced in part or in whole in any manner whatsoever, except with the written permission of and in a manner permitted by the proprietors.

(This page not to be issued with contract)

SPECIFICATION FOR GENERAL WORK AND WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

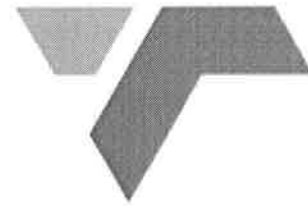
Author:	Project Manager Capital Program (Electrical)	G. Maposa	
Approved:	Senior Engineer Infra Engineering (Train Authorisation Systems)	J. van den Berg	
"	Principal Engineer Infra Engineering (Track)	M. Marutla	
"	Principal Engineer Infra Engineering (Structures)	J. Homan	
"	Principal Engineer Infra Engineering (Electrical)	J. Vosloo	
"	Principal Engineer Technology Management (Electrical)	W. Coetzee	
"	Chief Engineer Transport Telecoms	D. Botha	 17 June 11
Authorised:	Chief Engineer Infrastructure Engineering	J. van Aardt	 2011/06/30

Date:

May 2011

(This page not to be issued with contract)

TRANSNET



Transnet SOC Limited Registration Number 1990/00900/06

TRANSNET SPECIFICATION

E7/1 - SPECIFICATION FOR GENERAL WORK AND WORKS ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES AND NEAR HIGH VOLTAGE EQUIPMENT

(This specification shall be used in network operator contracts)

“PREVIEW COPY ONLY”

Circulation Not Restricted

© This document as a whole is protected by copyright. The information herein is the sole property of Transnet SOC Ltd. It may not be used, disclosed or reproduced in part or in whole in any manner whatsoever, except with the written permission of and in a manner permitted by the proprietors.

CONTENTS

<u>CLAUSE</u>	<u>HEADING</u>	<u>PAGE</u>
1.0	SCOPE	3
2.0	DEFINITIONS	3
PART A - GENERAL SPECIFICATION		
3.0	AUTHORITY OF OFFICERS OF TRANSNET	4
4.0	CONTRACTOR'S REPRESENTATIVES AND STAFF	4
5.0	OCCUPATIONS AND WORK PERMITS	4
6.0	SPEED RESTRICTIONS AND PROTECTION	5
7.0	ROADS ON THE NETWORK OPERATOR'S PROPERTY	5
8.0	CLEARANCES	5
9.0	STACKING OF MATERIAL	5
10.0	EXCAVATION, SHORING, DEWATERING AND DRAINAGE	5
11.0	FALSEWORK FOR STRUCTURES	6
12.0	PILING	6
13.0	UNDERGROUND SERVICES	6
14.0	BLASTING AND USE OF EXPLOSIVES	6
15.0	RAIL TROLLEYS	7
16.0	SIGNAL TRACK CIRCUITS	7
17.0	PENALTY FOR DELAYS TO TRAINS	7
18.0	SURVEY BEACONS AND PEGS	7
19.0	TEMPORARY LEVEL CROSSINGS	8
20.0	COMPLETION OF THE WORKS	8
21.0	PROTECTION OF PERSONS AND PROPERTY	9
22.0	INTERFERENCE WITH THE NETWORK OPERATOR'S ASSETS AND WORK ON OPEN LINES	10
23.0	ACCESS, RIGHTS-OF-WAY AND CAMPSITES	10
24.0	SUPERVISION	10
25.0	HOUSING OF EMPLOYEES	10
26.0	OPTICAL FIBRE CABLE ROUTES	10
PART B - ADDITIONAL SPECIFICATION FOR WORK NEAR HIGH-VOLTAGE ELECTRICAL EQUIPMENT		
27.0	GENERAL	11
28.0	WORK ON BUILDINGS OR FIXED STRUCTURES	11
29.0	WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING AND UNLOADING	11
30.0	USE OF EQUIPMENT	12
31.0	CARRYING AND HANDLING MATERIAL AND EQUIPMENT	12
32.0	PRECAUTIONS TO BE TAKEN WHEN ERECTING OR REMOVING POLES, ANTENNAE AND TREES ETC.	12
33.0	USE OF WATER	13
34.0	USE OF CONSTRUCTION PLANT	13
35.0	WORK PERFORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT	13
36.0	TRACTION RETURN CIRCUITS IN RAILS	13
37.0	HIGH-VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY THE NETWORK OPERATOR	14

1.0 SCOPE

- 1.1 This specification covers the network operator's requirements for general work and works on, over, under or adjacent to railway lines and near high voltage equipment.

2.0 DEFINITIONS

The following definitions shall apply:

"Authorised Person" - A person whether an employee of the network operator or not, who has been specially authorised to undertake specific duties in terms of Transnet' publication Electrical Safety Instructions, and who holds a certificate or letter of authority to that effect.

"Barrier" Any device designed to restrict access to "live" high-voltage electrical equipment.

"Bond" - A short conductor installed to provide electrical continuity.

"Contractor" - Any person or organisation appointed by the network operator to carry out work on its behalf.

"Contract Supervisor" - The person or juristic person appointed by the network operator from time to time as the Contract Supervisor, to administer the Contractor's performance and execution of the Works according to the powers and rights held by and obligations placed upon the Contract Supervisor in terms of the Contract.

"Dead" - Isolated and earthed.

"Electrical Officer (Contracts)" - The person appointed in writing by the Project Manager in terms of this specification as the person who shall be consulted by the Contractor in all electrical matters to ensure that adequate safety precautions are taken by the Contractor.

"Executive Officer" - The person appointed by the network operator from time to time as the Executive Officer to act according to the rights and powers held by and obligations placed upon him in terms of the Contract.

"High-Voltage" - A voltage normally exceeding 1000 volts.

"Live" - A conductor is said to be "live" when it is at a potential different from that of the earth or any other conductor of the system of which it forms a part.

"Near" - To be in such a position that a person's body or the tools he is using or any equipment he is handling may come within 3 metres of "live" exposed high-voltage electrical equipment.

"Occupation" - An authorisation granted by the network operator for work to be carried out under specified conditions on, over, under or adjacent to railway lines.

"Occupation Between Trains" - An occupation during an interval between successive trains.

"Optical Fibre Cable" - Buried or suspended composite cable containing optical fibres used in:

- telecommunication networks for transmission of digital information and
- safety sensitive train operations systems.

"Project Manager" - As defined in the special conditions of the contract. The person or juristic person appointed by the network operator from time to time as the Project Manager, to administer the Contract according to the powers and rights held by and obligations placed upon him in terms of the Contract.

"Responsible Representative" - The responsible person in charge, appointed by a contractor, who has undergone specific training (and holds a certificate) to supervise (general or direct) staff under his control who perform general work or to work on, over, under or adjacent to railway lines and in the vicinity of high-voltage electrical equipment.

"Total Occupation" - An occupation for a period when trains are not to traverse the section of line covered by the occupation.

"Work on" - Work undertaken on or so close to the equipment that the specified working clearances to the "live" equipment cannot be maintained.

"Work Permit" - A combined written application and authority to proceed with work on or near dead electrical equipment.

"Works" - The contractual intent for the work to be done as defined in the contract at a defined work site.

PART A - GENERAL SPECIFICATION

3.0 AUTHORITY OF OFFICERS OF TRANSNET

- 3.1 The Contractor shall co-operate with the officers of the network operator and shall comply with all instructions issued and restrictions imposed with respect to the Works which bear on the existence and operation of the network operator's railway lines and high-voltage equipment.
- 3.2 Without limiting the generality of the provisions of clause 3.1, any duly authorised representative of the network operator, having identified himself, may stop the work if, in his opinion, the safe passage of trains or the safety of the network operator's assets or any person is affected. **CONSIDERATIONS OF SAFETY SHALL TAKE PRECEDENCE OVER ALL OTHER CONSIDERATIONS.**

4.0 CONTRACTOR'S REPRESENTATIVES AND STAFF

- 4.1 The Contractor shall nominate Responsible Representatives of whom at least one shall be available at any hour for call-out in cases of emergency. The Contractor shall provide the Contract Supervisor with the names, addresses and telephone numbers of the representatives.
- 4.2 The Contractor guarantees that he has satisfied himself that the Responsible Representative is fully conversant with this specification and that he shall comply with all his obligations in respect thereof.
- 4.3 The Contractor shall ensure that all contractor staff receives relevant awareness, educational and competence training regarding safety as prescribed.

5.0 OCCUPATIONS AND WORK PERMITS

- 5.1 Work to be done during total occupation or during an occupation between trains or under a work permit shall be done in a manner decided by the Contract Supervisor and at times to suit the network operator requirements.
- 5.2 The Contractor shall organise the Works in a manner which will minimise the number and duration of occupations and work permits required.
- 5.3 The network operator will not be liable for any financial or other loss suffered by the Contractor arising from his failure to complete any work scheduled during the period of an occupation or work permit.
- 5.4 The Contractor shall submit to the Contract Supervisor, in writing, requests for occupations or work permits together with details of the work to be undertaken, at least 21 days before they are required. The network operator does not undertake to grant an occupation or work permit for any particular date, time or duration.
- 5.5 The network operator reserves the right to cancel any occupation or work permit at any time before or during the period of occupation or work permit. If, due to cancellation or change in date or time, the Contractor is not permitted to start work under conditions of total occupation or work permit at the time arranged, all costs caused by the cancellation shall be born by the Contractor except as provided for in clauses 5.6 to 5.8.
- 5.6 When the Contractor is notified less than 2 hours before the scheduled starting time that the occupation or work permit is cancelled, he may claim reimbursement of his direct financial losses caused by the loss of working time up to the time his labour and plant are employed on other work, but not exceeding the period of the cancelled occupation or work permit.
- 5.7 When the Contractor is notified less than 2 hours before the scheduled starting time, or during an occupation or work permit, that the duration of the occupation or work permit is reduced, he may claim reimbursement of his direct financial losses caused by the loss of working time due to the reduced duration of the occupation or work permit.
- 5.8 Reimbursement of the Contractor for any loss of working time in terms of clause 5.6 and 5.7, shall be subject to his claims being submitted within 14 days of the event with full details of labour and plant involved, and provided that the Contract Supervisor certifies that no other work on which the labour and plant could be employed was immediately available.
- 5.9 Before starting any work for which an occupation has been arranged, the Contractor shall obtain from the Contract Supervisor written confirmation of the date, time and duration of the occupation.
- 5.10 Before starting any work for which a work permit has been arranged, the Responsible Representative shall read and sign portion C of the Work Permit, signifying that he is aware of the work boundaries within which work may be undertaken. After the work for which the permit was granted has been completed, or when the

work permit is due to be terminated, or if the permit is cancelled after the start, the same person who signed portion C shall sign portion D of the Work Permit, thereby acknowledging that he is aware that the electrical equipment is to be made "live". The Contractor shall advise all his workmen accordingly.

6.0 SPEED RESTRICTIONS AND PROTECTION

- 6.1 When speed restrictions are imposed by the network operator because of the Contractor's activities, the Contractor shall organise and carry out his work so as to permit the removal of the restrictions as soon as possible.
- 6.2 When the Contract Supervisor considers protection to be necessary the Contractor shall, unless otherwise agreed, provide all protection including flagmen, other personnel and all equipment for the protection of the network operator's and the Contractor's personnel and assets, the public and including trains.
- 6.2.1 The network operator will provide training free of charge of the Contractor's flagmen and other personnel performing protection duties. The Contractor shall consult with the Contract Supervisor, whenever he considers that protection will be necessary, taking into account the minimum permissible clearances set out in the Manual for Track Maintenance (Document no. BBB0481):
- Drawing no. BE-97 Sheet 1: Horizontal Clearances: 1065mm gauge (Annexure 1 sheet 1)
 - Drawing no. BE-97 Sheet 2: Vertical Clearances: 1065mm gauge (Annexure 1 sheet 2)
 - Drawing no. BE-97 Sheet 3: Clearances: Platform (Annexure 1 sheet 3)
 - Drawing no. BE-97 Sheet 5: Clearances: 610mm Gauge (Annexure 1 sheet 5)
- 6.3 The Contractor shall appoint a Responsible Representative to receive and transmit any instruction which may be given by the network operator personnel providing protection.

7.0 ROADS AND ROADS ON THE NETWORK OPERATOR'S PROPERTY

- 7.1 The Contractor shall take every reasonable precaution to prevent damage to any roads or bridges used to obtain access to the site, and shall select routes, use vehicles, and restrict loads so that any extraordinary traffic as may arise from the moving of plant or material to or from the site shall be limited as far as is reasonably possible.
- 7.2 The Contractor shall not occupy or interfere in any way with the free use of any public or private road, right-of-way, path or street unless the Contract Supervisor has obtained the approval of the road authority concerned.

8.0 CLEARANCES

- 8.1 No temporary works shall encroach on the appropriate minimum clearances set out in the Manual for Track Maintenance (Document no. BBB0481):
- Drawing no. BE-97 Sheet 1: Horizontal Clearances: 1065mm gauge (Annexure 1 sheet 1)
 - Drawing no. BE-97 Sheet 2: Vertical Clearances: 1065mm gauge (Annexure 1 sheet 2)
 - Drawing no. BE-97 Sheet 3: Clearances: Platform (Annexure 1 sheet 3)
 - Drawing no. BE-97 Sheet 5: Clearances: 610mm Gauge (Annexure 1 sheet 5)

9.0 STACKING OF MATERIAL

- 9.1 The Contractor shall not stack any material closer than 3m from the centre line of any railway line without prior approval of the Contract Supervisor.

10.0 EXCAVATION, SHORING, DEWATERING AND DRAINAGE

- 10.1 Unless otherwise approved by the Contract Supervisor any excavation adjacent to a railway line shall not encroach on the hatched area shown in Figure 1.

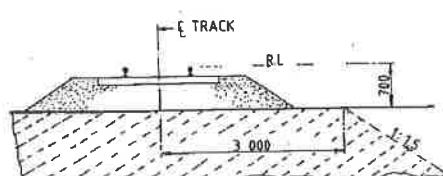


Fig 1

- 10.2 The Contractor shall provide, at his own cost any shoring, dewatering or drainage of any excavation unless otherwise stipulated elsewhere in the Contract.
- 10.3 Where required by the Contract Supervisor, drawings of shoring for any excavation under or adjacent to a railway line shall be submitted and permission to proceed, obtained before the excavation is commenced.
- 10.4 The Contractor shall prevent ingress of water to the excavation but where water does enter, he shall dispose of it as directed by the Contract Supervisor.
- 10.5 The Contractor shall not block, obstruct or damage any existing drains either above or below ground level unless he has made adequate prior arrangements to deal with drainage.

11.0 FALSEWORK FOR STRUCTURES

- 11.1 Drawings of falsework for the construction of any structure over, under or adjacent to any railway line shall be submitted to the Contract Supervisor and his permission to proceed obtained before the falsework is erected. Each drawing shall be given a title and a distinguishing number and shall be signed by a registered professional engineer certifying that he has checked the design of the falsework and that the drawings are correct and in accordance with the design.
- 11.2 After the falsework has been erected and before any load is applied, the Contractor shall submit to the Contract Supervisor a certificate signed by a registered professional engineer certifying that he has checked the falsework and that it has been erected in accordance with the drawings. Titles and numbers of the drawings shall be stated in the certificate. Notwithstanding permission given by the Contract Supervisor to proceed, the Contractor shall be entirely responsible for the safety and adequacy of the falsework.

12.0 PILING

- 12.1 The Contract Supervisor will specify the conditions under which piles may be installed on the network operator's property.

13.0 UNDERGROUND SERVICES

- 13.1 No pegs or stakes shall be driven or any excavation made before the Contractor has established that there are no underground services which may be damaged thereby.
- 13.2 Any damage shall be reported immediately to the Contract Supervisor, or to the official in charge at the nearest station, or to the traffic controller in the case of centralised traffic control.

14.0 BLASTING AND USE OF EXPLOSIVES

- 14.1 When blasting within 500m of a railway line, the Contractor shall observe the requirements stipulated in this specification.
- 14.2 No blasting shall be carried out except with the prior written permission of the Contract Supervisor and under such conditions as he may impose.
- 14.3 On electrified lines the Contractor shall also obtain the permission of the Electrical Officer (Contracts) before blasting, and shall give at least 21 days notice of his intention to blast. No blasting shall be done in the vicinity of electrified lines unless a member of the network operator's electrical personnel is present.
- 14.4 The Contractor shall arrange for the supply, transport storage and use of explosives.
- 14.5 The Contractor shall have labour, tools and plant, to the satisfaction of the Contract Supervisor, available on the site to clear immediately any stones or debris deposited on the track or formation by blasting, and to repair any damage to the track or formation immediately after blasting. Repairs to the track shall be carried out only under the supervision of a duly authorised representative of the network operator.
- 14.6 The Contractor shall notify the Contract Supervisor of his intention to blast at least 21 days before the commencement of any blasting operations.
- 14.7 Before any blasting is undertaken, the Contractor and the Contract Supervisor shall jointly examine and measure up any buildings, houses or structures in the vicinity of the proposed blasting to establish the extent of any existing cracking or damage to such structures, etc. The Contractor, shall, subject to the provisions stipulated in the Contract Insurance Policy, make good any deterioration of such buildings, houses, or structures, which, in the opinion of the Contract Supervisor, was directly caused by the blasting.
- 14.8 After completion of the blasting the Contractor shall obtain a written clearance from each landowner in

the vicinity of the blasting operations to the effect that all claims for compensation in respect of damage caused by the blasting operations to their respective properties, have been settled.

14.9 The Contractor shall provide proof that he has complied with the provisions of clauses 10.17.1 to 10.17.4 of the Explosives Regulations (Act 26 of 1956 as amended).

14.10 Blasting within 500m of a railway line will only be permitted during intervals between trains. A person appointed by the Contract Supervisor, assisted by flagmen with the necessary protective equipment, will be in communication with the controlling railway station.

Only this person will be authorised to give the Contractor permission to blast, and the Contractor shall obey his instructions implicitly regarding the time during which blasting may take place.

14.11 The flagmen described in clause 14.10, where provided by the network operator, are for the protection of trains and the network operator's property only, and their presence does not relieve the Contractor in any manner of his responsibilities in terms of Explosives Act or Regulations, or any obligation in terms of this Contract.

14.12 The person described in clause 14.10 will record in a book provided and retained by the network operator, the dates and times:-

(i) when each request is made by him to the controlling station for permission to blast;

(ii) when blasting may take place;

(iii) when blasting actually takes place; and

(iv) when he advises the controlling station that the line is safe for the passage of trains.

14.13 Before each blast the Contractor shall record in the same book, the details of the blast to be carried out. The person appointed by the Contract Supervisor and the person who will do the blasting shall both sign the book whenever an entry described in clause 14.12 is made.

15.0 RAIL TROLLEYS

15.1 The use of rail trolleys or trestle trolleys on a railway line for working on high voltage equipment will be permitted only if approved by the Contract Supervisor and under the conditions stipulated by him.

15.2 All costs in connection with trolley working and any train protection services requested by the Contractor shall, be borne by the Contractor, unless otherwise agreed.

16.0 SIGNAL TRACK CIRCUITS

16.1 Where signal track circuits are installed, the Contractor shall ensure that no material capable of conducting an electrical current makes contact between rails of railway line/lines.

16.2 No signal connections on track-circuited tracks shall be severed without the Contract Supervisor's knowledge and consent.

17.0 PENALTY FOR DELAYS TO TRAINS

17.1 If any trains are delayed by the Contractor and the Contract Supervisor is satisfied that the delay was avoidable, a penalty will be imposed on the Contractor as stipulated in the contract, for the period and number of trains delayed.

18.0 SURVEY BEACONS AND PEGS

18.1 The Contractor shall not on any account move or damage any beacon, bench mark, reference mark, signal or trigonometrical station in the execution of the Works without the written approval of the Contract Supervisor.

Should the Contractor be responsible for any such occurrence, he shall report the circumstances to the Contract Supervisor who will arrange with the Director-General of Surveys for replacement of the beacon or mark at the cost of the Contractor.

18.2 The Contractor shall not move or damage any cadastral or mining beacon without the written approval of the Contract Supervisor and before it has been referenced by a registered land surveyor. Any old boundary beacon, which becomes an internal beacon on creation of new boundaries, shall not be moved without the written approval of the Contract Supervisor.

Should the Contractor move or damage any cadastral or mining beacon without authority, he shall be responsible for having it replaced, at his cost, by a land surveyor.

- 18.3 The Contractor shall preserve all pegs and bench marks. Such survey points shall not be removed without the written approval of the Contract Supervisor. Should any peg or benchmark be removed without authority, the Contract Supervisor will arrange for its replacement and the cost will be recovered from the Contractor. No claim will be considered for delay in replacing any such peg or bench mark. Each peg replaced shall be checked by the Contractor.
- 18.4 Where a new boundary has been established, beacons on the fence line shall not be disturbed, and fence posts or anchors may not be placed or excavations made within 0,6 m of any beacon without the prior written approval of the Contract Supervisor.

19.0 TEMPORARY LEVEL CROSSINGS

- 19.1 The Contract Supervisor may, on request of the Contractor, and if necessary for the purpose of execution of the Works, permit the construction of a temporary level crossing over a railway a line at a position approved by the Contract Supervisor and at the Contractor's cost. The period for which the temporary level crossing is permitted will be at the discretion of the Contract Supervisor.
- 19.2 The Contractor will provide protection and supervise the construction of the road over the track(s) and within the railway servitude at the level crossing, as well as the erection of all road signs and height gauges. All cost to be borne by the applicant.

The Contractor shall exercise extreme caution in carrying out this work, especially in respect of damage to tracks, services, overhead power and communications routes and prevent contact with "live" overhead electrical equipment.

Unless otherwise agreed, the Contractor will provide the service deviations or alterations to the network operator's track-, structure-, drainage-, electrical-, telecommunications- and train authorisation systems to accommodate the level crossing.

- 19.3 The Contractor shall take all necessary steps including the provision of gates, locks and, where necessary, watchmen to restrict the use of the temporary level crossing to himself and his employees, his subcontractors and their employees, the staff of the network operator and to such other persons as the Contract Supervisor may permit and of whose identity the Contractor will be advised. If so ordered by the Contract Supervisor, the Contractor shall provide persons to control road traffic using the temporary level crossing. Such persons shall stop all road traffic when any approaching train is within seven hundred and fifty (750) metres of the temporary level crossing, and shall not allow road traffic to proceed over it until the lines are clear.
- 19.4 The Contractor shall maintain the temporary level crossing within the railway servitude in good condition for the period it is in use. A temporary agreement with the road authority to be concluded for the maintenance of the level crossing outside the railway servitude.
- 19.5 When the temporary level crossing is no longer required by the Contractor, or permitted by the network operator, the Contractor shall at his own cost remove it and restore the site and the network operator's track-, structure-, drainage-, electrical-, telecommunications- and train authorisation systems to its original condition. Work over the tracks and within the railway servitude will be supervised by the network operator.

20.0 COMPLETION OF THE WORKS

- 20.1 On completion of the works, the Contractor shall remove all the remaining construction plant and material from the site, other than material which is the property of the network operator, and leave the site in a clean, neat and tidy condition. If material and plant is required for the liability and maintenance period the Contract supervisor must authorise it's retention on site.

21.0 PROTECTION OF PERSONS AND PROPERTY

- 21.1 The Contractor shall provide and maintain all lights, guards, barriers, fencing and watchmen when and where necessary or as required by the Contract Supervisor or by any statutory authority, for the protection of the Works and for the safety and convenience of the public.

Red, yellow, green or blue lights may not be used by the Contractor as they can be mistaken for signals. Red, yellow, green or white flags shall only be used for protection by the Contractor. Within the precincts of a port the Contractor shall obtain the permission of the Port Captain before installing any light.

- 21.2 The Contractor shall take all the requisite measures and precautions during the course of the Works to:
- (i) protect the public and property of the public,
 - (ii) protect the property and workmen of both the network operator and the Contractor,
 - (iii) avoid damage to and prevent trespass on adjoining properties, and
 - (iv) ensure compliance with any instruction issued by the Contract Supervisor or other authorised person, and with any stipulation embodied in the contract documents which affects the safety of any person or thing.
- 21.3 The network operator will provide, at its own cost, protection for the safe working of trains during such operations as the Contract Supervisor may consider necessary. Protection by the network operator for any purpose whatsoever, does not absolve the Contractor of his responsibilities in terms of the Contract.
- 21.4 The Contractor shall take all precautions and appoint guards, watchmen and compound managers for prevention of disorder among and misconduct by the persons employed on the Works and by any other persons, whether employees or not, on the work site and for the preservation of the peace and protection of persons and property in the direct neighbourhood. Any relocation of camps because of disorder shall be at the Contractor's expense.
- 21.5 All operations necessary for the execution of the Works, including the provision of any temporary work and camping sites, shall be carried out so as not to cause veldt fires, ground and environmental pollution, soil erosion or restriction of or interference with streams, furrows, drains and water supplies.
- If the original surface of the ground is disturbed in connection with the Works, it shall be made good by the Contractor to the satisfaction of the land owner, occupier or responsible authority.
- 21.6 The Contractor shall take all reasonable steps to minimise noise and disturbance when carrying out the Works, including work permitted outside normal working hours.
- 21.7 Dumping of waste or excess materials by the Contractor shall, in urban areas, be done under the direction and control of, and at sites made available by the local authority. Dumping outside local authority boundaries shall be done only with the express permission and under the direction and control of the Contract Supervisor.
- 21.8 The Contractor shall comply with environmental protection measures and specifications stipulated by the Contract Supervisor and/or local and environmental authorities.
- 22.0 INTERFERENCE WITH THE NETWORK OPERATOR'S ASSETS AND WORK ON OPEN LINES**
- 22.1 The Contractor shall not interfere in any manner whatsoever with an open line, nor shall he carry out any work or perform any act which affects the security, use or safety of an open line except with the authority of the Contract Supervisor and in the presence of a duly authorised representative of the network operator.
- 22.2 The Contractor shall not carry out any work or operate any plant, or place any material whatsoever nearer than three metres from the centre line of any open line except with the written permission of the Contract Supervisor and subject to such conditions as he may impose.
- 22.3 Care must be taken not to interfere with or damage any services such as overhead wire routes, cables or pipes and optical fibre cable, except as provided for the work specified. The Contractor will be held responsible for any damage to or interruption of such services arising from any act or omission on his part or of any of his employees, or persons engaged by him on the Works. The cost of repairing, replacing or restoring the services, as well as all other costs arising from any damage to services, shall be borne by, and will be recovered from the Contractor.
- 22.4 Authority granted by the Contract Supervisor and the presence of an authorised representative of the network operator in terms hereof, shall not relieve the Contractor of his duty to comply with this specification.
- 23.0 ACCESS, RIGHTS-OF-WAY AND CAMPSITES**
- 23.1 Where entry onto the network operator's property is restricted, permission to enter will be given only for the purpose of carrying out the Works and will be subject to the terms and conditions laid down by the network operator.
- 23.2 The Contractor shall arrange for campsites, workplaces and access thereto as well as for any right-of-

way over private property to the site of the Works, and for access within the boundaries of the network operator's property. The owners of private property to be traversed shall be approached and treated with tact and courtesy by the Contractor, who shall, if necessary, obtain a letter of introduction to such property owners from the Contract Supervisor.

The Contractor shall be responsible for the closing of all gates on roads and tracks used by him or his employees. Except with the prior approval of the Contract Supervisor and the owner or occupier of any private land to be traversed, the Contractor shall not cut, lower, damage, remove or otherwise interfere with any fence or gate which is either on the network operator's property or on private property and which restricts access to the Works. Where such approval has been given, the Contractor shall prevent entry of animals or unauthorised persons onto the network operator's or private property, and shall make the fences safe against trespass at the close of each day's work.

23.3 The Contractor shall take all reasonable steps to confine the movement of vehicles and plant to the approved right-of-way to minimise damage to property, crops and natural vegetation.

23.4 When access is no longer required, and before completion of the Works, the Contractor shall repair, restore or replace any fence or gate damaged during execution of the Works to the satisfaction of the Contract Supervisor and shall furnish the Contract Supervisor with a certificate signed by the owner and occupier of land over which he has gained access to a campsite, workplace and the Works, certifying that the owner and occupier have no claim against the Contractor or the network operator arising from the Contractor's use of the land. Should the Contractor be unable to obtain the required certificate, he shall report the circumstances to the Contract Supervisor.

24.0 SUPERVISION

24.1 The Contract Supervisor will provide overall technical superintendence of the Works, and may direct the Contractor in terms of the provisions of the Contract or in respect of any measures which the Contract Supervisor may require for the operations of the network operator, the safety of trains, property and workmen of the network operator, and for the safety of other property and persons. The Contractor shall carry out the directions of the Contract Supervisor. The superintendence exercised by the Contract Supervisor, including any agreement, approval, refusal or withdrawal of any approval given, shall not relieve the Contractor of any of his duties and liabilities under the Contract, and shall not imply any assumption by the network operator or by the Contract Supervisor of the legal and other responsibilities of the Contractor in carrying out the Works.

24.2 The Contract Supervisor may delegate to any deputy or other person, any of his duties or functions under the Contract. On receiving notice in writing of such delegation, the Contractor shall recognise and obey the deputy or person to whom any such duties or functions have been delegated as if he were the Contract Supervisor.

24.3 The Contractor shall exercise supervision over the Works at all times when work is performed or shall be represented by an agent having full power and authority to act on behalf of the Contractor. Such agent shall be competent and responsible, and have adequate experience in carrying out work of a similar nature to the Works, and shall exercise personal supervision on behalf of the Contractor. The Contract Supervisor shall be notified in writing of such appointment which will be subject to his approval.

24.4 The Contractor or his duly authorised agent shall be available on the site at all times while the Works are in progress to receive the orders and directions of the Contract Supervisor.

25.0 HOUSING OF EMPLOYEES

25.1 The Contractor shall, where necessary, make his own arrangements for suitable housing of his employees. Where temporary housing is permitted by the Contract Supervisor on any part of the site, the Contractor shall provide suitable sanitation, lighting and potable water supplies in terms of the requirements of the local authority or the current network operator's specification; Minimum Communal Health Requirements in Areas outside the Jurisdiction of a Local Authority - E.4B, as applicable.

25.2 Fouling the area inside or outside the network operator's boundaries shall be prevented. The Contractor will be called upon by the Contract Supervisor to dispose of any foul or waste matter generated by the Contractor.

26.0 OPTICAL FIBRE CABLE ROUTES

26.1 The Contractor shall not handle, impact, move or deviate any optical fibre cable without prior approval.

26.2 Works that in any way affect the optical fibre cable requires prior approval from the Contract Supervisor

who will determine the work method and procedures to be followed.

“PREVIEW COPY ONLY”

PART B - SPECIFICATION FOR WORK NEAR HIGH-VOLTAGE ELECTRICAL EQUIPMENT

27.0 GENERAL

- 27.1 This specification is based on the contents of Transnet's publication ELECTRICAL SAFETY INSTRUCTIONS, as amended, a copy of which will be made available on loan to the Contractor for the duration of the contract.

These instructions apply to all work near "live" high-voltage equipment maintained and/or operated by the network operator, and the onus rests on the Contractor to ensure that he obtains a copy.

- 27.2 This specification must be read in conjunction with and not in lieu of the Electrical Safety Instructions.
- 27.3 The Contractor's attention is drawn in particular to the contents of Part I, Sections 1 and 2 of the Electrical Safety Instructions.
- 27.4 The Electrical Safety Instructions cover the minimum safety precautions which must be taken to ensure safe working on or near high-voltage electrical equipment, and must be observed at all times. Should additional safety measures be considered necessary because of peculiar local conditions, these may be ordered by and at the discretion of the Electrical Officer (Contracts).
- 27.5 The Contractor shall obtain the approval of the Electrical Officer (Contracts) before any work is done which causes or could cause any portion of a person's body or the tools he is using or any equipment he is handling, to come within 3 metres of any "live" high-voltage equipment.
- 27.6 The Contractor shall regard all high-voltage equipment as "live" unless a work permit is in force.
- 27.7 Safety precautions taken or barriers erected shall comply with the requirements of the Electrical Officer (Contracts), and shall be approved by him before the work to be protected is undertaken by the Contractor. The Contractor shall unless otherwise agreed, bear the cost of the provision of the barriers and other safety precautions required, including the attendance of the network operator's staff where this is necessary.
- 27.8 No barrier shall be removed unless authorised by the Electrical Officer (Contracts).

28.0 WORK ON BUILDINGS OR FIXED STRUCTURES

- 28.1 Before any work is carried out or measurements are taken on any part of a building, fixed structure or earthworks of any kind above ground level situated within 3 metres of "live" high-voltage equipment, the Electrical Officer (Contracts) shall be consulted to ascertain the conditions under which the work may be carried out.
- 28.2 No barrier erected to comply with the requirements of the Electrical Officer (Contracts) shall be used as temporary staging or shuttering for any part of the Works.
- 28.3 The shuttering for bridge piers, abutments, retaining walls or parapets adjacent to or over any track may be permitted to serve as a barrier, provided that it extends at least 2,5 metres above any working level in the case of piers, abutments and retaining walls and 1,5 metres above any working level in the case of parapets.

29.0 WORK DONE ON OR OUTSIDE OF ROLLING STOCK, INCLUDING LOADING OR UNLOADING

- 29.1 No person may stand, climb or work, whilst on any platform, surface or foothold:
- 29.1.1 higher than the normal unrestricted access way, namely -
 - 29.1.1.1 external walkways on diesel, steam and electric locomotives, steam heat vans, etc. and
 - 29.1.1.2 walkways between coaches and locomotives.
 - 29.1.2 of restricted access ways in terms of the Electrical Safety Instructions namely -
 - 29.1.2.1 the floor level of open wagons
 - 29.1.2.2 external walkways or decks of road-rail vehicles, on-track maintenance machines and material trains.
 - 29.1.3 Unauthorised staff working on these platforms must be directly supervised by duly authorised persons in terms of clause 607.1.3 of the Electrical Safety Instructions. These persons must attend the relevant electrical safety module training. A letter of training must then be issued by an accredited training authority. A Category C Certificate of Authority must be obtained from the

local depot examining officer.

- 29.2 When in the above positions no person may raise his hands or any equipment he is handling above his head.
- 29.3 In cases where the Contractor operates his own rail mounted equipment, he shall arrange for the walkways on this plant to be inspected by the Electrical Officer (Contracts) and approved, before commencement of work.
- 29.4 The handling of long lengths of material such as metal pipes, reinforcing bars, etc should be avoided, but if essential they shall be handled as nearly as possible in a horizontal position below head height.
- 29.5 The Responsible Representative shall warn all persons under his control of the danger of being near "live" high-voltage equipment, and shall ensure that the warning is fully understood.
- 29.6 Where the conditions in clauses 30.1 to 30.4 cannot be observed the Electrical Officer (Contracts), shall be notified. He will arrange for suitable Safety measures to be taken. The Electrical Officer (Contracts), may in his discretion and in appropriate circumstances, arrange for a suitable employee of the Contractor to be specially trained by the network operator and at the Contractor's cost, as an Authorised Person to work closer than 3 metres from "live" overhead conductors and under such conditions as may be imposed by the senior responsible electrical engineer of the network operator.

30.0 USE OF EQUIPMENT

30.1 Measuring Tapes and Devices

- 30.1.1 Measuring tapes may be used near "live" high-voltage equipment provided that no part of any tape or a person's body comes within 3 metres of the "live" equipment.
- 30.1.2 In windy conditions the distance shall be increased to ensure that if the tape should fall it will not be blown nearer than 3 metres from the "live" high-voltage equipment.
- 30.1.3 Special measuring devices longer than 2 metres such as survey sticks and rods may be used if these are of non-conducting material and approved by the responsible Electrical Engineer of the network operator, but these devices must not be used within 3 metres of "live" high-voltage equipment in rainy or wet conditions.
- 30.1.4 The assistance of the Electrical Officer (Contracts) shall be requested when measurements within the limits defined in clauses 31.1.1 to 31.1.3 are required.
- 30.1.5 The restrictions described in 31.1.1 to 31.1.3 do not apply on a bridge deck between permanent parapets nor in other situations where a barrier effectively prevents contact with the "live" high-voltage equipment.

30.2 Portable Ladders

- 30.2.1 Any type of portable ladder longer than 2 metres may only be used near "live" high-voltage equipment under the direct supervision of the Responsible Representative. He shall ensure that the ladder is always used in such a manner that the distance from the base of the ladder to any "live" high-voltage equipment is greater than the fully extended length of the ladder plus 3 metres. Where these conditions cannot be observed, the Electrical Officer (Contracts) shall be advised, and he will arrange for suitable safety measures to be taken.

31.0 CARRYING AND HANDLING MATERIAL AND EQUIPMENT

- 31.1 Pipes, scaffolding, iron sheets, reinforcing bars and other material which exceeds 2 metres in length shall be carried completely below head height near "live" high-voltage equipment. For maximum safety such material should be carried by two or more persons so as to maintain it as nearly as possible in a horizontal position. The utmost care must be taken to ensure that no part of the material comes within 3 metres of any "live" high-voltage equipment.
- 31.2 Long lengths of wire or cable shall never be run out in conditions where a part of a wire or cable can come within 3 metres of any "live" high-voltage equipment unless the Electrical Officer (Contracts) has been advised and has approved appropriate safety precautions.
- 31.3 The presence of overhead power lines shall always be taken account of especially when communications lines or cables or aerial cables, stay wires, etc. are being erected above ground level.

32.0 PRECAUTIONS TO BE TAKEN WHEN ERECTING OR REMOVING POLES, ANTENNAE, TREES ETC.

- 32.1 A pole may be handled for the purpose of erection or removal near high-voltage equipment under the following conditions:

(i) If the distance between the point at which the pole is to be erected or removed and the nearest "live" high-voltage equipment is more than the length of the pole plus 3 metres, the work shall be supervised by the Responsible Representative.

(ii) If the distance described in (i) is less than the length of the pole plus 3 metres, the Electrical Officer (Contracts) shall be consulted to arrange for an Authorised Person to supervise the work and to ensure that the pole is earthed where possible. The pole shall be kept in contact with the point of erection, and adequate precautions shall be taken to prevent contact with "live" high-voltage equipment.

32.2 The cost of supervision by an Authorised Person and the provision of earthing shall, unless otherwise agreed, be borne by the Contractor.

32.3 The provisions of clauses 33.1 and 33.2 shall also apply to the erection or removal of columns, antennae, trees, posts, etc.

33.0 USE OF WATER

33.1 No water shall be used in the form of a jet if it can make contact with any "live" high-voltage equipment or with any person working on such equipment.

34.0 USE OF CONSTRUCTION PLANT

34.1 "Construction plant" entails all types of plant including cranes, piling frames, boring machines, excavators, draglines, dewatering equipment and road vehicles with or without lifting equipment.

34.2 When work is being undertaken in such a position that it is possible for construction plant or its load to come within 3 metres of "live" high-voltage equipment, the Electrical Officer (Contracts) shall be consulted. He will arrange for an Authorised Person to supervise the work and to ensure that the plant is adequately earthed. The Electrical Officer (Contracts) will decide whether further safety measures are necessary.

34.3 The cost of any supervision by an Authorised Person and the provision of earthing shall, unless otherwise agreed, be borne by the Contractor.

34.4 When loads are handled by cranes, non-metallic rope hand lines shall be used, affixed to such loads so as to prevent their swinging and coming within 3 metres of "live" high-voltage equipment.

34.5 Clauses 35.1 to 35.4 shall apply *mutatis mutandis* to the use of maintenance machines of any nature.

35.0 WORK PERFORMED UNDER DEAD CONDITIONS UNDER COVER OF A WORK PERMIT

35.1 If the Responsible Representative finds that the work cannot be done in safety with the high-voltage electrical equipment "live", he shall consult the Electrical Officer (Contracts) who will decide on the action to be taken.

35.2 If a work permit is issued the Responsible Representative shall-

(i) before commencement of work ensure that the limits within which work may be carried out have been explained to him by the Authorised Person who issued the permit to him, and that he fully understands these limits.

(ii) sign portion C of the permit before commencement of work;

(iii) explain to all persons under his control the limits within which work may be carried out, and ensure that they fully understand these limits;

(iv) care for the safety of all persons under his control whilst work is in progress; and

(v) withdraw all personnel under his control from the equipment on completion of the work before he signs portion D of the work permit.

36.0 TRACTION RETURN CIRCUITS IN RAILS

36.1 DANGEROUS CONDITIONS CAN BE CREATED BY REMOVING OR SEVERING ANY BOND.

36.2 Broken rails with an air gap between the ends, and joints at which fishplates are removed under "broken bond" conditions, are potentially lethal. The rails on either side of an air gap between rail ends on electrified lines shall not be touched simultaneously until rendered safe by the network operator personnel.

36.3 The Contractor shall not break any permanent bonds between rails or between rails and any structure. He shall give the Contract Supervisor at least 7 days written notice when removal of such bonds is necessary.

36.4 No work on the track which involves interference with the traction return rail circuit either by cutting or removing the rails, or by removal of bonds shall be done unless the Electrical Officer (Contracts) is consulted. He will take such precautions as may be necessary to ensure continuity of the return circuit before permitting the work to be commenced.

37.0 HIGH-VOLTAGE ELECTRICAL EQUIPMENT NOT MAINTAINED AND/OR OPERATED BY THE NETWORK OPERATOR

Where the work is undertaken on or near high-voltage electrical equipment which is not maintained and/or operated by the network operator, the Occupational Health and Safety Act No. 85 of 1993, and Regulations and Instructions, or the Mines Health and Safety Act (Act 29 of 1996), shall apply.

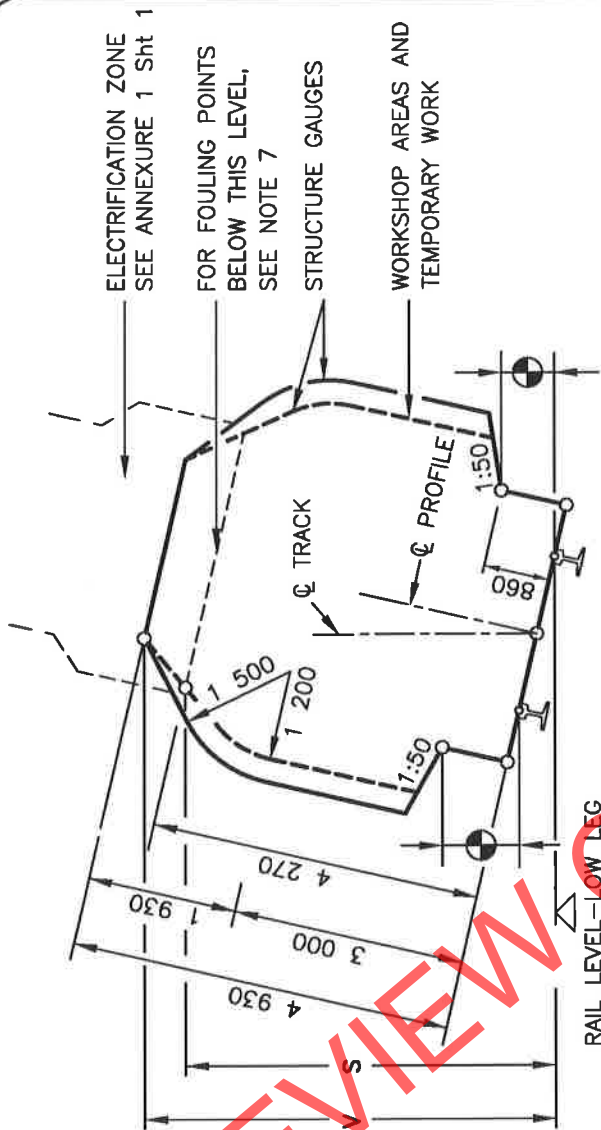
Such equipment includes:-

- (i) Eskom and municipal equipment;
- (ii) The Contractor's own power supplies; and
- (iii) Electrical equipment being installed but not yet taken over from the Contractor.


END

“PREVIEW COPY ONLY”

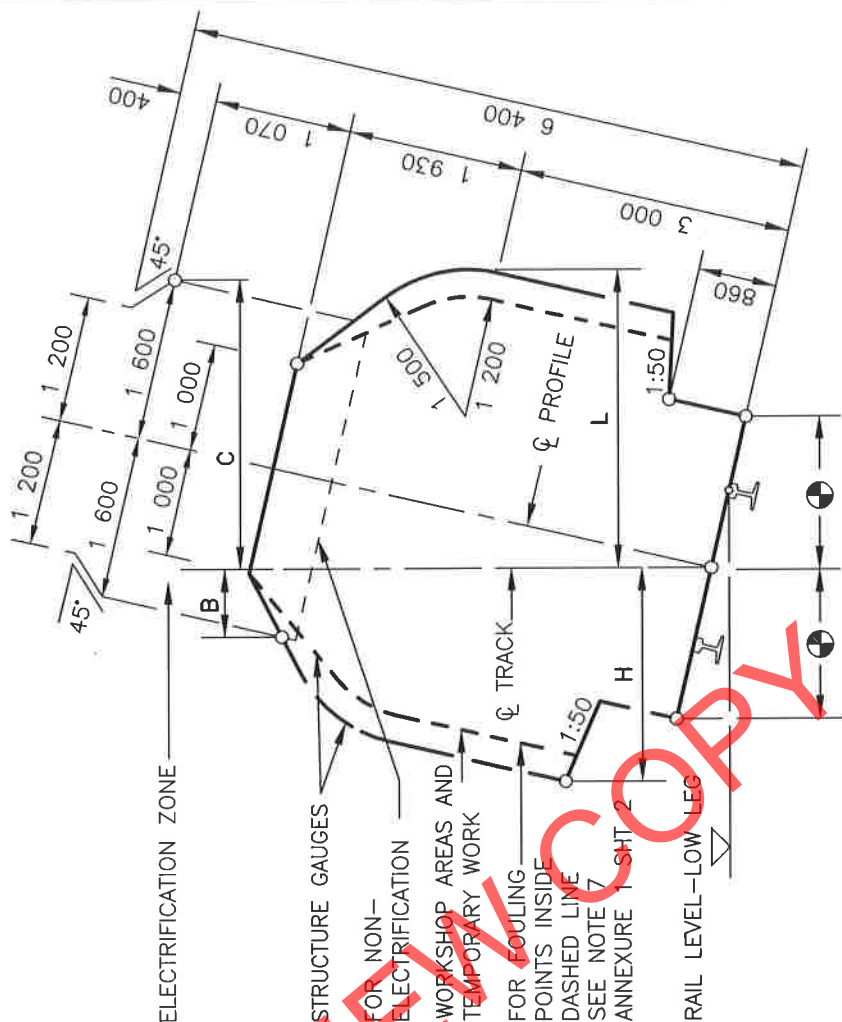
LOCATION		NOT ELECTRIFIED	ELECTRIFIED (PRESENT OR FUTURE)	
	RADIUS (mm)	S (mm)	V (mm)	V (mm)
ALL AREAS OTHER THAN THOSE INDICATED BY * BELOW	100	4 470	5 050	5 400
	300	4 410	5 020	5 370
	600	4 370	5 000	5 350
	1 000	4 350	4 990	5 340
	1 500	4 310	4 960	5 310
	2 000	4 290	4 940	5 290
	>3 000	4 270	4 930	5 280
* OVER OR NEAR POINTS AND CROSSING IF REQUIRED BY ELECTRICAL IRRESPECTIVE OF RADIUS			5 650	6 000



REMARKS:


1. **V** IS THE REQUIRED VERTICAL CLEARANCE EXCEPT WHERE REDUCED CLEARANCE **S** APPLIES.
2. **S** IS THE MINIMUM VERTICAL CLEARANCE FOR STRUCTURES AND TEMPORARY WORK OVER ~~NON-ELECTRIFIED~~ LINES.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR APPLICATION AT CURVES
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 3m BEYOND THE ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 15m ALONG STRAIGHTS.
5. NEW STRUCTURES: SEE BRIDGE CODE.
6. TUNNELS: SEE DRAWING BE 82-35.
7. FOULING POINTS: SEE CLAUSE 8.1.
8. CLEARANCES ARE BASED ON 15m BOGIE CENTRES AND 21,2m VEHICLE BODY LENGTH.
9.  SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.

HORIZONTAL CLEARANCES :
1 065mm TRACK GAUGE



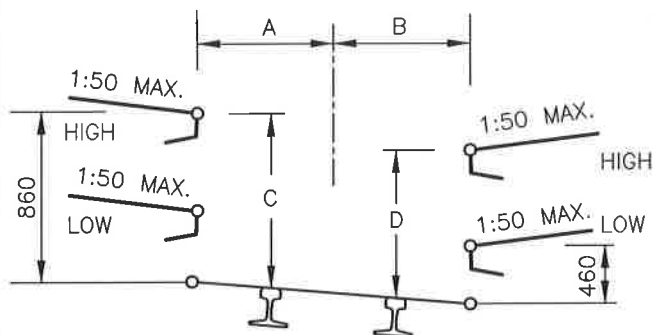
RADIUS (m)	WITH CANT		NO CANT	WITH CANT	
	H (mm)	L (mm)		H & L	C (mm)
90	2 730	3 090	2 780	130	2 100
100	2 700	3 030	2 750	1 140	2 050
120	2 650	2 970	2 700	1 160	2 010
140	2 620	2 920	2 660	1 175	1 990
170	2 590	2 870	2 630	1 190	1 970
200	2 570	2 820	2 600	1 205	1 950
250	2 550	2 790	2 580	1 230	1 920
300	2 540	2 760	2 560	1 250	1 900
350	2 530	2 730	2 540	1 270	1 890
400	2 520	2 710	2 530	1 290	1 875
500	2 510	2 680	2 520	1 320	1 850
600	2 500	2 660	2 510	1 340	1 830
800	2 490	2 620	2 500	1 365	1 790
1 000	2 480	2 600	2 490	1 380	1 760
1 200	2 480	2 580	2 490	1 200	1 730
1 500	2 480	2 550	2 480	1 415	1 700
2 000	2 480	2 500	2 480	1 440	1 660
3 000	2 470	2 470	2 470	1 500	1 600
>5 000	2 460	2 460	2 460	1 600	1 600

REMARKS:

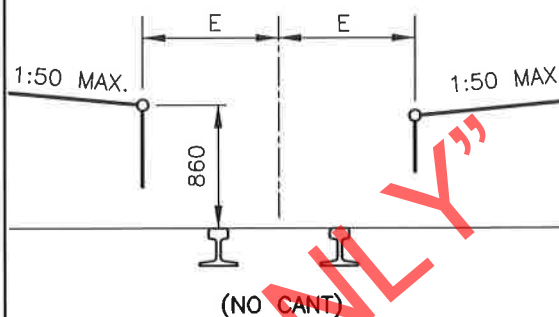
1. **H** AND **B** IS THE REQUIRED HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. **L** AND **C** IS THE REQUIRED HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
4. FOR WORKSHOP AREAS AND TEMPORARY WORK, CLEARANCES **H** AND **L** MAY BE REDUCED BY 300mm.
5.  SEE ANNEXURE 1 SHEET 3 FOR PLATFORM CLEARANCES.
6. ALSO REFER TO REMARKS 4 TO 8 OF ANNEXURE 1 SHEET 2.

PLATFORMS : TRACK GAUGE 1 065mm

PASSENGERS



GOODS

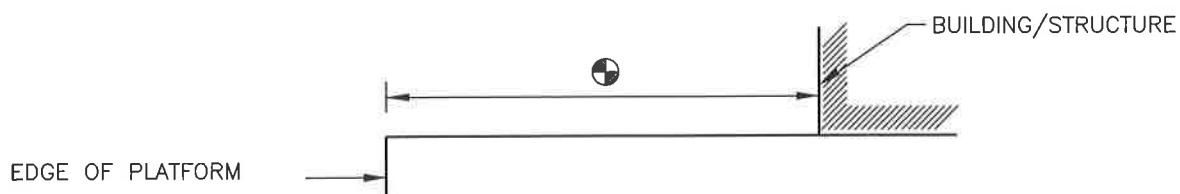


RADIUS (m)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
90	1 690	1 820	890	810	1 840
100	1 650	1 790	890	810	1 810
120	1 610	1 740	890	810	1 760
140	1 580	1 700	890	810	1 720
170	1 550	1 660	890	810	1 690
200	1 530	1 630	890	820	1 670
250	1 520	1 600	890	820	1 640
300	1 520	1 580	890	830	1 620
350	1 520	1 560	880	830	1 600
400	1 520	1 550	880	840	1 590
500	1 520	1 540	880	850	1 580
600	1 520	1 530	870	850	1 570
800	1 520	1 520	860	860	1 560
1 200	1 520	1 520	860	860	1 550
2 000	1 520	1 520	860	860	1 540
3 000	1 520	1 520	860	860	1 530
STRAIGHT	1 520	1 520	860	860	1 520

REMARKS:

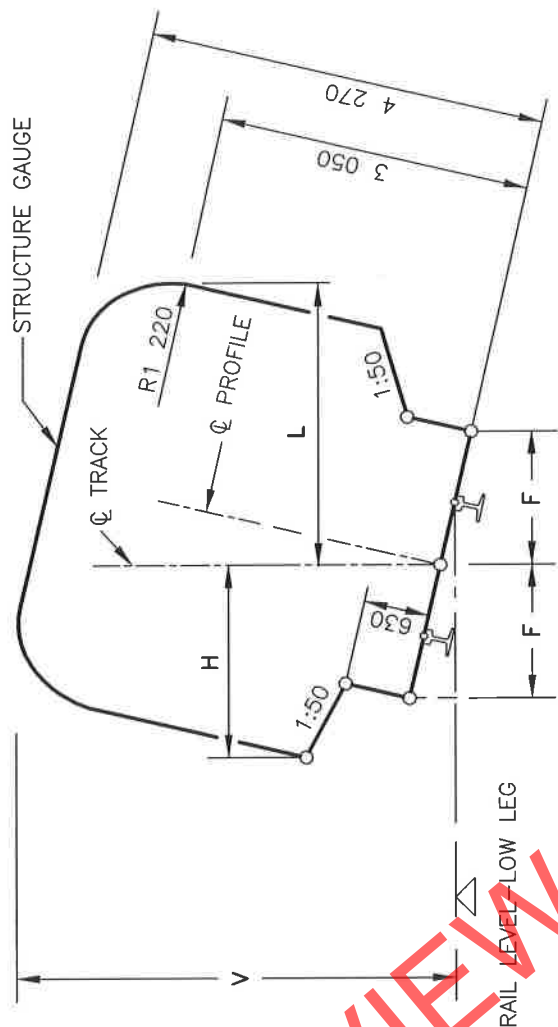
1. NO CANT TO BE APPLIED EXCEPT WHEN THE GOODS PLATFORM IS ON A RUNNING LINE.
2. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
3. 8m TO MAIN STATION-BUILDINGS AND 3m TO ALL OTHER STRUCTURES.
4. TOLERANCES : SEE CLAUSE 8.0.10.

STRUCTURES ON PLATFORMS : 1 065mm AND 610mm TRACK GAUGE



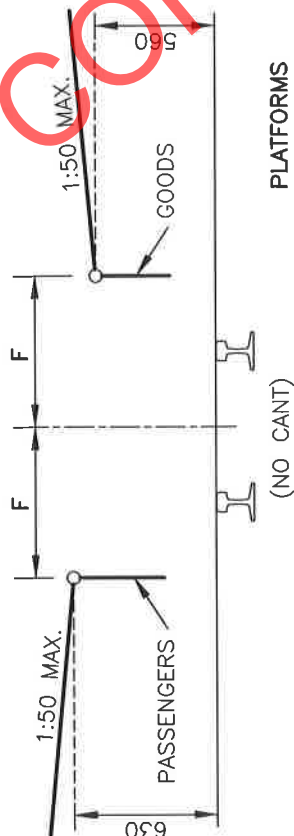
Part C4: Site Information

“PREVIEW COPY ONLY”



RADIUS (m)	F (mm)
50	1 550
60	1 510
80	1 460
100	1 430
120	1 410
140	1 390
170	1 380
200	1 370
250	1 360
300	1 350
600	1 330
1 000	1 320
>2 000	1 320
STRAIGHT	1 310

CLEARANCES



REMARKS:

1. H IS THE MINIMUM HORIZONTAL CLEARANCE ON THE OUTSIDE OF THE CURVE BASED ON MINIMUM CANT.
2. L IS THE MINIMUM HORIZONTAL CLEARANCE ON THE INSIDE OF THE CURVE BASED ON MAXIMUM CANT.
3. V IS THE MINIMUM VERTICAL CLEARANCE.
4. FOR APPLICATION AT CURVES:
 - 4.1 APPLY INCREASED CLEARANCES FOR CURVES TO POINTS 2m BEYOND THE ENDS OF THE CIRCULAR CURVE.
 - 4.2 REDUCE CLEARANCES AT A UNIFORM RATE OVER THE REMAINDER OF THE TRANSITION CURVE.
 - 4.3 FOR NON-TRANSITIONED CURVES REDUCE AT A UNIFORM RATE OVER A LENGTH OF 18m ALONG STRAIGHTS.
5. INTERMEDIATE VALUES MAY BE INTERPOLATED BY THE ENGINEER IN CHARGE.
6. ALSO REFER TO REMARKS 5, 6 AND 7 OF ANNEXURE 1 SHEET 2.
7. CLEARANCES ARE BASED ON 9 700mm BOGIE CENTRES AND 13 700mm VEHICLE BODY LENGTH.
8. SEE ANNEXURE 1 SHEET 3 FOR STRUCTURES ON PLATFORMS.

Part C4

SITE INFORMATION

CONTENTS

Item no.	Description	Page
4.1	DESCRIPTION OF THE WORKS	1
4.2	EXTEND OF THE WORKS	1
4.3	LOCATION OF THE WORKS	1

“PREVIEW COPY ONLY”

Part C4

Site Information

4 Site Information

4.1 **CONTRACT AREA**

The contract area will be the track owned or maintained by Transnet Freight Rail.

The Service Manager may require the machine to work outside the contract area mentioned above.

4.2 **EXTENT OF THE WORKS**

The Contractor would be required to maintain the permanent track anywhere in the Country on any lines owned or maintained by Transnet Freight Rail for the period as specified in the Contract Data. Maintenance of permanent track will be required on open lines, tunnels, platform lines, and loop and yard lines. It will be required that all different types of activities are performed as prescribed in the various particular specifications.

4.3 **LOCATION OF THE WORKS**

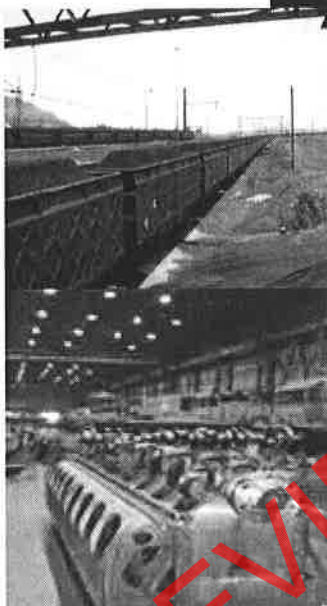
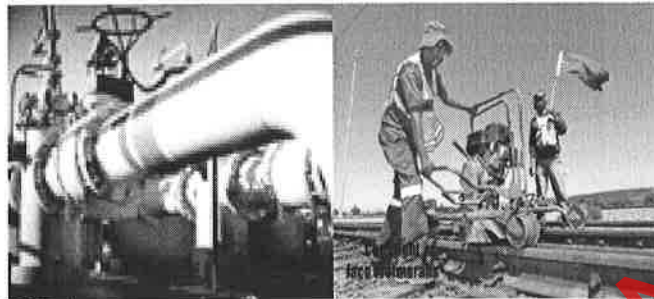
4.3.1 The Service Manager's Deputy shall determine where the Work shall be performed. Maintenance of permanent track will be required on open lines, tunnels, platform lines, and loop and yard lines.

4.3.2 The Contractor may be required to work in areas where varying degrees and types of security situations are prevailing such as may occur in remote rural areas through to densely populated metropolitan areas. This could require the Contractor to work inside any of the Infrastructure Depot areas at any time of the year for any period of time.

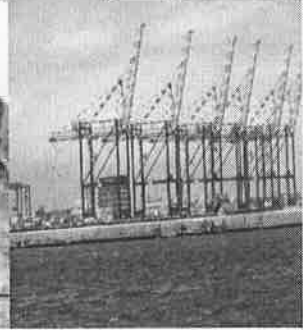
4.3.3 The Service Manager's Deputy shall make the necessary arrangements to move the machinery by rail from one work site to another, and shall give the Contractor written notice of the date and time of departure. Major movements will be planned and the time allowed should be a minimum of 14 days or such shorter period as agreed.

4.3.4 Any delay to an announced move caused by the Contractor will render the machinery non-available for the period of such delay, excluding overnight stops.

TRANSNET



Transnet Procedure Manual
Principal Controlled Insurance
Contract Works
Contractors Public Liability
2012 / 2013



Index

INTRODUCTION	2
INSURANCE RESPONSIBILITIES	4
SUMMARY OF COVER - GENERAL	8
SUMMARY OF COVER - CONTRACT WORKS INSURANCE	11
SUMMARY OF COVER - CONTRACTORS PUBLIC LIABILITY INSURANCE	16
ADMINISTRATIVE PROCEDURES	20
CLAIMS PROCEDURE	24
WILLIS SOUTH AFRICA - PERSONNEL	26
ANNEXURE 1	
Transnet Principal Controlled Construction Insurance Programme Contract Award Declaration (Part A) Contract Completion Declaration (Part B) Variation Order / Extension Request (Part C) Project Specific, One Off or Multiple Packages R100m and above (Form A1)	
ANNEXURE 2	
Incident Advice Form	
ANNEXURE 3	
Monthly Contract Register Control Sheets	

Introduction

“PREVIEW COPY ONLY”



Introduction

TRANSNET SOC LIMITED insure all Projects / Contracts on a Principal Controlled Insurance Programme basis (including the Assembly and/or Erection of Plant and Machinery) in respect of Contract Works and Contractors Public Liability.

Philosophy of the programme

- Transnet SOC Limited and its Operating Divisions and Specialist Units wish to control the risk exposures in this regard.
- Transnet SOC Limited, as a large organization, bulk-buys - resulting in preferential rates and cover.
- Simplified administration.
- Eliminates potential problems which usually occur when individual Contractors are responsible to arrange separate insurance.
- Includes the Contractor and/or Subcontractors as an insured party.

The Transnet SOC Ltd Principal Controlled Insurance Programme comprises:

- Blanket Principal Controlled Contract Works Insurance hereinafter abbreviated as (BPCI) - This policy is specifically designed to provide indemnity for small contracts to a maximum estimated contract value of **R 5,0 million VAT exclusive inclusive of Free Issue Material.**
- Principal Controlled Contract Works Insurance hereinafter abbreviated as (PCI) - This policy provides indemnity for all contracts within the range of **R 5,0 million to R 100 million VAT exclusive inclusive of Free Issue Material.**
- Principal Controlled Contractors Liability Insurance hereinafter abbreviated as (PCI LIAB) - This policy provides indemnity for all contracts up to **R 100 million VAT exclusive inclusive of Free Issue Material.**
- Principal Controlled One Off Insurance hereinafter abbreviated as (PCI One Off) - This policy provides indemnity for all contracts with values in excess of **R 100 million VAT exclusive inclusive of Free Issue Material.**
- Project Specific Insurance hereinafter abbreviated as (PSI Projects) - This policy will indemnify any project comprising Multiple Packages.

NOTE

Insurance cover arrangements for these categories is subject to prior notification and arrangement with Group Risk Finance as specific underwriting information is required for soliciting quotations for cover.

- It is therefore important that Tender and eventual Contract documents reflect the fact that Transnet as the Principal (i.e. the Employer) arranges certain covers which incorporates cover on behalf of Contractor's and / or Subcontractor's.
- The concept does not relieve the contracting parties of their responsibilities for, amongst others, care of the works and liabilities to third parties.

Insurance Responsibilities

“PREVIEW COPY ONLY”



Insurance Responsibilities

1. Cover arranged by Transnet as the Principal (Employer)

1.1 Insurance Cover Applicable To All Contracts

Principal Controlled Insurance Programme	Estimated Contract Values any one Contract inclusive of Free Issue Material
Blanket PCI Contract Works BPCI	≤ R 5 million VAT exclusive
PCI Contract Works PCI	>R 5 million ≤ R100 million VAT exclusive
PCI Liability PCI LIAB	≤ R100 million VAT exclusive
PCI One Off Contract Works & Liability PCI One Off's	>R 100 million VAT exclusive
Project Specific Insurance Contract Works & Liability PSI Projects	>R 100 million VAT exclusive comprising multiple packages

Note

- **BPCI ; PCI ; PCI LIAB and PCI One Off's** are normally arranged for single contracts.
- **PSI Projects** in most instances comprise a multitude number of different packages included in a package plan and is normally managed by Transnet Capital Projects on behalf of the Operating Divisions.

1.1.1 Contract Works Cover

Covering fortuitous physical loss or damage to the works, temporary works and materials for incorporation into the works whilst in inland transit and whilst at the contract site.

Limited to **R100,000,000** any one contract inclusive of Free Issue Material (**Exclusive of VAT**)

1.1.2 Public Liability Cover

Covering legal liability arising out of or connection with the performance of the works on the contract site or sites designated by Transnet for purposes of the performance of the contract.

Limited to **R25,000,000** any one occurrence.

1.1.3 Riot / Strike Cover (Contract Works)

Provided by:
SASRIA (*South African Special Risks Insurance Association*) in respect of risks with RSA.



1.2 Additional Insurances (Optional)

- | | |
|-----------------------------------|---|
| 1.2.1 Marine Transit Cover | Covering imports until delivered and checked on site. |
| 1.2.2 Project Delay Cover | Covering consequential financial exposures due to delays following indemnifiable loss or damage to the works. |

The above information (including limits of insurance purchased) should be clearly spelt out in Tender and eventual Contract documentation including the deductible (excess) which are applicable and the fact that Contractor's and/or Subcontractor's are responsible for the deductible.

“PREVIEW COPY ONLY”

2. Cover to be arranged by Contractor's/Subcontractor's

All Contractor's/Subcontractor's still remain fully responsible to arrange insurance in respect of the following:

- As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.
- Employers Common Law Liability.
- Own plant, machinery, equipment and tools.
- Motor Vehicle Liability.
- Professional Indemnity (Defective Design).

This should also be clearly spelt out in Tender and eventual Contract documentation.

3. Cover to be arranged by Consulting Engineers, Architects & Other Professionals

Professional Indemnity (defects in Design, Plan or Specification).

Please ensure that Professional Service Providers do not contract out of their liability in this regard. (Please refer to Transnet Group Insurance for recommendation and approved limits).

“PREVIEW COPY ONLY”



Summary of Cover

General

“PREVIEW COPY ONLY”



Summary of Cover

The Insured Parties

- Transnet SOC Limited and / or its Subsidiary Companies as Principal or Employer.
- All Contractor's undertaking work for or on behalf of the Principal in execution of the Contract.
- All Subcontractor's employed by the Contractor and all other Subcontractor's (whether nominated or otherwise) engaged in the fulfillment of the Contractor.
- To the extent required by any Contract or Agreement suppliers manufacturers vendors or other persons engaged on the contract sites but only to the extent of loss damage or liability originating at the Contract Site (other than while the Property Insured is in transit) arising out of the performance of their Contract Site obligations.

Insured Contracts

All contracts undertaken by the Insured involving but not limited to Design Construction, Testing, Commission in respect of new works, geotechnical and exploratory works, capital expenditure, upgrade, modification, maintenance and/or overhaul and/or refurbishment, renovation, retrofitting or alteration and/or additions to existing facilities and/or re-profiling of track, vegetation rehabilitation and ballast tamping activities undertaken by the Insured or other Insured Parties acting on their behalf but excluding:

- Contracts where the contract value including the value of Free Issue Material exceeds R100,000,000 (Exclusive of VAT).
- Contracts where the duration of the contract exceeds 36 months.
- Contracts where the contractual Defects Liability / Maintenance period exceeds 24 months.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa.
In territories outside of South Africa it is required in terms of their Insurance Acts that insurance cover be placed with their local markets. It is therefore important that the Broker be advised at feasibility stage (prior to Tender documents being issued) should any contracts, whether as Principal or Contractor, take place in any Territory outside of the Republic of South Africa.

Contract Site

Any location upon which the Insured Contract(s) is to be executed or carried out as more fully defined in the Insured Contract(s) documents together with so much of the surrounding area as may be designated for the performance of the Insured Contract(s) within the Republic of South Africa.



Principal Controlled Insurance Programme	Estimated Contract Values any one Contract inclusive of Free Issue Material
Blanket PCI Contract Works BPCI	≤ R 5 million VAT exclusive
PCI Contract Works PCI	>R 5 million ≤ R100 million VAT exclusive
SASRIA on Contract Works	≤ R100 million VAT exclusive
PCI Liability PCI LIAB	≤ R100 million VAT exclusive
PCI One Off Contract Works & Liability PCI One Off's	>R 100 million VAT exclusive
Project Specific Insurance Contract Works & Liability PSI Projects	>R 100 million VAT exclusive comprising multiple packages

- To extend the contract period beyond 36 months will attract an additional premium.
(See Administrative Procedures herein).

Declaration Procedure/Premium Payment Procedure

All Contracts up to R100m VAT exclusive including the value of Free Issue Material must be declared to Willis South Africa in terms of the attached declaration form marked as Annexure 1 prior to commencement of the Works and provision must be made against the Contract Number for payment of the premiums at the end of the Insurance Period namely 31st March 2013.

Claims Reporting

- All incidents that could give rise to claim under the Principal Controlled Insurances, **HAVE TO BE** reported to the Willis / Insurer as soon as possible and in any event no later than 30-days after occurrence of the incident which may give rise to a claim under the Contract Works or Liability insurance.
Failing this, all benefits in terms of the Policy shall be voidable from date of occurrence. It is essential that this condition is brought to the attention of Contractors in Tender/Contract Documents.
- All incidents / claims must be registered in terms of **Transnet SOC Unique Claim Numbering System** and captured on **TOMS**

Policy Structure

There are two policies covering the Transnet Construction, Maintenance and Refurbishment contracts (but excluding contracts as described on page 9) as follows:-

1. Blanket PCI & PCI Policy MZAR10060 – (BPCI) & (PCI)

Principal Controlled Contract Works up to R100,000,000 any one contract including the value of Free Issue Material;

2. PCI Liability Policy S04089-12 – (PCI LIAB)

Principal Controlled Contractors Public Liability (PCI) in respect of Contracts up to R100,000,000 any one contract including the value of Free Issue Material with a Limit of Indemnity of R25,000,000; Projects in excess of R100,000,000 including the value of Free Issue Material must be referred to Transnet Group Insurance for further instructions.

Summary of Cover

Contract Works Insurance

“PREVIEW COPY ONLY”



Contract Works Insurance

Synopsis of Cover

Accidental physical loss of or damage to the works or materials for incorporation in the works:

- During dismantling of property in connection with the Insured Contracts.
- Whilst in transit, including loading and unloading, or whilst temporarily stored at any premises en route to or from The Contract Site within the Republic of South Africa;
- During the preparation of The Contract Site and thereafter until the Property Insured has been officially accepted by the Employer and becomes his responsibility by means of a Notice of Completion Certificate or similar evidence of legal transfer of risk in the whole or permanent works under the Insured Contract to the Employer;
- Where testing and commissioning of Property Insured is conducted by the Employer "completion" for purposes of this insurance to occur only after successful completion of all testing and commissioning of the whole of the permanent works under the Insured Contract;
- Where the permanent property insurance arranged by the Employer indemnify the Insured for completed portions of the Property Insured prior to completion of the whole of the permanent works under the Insured Contract, this insurance in respect of such completed portions of the Property Insured shall cease except as provided below;
- Work uncompleted or outstanding in terms of any certificate of completion, certificate of handover or similar document shall continue to be insured until its completion and the inception of the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) for such uncompleted or outstanding work where after the provision hereafter shall apply in respect of such work;
- During the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
 - i) arising from a cause occurring prior to commencement of such period of maintenance or defects liability period
 - ii) arising from any act or omission of the Insured their Servants, Agents, Suppliers or Subcontractors in pursuance of the Insured's obligations.

for which the Insured Contractor is responsible under the Contract.

Contract Period Limitation

Maximum Contract period	36 months
Maximum Defects Liability / Maintenance Period	24 Months



Limits of indemnity (VAT exclusive)

Contract Works (Any One Contract) including Free Issue Material	R100,000,000
Surrounding Property	R50,000,000
Surrounding Property – Worked Upon	R50,000,000
Surrounding Property – Watercraft	R50,000,000
Removal to Gain Access	R5,000,000
Documentation	R200,000
Debris Removal	R5,000,000
Claims Preparation Costs	R1,000,000
Maximum testing / commissioning period	60 days
Maximum un-sealed / un-primed base course limitation	5,000 metres
Maximum open trench limitation	5,000 metres

Deductibles (VAT exclusive)

The deductible (excess) is the amount which the Contractor and/or Sub-Contractor is responsible for and this obligation must be reflected in the Tender and/or Contract Documents and the responsibility for same made clear.

The deductibles apply to each and every occurrence and in respect of all Contracts.

The deductibles are:

Loss or damage due to storm, rain, tempest, wind, flood, theft, malicious damage, subsidence, collapse, earthquake, testing or commissioning	R 25,000
Loss or damage arising from any other cause	R 15,000
Removal of Debris	R 25,000
Loss or damage to Surrounding Property	R 75,000
Loss or damage to Documentation	R 5,000
Road Reserve / Servitude	R250,000

All Contracts Entailing Trenching and / or Layer Works

Following additional Deductibles apply over and above the aforesaid deductibles: - i.e. in excess of 1,000 metres

Up to a maximum of 3,000metres	20% of loss / minimum R50,000
Up to a maximum of 5,000metres	20% of loss / minimum R100,000

It is essential that this is brought to the attention of Contractor's. Where this restriction is not practical, specific arrangements for cover can be made with underwriters. They will, however, require detailed underwriting information and an additional premium may be charged.



Property Insured

The actual Contract Works and all material intended for incorporation into the Works (*including Free Issue Material* the value of which has to be included in the Contract Value declared*) and Temporary Works.

N.B.

Temporary works does not include mobile plant, constructional aids, equipment, structures or works (not being part of the permanent works) which are not intended to be removed from the Contract Site on completion of the Contract (other than scaffolding shuttering and formwork as well as construction equipment specifically designed and/or constructed for the Insured Contract and which is not intended for immediate re-use on another contract) or have no residual value at completion of the Contract (other than scrap value), solely due to their specialised nature.

* **Note:** Where Transnet for the purposes of the Contract issues materials 'free of charge' to the Contractor such materials shall be and remain the property of the Transnet. Free Issue Material shall mean any material provided by or on Transnet's behalf which is to be used in the provision of the Service or incorporated into the Contract.

Main Exceptions

- The amount of the policy deductible.
- Loss or damage of money or the like.
- Aircraft, waterborne vessels or craft.
- Construction plant, tools or equipment.
- Losses by disappearance / shortage discovered by taking of routine inventory.
- Defective material workmanship design plan or specification (but resultant damage covered).
- Cost of re-design, improvement, betterment or alteration.
- Consequential loss.
- Liquidated damages or penalties for delay in connection with guarantee or performance or efficiency.
- Air transit (unless in territorial limits).
- Ocean transit or whilst in storage thereafter (unless immediately inspected by an independent party after offloading from vessel).
- During the Contractual Defects Liability or Maintenance Period (as may be described in the Insured Contract) pertaining to any part of the permanent works but only in respect of loss or damage:
 - i) arising from a cause occurring prior to commencement of such period of maintenance or defects liability period
 - ii) arising from any act or omission of the Insured his Servants or Agents, in the course of the work carried out in pursuance of the Insured's obligations with regard to maintenance under the Contract.
- Wear, tear, gradual deterioration rust, corrosion or oxidation and normal up-keep.
- Electrical or mechanical breakdown or explosion to machinery or plant which has operated under load conditions prior to commencement of the Insured Contract or in respect of new machinery or plant which has occurred after a Testing / Commissioning Period of 60-days.
- Damage to any unsealed / unprimed or base course in excess of limitations as stated in the policy.
- Damage to any open trench in excess of the limitations as stated in the policy.
- War, asbestos and nuclear risks.
- Sinking (whether partial or in whole) of any watercraft arising out of or in consequence of any work undertaken below the load line (international load line / plimsoll line).



Cover Limitations

Unsealed / Unprimed Base Course

- Unsealed / unprimed base course – cover limited to a maximum of 5,000 metres.

Open Trench

- Open trench – cover limited to a maximum indemnity of 5,000 metres.

It is essential that the above limitations are brought to the attention of Contractor's. Where this restriction is not practical, specific arrangements for cover can be made with Underwriters. They will, however, require detailed underwriting information and an additional premium may be charged.

Used Plant – Basis of Loss Settlement

Insured property which has operated under service conditions prior to attachment of cover:-

- Up to 5 years – cost of repair / reinstatement / replacement.
- In excess of 5 years - agreed value (calculated on basis of each life year (or part thereof) on present day New Replacement Value reduced proportionally over 20 years subject to residual of 20%).

“PREVIEW COPY ONLY”

Summary of Cover

Contractors Public Liability Insurance

“PREVIEW COPY ONLY”



Contractors Public Liability Insurance

Insured Contracts

All contracts undertaken by the Insured involving but not limited to Design Construction, Testing, Commission in respect of new works, geotechnical and exploratory works, capital expenditure, upgrade, modification, maintenance and/or overhaul and/or refurbishment, renovation, retrofitting or alteration and/or additions to existing facilities and/or re-profiling of track, chemical vegetation control, vegetation rehabilitation and ballast tamping activities undertaken by the Insured or other Insured Parties acting on their behalf but excluding:

- Contracts where the contract value including the value of Free Issue Material exceeds R100,000,000 (Exclusive of VAT).
- Contracts where the duration of the contract exceeds 36 months.
- Contracts where the contractual Defects Liability / Maintenance period exceeds 24 months.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa
In territories outside of South Africa it is required in terms of their Insurance Acts that insurance cover be placed with their local markets. It is therefore important that the Broker be advised at feasibility stage (prior to Tender documents being issued) should any contracts, whether as Principal or Contractor, take place in any Territory outside of the Republic of South Africa.
- Limited to a maximum contract period of 36 months followed by a maximum Defects Liability / Maintenance period of 24 months.

Synopsis of Cover

Legal Liability to pay as compensation for and in consequence of:

- Death of or injury to or illness or disease contracted by any person.
- Loss of / or physical damage to tangible property.

Occurring during the period of insurance and arising out of or in connection with the performance of the Insured Contract(s).

Limits Of Indemnity

Contractors Public Liability	R25,000,000 any one occurrence / unlimited for the Period of Insurance
Removal of Support	R25,000,000 unlimited for the Period of Insurance
Statutory Legal Defence Costs	R25,000,000 any one occurrence
Arrest / Assault / Defamation	R25,000,000 any one occurrence
Emergency Medical Expenses	R25,000,000 any one occurrence
Prevention of Access	R25,000,000 any one occurrence
Trespass / Nuisance	R25,000,000 any one occurrence
Claims Preparation Costs	R2,500,000 any one occurrence

Deductibles

The deductible (excess) is the amount which the Contractor and/or Sub-Contractor is responsible for and this obligation must be reflected in the Tender and/or Contract Documents and the responsibility for same made clear.

The deductibles apply to each and every occurrence and in respect of all Contracts.

The deductibles are:

● Loss of or damage to public utilities	R25,000
● Spread of fire or burning of fire breaks	R250,000
● Loss of or damage to any other property	R25,000
● Loss of or damage to property arising from removal of support	R50,000
● Loss of or damage arising from the burning of fire breaks	R250,000
● Loss of or damage arising out of vegetation control including but not limited to the use of pesticides	R250,000



Main Exceptions

- The amount of the policy deductible.
- Death or injury to own employees.
- Motor vehicle liabilities under legislation or as defined in Multi-lateral Motor Vehicles Accident Fund No. 93 of 1989 as amended.
- Claims in connection with ownership or use of aircraft or watercraft.
- Property belonging to the Insured or in his care custody and control (as defined in the Policy).
- Property forming part of Contract Works.
- Liquidated damages or penalties for delays or in respect of performance or efficiency guarantees.
- The cost of making good faulty workmanship materials design plan or specification in any part of the Property insured.
- Gradual pollution and contamination.
- Sudden unintended and unforeseen seepage, pollution or contamination including the cost of removing, nullifying or cleaning up in respect of both ocean and harbour going watercraft outside of dry dock.
- After completion and handover (inclusive of the contractual Defects / Maintenance period).
- Punitive damages.
- Ownership hiring or leasing of any airport or airstrip.
- War, asbestos and nuclear risks.

Cover Limitation

Indemnity for removal of support is limited to R25,000,000.

If a higher limit of indemnity is required, the Employers Insurance Broker needs to be advised and underwriting information will need to be provided in advance (i.e prior to Tender stage) and this will entail an additional premium.

Administrative Procedures

“PREVIEW COPY ONLY”



Administrative Procedures

Arranging Insurance cover

The Operating Divisions and Specialist Units must

Prior to the commencement of each Contract:-

- ☛ Complete the Declaration Form per Part A as per Annexure 1 herein. Please note that in terms of SASRIA regulations where the Contract Value exceeds R2 million, the physical address of the Contract is mandatory. Where track is being worked upon, the start and end points are required.
- ☛ Date and sign the Declaration Form.
- ☛ Submit the Declaration Form to the Broker.

Cover will be effective from the date of receipt of the Declaration Form by the Broker who will acknowledge receipt of the same.

An Insurance Certificate and a SASRIA Coupon evidencing cover can be issued on specific request.

Prior to the expiry of each Declarations estimated completion date:-

- ☛ Confirm to the Broker that the contract will be completed on time.
 - ☛ On completion submit to the Broker a Declaration of the final contract value per Part B as per Annexure 1 herein.
- NB** If the original completion date is not going to be achieved, the period of insurance on the Declaration document will need to be extended and the Broker needs to be notified **prior to original completion date**.
- The Operating Divisions and Specialist Units (**prior to the expiry date of the certificate period**) has to advise the Broker in writing to extend the period of insurance and provide the new estimated completion date.
- NB** If a completion date needs to be extended and the Broker is not advised prior to the original completion date, all SASRIA cover will cease on the originally declared completion date as there is no hold covered arrangement with SASRIA.
A new SASRIA Coupon will then only be issued for the extension period from the date when the Insurer is advised in writing by the Broker.
Under these circumstances the new SASRIA Coupon will be subject to an additional premium, subject to the minimum premium.

This process needs to be followed by the Operating Divisions and Specialist Units until the time of completion is achieved.

Once the Contract has been completed:-

- ☛ The Operating Divisions and Specialist Units have to declare the final contract value to the Broker per Part B as per Annexure 1 herein.
- ☛ The deposit premium will then be adjusted accordingly.

Failure by the Operating Divisions and Specialist Units to conform to the above procedure will result in cover being voided.

Contracts that require specific arrangements

All contracts that fall outside the scope of this Principal Controlled Insurance Programme have to be advised to Group Risk & Insurance prior to Tender and specific "One Off" cover will need to be negotiated.

These are:

- Contracts where the contract value including the value of Free Issue Material exceeds R100,000,000 (Exclusive of VAT).
- Contracts where the duration of the contract exceeds 36 months.
- Contracts where the contractual Defects Liability / Maintenance period exceeds 24 months.
- Contracts involving harbor wet risks being all work entailing or involving work in or upon water whether partially or fully submerged such as but not limited to quay walls, wharfs, seawalls, caissons, breakwaters, jetties, piers, deepening or widening and dredging of ports and other off-shore risks.
- Contracts involving construction or erection of Petrochemical Manufacturing Plant(s) such as Sasol but this exclusion shall not apply to pipelines and other works undertaken by or on behalf of Transnet Pipelines Limited.
- Contracts outside of the Republic of South Africa.

Contracts where cover limitations will be exceeded or where cover warranties cannot be complied with need to be discussed with the Employers Insurance Broker's personnel prior to contract award date to enable the Broker to make specific arrangements with Underwriters. This will however require detailed Underwriting Information and an additional premium may be charged.

In order to ensure that Contractor's and site staff are aware of procedures a copy of this Procedure Manual must be supplied to the contract administrators and each Contractor on award of contract .



BPCI PCI AND PCI PL

BLANKET PRINCIPAL CONTROLLED INSURANCE - CONTRACT
DECLARATION AND EXTENSION TEMPLATES**Procurement & Depots, on receipt of this attachment please:**

This schedule only applies to Contracts max value R 100,0 million inclusive of Free Issue Material but exclusive of VAT

- a) Save electronic versions of New Contract and Contract Extension templates on computers for future month usage

Create schedules for each month i.e. use "copy function" to create schedules for each month i.e. April 2012 May 2012 June 2012 etc.)

- b) Complete register from the first to last day of month in respect of:

- New contracts declared during the month
- **Purchase Order Numbers must be inserted below the contract number on the register refer column in yellow**

Purchase Order numbers: No Confirmation of Insurance will be issued in the absence of the purchase order number

- Contracts of which the contract periods have to be extended

- c) Monitor contracts declared/ extended on monthly basis i.e. forward register "as attachment" Andrew.Buys@willis.com; Lambm@willis.com and nico.steyn@transnet.net
Izak.Conradie@Transnet.net

- d) Follow up all discrepancies with **Willis** in order to rectify problems

- e) Capture premium payment amounts **excluding** VAT on schedule to keep reserves for annual adjustment

- f) Follow up outstanding Confirmation of Insurance from brokers

- g) Submit "Nil Return" Registers in the event of no new contracts declared or where no contract period extensions were required during a specific month i.e. **"APRIL 2012-Nil"**



Claims Procedure

“PREVIEW COPY ONLY”



Claims Procedure

In the event of any incident or occurrence, which is likely, to give rise to a claim under the Insurance arranged by Transnet the following procedures shall be adhered to in addition to any statutory or other requirements contained in the Contract.

All incidents that could give rise to claim under the Principal Controlled Insurances, **HAVE TO BE** reported to the Broker / Insurer as soon as possible and in any event no later than a **30** (thirty) day period from date of incident.

IMMEDIATELY advise **Willis South Africa** (Attention **Andrew Buys** and **Mike Lamb**).

At the same time complete the **Incident Advice Form (Annexure 2 herein)** and submit to **Willis South Africa**.

- Losses involving **theft or malicious damage** must be reported to the police and a police reference number obtained and recorded.
- The Employer, Contactor(s) or Sub-Contractor(s) shall allow free access to Insurers' Loss Adjuster(s) and / or Employer's Insurance Broker for the purpose of investigation and assessing the loss or damage.
- The Employer, Contractor(s) shall **not** deal direct with the Insurers other than by co-operating with their Loss Adjuster(s) and / or the Employers Insurance Broker.
- **No Admission of Liability** shall be made by the Employer, Contractor(s) or Sub-Contractor(s) in the event of damage or loss to third party property or injury or death of third party persons.
- Letters from claimants should be passed to **Willis South Africa** as soon as possible via the Employer if necessary.
- In the event of immediate repairs being necessary in the interest of safety, the Contractors may with the Employer's permission proceed with such repairs.
- The Employer shall immediately advise **Andrew Buys and Mike Lamb** at **Willis South Africa**.
- Other than in the circumstances described above the Contractor shall not proceed with the making good of any loss without the prior authorization of the Employer who shall advise the Insurer's appointed Loss Adjuster(s) and **Andrew Buys** and **Mike Lamb** of **Willis South Africa**.
- Upon commencement of the making good of any loss, the Contractor shall keep separate records of the costs involved in making good such loss and these records must be authenticated by the Employer for submission to the Insurer's or their Loss Adjuster(s). Such records shall include, inter alia, the entire cost of labour, materials, transport and equipment.
- The basis upon which the Insurers will indemnify loss or damage is the cost of repair or replacement of the loss or damage including, inter alia, transport and overheads.
- On completion of the making good of any loss the records of the costs involved having been authenticated by the Employer shall be sent to the Insurer's via their Loss Adjuster(s) and copied to **Willis South Africa (Mr Andrew Buys and Mike lamb)** for processing.
- Upon the amount of the loss or damage being agreed upon by the Insurer's Loss Adjuster(s) and the Contractor, an "Agreement of Loss" form will be signed by the Contractor and Employer.
- The amount agreed upon by the Insurers, the Contractor and the Employer shall be paid by the Insurers to the Employer net of the deductible, who will arrange for the payment to be made to the Contractor as appropriate after deduction of the first amount payable.

All incidents which could give rise to a claim under the insurances arranged by the Principal / Employer must be notified to the Broker without delay, per the procedures set out above



South Africa Personnel

Willis South Africa

“PREVIEW COPY ONLY”



Willis South Africa Personnel

Willis South Africa personnel are at all times available for advice, please feel free to contact :-

- **Andrew Buys**
Account Advocate
Tel No. (011) 011 082 8704
Fax No. (011) 784 1610
E-Mail buysa@willis.com

- **Mike Lamb**
Construction Broker
Tel No. (011) 011 082 8722
Fax No. (011) 784 1610
E-Mail lambm@willis.com

TRANSNET GROUP RISK MANAGEMENT

Julie Naik
Tel No (011)308-2718
E-Mail Julie.naik@transnet.net

“PREVIEW COPY ONLY”

Annexure 1

Transnet Principal Controlled Construction Insurance

Programme Contract Award Declaration (Part A),

Contract Completion Declaration (Part B)

Contract Variation Declaration (Part C)

Project Specific One Off or Multiple Packages R 100 m
and above (Form A1)

“PREVIEW COPY ONLY”



**CONTRACT DECLARATION FOR
BPCI, PCI, PCI LIABILITY BELOW R100,000,000**

Only complete sections with white background

SEND TO THE BROKER	FROM
Willis South Africa (Pty) Ltd P O Box 55509 Northlands 2116	TRANSNET Postal Address:
Attention: Mike Lamb E-mail: lambm@willis.com	Represented by: Email:
Tel No : +27(0) 11 535-5400	Tel No:
Fax No: +27(0) 11 784-1610	Fax No:

PART A 1: CONTRACT AWARD INFORMATION

CONTRACT NUMBER		
PURCHASE ORDER		
DECLARATION REGISTER CONTROL NUMBER		
DESCRIPTION OF CONTRACT WORKS:		
CONTRACT VALUE AT AWARD (VAT EXCLUSIVE)		
ESTIMATED VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT EXCLUSIVE)		
COVER SELECTION	CONTRACT WORKS & LIABILITY	CONTRACTORS LIABILITY ONLY
INSERT YES /NO UNDER THE SELECTED COVER		
PHYSICAL ADDRESS WHERE CONTRACT IS TAKING PLACE		
CONTRACT AWARD DATE		
CONTRACT COMMENCEMENT DATE		
EXPECTED CONTRACT COMPLETION DATE		
CONSTRUCTION PERIOD(MONTHS)		
MAINTENANCE PERIOD (MONTHS)		



PART A2: OPTIONAL INSURANCE REQUIRED:		INSERT (YES/NO) BELOW
1.	IS REMOVAL OF SUPPORT COVER REQUIRED?	
2.	DOES THIS CONTRACT EVIDENCE AN EXPOSURE WHICH CAN BE COVERED BY PROJECT DELAY INSURANCE?	
3.	WILL TRANSNET/CONTRACTOR/SUB-CONTRACTOR BE IMPORTING MATERIALS/ EQUIPMENT FOR THE CONTRACT THAT REQUIRES MARINE CARGO IMPORT INSURANCE?	
IF REQUIRED, PROVIDE FULL DETAILS TO BROKER		

PART A3: CONTRACTORS LIABILITY COVER ONLY		
DOES THIS CONTRACT ENTAIL WORK IN THE FOLLOWING CATEGORIES WHERE THE EXPOSURE TO OWN DAMAGE (DAMAGE TO WORKS) IS NIL OR NEGLIGIBLE. INSERT YES/ NO AS APPLICABLE BELOW		
1.	CHEMICAL CONTROL OF VEGETATION	
2.	VEGETATION REHABILITATION	
3.	BALLAST TAMPING	
4.	TRACK RE-PROFILING (including Welding/Grinding)	
5.	BURNING OF FIRE BREAKS	
6.	GEOTECHNICAL AND EXPLORATORY WORKS	

CONTRACTORS DETAILS		
PART B: CONTRACT COMPLETION DECLARATION COMPLETION OF THIS SECTION IS COMPULSORY AND MUST BE SUBMITTED TO ARRANGE PREMIUM ADJUSTMENT ON COMPLETION OF WORKS.		
CONTRACT COMPLETION DATE		
ENDORSEMENT/CERTIFICATE NUMBER		
EXPIRY OF MAINTENANCE PERIOD		
FINAL CONTRACT VALUE (VAT EXCLUSIVE)		
ACTUAL VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT EXCLUSIVE)		
	ORIGINAL DECLARATION	COMPLETION OF WORKS
ORIGINATOR / SIGNATURE		
DATE		



PART C – CONTRACT VARIATION / EXTENSION DECLARATION

CONTRACT NUMBER

TITLE OF CONTRACT

NEW CONTRACT COMPLETION DATE

ENDORSEMENT/CERTIFICATE NUMBER

EXPIRY OF MAINTENANCE PERIOD

NEW CONTRACT VALUE (VAT Exclusive)

ACTUAL VALUE OF FREE ISSUE SUPPLIED TO CONTRACTOR (VAT Exclusive)

“PREVIEW COPY ONLY”

Project Specific One Off or Multiple Packages R100,000,000 and above Insurance Notification Form

CONTACT DETAILS

Name

Division/Office

Telephone Number

Fax Number

Email Address

PROJECT INFORMATION

Project Title

Project Location

Principal Contractor

Role of Transnet

Joint Venture Partners (%)

Design & Construct

☐

Construct Only

☐

Other?

☐

Please advise details

PROJECT DETAILS

Scope of Works

Project Value (Estimate)

Currency

Contract Value

R

Transnet Supplied Materials

R

Surrounding Property being
worked upon

R

R

(When Transnet
to Insure)

Total Sum Insured

R

Project Value Breakdown

Type of Works

% of Total Project
Value (Include
Principal Materials)Wharves, Jetties, Piers, Marinas,
Causeways, Breakwaters and Drydocks

Wet Risk Works (other than above)

Tunnel Works

Offshore Works

Pipeline Works

Horizontal Drilling

Dry Civil Works (eg, Earthworks & Bridges)

Building Works

Mechanical Works

Dams

All Other Contracts

Duration (Estimate)

Construction Period

Testing Period

Defects Period

/ / to / /

Months

Months

INSURANCE

Insurance Arranged By	Transnet	Contractor	Sum Insured/Currency
Construction Risks (Works)	<input type="checkbox"/>	<input type="checkbox"/>	
Public Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Professional Indemnity	<input type="checkbox"/>	<input type="checkbox"/>	
Construction Plant & Equipment	<input type="checkbox"/>	<input type="checkbox"/>	
Marine Hull/Plant/Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Transits (Inland/Overseas)	<input type="checkbox"/>	<input type="checkbox"/>	
Employer's Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Automobile Liability	<input type="checkbox"/>	<input type="checkbox"/>	
Aviation Liability	<input type="checkbox"/>	<input type="checkbox"/>	

TRANSIT RISKS

Please provide details of major transit for which you are responsible

Inland ☐ Overseas ☐

Major Journeys

Maximum Value Any One Item

R

Maximum Value Any One Shipment

R

Total Estimated Sendings for the Project

R

Description of Cargo

Method of Conveyance

Road ☐Rail ☐Air ☐Ocean/Sea ☐Inland Waterway ☐

DESIGN RISKS

For Design & Construct Contracts:

Will Transnet engage an independent designer? ☐ Yes ☐ No

If yes to the above, please advise name of company _____

Confirm limit of PI Insurance to be carried by independent designer R _____

Does the contract involve any novation of design liability from the Principal? ☐ Yes ☐ No**OFFSITE STORAGE**Provide details for offsite storage of materials where this exceeds R1,000,000 at any one location

_____**GENERAL RISK INFORMATION**

Please provide a copy of the following

- (a) Contract drawings
- (b) General conditions of contract (including any amendment thereto) referring to insurance and indemnity obligations, annexure pages, schedules and defect liability obligations
- (c) Works programme (gant charts, etc)
- (d) Scope of Works

Does the project involve removal and disposal of hazardous materials? Eg, asbestos/PCB

☐ Yes ☐ No (If yes, please provide full details)

Supplementary Questionnaire Earthworks

TYPE (DEPTH OF TRENCH/EXCAVATION) _____

DIMENSIONS (EG: LENGTH, HEIGHT, DEPTH, ETC) _____

CONSTRUCTION METHOD _____

FOUNDATIONS (TYPE AND DEPTH) _____

SUPPORT STRUCTURES _____

BLASTING _____

Please provide details of the blasting company and their experience _____

UNDERPINNING _____

Supplementary Questionnaire Construction of Wharves & Jetties

DESCRIPTION OF WORKS

Dimensions

Type of structure and material of construction

Type and dimensions of piling/foundations

Height of deck above water level at low tide and high tide

Extent of dredging and who is performing the work

Maximum value and weight of heaviest lift

SUB SOIL CONDITION

Geological strata and/or details of bore logs

WAVE, FLOODING AND STORM

Please provide historical data

Height of Deck above highest water level recorded

Maximum wave height expected

LIABILITY

Any underground services?

To what extent can construction operation affect adjacent structures and water traffic?



Supplementary Questionnaire Dams

DAM EMBANKMENT

Height _____

Length _____

Width of crown and basement _____

Inclination of slope upstream and downstream _____

DIVERSION DETAILS

Coffer Dams: Upstream height and downstream height _____

Diversion/canal size _____

Discharge capabilities _____

FOUNDATIONS

Maximum depth of excavation _____

Details of ground support _____

BREAK-UP VALUES

Earthworks _____

Concrete works _____

Coffer dams upstream and downstream _____

Diversion piping _____

Access Roads _____

Others as available _____

WATER FLOW DATA

Rainfall _____

River flow _____

BLASTING REQUIRED?

☐ Yes ☐ No (If yes, please provide details) _____

DOCUMENTS REQUIRED

Site plan including contours, location of haul roads and storage areas

Profile of dam

Location map

Supplementary Questionnaire Bridges

DIMENSIONS

Length _____

Breadth _____

FOUNDATIONS

Details of piles _____

Details of footings breadth _____

SUPERSTRUCTURE

Number of spans _____

Length _____

Girders ☐ Precast ☐ In situ

Girder material

Deck ☐ Precast ☐ In situ

Are any dual lift activities anticipated? ☐ Yes ☐ No

APPROACH WORK REQUIRED?

☐ Yes ☐ No (If yes, please provide details) _____

IS THE BRIDGE OVER A WATER COURSE?

☐ Yes ☐ No (If yes, please provide details) _____

Details of river flow _____

Details of flood exposure _____

Method of protecting works during construction _____

BREAK-UP OF VALUES

Foundations maximum any one precast section R _____

Maximum any one concrete pour R _____

Falsework/Formwork R _____

Earthworks R _____

Water protection systems R _____

DOCUMENTS REQUIRED

Profile of bridge

Cross section of bridge



Supplementary Questionnaire Road Works

EMBANKMENT

Total length _____
 Average cut _____
 Maximum cut _____
 Fill type _____
 Maximum length of unsealed embankment (in metres) _____

DRAINAGE

Total length _____
 Open trench – maximum open _____
 Average open _____

CULVERTS

Number _____
 Details of major culverts _____

BRIDGES

Number _____
 Please provide the following details for each bridge:

- ◆ Number of spans _____
- ◆ Maximum length _____
- ◆ Length and breadth _____
- ◆ Foundation details _____
- ◆ Construction method _____
- ◆ Flow details of any rivers/creeks to be bridged _____
- ◆ Are any dual lift activities anticipated? ☐ Yes ☐ No

BREAK-UP OF VALUES

Drainage culverts	R _____	Bridges	R _____	Earthworks	R _____
Landscaping	R _____	Paving	R _____		
Other (specify)					R _____

DOCUMENTS REQUIRED

Topographical map of area _____
 Profile of the cross section of road. Is the area prone to flooding? ☐ Yes ☐ No
 (If yes, please provide details) _____
 What protection will be implemented to prevent damage occurring due to water?

Supplementary Questionnaire Pipelines

PROJECT DETAILS

Pipeline type (eg, gas, etc) _____

Total length _____

Pipe diameter/s _____

Method of construction/laying _____

PIPE

To be supplied by Principal? ☐ Yes ☐ No

Acceptance point for pipe _____

Where is pipe to be stored? _____

TRENCHES

Depth (metres): maximum and average _____

Open trench (without pipe): _____

◆ Maximum length any one time (number of kilometres) _____

◆ Maximum length any one continuous stretch (number of kilometres) _____

Open trench with pipe laid: maximum length _____

Quotations/cover required for open trench: _____

☐ Policy limit 15 kilometres (of which 5 kilometres with pipe)

☐ Other limit required (Please specify) _____

TERRAIN

Soil conditions and terrain contour _____

OTHER STRUCTURES (PUMP STATION, ETC)

Description, including dimensions _____

CROSSINGS

Type (river, road, etc). Method of construction _____

TESTING

Type _____

Period _____

Hydrostatic pressure test% of manufacturer's specification _____

Welds – Percentage to be x-rayed _____

**BREAK-UP OF VALUES**

Pipe R _____

Mechanical R _____

Structures R _____

Trenching R _____

Other (Specify) _____ R _____

FLOOD EXPOSURE

Is there any exposure to flooding?

☐ Yes ☐ No (If yes, please provide details of preventative measures undertaken)

Is water table expected to be encountered during construction period?

☐ Yes ☐ No (If yes, please provide details of preventative measures undertaken)**Horizontal Drilling (HDD)**

HDD Contract Value R _____

Details of drills exceeding 1 kilometre in length _____

Details of drills where the pipe diameter is greater than 760mm _____

DOCUMENTS REQUIRED

Route of pipeline

Contour maps

Rainfall details

Annexure 2

Incident Advice Form

ALL INCIDENTS HAVE TO BE REPORTED WITHIN 30 DAYS OF OCCURRENCE

“PREVIEW COPY ONLY”



TRANSNET PRINCIPAL CONTROLLED INSURANCE PROGRAMME INCIDENT ADVICE FORM

TRANSNET UNIQUE CLAIM NUMBER

Send to
Willis South Africa (Pty) Ltd
First Floor,
Eversheds Building,
22 Fredman Drive,
Sandton
2196

Attention : Andrew Buys
Tel No. 011) 535 5400
Fax No. (0)11 784 1610
E-Mail: buysa@willis.com

From
Represented by

Tel No.
Fax No.

PRINCIPAL (PER CONTRACT DOCUMENT)

CONTRACT NUMBER

ORIGINAL DECLARATION NO.

TITLE OF CONTRACT

ORIGINAL CONTRACT COMMENCEMENT DATE

DATE OF LOSS OR DAMAGE

DATED REPORTED TO SITE AGENT

REPORTED BY

REPORTED TO BY

DATE

LOCALITY OF INCIDENT

DETAILS OF HOW THE LOSS OR DAMAGE OCCURRED

DETAILS AND NATURE OF LOSS OR DAMAGE TO CONTRACT WORKS / TO THIRD PARTY PROPERTY

DETAILS OF OTHER DEATH OR INJURY TO PARTIES

ESTIMATED COST (SEPARATE RECORDS OF ALL COSTS MUST BE KEPT)

WHO OR WHAT APPEARS TO BE RESPONSIBLE FOR THE CAUSE OF THE LOSS / DAMAGE

PERSON WHOM ASSESSOR SHOULD CONTACT

DESIGNATION:

TELEPHONE (LANDLINE)

CELLPHONE NO.

E-MAIL ADDRESS

**ALL INCIDENTS HAVE TO BE REPORTED AS SOON AS POSSIBLE AND WITHIN 30 DAYS
OF OCCURRENCE**

SIGNED BY:

SIGNATURE:

COMPANY:

DATE:

Annexure 3

Monthly Contract Register Control Sheets

“PREVIEW COPY ONLY”



TRANSNET: PRINCIPAL CONTROLLED INSURANCE – MONTHLY CONTRACT REGISTER CONTROL SHEET

A) NEW CONTRACTS FIRST DECLARATION OF NEW CONTRACT WORKS FOR COVER UNDER PCI POLICY

DIVISION / SUPPORT UNIT:
CONTACT PERSON:
TELEPHONE / CELL NO'S:

INSURANCE YEAR: 2012/2013
MONTH:
E-MAIL ADDRESS:

CONTRACT NUMBER	CONTRACT DECLARATION CONTROL NUMBER	DESCRIPTION OF CONTRACT WORKS	DATE DECLARED TO BROKERS	ESTIMATED TOTAL CONTRACT VALUE R	COMMENCEMENT DATE OF WORKS	ESTIMATED COMPLETION DATE
Purchase Order No	1					
Purchase Order No	2					
Purchase Order No	3					
Purchase Order No	4					
Purchase Order No	5					
Purchase Order No	6					
		TOTAL DECLARED FOR MONTH				

PREVIEW COPY ONLY

B) CONTRACT EXTENSIONS

ONLY APPLICABLE TO CONTRACTS PREVIOUSLY DECLARED WHERE EXTENSION OF CONTRACT PERIOD IS REQUIRED

CONTRACT NUMBER	CONTRACT DECLARATION CONTROL NUMBER	DESCRIPTION OF CONTRACT WORKS	DATE DECLARED TO BROKERS	ESTIMATED TOTAL CONTRACT VALUE R	COMMENCEMENT DATE OF WORKS	ESTIMATED COMPLETION DATE
TOTAL DECLARED FOR MONTH						