

SECTION B1200: GENERAL REQUIREMENTS AND PROVISIONS

B1202 SERVICES

Add the following as the first paragraph:

" All reference to services in this clause shall also mean utility services."

In the final paragraph, replace "clause 15" in the second line with "clause 31"

Add the following to the sixth paragraph:

"The Contractor shall also be liable for any loss or consequential loss suffered by the owner of an identified or known service or a service that should have reasonably been foreseen to have been present, which is damaged by the Contractor's operations."

In the final paragraph, delete the second and third sentences starting with "Should" and replace with the following:

"Table B1202/1 to Table B1202/3 lists all known services on the Site. Those requiring removal, realignment or temporary replacement are indicated in the tables with an identity number or shown on the drawings. However, before any work can commence, the Contractor shall verify the actual position of each station and bring to the attention of the Engineer any service that is not recorded. As the Contractor is not authorised to remove or replace these facilities he shall:

- (a) Give preliminary notice, in writing to the relevant service provider, that the services on the Site will require removal or protection prior to works being carried out in the vicinity of each station. The Contractor shall advise the service provider of:
 - (i) The number of services, their locations and station ID numbers.
 - (ii) The proposed dates when work will commence in the vicinity of each service.
- (b) In addition to the above preliminary notice, give the service provider fourteen (14) days written notice of the intention to commence work in the vicinity of each facility.
- (c) Upon completion of the work in the vicinity of each facility, the Contractor shall notify the service provider, in writing, that work is complete and the service may be reinstated.

Any delay resulting from the removal and/or replacement of a service shall not be the subject of a potential claim, unless the Contractor can demonstrate that every effort has been made to timeously request and/or apply for the removal and/or replacement of the said service. In addition, the Contractor shall be deemed to have employed the services of the service provider as a subcontractor for purposes of removing and/or replacing the relevant deemed service.

TABLE B1202/1: LIST OF KNOWN SERVICES FOR NEWARK ROAD

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
150	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
572	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
572	Right	Water	W	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
577-584	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
638-690	Right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
638-690	Right	Water	W	Hand excavate; lay new relocated pipe; encase pipe in concrete; backfill and compact
777-790	Left	Water	W	Hand excavate; lay new relocated pipe; encase new line in concrete; backfill and compact
846-858	Right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
877-886	Right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
910-942	Right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1005-1014	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1052-1058	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1072-1078	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1095-1103	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1143-1150	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1188	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1290-1320	Right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1712-1725	Right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1984	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
2310	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
2523	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
3504	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
186	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
203-215	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
224	Left	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
242	Left	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
578	Left + right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
578-683	Left + right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
850-858	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
878-885	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact

915	Left + right	Acid	EXCD	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
918	Left + right	Acid	EXCD	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
915-940	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1032	Left + right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1283-1296	Right	Sewer	S	Hand excavate; lay new relocated pipe; encase new line in concrete; backfill and compact
1296-1326	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
1704-1738	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
2078-297	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
2318-2350	Right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
920-962	Left	Fence	WALL	Remove/demolish wall and fence
1160-1180	Left	Fence	CANOPY	Relocate canopy to new position
1280-1400	Right	Fence	CANOPY	Relocate canopies to new position

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
158	Right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
920-938	Right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
1290-1320	Right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
1717-1727	Right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2504	Left + right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
3410	Left + right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
4108	Right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
4125	Left + right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
4135	Left + right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
130	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
150-160	Left	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
158	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
212	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
272	Left	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
470	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
473	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
754	Right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
754	Left	Electricity	EL	Hand excavate; re-route existing line; encase new line in

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
				concrete; backfill and compact
772-790	Left	Electricity	EL	Hand excavate; lay new line; encase new line in concrete; backfill and compact
850-860	Right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
870-888	Right	Electricity	EL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
910-940	Right	Electricity	EL	Hand excavate; lay new line; encase new line in concrete; backfill and compact
1350	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
1290-1320	Right	Electricity	EL	Hand excavate; lay new line; encase new line in concrete; backfill and compact
1710-1740	Right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
1970	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2068-2100	Right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2144-2157	Left	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2180-2205	Left	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2310-2375	Right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
2350-2370	Left	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2410	Left + right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
2476	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2517	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2642	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
2678	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
3445	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
3448	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
3964	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
4018	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
4070-4110	Right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
4090	Right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
4144	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
4168	Left + right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact

TABLE B1202/2: LIST OF KNOWN SERVICES FOR VENTURA ROAD

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
58-64	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
115-122	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
130-190	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
208-223	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
237-245	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
280-285	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
298-304	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
320-312	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
378-390	Left	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
500-557	Left	Water	W	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
158-168	Left	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
178-190	Left	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
190-202	Left + right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
210-217	Left + right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact
218-278	Left + right	Sewer	EXS	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
523-560	Left	Fence	FENCE	Relocate fence to new position
538	Left	Fence	GATE	Extend gate

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
123-170	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
178-190	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
280-290	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
298-303	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
320-310	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
376-390	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
514-524	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
548-587	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
116-123	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
130-163	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
179-192	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
210-126	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
232-150	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
232-150	LEFT	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
282-286	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
298-303	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
320-332	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
376-395	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
510-526	LEFT	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
510-526	LEFT	Electricity	EL	Hand excavate; lay new line; encase new line in concrete; backfill and compact
530	Left + right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
542	Left + right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
558-580	LEFT	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact

TABLE B1202/3: LIST OF KNOWN SERVICES FOR URANIA ROAD

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
590	Left + right	Water	EXW	Hand excavate to expose pipe; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
15-30	Left	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
500-546	Left	Data	DA	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
598	Left + right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
860	Left + right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact
877- 917	Right	Data	EXDA	Hand excavate to expose line; encase pipe in concrete; backfill and compact

CHAINAGE (m)	POSITION	SERVICE TYPE	IDENTITY NUMBER	ACTION
0-5	Left + right	Electricity	EL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
15-40	Left	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
15-40	Right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact
15-41	Right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
40-60	Right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
40	Left + right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
500-546	Left	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
804	Left + right	Electricity	EL	Hand excavate; re-route existing line; encase new line in concrete; backfill and compact
877- 917	Right	Electricity	EXEL	Hand excavate to expose line; encase pipe in concrete; backfill and compact

The Contractor must contact the Employer before the Contractor commences with any work on existing services.

The contact person for the Employer is:

Ms. Zinhle Gumede
Civil Engineer
Transnet National Ports Authority (TNPA)
Pioneer Centre
San-Thom Road
RICHARDS BAY
3900

Tel: (072) 558 7177
Cell: 035 905 3791
Email: Zinhle.gumede2@transnet.net

Any cost of repairs, replacement and/or installation of the stations and equipment resulting from the Contractor's negligence or unauthorised action shall be to the Contractor's account."

B1204 PROGRAMME OF WORK

Insert the following before the first paragraph:

"A network-based programme in accordance with the precedence method shall be provided, showing the various activities in such detail as the Engineer may require. The programme shall be updated monthly in accordance with the requirements of the Conditions of Contract to accurately reflect the progress made by the Contractor."

(a) General requirements

Add the following as a continuation of the first paragraph:

"In drawing up the programme the Contractor shall make allowance for the following:

- (i) The proposed rate of progress in order to complete the Works within the required period as tendered, showing the various activities, their durations and proposed resourcing levels (major plant and labour) for each element of the Works. Sufficient detail shall be provided to enable the Engineer to be able to gauge construction progress. All activities, including establishment on site, trimming and finishing and the completion of all minor ancillary works are to be included in the programme
- (ii) The sequence of activities and any dependencies (time or resource related) between them .
- (iii) The critical path activities
- (iv) Working times and all other constraints stated in this clause
- (v) Expected weather conditions and their effects (clause B1215)
- (vi) Known physical conditions or artificial obstructions
- (vii) The accommodation and safeguarding of traffic
- (viii) Dealing with, altering and installing services
- (ix) Meeting the requirements of the environmental management plan (EMP).
- (x) The time required for the preparation and approval of the various mix designs specified in the relevant sections of the Scope of Works

During the contractors' annual shutdown period during December and January, the Contractor shall maintain two-way traffic within the limits of the Contract.

(1) Sequence of Works:

The maintenance of the existing roads and clearing of stormwater structures/systems must be programmed to be done first.

If an alternative contract period is offered, the Contractor shall submit a separate programme with the alternative tender."

Add the following subclauses:

"(c) Additional programme requirements

In addition to the requirements of subclauses B1204(a) and B1204(b) and Clause 31, the programme shall include the following details:

- (i) A work breakdown structure that identifies all major activities.
- (ii) Scheduled start and end dates for each activity.
- (iii) Linkages between activities that clearly identify sequence, floats and critical path.
- (iv) Intended working hours and resource allocations (plant and labour).
- (v) Monthly cashflow projections.
- (vi) Key dates in respect of information required or due delivery.
- (vii) The Contractor's payment weekends.
- (viii) A risk assessment schedule with mitigating plans of issues that could prevent the due completion date being met.

Should the Engineer require an electronic version of the programme for review purposes, the Contractor shall supply the programme in a format compatible with the Engineer's software.

(d) Programme revisions

The programme will be reviewed at the monthly site meetings at which the Contractor shall provide sufficient detail that will allow the comparison of completed work per activity against the current approved programme. The Contractor shall indicate the resources and programme changes he intends to implement in order to remedy any activity that has fallen behind. The Engineer may demand a major revision of the programme from the Contractor. Such a revision shall be submitted for comment within fourteen (14) days of the demand, or as specified in the Conditions of Contract.

Failure to comply with these requirements entitles the Engineer to use a programme based on his own assumptions to evaluate claims for extension of time for completion of the Works, or for additional compensation."

B1205 WORKMANSHIP AND QUALITY CONTROL

Delete the second to fifth paragraph and replace with the following:

"The Contractor shall submit a proposed Quality Management Plan for this Contract in a format approved by the Engineer. Confirmation of the Quality Management Plan shall be submitted to the Engineer, for his approval, within fourteen (14) days of award of the contract and prior to the commencement of construction activities. Once accepted by the Engineer the *Contractor* shall not deviate from it unless written notification of proposed changes has similarly been submitted and approved. The system shall record the lines and levels of responsibility and indicate the method and frequency by which testing procedures will be conducted.

Payment for work done will not be made until the results of the Contractor's process control testing have been submitted and the Engineer has approved the work. The Engineer shall conduct such tests as he may deem necessary to verify the process control test results and shall retain all rights as determined in the General Conditions of Contract related to bad workmanship or unacceptable materials. This shall also be applicable to accepted alternative (mix) designs and related specifications."

Add the following new paragraph:

"The Contractor's rates shall include the rate for process quality control testing wherever required. Additional to the Contractor's testing an external SANAS approved laboratory will be appointed to undertake the Engineer's acceptance quality control testing of construction materials and workmanship by means of laboratory testing at an external testing facility and payment will be made under **item B14.11**. All sampling and testing by the external testing house will be done on the instruction of the Engineer. Materials will be sampled on site or at commercial supply sources or at the Contractor's asphalt or concrete plant and will be tested the following day. Results will be reported to the Engineer for interpretation and possible action. The external testing house will invoice the Contractor for the cost of material sampling and testing and for reporting the test results to the Engineer. This cost will be reimbursed under the provisional sum item on approval of the Engineer.

The Contractor will be required to accommodate and support the sampling procedures of the external testing house during the course of the contract. Representatives of the Engineer and the testing house will be allowed to inspect any stockpile, storage facility or processing activity for the purpose of quality control."

B1206 THE SETTING-OUT OF WORK AND PROTECTION OF BEACONS

Replace "clause 14" in the first paragraph with "Clause 20.1".

Replace the first paragraph with the following:

"The horizontal alignments shown on the drawings reflect the centre line of the new roads. The Contractor shall appoint an experienced and reputable surveyor to stake the road at 20 m intervals using these alignments, and shall take cross-sections of the road formation and adjacent area at 10 m intervals in mountainous areas, and 20 m intervals in other areas, to a distance of at least 10 m wider than the new road toe-lines. The cross-sections shall clearly define shoulder break lines, drains and batter slopes of existing cuts and fills. The cross-sections of a particular section of the road to be constructed shall be submitted to the Engineer for his approval at least seven (7) days before the time envisaged by the Contractor when such a section of road will be constructed. These cross-sections shall then be used for the calculation of quantities.

The reference beacons shown on the drawings shall be used for the purpose of staking and taking cross-sections. The appointed surveyor shall, in addition, also construct sufficient reference markers corresponding to the staked line to ensure that accurate measurements can be made.

No additional or extra over payment will be made for staking the road centre line or for taking cross-sections. Full compensation therefore shall be deemed to be included in the rates tendered and paid for the various items of work included in this Contract."

B1209 PAYMENT

(b) Rates to be inclusive

Add the following to the first paragraph:

"VAT shall be excluded from the rates."

Add the following subclauses:

"(g) Work in confined areas

Except where provided for in the specification and the Pricing Schedules, no extra payment shall be made nor shall any claim for additional payment be considered for construction in confined areas. The omission of payment items from the Pricing Schedules shall be taken to be deliberate and any additional costs incurred shall be included in the bulk rate.

B1210 CERTIFICATE OF PRACTICAL COMPLETION OF THE WORKS

Add the following before the first paragraph:

"Practical completion shall be deemed to have the same meaning and interpreted as 'take-over' in respect of NEC3."

Add the following paragraphs after subclause B1210(h):

"Notwithstanding that there might be natural or programmed sections of the Works that will result in them being completed in their entirety before other sections, no consideration shall be given to the issuing of practical completion certificates for portions of the Works. The use of any completed roadway or portions of the Works, whether for unhindered use by the public or for accommodation of traffic while other portions are being constructed, shall not constitute use or occupation by the Employer.

In addition to the listed specified items of work and regardless of the degree of beneficial occupation by the Employer, the Works shall be considered for practical completion only if the following criteria have also been met:

- (i) The estimated cost to complete the outstanding work is less than 2% of the tendered value of work plus the cost of any variation or extra work orders, but excluding CPA and VAT.
- (ii) The written list of outstanding items of work can be completed within twenty-eight (28) days of the list having been accepted in writing by the Contractor.
- (iii) Any information in the Contractor's possession, which is required by the Engineer and has been requested in writing, has been supplied.
- (iv) The work should be completed in terms of the OHS construction regulations 2014, the Contractor's OHS plan, ACSA regulations and should be fit for purpose..

The contents of this Clause 1210 of the COLTO Standard Specifications, together with the above amendment, shall apply equally to the requirements for taking over any of the Works in terms of clause 35."

B1215 EXTENSION OF TIME RESULTING FROM ABNORMAL RAINFALL

Delete the entire clause and replace with the following:

"Any extension of time shall be determined in accordance with Clause 60.1 of the Conditions of Contract.

Change the existing heading of clause 1215 to read as above and wherever the expression 'abnormal rainfall' is encountered replace it with '*inclement weather*' and make the following changes to *Method (ii) (Critical-path method)* which will apply to this Contract:"

Add the following as a new paragraph:

- "(a) Extension of time resulting from inclement weather, other forms of inclement weather or shift delays shall be calculated according to the requirements of *Method (ii) (Critical-path method)*. The n-values of working days per calendar month, as specified in this clause as being

expected delays for which the *Contractor* must make allowance in his programme, have been calculated from the figures given in Table B1215/1 below.

TABLE B1215/1: AVERAGE ('N') DELAYS DUE TO INCLEMENT WEATHER

Month	Jan*	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec*	Total
Average rain days	5	4	4	3	2	1	2	3	4	5	5	6	44

The value 'n' is the average number of days on which 10 mm of rain has been recorded.

The *Supervisor* will certify a shift loss due to abnormal rain or adverse weather conditions based on the following criteria:

- (i) No work was possible during the relevant shift on any item which is on the critical path according to the latest approved construction programme, given that sufficient temporary drainage of work areas was provided, or if
- (ii) Less than 50% of the work force and plant planned for that specific shift could work.

Actual extensions of time due to inclement weather and time lost during shifts due unforeseen delays attributable to the Employer's actions shall be agreed between the Engineer's and Contractor's Representatives on the site immediately or as soon as possible afterwards.

Adjustment to the contract period shall only be made at the end of the contract when the Contractor may submit its claim for the agreed extension due, as well as any additional payment resulting from the delay. Extension caused by inclement weather or unforeseen delays attributable to the Employer's actions will only accrue once the agreed cumulative delays exceed the cumulative total for the contract period months as indicated above. Should the contract period cover parts of a month then these months will be calculated pro rata for parts of a month.

If approved extensions of time extend the completion date beyond the start of the Contractor's holiday in December, the holiday period shall not be considered as working days. Any remaining extension of time at this date shall be calculated from the first statutory working day in January the following year, provided that the Contractor has shown in his programme that he intends to close during the traditional Christmas/New Year break.

Time lost during shifts shall be agreed between the Engineer's and Contractor's Representative on site. The agreed shifts or parts thereof shall be recorded at the site meetings and adjustment made to the contract period by extending the contract period according to the number of shifts lost less the allowance."

B1219 WATER

Add the following:

"Water, other than municipal, for use on the Site shall be subject to the required permit from the Department of Water and Sanitation (DWS). This shall include such extraction points as rivers, dams, streams and boreholes.

Use Table B1219 to determine the suitability of water for construction purposes.

TABLE B1219: WATER CLASSIFICATION FOR CONSTRUCTION TESTING

		WATER QUALITY CLASSIFICATION CODE							
		H0	H1	H2	H3	H4	H5		
Property	Unit	Pure water (AR)	Clean water (Rain)	Treated water (Municipal)	Silty (muddy) water with low salt content	Highly mineralised chloride sulphate water (brackish)	Waste brack, sewage, marsh, sea, water, etc.	Method	
pH*	-	7,0	5,7 – 7,9	4,5 – 6,5	4,5 – 8,5	9,0	-	SANS 10523 : 2012	
Dissolved solids*	ppm	0	1 000	1 500	3 000	-	-	SANS 5213	
Total hardness*	-	None	None	Temporary	Temporary	Permanent	-	SANS 450 SANS 453 : 2005	
Suspended matter	ppm	0	2 000	2 000	5 000	-	-	SANS 6049 : 2010	
Electrical conductivity	mS/m	0	200	200	500	-	-	SANS 7888 : 2005	
Sulphates (SO ₄)	ppm	0	200	300	500	1 000	-	SANS 6310 : 2005	
Chlorides (Cl)	ppm	0	500	1 000	3 000	5 000	-	SANS 374 : 2005	
Alkali carbonates (CO ₃) and bicarbonates (HCO ₃)	ppm	0	500	1 000	1 000	2 000	-	SANS 241 : 2011	
Sugar	-	Negative	Negative	Negative	Negative	Negative	-	SANS 5833 : 2006	
Quality of water required		Untreated layer works	✓	✓	✓	✓	Investigate the effect on the quality of the material		
		Chemically treated layer works	✓	✓	✓	Investigate the effect on the quality of the material			
		Concrete mass	✓	✓	✓	Investigate the effect on the quality of the material			
		Concrete prestressed	✓	✓	References: 1. Concrete Technology – Dr S Fulton (1989) 2. Materials Manual (PAWC)				
		Slurry and emulsion	✓	✓					
		Soil/gravel tests	✓	✓					
		Chemical or control tests	✓	✓					

* A primary property. The quality of the water is such that all three of the primary properties are within the limits.

* The tabulated single values are maximum values, except in the case of the pH value for pure water, which must be 7,0."

B1223 WORK ON, OVER, UNDER OR ADJACENT TO RAILWAY LINES

Add the following:

"The official specifications referred to shall be the latest edition of Specification E7, Part 2, of Transnet Limited.

The Contractor shall prepare detailed drawings to indicate exactly which methods (including any phased work required) will be used for construction works over and near the railway crossing.

Site work in connection with structures over railway lines shall not commence before said drawings have been approved by Transnet Limited. No additional payment will be made, nor will any claims be considered due to delays or inconvenience that may arise if the provisions of the Transnet Specification E7 (Specification of Transnet Limited) have not been complied with.

The Contractor shall make provision in his tendered rates and sums for arrangements to accommodate the rail traffic and occupy the railway reserve, and to prepare and submit the drawings as specified."

B1225 HAUL ROADS

Add the following:

"Where public roads are used for haulage of the material, the Contractor shall be responsible for all maintenance of the roads and also for reinstating the roads after use to a condition at least comparable with the condition before work commenced. The Contractor shall establish and agree in writing the requirements of the relevant local authorities for both maintenance and reinstatement of the roads. He shall not use such roads until the Engineer is satisfied that these agreements are in place.

Particular care shall be taken where haul roads traverse private land and pass close to houses. Haul roads in general, but particularly in the areas mentioned above, shall be kept continuously damp in order to limit the generation of dust.

The construction (where required), upgrading, maintenance, watering and rehabilitation of haul roads will not be measured separately and shall be deemed to be included in the various rates tendered for obtaining material from the borrow pits and/or from commercial sources. At the end of the Contract, all existing private roads shall be left in at least the same condition as they were at the beginning of the Contract."

B1228 LEGAL PROVISIONS

Add the following:

"The Contractor shall be required to comply with the Occupational Health and Safety Act, No. 85 of 1993: Construction Regulations, 2014 (the Construction Regulations, 2014) as promulgated in Government Gazette No 25207 and Regulation Gazette No 37305 of 7 February 2014. Non-compliance with these regulations, in any way whatsoever, will be adequate reason for suspending the Works.

The proposed type of work, materials to be used and potential hazards likely to be encountered on this Contract are detailed in the project specifications, Pricing Schedules and drawings, as well as in the Employer's health and safety specifications (Regulation 5(1)) of the Construction Regulations, 2014, which are bound in the Contract Document.

The Contractor shall in terms of Regulation 7(1) provide a comprehensive health and safety plan detailing his proposed compliance with the Construction Regulations, 2014, for approval by the Employer.

The Contractor shall at all times be responsible for full compliance with the approved plan, as well as the Construction Regulations, 2014, and no extension of time will be considered for delays due to non-compliance with the aforementioned plan or the Construction Regulations, 2014.

A payment item is included in the Pricing Schedules to cover the Contractor's cost for compliance with the OHS Act and the aforementioned regulations."

B1229 SABS CEMENT SPECIFICATION

Delete this clause.

Add the following clauses:

"B1230 MATERIALS

(a) General

The Contractor, when using materials that are required to comply with any standard specification, shall, if so ordered, furnish the Engineer with certificates showing that the materials do so comply.

Where so specified, materials shall bear the official mark of the appropriate authority. Samples ordered or specified shall be delivered to the Engineer's office on the Site free of charge.

Where materials are specified under trade names, tenders must be based on these materials. Alternative materials may be submitted as alternative tenders and the Engineer may, after receipt of tenders, approve the use of equivalent materials. The Tender must be clearly marked as an alternative tender, failing which the tender may be rejected.

Unless otherwise specified, all proprietary materials shall be used and placed in strict accordance with the relevant manufacturer's current published instructions. Agrément certified products shall be used and placed in accordance with their Agrément certification criteria.

Unless anything to the contrary is specified, all manufactured articles or materials supplied by the Contractor for the permanent works shall be unused.

Any materials excavated or present on the Site, or within the road reserve, or in borrow areas shall not become the property of the Contractor, but will be at his disposal only in so far as they are approved for use on the Contract, unless indicated otherwise in the specifications.

Existing structures on the Site shall remain the property of the Employer and except as and to the extent required elsewhere in the Contract, shall not be interfered with by the Contractor in any way.

Materials to be included in the Works shall not be damaged in any way and, should they be damaged on delivery or by the Contractor during handling, transportation, storage, installation or testing, they shall be replaced by the Contractor at his own expense.

All places where materials are being manufactured or obtained for use in the Works, and all the processes in their entirety connected therewith, shall be open to inspection by the Engineer (or other persons authorised by the Engineer) at all reasonable times. The Engineer shall be at liberty to suspend any portion of work which is not being executed in conformity with these specifications.

The Contractor shall satisfy himself that any quarry selected for use provides the necessary mined material in accordance with the specification.

(b) Banned materials

No tar fluid products shall be used in the Works.

B1231 MIX DESIGNS

Before commencing with certain construction activities, the Contractor shall timeously except where specified otherwise in the relevant construction sections in the Scope of Works, apply the following procedures with regards to mix designs:

- Taking and submitting samples of the relevant materials
- Undertake the required mix design(s) or allow the Engineer to undertake them
- Produce, where required, laboratory, production/plant and/or trial mix(es)
- Undertake the required adjustments to the mix design(s) and reproduce required laboratory, production/plant and/or trial mix(es)
- Complete trial section(s) where required
- Await the Engineer's approval of the mix design(s) and trial section(s).

B1232 REPORTING OF ACCIDENTS

The Contractor shall report every accident which occurs on the road, within the extent of the Works, to the Engineer within 24 hours of such accident occurring, irrespective of whether such accident has a bearing on damage to the Works or to persons, property or things. The report must be in writing and must contain full particulars of the accident. Photographs of each accident shall also be included in the report. The Engineer has the right to conduct any or all enquiries, either on the Site or elsewhere, as to the causes and consequences of any such accident. The Contractor shall also keep a comprehensive record of all accidents which occur on the road and shall make such records available to the Engineer on demand.

B1233 LIGHTING REQUIREMENTS DURING NIGHT WORK

The Contractor shall provide sufficient lighting for night work to ensure that all inspection and work areas are illuminated to a minimum average of 100 lux at an overall uniformity of 0,33. The illuminance for active work areas shall comply with the requirements of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993) and the related Environmental Regulations for Workplaces, 1987. All lighting shall be subject to a minimum glare control of 5. Luminaires mounted on masts shall have a minimum mounting height of 4,0 m. The Contractor shall ensure sufficient back-up lighting to replace faulty lighting. The full specified lighting must be provided at all activities undertaken at night.

The lighting must be positioned so as not to cause a hazard to the travelling public using the road. Should the Engineer be of the opinion that the lighting is insufficient or that it is a hazard to the road users, the Contractor must rectify it immediately. Non-compliance will be subject to penalties as detailed in subclause B1502(l).

Two mobile lighting units, including a towing vehicle and operators, must on request be made available to the Engineer for night-time inspections.

The Contractor shall submit his lighting operational plan to the Engineer for approval and demonstrate the effectiveness of the lights before the commencement of any night work. The Engineer shall also inspect and approve all lighting equipment prior to the commencement of the night work. A trial set-up of the lighting equipment shall be made at an appropriate site. The Contractor shall arrange for the measurement and certification of the lighting adequacy by a reputable service provider. Once the lighting plan and equipment have been approved, the Contractor may not deviate from it unless agreed by the Engineer. If lighting requirements are not met for any particular activity, the Engineer will order the activity to be stopped until the required lighting has been reinstated.

B1234 OWNERSHIP OF REDUNDANT ROADSIDE FURNITURE AND OTHER MATERIALS

Ownership of all redundant roadside furniture and other materials will remain vested with the Employer. The Contractor shall therefore first obtain the approval of the Engineer before the disposal of any of these items. Items such as guardrails and posts, road sign gantries, bridge railings, etc., if not to be re-used in the Works, shall be taken to a designated Employer depot on instruction of the Engineer. The Contractor shall be compensated under dayworks for any costs incurred resulting from this requirement, which is not provided for in the relevant payment items.

B1235 MEASUREMENT AND PAYMENT

Item	Unit
B12.01 Compliance with the Occupational Health and Safety Act (OHS) and Regulations (including the Construction Regulations, 2014)	lump sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations, 2014) at all times for the full duration of the Contract, as described in clause B1228 of the project specifications. The successful Tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

This sum will be paid to the Contractor in equal monthly amounts subject to proper and/or substantial compliance.

Item	Unit
B12.02 Compliance with Environmental Specification (ES):	
(a) Time for environmental training	lump sum
(b) General compliance with ES.....	lump sum

The tendered lump sum shall include full compensation for all activities and costs associated with environmental training as described in the Environmental Specification. Payment shall be made on completion of the training.

The Contractor shall include a lump sum for general compliance with the Environmental Specification. Failure to provide any item or comply with any instruction of the Responsible Person will be cause for non-payment of the whole lump sum and for ordering the cessation of works.”