



C1.1: Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

REHABILITATION AND WIDENING OF PORT VIEW ROAD IN PORT OF EAST LONDON

The tenderer, identified in the Offer signature block, has

examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

	R
Value Added Tax @ 15% is	R
The offered total of the Prices inclusive of VAT is	R
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the
tenderer:**

(Insert name and address of organisation)

Name &
signature of
witness

Date

Tenderer's CIDB registration number:



Acceptance

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Contractor* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).



Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

**for the
Employer**

Transnet SOC Ltd

(Insert name and address of organisation)

Name &
signature of
witness

Date



Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer’s covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

For the tenderer:	For the Employer
Signature	
Name	
Capacity	
On behalf of	Transnet SOC Ltd
	<i>(Insert name and address of organisation)</i>
Name & signature of witness	
Date	





C1.2 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	General	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option	
		B: Priced contract with Bill of Quantities
	dispute resolution Option	W1: Dispute resolution procedure
	and secondary Options	X2 Changes in the law
		X4: Parent company guarantee
		X7: Delay damages
		X13: Performance Bond
		X16: Retention
		X18: Limitation of liability
		X20: Key performance indicators
		Z: <i>Additional conditions of contract</i>
		Z1 Intellectual property
		Z2 Obligations in respect of Job Creation.
		Z3 Assignment and Waiver
		Z5 Additional clause relating to Performance Bonds and/or guarantees
		Z6 Additional clauses relating to Joint Venture
		Z7 Additional obligations in respect of Termination
		Z8 Right Reserved by the <i>Employer</i> to Conduct Vetting through SSA



**Z9 Additional Clause Relating to Collusion
in the Construction Industry**

Z10 Protection of Personal Information Act

of the NEC3 Engineering and
Construction Contract June
2005 (amended June 2006
and April 2013)

Z11 Database of Restricted Suppliers

10.1 The *Employer* is: **Transnet SOC Ltd
(Registration No. 1990/000900/30)**

Address Registered address:
**eMendi Building
N2 Neptune Road
Off Klub Road
Port of Ngqura
Port Elizabeth
6100**

Having elected its
Contractual Address for the
purposes of this contract as: **Office No. 6, CRD Building
1 Hely Hutchinson Road
Quigney
East London
5201**

10.1 The *Project Manager* is:
(Name) **Basokazi Mthembu**

Address **Port Control No1
Gateume Crescent
Quigney
East London
5001**

Tel **043 700 2409**

e-mail Basokazi.Mthembu@Transnet.net

10.1 The *Supervisor* is: (Name) **Thembakazi Ngxabani**

Address **Office No. 6, CRD Building
1 Hely Hutchinson Road
Quigney
East London
5201**

Tel No. **043 700 2403**



e-mail

Zanele.Ntantala@Transnet.net

11.2(13) The *works* are

Rehabilitation and widening of Port View Road:

- **The road will be widened from an approximate 6m surfaced width to an 8.6m surfaced width.**
- **Clearing and grubbing of the top grass layer to cater for the widening.**
- **The widening will need a full depth excavation.**
- **Pavement construction with imported material to make up two selected layers.**
- **300mm thick cement stabilised subbase layer for the 120m long lane for truck staging.**
- **Application of prime coat.**
- **Deep in-situ recycling and stabilization of the existing gravel base**
- **asphalt surfacing material to form a 300mm C3 Subbase.**
- **The entire roadway would then be overlain by an 80mm asphalt base, and a 45mm asphalt surfacing.**
- **Replace existing guardrails.**
- **Construct new drainage system, culverts, kerbs, concrete channelling, chutes and downpipes and concrete linings for drains**



11.2(14)	The following matters will be included in the Risk Register	<ol style="list-style-type: none"> 1. Contractor’s Health and Safety Management Plan. All safety incidents and non-compliances must be recorded and managed. 2. Contractor’s Environmental Management Plan. All environmental incidents and non-compliances must be recorded and managed 3. All Early Warning Items Must be recorded in the risk register in accordance with Clause 16. 4. Inclement Weather. 5. Effects of Covid 19 to the project. 6. Risks of variance in recorded quantities versus actual quantities in the Bill of Quantities. 7. Risk associated with existing underground services within the road servitude
11.2(15)	The <i>boundaries of the site</i> are	As stated in Part C4.1.” Description of the Site and its surroundings”
11.2(16)	The Site Information is in	Part C4
11.2(19)	The Works Information is in	Part C3
12.2	The <i>law of the contract</i> is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.
13.1	The <i>language of this contract</i> is	English
13.3	The <i>period for reply</i> is	2 weeks
2	The <i>Contractor’s</i> main responsibilities	No additional data is required for this section of the <i>conditions of contract</i>.
3	Time	
11.2(3)	The <i>completion date</i> for the whole of the <i>works</i> is	28-11-2022
11.2(9)	The <i>key dates</i> and the <i>conditions</i> to be met are:	The critical path of the accepted programme will be used to determine key dates.
30.1	The <i>access dates</i> are	The access date will be determined and notified during signing of the contract with the awarded bidder



31.1	The <i>Contractor</i> is to submit a first programme for acceptance within	2 weeks of the Contract Date.
31.2	The <i>starting date</i> is	24-06-2022
32.2	The <i>Contractor</i> submits revised programmes at intervals no longer than	2 weeks.
4	Testing and Defects	
42.2	The <i>defects date</i> is	52 (fifty-two) weeks after Completion of the whole of the works.
43.2	The <i>defect correction period</i> is	2 weeks
5	Payment	
50.1	The <i>assessment interval</i> is monthly on the	15th (fifteenth) day of each successive month.
51.1	The <i>currency of this contract</i> is the	South African Rand.
51.2	The period within which payments are made is	Payment will be processed on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received.
51.4	The <i>interest rate</i> is	the prime lending rate of Standard Bank of South Africa.
6	Compensation events	
60.1(13)	The <i>weather measurements</i> to be recorded for each calendar month are,	<p>the cumulative rainfall (mm)</p> <p>the number of days with rainfall more than 10 mm</p> <p>the number of days with minimum air temperature less than 0 degrees Celsius</p> <p>the number of days with snow lying at 08:00 hours South African Time</p> <p>The Contractor's Site establishment area within the boundaries of the site, refer to Part C4.1.</p>



The place where weather is to be recorded (on the Site) is:

The *Contractor's* Site establishment area

The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:

East London

and which are available from:

South African Weather Service 012 367 6023 or info3@weathersa.co.za and <https://www.statssa.gov.za>.

7	Title	No additional data is required for this section of the <i>conditions of contract</i>.
8	Risks and insurance	
80.1	These are additional <i>Employer's</i> risks	<ol style="list-style-type: none"> 1. Covid 19 related regulations issued by the government of the Republic of South Africa may affect the project's human resources thereby prevent the contractor in meeting key dates. 2. Covid 19 related regulations issued by the government of the Republic of South Africa may affect the contractor meeting key dates and increase project costs.
84.1	The <i>Employer</i> provides these insurances from the Insurance Table	
	1 Insurance against:	Loss of or damage to the <i>works</i>, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.
	Cover / indemnity:	to the extent as stated in the insurance policy for Contract Works / Public Liability
	The deductibles are:	as stated in the insurance policy for Contract Works / Public Liability



2 Insurance against:	Loss of or damage to property (except the works, Plant and Materials & Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability
Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
The deductibles are	as stated in the insurance policy for Contract Works / Public Liability
3 Insurance against:	Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability
Cover / indemnity	Is to the extent as stated in the insurance policy for Contract Works / Public Liability
The deductibles are:	As stated in the insurance policy for Contract Works / Public Liability
4 Insurance against:	Contract Works SASRIA insurance subject to the terms, exceptions, and conditions of the SASRIA coupon
Cover / indemnity	Cover / indemnity is to the extent provided by the SASRIA coupon
The deductibles are	The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.
Note:	The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."



84.1 The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is

The *Contractor* provides these additional Insurances

The *Contractor* must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.

- 1 Where the contract requires that the design of any part of the *works* shall be provided by the *Contractor* the *Contractor* shall satisfy the *Employer* that professional indemnity insurance cover in connection therewith has been affected**
- 2 Where the contract involves manufacture, and/or fabrication of Plant & Materials, components, or other goods to be incorporated into the *works* at premises other than the site, the *Contractor* shall satisfy the *Employer* that such plant & materials, components, or other goods for incorporation in the *works* are adequately insured during manufacture and/or fabrication and transportation to the site.**
- 3 Should the *Employer* have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the *Contractor's* policies of insurance as well as those of any sub-contractor**
- 4 Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000.**



5 The insurance coverage referred to in 1, 2, 3, and 4 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the Employer. The Contractor shall arrange with the insurer to submit to the Project Manager the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the Contractor.

84.2 The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is

Whatever the Contractor requires in addition to the amount of insurance taken out by the Employer for the same risk.

84.2 The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:

Principal Controlled Insurance policy for Contract OR Project Specific Insurance for the contract

9 Termination

There is no additional Contract Data required for this section of the conditions of contract.

10 Data for main Option clause

B Priced contract with Bill of Quantities

No additional data is required for this Option.



60.6	The <i>method of measurement</i> is	The Bill of Quantities have been measured in accordance with COLTO unless indicated otherwise.
11	Data for Option W1	
W1.1	The <i>Adjudicator</i> is	Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the <i>Adjudicator</i>, the Chairman of the Association of Arbitrators will appoint an <i>Adjudicator</i>.
W1.2(3)	The <i>Adjudicator nominating body</i> is: If no <i>Adjudicator nominating body</i> is entered, it is:	The Chairman of the Association of Arbitrators (Southern Africa) the Association of Arbitrators (Southern Africa)
W1.4(2)	The <i>tribunal</i> is:	Arbitration
W1.4(5)	The <i>arbitration procedure</i> is	The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)
	The place where arbitration is to be held is	East London, South Africa
	The person or organisation who will choose an arbitrator <ul style="list-style-type: none"> - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is 	The Chairman of the Association of Arbitrators (Southern Africa)
12	Data for secondary Option clauses	
X2	Changes in the law	
X2.1		A change in law for this contract is the change in law of the Republic of South Africa that occurs After the Contract Date will be a compensation event.
X4	Parent company guarantee	No additional data is required for this Option



X7	Delay damages	
X7.1	Delay damages for Completion of the whole of the <i>works</i> are	Shall be equated to the actual monetary loss Transnet incurred per day
X13	Performance bond	
X13.1	The amount of the performance bond is	4% of the total of the Prices
X16	Retention	
X16.1	The retention free amount is	Nil,
	The retention percentage is	10% of the amount due for payment for each approved assessment.
X18	Limitation of liability	
X18.1	The <i>Contractor's</i> liability to the <i>Employer</i> for indirect or consequential loss is limited to:	Shall be equated to the actual monetary value of the indirect or consequential loss.
X18.2	For any one event, the <i>Contractor's</i> liability to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property is limited to:	The deductible of the relevant insurance policy
X18.3	The <i>Contractor's</i> liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	The cost of correcting the Defect
X18.4	The <i>Contractor's</i> total liability to the <i>Employer</i> for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	The Total of the Prices
X18.5	The <i>end of liability date</i> is	5 years after Completion of the whole of the <i>works</i>



Z	<i>Additional conditions of contract are:</i>
Z1	Intellectual property
Z1.1	Intellectual property rights (including patents, copyright, trademarks etc.) rest with the party owning them and the <i>Employer</i> indemnifies the <i>Contractor</i> from any liability arising from infringement of such intellectual property rights. [See Clauses 80.1, 83.1 and 83.2 of the main clauses]
Z3	Assignment and Waiver
Z3.1	Neither the <i>Employer</i> nor the <i>Contractor</i> may, without the written consent of the other, assign the Contract or any part thereof or any obligation under the Contract or cede any right or benefit thereunder.
Z3.2	No grant by the <i>Contractor</i> or the <i>Employer</i> to the other of any concession, waiver, condonation, or allowance is, in respect of any specific event or circumstance other than that in respect of which the grant was made to constitute a waiver of the rights of the grantor in terms of the Contract or an <i>estoppel</i> of the grantor's right to enforce the provisions of the Contract.
Z5	Additional clause relating to Performance Bonds and/or guarantees
Z5.1	The Performance Guarantee under X13 above shall be an irrevocable, on-demand performance guarantee, to be issued exactly in the form of the Pro Forma documents provided for this purpose under C1.3 (Forms of Securities), in favour of the <i>Employer</i> by a financial institution reasonably acceptable to the <i>Employer</i> .
Z6	Additional clauses relating to Joint Venture



Z6.1

Insert the additional core clause 27.5

27.5. In the instance that the *Contractor* is a joint venture, the *Contractor* shall provide the *Employer* with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.

The Joint Venture agreement shall contain but not be limited to the following:

- A brief description of the Contract and the Deliverables.
- The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture.
- The constituent's interests.
- A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents.
- Details of an internal dispute resolution procedure.
- Written confirmation by all of the constituents:
 - i. of their joint and several liabilities to the *Employer* to Provide the Works.
 - ii. identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the *Contractor's* representative.
 - iii. Identification of the roles and responsibilities of the constituents to provide the Works.
- Financial requirements for the Joint Venture:
 - iv. the working capital requirements for the Joint Venture and the extent to which and manner whereby this will



be provided and/or guaranteed by the constituents from time to time. the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture

Z6.1

Insert additional core clause 27.6

27.6. The *Contractor* shall not alter its composition or legal status of the Joint Venture without the prior approval of the *Employer*.

Z7 Additional obligations in respect of Termination

Z7.1

The following will be included under core clause 91.1:

In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and

Under the second main bullet, insert the following additional bullets after the last sub-bullet:

- commenced business rescue proceedings (R22)
- repudiated this Contract (R23)

Z7.2

Termination Table

The following will be included under core clause 90.2 Termination Table as follows:

Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"

Z7.3

Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."

Z8 Right Reserved by the Employer to Conduct Vetting through SSA



Z8.1	The <i>Employer</i> reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any <i>Contractor</i> who has access to National Key Points for the following without limitations: <ol style="list-style-type: none">1. Confidential – this clearance is based on any information which may be used by malicious, opposing, or hostile elements to harm the objectives and functions of an organ of state.2. Secret – clearance is based on any information which may be used by malicious, opposing, or hostile elements to disrupt the objectives and functions of an organ of state.3. Top Secret – this clearance is based on information which may be used by malicious, opposing, or hostile elements to neutralise the objectives and functions of an organ of state.
Z9	Additional Clause Relating to Collusion in the Construction Industry
Z9.1	The contract award is made without prejudice to any rights the <i>Employer</i> may have to take appropriate action later about any declared tender rigging including blacklisting.
Z10	Protection of Personal Information Act
Z10.1	The <i>Employer</i> and the <i>Contractor</i> are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.
Z11	Database of Restricted Suppliers



- Z11.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Bid shall be awarded to a Bidder whose name (or any of its members, directors, partners, or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Bidder should it be established, at any time
- Z11.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual are included herein by way of reference. Below follows a condensed summary of this restriction procedure
- Z11.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- Z11.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "prima facie" (i.e., on the face of it) case has been established
- Z11.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.



Z11.5

Database of Restricted Suppliers

The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Bid shall be awarded to a Bidder whose name (or any of its members, directors, partners, or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Bidder should it be established, at any time, that a bidder has been restricted with National

All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual are included herein by way of reference. Below follows a condensed summary of this restriction procedure.



On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.

The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "prima facie" (i.e., on the face of it) case has been established.

Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.

A supplier or contractor to Transnet may not subcontract any portion of the contract to a restricted company.

Grounds for restriction include: If any person/Enterprise which has submitted a Bid, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Bid or contract:

- a) has, in bad faith, withdrawn such Bid after the advertised closing date and time for the receipt of Bids.
- b) has, after being notified of the acceptance of his Bid, failed, or refused to sign a contract when called upon to do so in terms of any condition forming part of the bid documents.
- c) has carried out any contract resulting from such bid in an unsatisfactory manner or has breached any condition of the contract.
- d) has offered, promised, or given a bribe in relation to the obtaining or execution of the contract.



- e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise, or person.
- f) has, in bad faith, withdrawn such Bid after the advertised closing date and time for the receipt of Bids.
- g) has, after being notified of the acceptance of his Bid, failed, or refused to sign a contract when called upon to do so in terms of any condition forming part of the bid documents.
- h) has carried out any contract resulting from such bid in an unsatisfactory manner or has breached any condition of the contract.
- i) has offered, promised, or given a bribe in relation to the obtaining or execution of the contract.
- j) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise, or person.
- k) has made any incorrect statement in a certificate or other communication about the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
 - l) he made the statement in good faith honestly believing it to be correct; and
 - m) before making such statement, he took all reasonable steps to satisfy himself of its correctness.
- n) has submitted false information regarding any other matter required in terms of the Preferential Procurement Regulations, 2017 issued in terms of the Preferential Procurement Policy Framework Act which will affect the evaluation of a Bid or where a Bidder has failed to declare any subcontracting arrangements.
- o) caused Transnet damage, or to incur costs to meet the contractor's requirements and which could not be recovered from the contractor.
- p) has litigated against Transnet



q) in bad faith.

Transnet recognizes that trust and good faith are pivotal to its relationship with its suppliers/service providers. When a dispute arises between Transnet and its Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based.

Accordingly, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) Vexatious proceedings. These are frivolous proceedings which have been instituted without proper grounds.
- b) Perjury. Where a Contractor commits perjury either in giving evidence or on affidavit.
- c) Scurrilous allegations. Where a Contractor makes allegations regarding a senior Transnet employee which are without a proper foundation, scandalous, abusive, or defamatory.
- d) Abuse of court process. When a Contractor abuses the court process to gain a competitive advantage during a bid process.

Where any person or Enterprise has been found guilty by a court of law, tribunal or other administrative body of a serious breach of any law, during the preceding 5 Years, such person/Enterprise may also be restricted. Serious breaches of the law would include but are not limited to corruption, fraud, theft, extortion, or contraventions of the Competition Act 89 of 1998 (e.g., collusive tendering). This process excludes minor convictions such as traffic offences or personal disagreements between parties which have no bearing on the business operations of the person or Enterprise.



C1.2 Contract Data

Part two - Data provided by the *Contractor*

The tendering *Contractor* is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The <i>Contractor</i> is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The <i>direct fee percentage</i> is	%
	The <i>subcontracted fee percentage</i> is	%
11.2(18)	The <i>working areas</i> are the Site and	
24.1	The <i>Contractor's</i> key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	



		CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .		
11.2(14)	The following matters will be included in the Risk Register			
31.1	The programme identified in the Contract Data is			
B	Priced contract with bill of quantities			
11.2(21)	The <i>bill of quantities</i> is in			
11.2(31)	The tendered total of the Prices is	(in figures)		
		(in words), excluding VAT		
	Data for Schedules of Cost Components	<i>Note "SCC" means Schedule of Cost Components starting on page 60 of ECC, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC.</i>		
B	Priced contract with bill of quantities	Data for the Shorter Schedule of Cost Components		
41 in SSCC	The percentage for people overheads is:	%		
21 in SSCC	The published list of Equipment is the last edition of the list published by			
	The percentage for adjustment for Equipment in the published list is	% (state plus or minus)		
22 in SSCC	The rates of other Equipment are:	Equipment	Size or capacity	Rate



61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are	Category of employee	Hourly rate
62 in SSCC	The percentage for design overheads is	%	
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:		



C1.3 Forms of Securities

Pro forma Performance Guarantee

For use with the NEC3 Engineering & Construction Contract - June 2005 (with amendments June 2006 and April 2013)

The *conditions of contract* stated in the Contract Data Part 1 include the following Secondary Option:

Option X13: Performance bond

The pro forma document for this Guarantee is provided here for convenience but is to be treated as part of the *Works Information*.

The organisation providing the Guarantee does so by copying the pro forma document onto its letterhead without any change to the text or format and completing the required details. The completed document is then given to the *Employer* within the time stated in the contract.

The Performance Bond needs to be issued by an institution that are reasonably acceptable to the *Employer*.

Transnet may choose to not to accept an Issuer. Should the issuer not being accepted, the performance bond needs to be replaced by an issuer that are acceptable to Transnet. Issuers need to be verified for acceptance by Transnet before a performance bond is issued.



Pro-forma Performance Bond (for use with Option X13)

(to be reproduced exactly as shown below on the letterhead of the Surety)

Transnet SOC Ltd
C/o Transnet National Ports Authority
Transnet Corporate Centre
Waterfall Business Estate
9 Country Estate Drive
Midrand

Date:

Dear Sirs,

Performance Bond for Contract No.

With reference to the above numbered contract made or to be made between

Transnet SOC Limited, Registration No. 1990/000900/30 (the *Employer*) and

{Insert registered name and address of the Contractor} (the *Contractor*), for

{Insert details of the works from the Contract Data} (the *works*).

I/We the undersigned

.....
on behalf of the
Guarantor

.....
of physical address
.....
.....

and duly authorised thereto do hereby bind ourselves as Guarantor and co-principal debtors in solidum for the due and faithful performance of all the terms and conditions of the Contract by the *Contractor* and for all losses, damages and expenses that may be suffered or incurred by the *Employer* as a result of non-performance of the Contract by the *Contractor*, subject to the following conditions:

1. The terms *Employer*, *Contractor*, *Project Manager*, *works* and Completion Certificate have the meaning as assigned to them by the *conditions of contract* stated in the Contract Data for the aforesaid Contract.
2. We renounce all benefits from the legal exceptions "Benefit of Excussion and Division", "No value received" and all other exceptions which might or could be pleaded against the validity of this bond, with the meaning and effect of which exceptions we declare ourselves to be fully acquainted.
3. The *Employer* has the absolute right to arrange his affairs with the *Contractor* in any manner which the *Employer* deems fit and without being advised thereof the Guarantor shall not have the right to claim his release on account of any conduct alleged to be prejudicial to the Guarantor. Without derogating from the foregoing compromise, extension of the construction period, indulgence, release or variation of the *Contractor's* obligation shall not affect the validity of this performance bond.



4. This bond will lapse on the earlier of
- the date that the Guarantor receives a notice from the *Project Manager* stating that the Completion Certificate for the whole of the *works* has been issued, that all amounts due from the *Contractor* as certified in terms of the contract have been received by the *Employer* and that the *Contractor* has fulfilled all his obligations under the Contract, or
 - the date that the Surety issues a replacement Performance Bond for such lesser or higher amount as may be required by the *Project Manager*.
5. Always provided that this bond will not lapse in the event the Guarantor is notified by the *Project Manager*, (before the dates above), of the *Employer's* intention to institute claims and the particulars thereof, in which event this bond shall remain in force until all such claims are paid and settled.
6. The amount of the bond shall be payable to the *Employer* upon the *Employer's* demand and no later than 7 days following the submission to the Guarantor of a certificate signed by the *Project Manager* stating the amount of the *Employer's* losses, damages and expenses incurred as a result of the non-performance aforesaid. The signed certificate shall be deemed to be conclusive proof of the extent of the *Employer's* loss, damage, and expense.
7. Our total liability hereunder shall not exceed the sum of:
- (say) _____
- R _____
8. This Performance Bond is neither negotiable nor transferable and is governed by the laws of the Republic of South Africa, subject to the jurisdiction of the courts of the Republic of South Africa

Signed at _____ on this _____ day of _____ 201_

Signature(s)	_____
Name(s) (printed)	_____
Position in Guarantor company	_____
Signature of Witness(s)	_____
Name(s) (printed)	_____



PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option B	3
C2.2	The <i>bill of quantities</i>	



C2.1 Pricing instructions: Option B

1. The *conditions of contract*

1.1. How the contract prices work and assesses it for progress payments

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 and 2013 (ECC) Option B states:

**Identified
and defined
terms**

11

11.2

(21) The Bill of Quantities is the *bill of quantities* as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.

(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.

(28) The Price for Work Done to Date is the total of

- the quantity of the work which the *Contractor* has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the *Contractor* has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract, and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.



1.2. Function of the Bill of Quantities

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that instructions to do work or how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

1.3. Guidance before pricing and measuring

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the *bill of quantities* or before entering rates and lump sums into the *bill*.

Historically bill of quantities-based contracts in South Africa have been influenced by the different approaches of the civil engineering and building sectors of the industry through their respective discipline based standard forms of contract and methods of measurement. This is particularly apparent in the approach to the Preliminary and General bill. On the other hand, because ECC caters for a number of disciplines in the same contract, including electrical works, a different approach not currently found in local methods of measurement to the Preliminary & General bill items may have been used.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill.



2. Measurement and payment

2.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	percent
h	hour
ha	hectare
kg	kilogram
kl	kilolitre
km	kilometre
km-pass	kilometre-pass
kPa	kilopascal
kW	kilowatt
l	litre
m	metre
mm	millimetre
m ²	square metre
m ² -pass	square metre pass
m ³	cubic metre
m ³ -km	cubic metre-kilometre
MN	meganewton
MN.m	meganewton-metre



MPa	megapascal
No.	number
Prov sum ¹	provisional sum
PC-sum	prime cost sum
R/only	Rate only
sum	Lump sum
t	ton (1000kg)
W/day	Work day

2.2. General assumptions

- 2.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
- 2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the *Contractor* in carrying out or providing that item.
- 2.2.3. Clause 63.13 in Option B provides that these rates and Prices may be used as a basis for assessment of compensation events instead of Defined Cost.
- 2.2.4. Where this contract requires detailed drawings, designs or other information to be provided, and no rates or prices are included in the *bill* specifically for such matters, then the *Contractor* is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Bill of Quantities.
- 2.2.5. An item against which no Price is entered will be treated as covered by other Prices or rates in the *bill of quantities*. If a number of items are grouped together for pricing purposes, this will be treated as a single lump sum.

¹ Provisional Sums should not be used unless absolutely unavoidable. Rather include specifications and associated bill items for the most likely scope of work, and then change later using the compensation event procedure if necessary. This is because tenderers cannot programme effectively for unknown scopes of work



2.2.6. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment by the *Project Manager* at each assessment date will be used for determining payments due and not the quantities given in the Bill of Quantities.

2.2.7. The short descriptions of the items of payment given in the *bill of quantities* are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Works Information.

2.3. Departures from the *method of measurement*

2.4. Amplification of or assumptions about measurement items

For the avoidance of doubt the following is provided to assist in the interpretation of descriptions given in the *method of measurement*. In the event of any ambiguity or inconsistency between the statements in the *method of measurement* and this section, the interpretation given in this section shall be used.



C2.2 The *bill of quantities*

TENDER SUM CARRIED TO FORM OF OFFER

SCHEDULE	DESCRIPTION	AMOUNT
A	ROAD WORKS	
SUB TOTAL A		
OWNER'S COST		
CONTINGENCIES: 10% of Subtotal A		
SUB TOTAL B		
TOTAL CARRIED TO C.1.1.1 : FORM OF OFFER		



SUMMARY OF SCHEDULE OF QUANTITIES		
SECTION	DESCRIPTION	AMOUNT
SCHEDULE A	ROADWORKS	
1200	EXISTING SERVICES	
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS	
1400	HOUSING, OFFICES AND LABORATORY FOR THE ENGINEER'S SITE PERSONNEL	
1500	ACCOMMODATION OF TRAFFIC	
1700	CLEARING AND GRUBBING	
2100	DRAINS	
2200	PREFABRICATED CULVERTS	
2300	CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS	
3300	MASS EARTHWORKS	
3400	PAVEMENT LAYERS OF GRAVEL MATERIAL	
3500	STABILIZATION	
4100	PRIME COAT	
4200	ASPHALT AND SURFACING	
5400	GUARDRAILS	
5700	ROAD MARKINGS	
5900	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS	
8100	TESTING MATERIALS AND WORKMANSHIP	
TOTAL SCHEDULE A: ROADWORKS		
CONTINGENCIES: 10% of Subtotal A		
SUB TOTAL B		
TOTAL CARRIED TO C.1.1.1 : FORM OF OFFER		



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1200	EXISTING SERVICES				
12.02	Reinstate existing services	Sum	1		
1200	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1300	CONTRACTOR'S ESTABLISHMENT ON SITE AND GENERAL OBLIGATIONS				
B13.01	Contractor's general obligations				
	(a) Fixed obligations	sum	1		
	(c) Time-related obligations	Month	6		
B13.04	Supply, transport to site and erect contract signboards	No	1		
B13.05	(a) Fixed obligations for the preparation of risk assessments, safe work procedures, the project H & S file, the H & S plan and any other H & S matters that the contractor deems necessary.	Sum	1		
	(b) Fixed obligations for completing and checking the Project H & S file and handing over to the Client on completion of the works.	Sum	1		
	(c) Fixed obligation for supplying and installing signage, and equipment in line with the COVID-19 requirements.	Sum	1		
	(d) Time related obligations for updating and amending the risk assessments, safe work procedures, the project H & S file, the H & S plan and full compliance with all H & S matters during the construction of the works under the contract.	month	6		
	(e) Time related obligations for maintaining all COVID equipment and apparatus on site.	month	6		
1300	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1400	HOUSING, OFFICES AND LABORATORY FOR THE ENGINEER'S SITE PERSONNEL				
14.03	(b) Prime-cost items and items paid for in a lump sum: (i) Provision of telephone service, including the cost of calls in connection with contract administration and telephone rental (ii) Handling costs and profit in respect of sub item 14.03(b)(i) above	PC Sum %	1	 10%	
14.07	Rental, hotel, and other accommodation (a) Provisional sum for providing rented housing, hotel or other accommodation as described in sub subclause 14.03(c)(ii) (b) Handling cost and profit in respect of sub item 14.07(a)	Provisional sum %	1	 10%	
14.08	Services The provision of water, electricity, sewerage, sewage and rubbish removal, cleaning services, maintenance, and repairs, all as specified in clause 1404, including the construction and maintenance of the access roads, footpaths, etc. (a) Services at offices (i) Fixed Costs (ii) Running Costs (c) Services for rented houses	 Sum month month	 1 6 6		
1400	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1500	ACCOMMODATION OF TRAFFIC				
B15.01	Accommodating traffic and maintaining temporary deviations (c) On the existing municipal roads	km	1.2		
B15.16	Provision of traffic safety (a) Traffic safety officer (a) Traffic safety vehicle	month month	6 6		
1500	TOTAL CARRIED TO SUMMARY				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1700	CLEARING AND GRUBBING				
17.01	Clearing and grubbing	ha	0.7		
1700	TOTAL CARRIED TO SUMMARY				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2100	DRAINS				
21.01	Excavation for Open Drains (a) Excavating soft material situated within the following depth ranges below the surface level: (i) 0m up to 1,5m	m ³	980		



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2100	DRAINS (Continues from page 6)				
21.03	Excavation for subsoil drainage systems (a) Excavating soft material situated within the following depth ranges below the surface level: (i) 0m up to 1,5m	m ³	980		
B21.06	Natural permeable material in subsoil drainage systems (washed crushed stone) (b) Crushed stone obtained from commercial sources (i) 13,2mm nominal size aggregate	m ³	950		
21.08	Pipes in subsoil drainage systems: (a) Unplasticized PVC pipes and fittings complete with couplings: (i) 110 mm internal diameter, perforated	m	650		
21.10	Synthetic fibre filter fabric: (a) Non-woven needle punched grade 2	m ²	2,000		
B21.12	Concrete outlet structures, manhole boxes, junction boxes and cleaning eyes for subsoil drainage systems: (a) Outlet Structures (Headwalls) (b) Grid Inlets	No No	2 2		
21.17	Test flushing of pipes in subsoil drainage systems	No	3		



2100	DRAINS (Continues from page 7)			
2100	TOTAL CARRIED TO SUMMARY			

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2200	PREFABRICATED CULVERTS				
B22.01	Excavation: (a) Excavating soft material situated within the following depth ranges below the surface level: (i) 0m up to 1.5m	m ³	30		
	(b) Extra over subitem 22.01(a) for excavation in hard material, irrespective of depth	m ³	30		
	(c) Extra over subitem 22.01(a) for excavation by hand	m ³	30		
22.02	Backfilling: (a) Using the excavated material	m ³	30		
	(b) Using imported selected material	m ³	20		
	(c) Extra over subitems 22.02(a) and (b) for soil cement backfilling (5% cement)	m ³	10		
22.03	Concrete pipe culverts: (b) On Class B bedding: (i) 600mm diameter Class 50D with "ogee" joints	m	30		
22.07	Cast in situ concrete and formwork:				



2200	TOTAL CARRIED TO SUMMARY				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2300	CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS				
23.02	Concrete kerbing-channelling combination (Class of Concrete indicated for cast in situ concrete)				
	(a) Straight precast figure 6 barrier kerb & fillet/channel: (i) 300mm channel / fillet	m	300		
	(b) Curved precast figure 6 barrier kerb & fillet/channel: (i) 300mm channel / fillet	m	60		
23.07	Trimming of excavations for concrete-lined open drains:				
	(a) In soft material	m ²	1,200		
	(b) In hard material	m ²	400		
23.08	Concrete lining for open drains:				
	(a) Cast-In-situ Concrete Lining to Open Drains (Class 20/19 for vee drains)	m ³	170		



23.09	Formwork to cast in situ concrete linings for open drains a) To sides with formwork on the internal face only b) To sides with formwork on both internal and external faces c) To ends of slabs	m ²	10		
		m ²	10		
		m ²	10		
23.10	Sealed Joints in Concrete Lining of Open Drains	m	15		
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2300	CONCRETE KERBING, CONCRETE CHANNELLING, CHUTES AND DOWNPIPES AND CONCRETE LININGS FOR OPEN DRAINS (Continues from Page12)				
23.13	Polyethylene Sheeting (0.15mm thick) for Concrete-Lined Open	m ²	1,600		
2300	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3300	MASS EARTHWORKS				
B33.01	Cut and borrow to fill, including free-haul up to 1,0 km				
	(e) Pioneer layer	m ³	560		
B33.04	Cut to spoil, including free-haul up to 1,0 km. Material obtained from:				
	(a) Soft excavation	m ³	1,520		
B33.07	Removal of unsuitable material (including free haul up to 1,0km)				
	(a) In layer thicknesses of 200mm and less:				
	(ii) Unstable material	m ³	120		
33.10	Roadbed preparation and compaction of material:				
	(b) Compaction of 93% of modified AASHTO density	m ³	610		



33/B16.02	Overhaul on material hauled in excess of 1,0 km (ordinary overhaul)	m ³ km	9,000		
3300	TOTAL CARRIED TO SUMMARY				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3400	PAVEMENT LAYERS OF GRAVEL MATERIAL				
B34.01	Pavement layers constructed from gravel taken from commercial sources. (a) Gravel selected layers compacted to: (i) 93% of modified AASHTO density (1) G7 material 150mm thick (ii) 95% of modified AASHTO density (1) G9 material 150mm thick (d) Gravel subbase (chemically stabilized material) compacted to: (ii) 96%of modified AASHTO density (300mm thick)	m ³	670		
		m ³	730		
		m ³	1,320		
B34.04	In-situ reconstruction of existing pavement layers as:				



	(e) Gravel subbase (chemically stabilized material) compacted to 95% of modified AASHTO density using: (iii) Mixture of in-situ asphalt, existing gravel pavement material(both cemented and non-cemented) and imported G5 gravel material to 300mm total layer thickness to produce C3 quality material compacted to 97% Maximum Dry Density.	m ³	1,920		
B34.06	Extra over item 34.04 for adding extra material as specified in subclause 3207(b)(iii): (b) Gravel subbase	m ³	960		
3400	PAVEMENT LAYERS OF GRAVEL MATERIAL (Continues from page13)				
B34.14	Removal of excess material from pavement layers in reconstructed areas	m ³	1500		
3400	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3500	STABILIZATION				
35.01	Chemical stabilization extra over unstabilized compacted layers :				
	(a) Subbase:				
	(ii) to roadway for insitu stabilisation	m ³			
B35.02	Chemical stabilizing agent:				
	(a) Cement CEM II A-V 32.5 (3%)	t			
35.13	Extra over items 35.01 and 35.07 for trial sections	m ³			



3500	TOTAL CARRIED TO SUMMARY	
-------------	---------------------------------	--

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4100	PRIME COAT				
41.01	Prime coat: (c) MC-30 Cut-back bitumen or bitumen emulsion MSP1 type (0.7 l/m ²)	litre	6,600		
4100	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4200	ASPHALT BASE AND SURFACING				
42.01	Asphalt base using AP1 or AE2 Modified Binder (80mm thick, maximum aggregate size 26mm)				
	(a) Continuously graded	m ²	9,300.00		
42.02	Asphalt surfacing				
	(a) Continuously graded				
	(1) Using AP1 or AE2 Modified Binder (40mm thick, medium grade)	m ²	9,300.00		
	(2) Using 50/70 pen bitumen (20mm thick, medium grade) to temporary widenings/bypasses	m ²	9,300.00		
42.04	Tack coat of 30% stable-grade emulsion (0.5 l/m ²)	l	4,700.00		
42.05	Binder variations using an:				



42.06	(a) 30/50 pen bitumen binder Variation in active filler	t	rate only		
B42.08	(b) Lime Cores in asphalt paving	t	rate only		
	(a) 100 mm dia	No	3.00		
	(b) 150 mm dia	No	2.00		
B42.21	Aggregate variations	t	rate only		
4200	TOTAL CARRIED TO SUMMARY				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5400	GUARDRAILS				
54.01	Guardrails on timber posts:				
	(a) Galvanised	m	580		
54.02	Guardrails on steel posts:				
	(a) Galvanised	m	580		
54.04	End treatments:				
	(a) End wings	No	2		
54.05	Additional guardrail posts:				
	(a) Timber	No	58		
B54.14	Nailing of gang nail plates on top of timber guardrail posts	No	58		
		□			
5400	TOTAL CARRIED TO SUMMARY				



ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5700	ROAD MARKINGS				
57.02	Retro-reflective road marking paint : (water based paint)				
	(a) White lines (broken or unbroken):				
	(i) 100 mm wide	km	1.4		
	(ii) 200 mm wide	km	0.5		
	(b) Yellow lines (broken or unbroken):				
	(ii) 150 mm wide	km	2.2		
	(f) Transverse lines, painted island and arrestor bed markings	m ²	50		
57.04	Variations in rate of application:				
	(a) White paint	l	rate only		
	(b) Yellow paint	l	rate only		
	(d) Retro-reflective beads	kg	175		



57.05	Roadstuds				
	(a) Bi-directional, galvanised steel /aluminum with fitted shank and 43/43 element reflectors (tenderer to specify.....)	No	123		
57.06	Setting out and premarking the lines (excluding traffic-island markings, lettering and symbols)	km	2.2		
57.07	Re-establishing the painting unit at the end of the maintenance period	L/sum	1		
57.08	Removal of existing, temporary or permanent road markings by:				
	(a) Sand-blasting	m ²	50		
	(b) Overpainting as temporary measure	m ²	50		
57.09	Removal of existing roadstuds	No	10		
	ROAD MARKINGS (Continues from Page 19)				
5700	TOTAL CARRIED TO SUMMARY				

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
5900	FINISHING THE ROAD AND ROAD RESERVE AND TREATING OLD ROADS				
59.01	Finishing road and road reserve:				
	(b) Single carriageway road				
	(i) Ramps	km	1.2		
59.02	Treatment of old roads and temporary deviations	km	0.5		



5900	TOTAL CARRIED TO SUMMARY	
-------------	---------------------------------	--

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8100	TESTING MATERIALS AND WORKMANSHIP				
81.02	Other special tests requested by the engineer	Provisional Sum	1		
8100	TOTAL CARRIED TO SUMMARY				



PART C3: SCOPE OF WORK

Document reference	Title	No of page
	This cover page	1
C3.1	<i>Employer's Works Information</i>	3 - 47
C3.2	<i>Contractor's Works</i>	47
Total number of pages		47

C3.1 EMPLOYER'S WORKS INFORMATION

Contents

PART C3: SCOPE OF WORK.....	1
SECTION 1.....	4
1 Description of the <i>works</i>	4
1.1 Executive overview	4
1.2 <i>Employer's</i> objectives	4
1.3 Interpretation and terminology.....	4
2 Engineering and the <i>Contractor's</i> design	5
2.1 <i>Employer's</i> design.....	5
2.2 Parts of the <i>works</i> which the <i>Contractor</i> is to design	6
2.3 Procedure for submission and acceptance of <i>Contractor's</i> design.....	6
2.4 Review and Acceptance of <i>Contractor</i> Documentation.....	7
2.5 Other requirements of the <i>Contractor's</i> design.....	7
2.6 Use of <i>Contractor's</i> design	7
2.7 Design of Equipment	7
2.8 Equipment required to be included in the <i>works</i>	8
2.9 As-built drawings, operating manuals and maintenance schedules.....	8
3 Construction	9
3.1 Temporary <i>works</i> , Site services & construction constraints	14
3.2 Completion, testing, commissioning and correction of Defects	19
4 Plant and Materials Standards and Workmanship	20
4.1 Investigation, Survey and Site Clearance	20
4.2 Building works	20
4.3 Civil Engineering and Structural Works.....	21
4.4 Electrical & mechanical engineering works.....	21
4.5 Process control and IT works.....	22
4.6 Quality Plan	22
4.7 Storage of existing Plant and Materials.....	22
4.8 Health, Safety and Environmental requirements.....	22
5 List Of Drawings	23
5.1 Drawings issued by the <i>Employer</i>	23
SECTION 2.....	24



6 Management and start up 24

6.1 Management meetings 24

6.2 Documentation Control..... 24

6.3 Safety risk management..... 25

6.4 Environmental constraints and management..... 25

6.5 Quality assurance requirements 37

6.6 Programming constraints 43

6.7 Contractor’s management, supervision and key people..... 45

6.8 Training workshops and technology transfer..... 46

6.9 Insurance provided by the Employer 47

6.10 Contract change management..... 47

6.11 Provision of bonds and guarantees 47

6.12 Records of Defined Cost, payments & assessments of compensation events kept by Contractor 47

7 Procurement..... 48

7.1 Code of Conduct 48

7.2 The Contractor’s Invoices 49

7.3 People..... 50

7.4 Subcontracting..... 51

7.5 Plant and Materials 52

7.6 Tests and inspections before delivery..... 53

7.7 Preparation of post Completion contracts..... 53

7.8 Tests and inspections before delivery..... 53

SECTION 3..... 53

C3.2 CONTRACTOR’S WORKS INFORMATION 53



SECTION 1

1 Description of the works

1.1 Executive overview

Transnet National Ports Authority in the port of East London is in a process of rehabilitating Port View Road situated on the West Bank. Port View Road serves as the only access to the West bank Foreshore, Tanker berth, Grain Elevator, etc. Topographically Port View Road is located along a ridge that has a gradual fall towards the harbour. The road trends in a north west to south east direction until it turns, crossing a railway and then trends from the south west to north east.

The works that the Contractor is to perform involve the widening and rehabilitation of 1.1km of roadway along Port View Road.

The road will be widened from an approximate 6m surfaced width to a 8.6m surfaced plus an addition 120m long lane for truck staging. The rehabilitation comprises of deep insitu recycling and stabilization of the existing gravel base and asphalt surfacing material to form a 300mm C3 Subbase. There will be pioneer layer that will be added as part of the layerworks. The widening and additional lane for truck staging would require full depth excavation and pavement construction with imported material to make up two selected layers and the 300mm thick stabilised subbase layer. The entire roadway would then be overlain by a 80mm asphalt base, and a 40mm asphalt surfacing.

1.2 Employer's objectives

The Employer's objectives are to sustain the current cargo volumes being transported by road via Port View Road which requires an appropriate road width, truck staging lane, and strengthened pavement layers so that the road maintains a suitable function service level. Port View Road provides the primary access to the West bank, Foreshore, Tanker berth and Grain Elevator. Therefore, all heavy vehicles use the road to gain access from the municipal road network to the port facilities.

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AIA	Authorised Inspection Authority
BBBEE	Broad Based Black Economic Empowerment
CEMP	Construction Environmental Management Plan
CD	Compact Disc
CIDB	Construction Industry Development Board
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CRL	Contractor Review Label
CSHEO	Contractor's Safety, Health and Environmental Officer
CM	Construction Manager
DTI	Department of Trade and Industry
DWG	Drawings
EO	Environmental Officer

Abbreviation	Meaning given to the abbreviation
HAW	Hazard Assessment Workshop
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
IP	Industrial Participation
IR	Industrial Relations
IPP	Industrial Participation Policy
IPO	Industrial Participation Obligation
IPS	Industrial Participation Secretariat
IRCC	Industrial Relations Co-ordinating Committee
JSA	Job Safety Analysis
CIRP	Contractor's Industrial Relations Practitioner
Native	Original electronic file format of documentation
PES	Project Environmental Specifications
PHA	Preliminary Hazard Assessment
PIRM	Project Industrial Relations Manager
PIRPMP	Project Industrial Relations Policy and Management Plan
PLA	Project Labour Agreements
PSIRM	Project Site Industrial Relations Manager
PSPM	Project Safety Program Manager
PSSM	Project Site Safety Manager
ProgEM	Programme Environmental Manager
ProjEM	Project Environmental Manager
QA	Quality Assurance
R&D	Research and Development
SANS	South African National Standards
SASRIA	South African Special Risks Insurance Association
SES	Standard Environmental Specification
SHE	Safety, Health and Environment
SHEC	Safety, Health and Environment Co-ordinator
SIP	Site Induction Programme
SMP	Safety Management Plan
SSRC	Site Safety Review Committee

Table 1: Glossary of Terms

2 Engineering and the *Contractor's* design

2.1 *Employer's* design

2.1.1 The *Employer* provides the following:

- Works information
- BOQ
- Designs and drawings

2.1.2 The *Employer* grants the *Contractor* a licence to use the copyright in design data presented to the *Contractor* for the purpose of the *works* (and the *Contractor's* obligation under paragraph 2.2 of the *Employer's Works Information*) ONLY.

2.2 Parts of the works which the *Contractor* is to design

2.2.1 The *Contractor* is to design the following parts of the *works*:

- Temporal works; and

2.2.2 All temporary or permanent *works* designed by the *Contractor* shall remain the *Contractor's* responsibility. The *Contractor* shall appoint suitably qualified and experienced engineers and designers to carry out such work and shall indemnify and hold indemnified the *Project Manager* and *Employer* against any claims and actions that may arise out of the design and construction of such works.

2.2.3 The *Contractor* shall be responsible for full compliance with all codes of practice, design standards, safety, professional procedures, checking, site approval and requirements of the Construction Regulations with regards to the temporary and permanent *works*.

2.2.4 The *Contractor* is responsible in his design for the overall integration of the design of the works with the design of the *Employer* as stated under 2.1 *Employer's* design above for all parts of the works.

2.2.5 Unless expressly stated to form part of the design responsibility of the *Employer* as stated under 2.1 *Employer's* design above and whether or not specifically stated to form part of the design responsibility of the *Contractor* under this paragraph 2.2, all residual design responsibility and overall responsibility for the total design solution for the *works* rests with the *Contractor*.

2.3 Procedure for submission and acceptance of *Contractor's* design

The *Contractor* shall address the following procedures:

- (a) The *Contractor's* documentation shall be issued to the *Project Manager* under cover of the *Contractor's* Transmittal Note, indicating all Contract references (i.e. Project No, Contract No, etc.) as well as the *Contractor's* Project Document Number, Revision Number, Title and chronological listing of transmitted documentation.
- (b) Formats of the *Contractor* data submitted is dependent on the project procedure and shall be specified by the *Project Manager*, upon the notified request of the *Contractor*.
- (c) The *Contractor* shall deliver both hard copies and electronic media copies (CD Rom) to the *Project Manager* at the address stated within the Contract Data.
- (d) All electronic documentation shall be submitted by the *Contractor* in Adobe Acrobat (.PDF) and Native file format.
- (e) Acceptance of documentation by the *Project Manager* will in no way relieve the *Contractor* of his responsibility for the correctness of information, or conformance with his obligation to provide the works. This obligation rests solely with the *Contractor*.
- (f) After review, a copy of the original reviewed/marked-up drawing/document, with the *Project Manager's* consolidated comments and document status marked on the *Contractor* Review Label, is scanned and the hard copy shall be returned to the *Contractor* under cover of the project's Transmittal Note for revision or re-submittal as instructed.
- (g) The *Contractor* shall allow the *Project Manager* 2 weeks to review and respond to the *Contractor's* submission of their documentation, i.e. from time of receipt by the project to the time of despatch.
- (h) On receipt of the reviewed documentation, the *Contractor* shall make any modifications requested/marked-up and resubmit the revised documentation to the *Project Manager* within 2 weeks. Queries regarding comments/changes must be addressed with the *Project Manager* prior to re-submittal.
- (i) Any re-submittals, which have not included the changes/comments identified, will be returned to the *Contractor* to be corrected. The *Contractor* shall re-issue the revised documentation, incorporating all comments and other specified details not included in the previous issue, within 2 working days of receipt of the marked-up document.



2.3.1 The *Contractor* shall undertake design safety reviews as and when requested by the *Project Manager* and/or *Employer*.

2.3.2 Documentation Submission

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard.

2.4 Review and Acceptance of *Contractor* Documentation

The *Contractor* submits all documentation as the 'Works Information' requires to the *Project Manager* for review and acceptance.

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Contractor Document Submittal Requirements' Standard detailed in section 2.3 above.

2.5 Other requirements of the *Contractor's* design

The *Contractor's* design complies with the following:

- (a) The *Contractor* shall be responsible for full compliance with all codes of practice, design standards, safety, professional procedures, checking, site approval and requirements of the Construction Regulations with regards to the temporary and permanent *works*.
- (b) The *Contractor* grants the *Employer* a licence to use the copyright in all design data presented to the *Employer* in relation to the *works* for any purpose in connection with the construction, reconstruction, refurbishment, repair, maintenance and extension of the *works* with such licence being capable of transfer to any third party without the consent of the *Contractor*.

2.6 Use of *Contractor's* design

- 2.6.1 The *Contractor* grants the *Employer* a licence to use the copyright in all design data presented to the *Employer* in relation to the *works* for any purpose in connection with the construction, reconstruction, refurbishment, repair, maintenance and extension of the *works* with such licence being capable of transfer to any third party without the consent of the *Contractor*.
- 2.6.2 The *Contractor* vests in the *Employer* full title guarantee in the intellectual property and copyright in the design data created in relation to the *works*, irrespective of where those *works* may be.

2.7 Design of Equipment

The *Contractor* submits his design details of his proposed principal Equipment to the *Project Manager* for his information only:

- 2.7.1 Details of the *Contractor's* design or proposed design of Equipment shall be shared with the *Project Manager*, not necessarily for his acceptance but as an assurance that the Equipment will be able to allow the *Contractor* to Provides the Works efficiently and without delay.
- 2.7.2 The *Contractor* ensures that his Equipment is safe and that it complies fully with the applicable statutory requirements including the relevant provisions of the Construction Regulations. 2.7.3
- 2.7.3 The *Contractor* provides all qualified operators, special certificates, permits to operate and the like for Equipment as required by the General Machineries Regulations of the Occupational Health and Safety Act 85 of 1993 and submits to the *Project Manager* for his acceptance prior to using the Equipment on the Site and/or Working Areas



2.8 Equipment required to be included in the works

2.8.1 The *Contractor* supplies and delivers all equipment, materials, design drawings, labour, tools, plant, consumables, storage facilities and accommodation and anything deemed necessary to Provide the Works.

2.9 As-built drawings, operating manuals and maintenance schedules

2.9.1 The *Contractor* provides the following:

(a) As-built drawings

- (i) The *Contractor* allows for the updating of all Transnet's and OEM drawings, documents and service / operating manuals with new part numbers and procedures to the Supervisors' acceptance after completion of all works on the structure.
- (ii) The *Contractor* provides a full set of new detailed as built drawings for all the new installations / modifications to the existing structure(s).
- (iii) The *Contractor* provides a parts list for all parts supplied and installed, as well as a recommended spares and wear and tear part list if/where applicable.
- (iv) As-built drawings are due to the *Project Manager* 14 days before the *Works* completion. All submissions are in triplicate.
- (v) By submitting drawings, the *Contractor* represents that he has determined and verified all site measurements, site instruction criteria, materials, catalogue numbers and similar data, or will do so, and that he has checked and co-ordinated each of his drawings with the requirements of the *Works* and the contract documents, taking into account drawings of all other relevant disciplines.
- (vi) At the time of submission, the *Contractor* informs the *Project Manager* in writing of any deviation between the approved drawings packs and the requirements of the contract documents.
- (vii) The *Supervisor* and *Project Manager* will review and approve drawings with reasonable promptness (so as not to cause a delay) only for conformance with the design concept and the contract requirements.
- (viii) The *Supervisor* and *Project Manager* may, at his discretion and depending on the number of discrepancies, require amendment and resubmission prior to approval. Drawings are resubmitted until approved prior to any portion of the *Works* related to the drawings being commenced.
- (ix) Should the *Contractor* during drawing amendment, alter any portion of his drawings not specifically required by the *Supervisor* and *Project Manager*; he points this out in writing when resubmitting the drawing.
- (x) Approval of the *Contractor's* drawings is in no way indemnifies him from being responsible for the correctness of the drawings and satisfactory operation of the installation.

(b) Operating manuals and maintenance schedules

- (i) The purpose of these documents is to simultaneously provide a permanent and accurate record of all the equipment provided as well as a usable guide in simple language covering operating, maintenance and fault finding procedures.
- (ii) The *Contractor* shall submit the operating manuals and maintenance schedules 14 days prior to completion of the works. These documents shall be submitted in both PDF and hardcopy form for the *Project Manager* and *Supervisor* to review and approve with reasonable promptness so as not to cause a delay.
- (iii) Three copies of Operating and Maintenance Manuals shall be supplied. A Draft copy of the manual shall be submitted for approval simultaneously with the drawings for manufacturing purposes.



- (iv) The manuals shall be securely bound in A4 size, hard backed plastic/waterproof 4-ring binders, with clear pockets on the spine and front cover for the insertion of title slips, giving the Contract Number, Scheme, Dam and a description of the equipment supplied.
- (v) Drawings larger than A3 size, index and other title pages shall be contained in separate plastic pockets, bound in the appropriate section.
- (vi) The sections shall be separated by plastic dividers, clearly and visibly marked to match the index, and shall be set out as follows:
 - Title page
 - Index
 - Specification and Technical Schedules
 - General description with test certificates and final test certificate relating to any tests carried out.
 - Operating Instructions: These shall be clear, concise and easy to follow and must include, where applicable, pre-start, safety and shut down procedures.
 - Routine maintenance and lubricating schedule.
 - Fault diagnosis and repair procedure.
 - Detailed schedule of plant components giving materials, corrosion protection, part numbers, etc.
 - Spare parts list: Suppliers/Agents details must be provided.
 - Drawings. They shall include; general arrangements, assembly drawings, hydraulic and electrical diagrams, parts and material list in A3 and flow discharge curves. Suppliers/Agents ORIGINAL brochures and instrumental literature shall also be incorporated in the manual.

2.9.2 **As-Built/Final Documentation**

In undertaking the '*Works*' (including incidental services required), the *Contractor* shall conform and adhere to the requirement of the *Contractor* document submittal requirement included in this Work Information under the section above.

2.9.3 **Installation, Maintenance and Operating Manuals and Data Books**

In undertaking the '*Works*' (including incidental services required), the *Contractor* shall conform and adhere to the requirement of the *Contractor* document submittal requirement included in this Work Information under the section above

3 Construction

3.1 Scope of works

Based on the criteria that were performed, it was founded that asphalt surfacing is the better solution to conduct the rehabilitation of port view road. The FEL 4 scope of work for asphalt surfacing is detailed as follows:

- The road will be widened from an approximate 6m surfaced width to an 8.6m surfaced width.
- Clearing and grubbing of the top grass layer to cater for the widening.
- The widening will need a full depth excavation
- Pavement construction with imported material to make up two selected layers



- 300mm thick cement stabilised subbase layer for the 120m long lane for truck staging
- Application of prime coat
- Deep insitu recycling and stabilization of the existing gravel base
- asphalt surfacing material to form a 300mm C3 Subbase
- The entire roadway would then be overlain by an 80mm asphalt base, and a 45mm asphalt surfacing.
- Replace existing guardrails
- Construct new drainage system, culverts, kerbs, concrete channelling, chutes and downpipes and concrete linings for drains.

3.2 Applicable standardized specifications:

1200	General Requirements and Provision
1300	Contractors Establishment on Site and General Obligations
1400	Housing, Offices and Laboratory for the Engineers Site Personnel
1500	Accommodation of Traffic
1700	Clearing and Grubbing
2100	Drains
2200	Prefabricated Culverts
2300	Concrete kerbing, concrete channelling, chutes & downpipes, concrete lining for open drains
3100	Borrow Materials
3300	Mass Earthworks
3400	Pavement layers of gravel material
3600	Crushed Stone Base
4100	Prime Coat
4200	Asphalt Base Surfacing
5200	Gabions
5600	Road Signs
5700	Road Markings
5800	Landscaping and Planting Plants
5900	Finishing the road and road reserve and treating old roads
8100	Testing Material and Workmanship
D1000	Day-works

Table 2: Applicable Standards

3.3 Project Specific Specification

PSS01 Cable Ducting

1. CONSTRUCTION

i. EXCAVATION OF TRENCHES

A. Trench Widths and Depths

Subject to the requirements of SANS 1200LC, trenches for ducts for telephone and low-tension (up to 500 V) cables shall be excavated to widths not less than those shown on Drawing 1.C-I for each particular duct or nest (batch) of ducts, as applicable.

Subject to the requirements of SANS 1200LC and unless otherwise shown on the drawings, trenches shall be excavated to such a depth that, after the duct or nest (batch) of ducts has been laid as shown on Drawing. There is a minimum cover to ground level of at least:

- a) 600 mm for telephone services,
- b) 900 mm for high-tension electric cables, and
- c) 600 mm for low-tension electric cables.

B. Bedding and Compaction of Bedding

Trench bottom.

The Contractor shall construct the trench bottom in accordance with the relevant requirements of Sub clause 5.5 of SABS 1200 DB. Bottom and authorized the laying of bedding.

Bedding

Bottom layer. Subject to the provisions of SANS 1200LC and except where otherwise required in terms of the drawings or the project specification, a layer of thickness 100 mm shall be placed in the bottom of the trench and well compacted before the duct(s) are laid.

Other layers. After the duct have been laid, the surrounding space shall be filled in and well compacted (when relevant. by means of the tamping tool referred to in 4.2) until the thickness of the bedding layer over the duct(s) is, subject to the provisions of SANS 1200LC and except where otherwise required in terms of the drawings or project specification, at least

- a) 150 mm over the top of ducts of diameter 75 mm and less,
- b) 100 mm over the top of ducts of diameter larger than 75 mm; and
- c) 150 mm over the top of the top row of ducts in a multi-layer installation.

Bedding around a duct or a nest of ducts shall be carried out as laying proceeds. Bedding material shall be placed around and over the duct(s) and thoroughly and evenly compacted, and compaction shall be so done that ducts are not disturbed, or joints impaired in any way.

C. DUCT LAYING

Straight Laying.

Ducts shall be laid and jointed true to line and shall be evenly supported for their full length on the bedding, which shall be evenly and thoroughly compacted.

Alongside the trench, care shall be taken to avoid straining of the joints when the ducting is lowered into the trench. The insides of ducts shall be kept clean as they are laid.

Curved Laying.

A change of direction or grade of a duct is permissible only in the case of ducts for telephone cables, and shall be achieved by offsetting individual duct lengths by not more than 35 mm for each 3 m of duct length.



Draw Wire.

A single strand of galvanized iron draw wire of nominal diameter 2,5 m shall be inserted through each length of ducting after proving has been completed. Least 2m, neatly coiled, shall be left at each end of each length of ducting. Be plugged to prevent the ingress of dirt.

Draw Pits.

If draw pits are included in the contract, they shall be constructed where shown on the drawings or ordered.

Unless otherwise shown on the drawings, draw pits shall be of internal size at least 600 mm x 600 mm and of depth at least 1m and shall be built in 230 mm brickwork on a concrete base slab of thickness at least 150 mm. The ducts shall be securely built in to the brick walls. Manhole covers at a level that conforms to the existing road or footway level and camber. The type of cover shall be one of the following, as scheduled:

- a) An approved footway-type or roadway-type frame and cover, as applicable, for telephone services; or
- b) A Type 2A circular manhole cover and frame (for use in roadways) or a Type 6 square manhole cover and frame (for use elsewhere than in roadways) complying, in each case, with the relevant requirements of SABS 558.

D. BACKFILLING AND COMPACTION.

The relevant requirements of Sub clauses 5.6 and 5.7 of SABS stand 1200 DB shall apply.

E. CONCRETE ENCASEMENT.

Where so required, ducts shall be encased in concrete in accordance with the requirements of the project specification.

F. MEASUREMENT AND PAYMENT

Material will be measured in meters or m³

Items will be provided for trenches of various widths and depths according to size and number of ducts as shown on the applicable drawing.

Where measured volumetrically in terms of Sub clause 8.1.2(a) of SABS 1200 DB, the volumes of duct and cable trench excavations will be computed from each length and the invert depth indicated on the drawings or the depth to the bottom of the specified bedding layer, whichever is the greater, and from the base width determined from the relevant side allowance given on the applicable drawing.

The rate shall cover the cost of complying with the safety and protection requirements of 5.1.2 (except where particular items are scheduled to cover particular cost), excavation, backfilling, compacting, and disposing of surplus material. If there are any extra over excavations of either or/and intermediate, hard rock, boulder class A and B, they will be paid using metres.

The rate shall cover the additional cost of the excavation and the handling of the more difficult material and, in the case of rock, of the disposal within a distance of 0.5 km and the replacement of the higher proportion of unsuitable material.

Excavate unsuitable material from trench bottom and dispose of it (provisional) measured in meters.

The volume will be computed from the trench width determined in accordance with 8.2.2(a) and the additional depth ordered.

The rate shall cover the cost of the excavation of the additional depth in any material and the disposal of it.

Imported bedding material, where ordered will be measured in meters



Separate items will be scheduled for each selected material obtained from designated sources.

The rate shall cover the cost of acquiring, loading, and transporting the material from the designated source, and of distributing the material along the length of the trench.

Draw pits/manholes will be measured in number of manholes or pits.

Separate items will be scheduled for different sizes of draw pits and manholes.

Cost of additional excavation, disposal of surplus excavated material, supplying materials, and constructing the draw pit or manhole, as applicable, complete in accordance with the details shown on the drawings.

Cable markers

- Route markers will be measured in number of items.
- Kerb marks will be measured in number of items.

The rate shall cover the cost of the manufacture and installation of the markers, the painting, inscribing, or stamping (as applicable) of the identification marks on the markers or kerb (as relevant), and of preparing and submitting the record of all cable route markers (see 3.4, 5.9, and 5.10).

Bidders must take into consideration that the following works may only be constructed using labour-based construction methods:

- Excavation to expose existing services.
- Brick laying.
- Assisting with the placing of concrete.

Where Bidders propose to use additional labour-based methods, the methods must be stated as well as the activities. It will reflect positively on the Bidder's bid if he should use more labour-based methods.

3.3 Traffic management plan

This traffic management plan is to be read in conjunction with traffic diversion drawing provided. The traffic management during construction will be as follows:

- There will be a road works ahead notification sign at 300 – 500m, followed by
- The stop sign at 120 – 250m, thereafter
- An advanced warning area;
- A 10m minimum temporary stop sign;
- A stop/go flagmen control;
- A 10 – 20m termination area;
- An activity area; and
- A second 10 – 20m termination area

All the above will happen on the side the contractor is not working on. Below is the plan on the side he will be working on:

- There will be a transition area;
- A 30 – 40m buffer zone;
- A 600m working zone;
- A second 30 – 40m buffer zone;



- A second transition area;
- Advanced warning area;
- The stop sign at 120 – 250m; and
- There will be a road works ahead notification sign at 300 – 500m

This traffic management plan is to be read in conjunction with the traffic diversion drawing.

3.4 Temporary works, Site services & construction constraints

3.4.1 Employer's Site entry and security control, permits, and Site regulations

The *Contractor* complies with by following requirement of the *Employer*.

- (a) *Employer's* Site entry is either from the East Bank main entrance at Hely Hutchinson Road or through the prison gate, off Dr Zahn Road.
- (b) Access to site will be made available for the duration of the project for which the services will be rendered. Prior to accessing the Site, all contracting parties responsible for the delivery of the services will be required to register as Supplier/*Contractor* at the security services centre (i.e. CRD building on Hely Hutchinson Road). This shall only be done when the *Contractor's* staff undergoes full safety and site induction to be conducted by the *Employer's* SHE department.
- (c) The *Contractor* will be required to have a construction site permit. The *Contractor* shall submit I.D. copies of his/her staff members who will be working on the site. The *Employer* will issue access cards/permits valid for the duration of the contract.
- (d) The *Contractor* shall make provision in his price to allow for a security guard on the site. The *Employer* shall not be held liable for any loss, theft and damage at the site.
- (e) The *Employer* has zero tolerance on any safety related incidents. The *Contractor* will not be allowed to access the Site if he/she has tested positive for alcohol consumption or drug use. This is a daily routine done by the *Employer* to all port users including contractors, suppliers, etc.

3.4.2 Restrictions to access on Site, roads, walkways and barricades

The *Contractor* complies with the following access / egress permissions and restriction for personnel and Equipment within the Site boundaries of the *Employer*.

- (a) The *Contractor* shall ensure that staff members do not move about in areas where they are not permitted to be.
- (b) Staff members shall also refrain from entering buildings occupied by the *Employer*, unless required for specific work purposes.
- (c) Staff members shall refrain from moving along private roads and service roads, without the necessary authorisations and permits.
- (d) All *Contractor's* staff and labour working within Port's boundary complies with *Employer's* operational safety requirements and are equipped with all necessary personnel protective equipment (PPE).
- (e) The *Contractor* shall provide adequate safe transport for all Site staff members between the construction site and *Contractor's* yard, as well as transport to and from Site.
- (f) The *Contractor* must adhere to the COVID 19 screening requirements at all entry and exit points of the Port. If the contractor or its employees tested positive during the screening, entry will not be permitted.

3.4.3 People restrictions on Site; hours of work, conduct and records:



The *Contractor* complies with the following hours of work for his people (including Subcontractors) employed on the Site:

- Monday to Friday – 07:30 to 16:30.

The working hours shall be in accordance with the requirements of South Africa labour legislation and industry agreements. Relevant documentation and information shall be provided to the *Project Manager* and/or *Supervisor* on a regular basis, and prior to commencement of any section of the works.

Access to the site outside of these hours should be arranged with the *Project Manager* at least a week prior to the required extended access.

The *Contractor* shall keep daily records of his people engaged on the Site and Working Areas, (including all subcontractors) with access to such daily records available for inspection by the *Project Manager* at all reasonable times.

3.4.4 Health and safety facilities on Site

The *Contractor* complies with the requirements stated under paragraph 2.3 of C3.1 *Employer's* Works Information.

The *Contractor* will be required to adhere to all health and safety requirement as set out in the *Employer's* Health and Safety Specification included in this Work Information as **Annexure A** in additions to those of the Occupational Health and Safety Act (OHSA).

The *Contractor* shall prepare, implement and administer the *Contractor's* Health and Safety Management Plan (CHSMP). The Health and Safety Management Plan must provide a systematic method of managing hazards and implementing control measures.

The *Contractor* must prepare and submit the Safety file to the *Project Manager* for acceptance. The Safety file will then be submitted to the TNPA Legal & Compliance Department for approval before start of the works.

The *Contractor* must adhere to the COVID 19 regulations as gazetted and any additional requirements stipulated by TNPA.

The *Contractor* ensures that its Subcontractors comply with the requirements of the CHSMP.

3.4.5 Environmental controls, fauna & flora, dealing with objects of historical interest

The *Contractor* complies with the CEMP, SES and PES in the construction of the *works*, all as described under paragraph 2.4 of C3.1 *Employer's* Works Information.

The *Contractor* adheres to all environmental requirements as set out in the *Employer's* Standards Environmental Specification (SES) additional to those of the National Environmental Management Act (NEMA). The *Contractor* to read this works information in conjunction with the Environmental specification provided by the *Employer*.

3.4.6 Title to Materials from demolition and excavation

The *Contractor* has no title to Materials arising from any demolition and/or refurbishments in the performance of the *works*. The *Project Manager* shall instruct the *Contractor* how to label, mark, set aside and/or dispose of such Materials for the benefit of the *Employer* in accordance with ECC Clause 73.1.

3.4.7 Cooperating with and obtaining acceptance of others

The *Contractor* performs the works and co-operates with:

- During the course of the contract, departments of Transnet and other contractors may be working in the general area surrounding the working area.
- The *Contractor* must make allowance for the necessity to interface with the activities of others, and to allow for safe access and working conditions.



- The success of the project depends on the effective co-operation of all contractors on site, and the *Contractor*, if necessary, must discuss his programme on a day to day basis with the *Project Manager* to ensure effective co-ordination.

3.4.8 Publicity and progress photographs

The *Contractor* shall supply and erect, at locations approved by the *Project Manager*, two (2) name boards that shall comply as regards to size, painting decorating and details, with the recommendations for the standard of the South African Institute for Civil Engineers. The description of the project and the names and titles of the *Employer*, *Project Manager*, *Supervisor* and *Contractor* to be painted on the boards shall be ordered.

The *Contractor* provides progress photographs on monthly basis in JPEG format to the *Project Manager* as part of the *Contractor's* monthly narrative report.

The *Contractor* does not advertise the contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the *Project Manager*.

3.4.9 *Contractor's* Equipment

The *Contractor* shall provide all the necessary Equipment to provide the *works*. The pricing for all equipment required to complete the *works* shall be deemed to be included in all submitted offers unless exclusions are clearly stated in the offer.

The *Contractor* keeps daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with access to such daily records available for inspection by the *Project Manager* at all reasonable times.

3.4.10 Equipment provided by the *Employer*

Not applicable.

3.4.11 Site services and facilities:

The *Employer* provides the following facilities for the *Contractor*:

- The *Employers* will provide a 50mm isolation valve for portable water and circuit breaker for power at 380 Volts, 3-phase and Neutral, 50Hz for use by the *Contractor* for the duration of the contract.
- The *Contractor* provides a connection to the *Employer's* water borne sewage network. Where no suitable connection to a sewerage system is feasible, portable chemical-type toilets may be used.
- The *Contractor* shall provide everything else including waste disposal, telecom, ablutions, firefighting, lighting etc. necessary for providing the *Works*. Hook up locations and how the hook ups will be done will be confirmed by the *Project Manager*.
- Wherever the *Employer* provides facilities (including, *inter alia*, temporary power, water, waste disposal, telecommunications etc.) for the *Contractor's* use within the Working Areas and the *Contractor* adapts such facilities for use, then the *Contractor* makes good and provides full reinstatement to the land (including all apparatus of the *Employer* and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the *Employer*.

3.4.12 Facilities provided by the *Contractor*:

- (a) The *Contractor* ensures that this site establishment area is compliant with the relevant safety regulations and restrictions, is clearly sign posted, and has a suitable security fence, lighting and the necessary access control gates.



- (b) All costs for preparation of the site establishment area are for the *Contractor's* account.
- (c) The *Contractor* submits details of the layout of his site establishment to the *Project Manager* for his acceptance.
- (d) The *Contractor* installs a metering device, accepted by the *Project Manager*, immediately downstream at each of the *Employer's* connections from where he draws services. The *Contractor* provides the *Project Manager* details of his monthly consumption of potable water and power.
- (e) The *Contractor* is responsible for his own connection to the *Employer's* services and for the reticulation of his services from the connection point. The cost of meters, connections, reticulation and all other usage costs associated with the provision of services are for the *Contractor's* account.
- (f) The *Contractor* provides the *Project Manager* with a "Certificate of Compliance" (COC), by an "Accredited" Person as defined by the OHS Act, in respect of his construction power electrical installation. The *Project Manager* only makes construction power available upon receipt of the COC.
- (g) The Construction Manager (or his nominated representative) conducts routine inspections of the *Contractor's* construction power reticulation and power tools. If found to be un-safe and / or non-compliant with statutory requirements, the electrical power supply is disconnected until the *Contractor* rectifies all defaults.
- (h) The *Contractor* provides, at his cost, a sufficient number of toilets and maintains them in a clean and sanitary working condition.
- (i) The *Contractor* provides temporary lighting and fencing around every section occupied by him during the construction of the Works.
- (j) Such fencing demarcates and secures the construction area. The fencing is erected before any work starts and is removed only upon completion of the work in that area.
- (k) The *Contractor* includes for all costs for such lighting and fencing, including access control into and out of these restricted areas.
- (l) Upon completion, and within one month of the date of acceptance of the Works, the *Contractor* completely removes from the Site and Working Areas all his Equipment, including the foundations of any structures, stores, office accommodation or any other asset belonging to him, and leaves the Site and Working Areas in a tidy condition to the satisfaction of the *Project Manager*.
- (m) No excess or discarded materials or Equipment may be buried or dumped within the port boundary.
- (n) Demolition of all permanent and temporary structures, surfaces etc. shall be first approved by the *Project Manager* prior to the work being carried out.
- (o) The *Employer* does not provide any security for the Site and Working Areas. The *Contractor* provides same and indemnifies and holds indemnified the *Project Manager* and *Employer* against any claims and actions that may arise out of Site and Working Area security.
- (p) No housing is available for the *Contractor's* employees. The *Contractor* makes his own arrangements to house his employees and transports them to site in a closed vehicle specifically designed for passenger transport (bus or similar) which is in a roadworthy condition.
- (q) The *Contractor* provides the following facilities for the *Project Manager* and/or *Supervisor*.
- The *Contractor* shall provide and furnish one office for the use of the *Project Manager* and/or *Supervisor* in accordance with SANS 1200AB.
 - The *Contractor* shall also supply a toilet for the exclusive use of the *Project Manager* and/or *Supervisor*. On completion of the Works, ownership of the buildings and their furnishings shall revert to the *Contractor* who shall remove them from the Site.



- (r) Wherever the *Contractor* provides facilities (either his own or for the *Project Manager* and/or *Supervisor*) and all items of Equipment, involving, inter alia, offices, accommodation, laboratories, Materials storage, compound areas etc., within the Working Areas, then the *Contractor* makes good and provides full reinstatement to the land (including all apparatus of the *Employer* and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.
- (s) Unless expressly stated as a responsibility of the *Employer* as stated under Site services and facilities, all residual requirements for the provision of facilities and all items of Equipment necessary for the *Contractor* to Provide the Works remains the responsibility of the *Contractor*

3.4.13 Survey control and setting out of the works

The contractor will be responsible for conducting surveys on site and produce as-builts.

3.4.14 Excavations and associated water control

The *Contractor* complies with the requirements of excavations and associated water control

3.4.15 Underground services, other services, cable and pipe trenches and covers

As a guide only, the *Project Manager* provides the *Contractor* with drawing(s), if available showing various known existing underground services for his information. The position of these services is approximate and it is possible that other services exist which are not reflected, and which may affect the Works.

The *Contractor* establishes the location of the various existing services, including the two oil pipes situated within the Site and Working Areas, and records all such information on "marked-up" drawing(s) which remain available for reference at all times.

The *Contractor* exercises due care and attention in carrying out any excavation work to avoid damage or disruption to existing services. The *Contractor* accordingly consults the *Project Manager* prior to undertaking any excavation work.

Should the *Contractor* fail to exercise the requisite care and attention in carrying the work, the *Contractor* will be held liable for any claims arising out of damage caused by such.

Where the *Contractor* encounters existing service, cables pipe trenches and covers which were not shown in the drawing(s) provided by *Project Manager's* information, the *Contractor* immediately contacts the *Project Manager*.

3.4.16 Control of noise, dust, water and waste

Before moving Equipment onto the Site, Working Areas and commencing operations, the *Contractor* submits his proposed methods of construction which demonstrate the measures taken to avoid and or reduce any nuisance arising from dust, noise, waste and vibration for acceptance by the *Project Manager*.

3.4.17 Sequence of construction or installation

The *Contractor* will be required to develop a detailed method of construction or installations to safely provide the works and also minimise disruption to port operations.

Sequencing of construction or installation will as per accepted programme reflecting key milestone dates.

3.4.18 Giving notice of work to be covered up



The *Contractor* notifies the *Supervisor* and/or *Project Manager* in writing of the elements of the *Works* which are to be covered up. This notification must be given not less than 24 (twenty four) hours prior to the proposed covering up.

The *Contractor* notifies the *Supervisor* and/or *Project Manager* of the following elements of the *works* which are to be covered up:

- Fill material and earthworks
- Layerworks
- Application of prime
- Ducting

3.5 Completion, testing, commissioning and correction of Defects

3.5.1 The *work* to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the *Works* including the work listed below which is to be done before the Completion Date and in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work listed below has been done and is also free of Defects, which would have, in his opinion, prevented the *Employer* from using the works and others from doing their work.

Item of work	To be completed by
As built drawings of completed works	Within 14 days prior to Completion.
Performance testing of the works in use as specified in paragraph of this Works Information.	To be conducted as the Works progress in order to satisfy the requirements of the Technical Specifications.

Table 3: Work to be done

3.5.2 The *Contractor* is permitted to carry out the following *works* after Completion:

Attend to Defects as and when required by the *Project Manager* and/or *Supervisor* until the Defects period has expired/ lapsed.

3.5.3 Use of the works before Completion has been certified

The *Employer* shall use any part / parts of the *works* before Completion is certified by the *Project Manager*.

3.5.4 Take over procedures

The *Contractor* ensures that the documentation as described under the *Works* Information is presented to the *Project Manager* before Completion.

The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of As-built documents that represent the status of the completed *works* (to include Plant within the *works*) to present to the *Employer*.

The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of Maintenance and Operating Manuals at the earlier of take-over or Completion.

Where the *Contractor* has presented Maintenance and Operating Manuals to the *Project Manager* at take-over, the *Contractor* modifies and updates As-built documents as necessary prior to Completion.

3.5.5 Access given by the *Employer* for correction of Defects

The *Contractor* complies with the following constraints and procedures of the *Employer* where the *Project Manager* arranges access for the *Contractor* after Completion:

Where the *Contractor* has to return to Site after Completion to rectify notified Defects, the *Employer* may either impose the same Site access / egress restrictions as communicated elsewhere under C3.1 *Employer's Works Information* at the starting date / access date stated under Contract Data - Part One, or as the *works* are now in use or the *Employer's* occupation of the Site may be incrementally or substantially changed post Completion, there may be further access / egress restrictions stated here at paragraph 3.2.13 of C3.1 *Employer's Works Information*.

The *Contractor* shall notify the *Project Manager* within at least a weeks of being made aware of the defect.

3.5.6 Performance tests after Completion

The *Contractor* performs the following performance tests after Completion of the *works*:

- The *Contractor* shall ensure the road is up to standard
- The *Contractor* shall ensure that the road has adequate drainage system.

4 Plant and Materials Standards and Workmanship

4.1 Investigation, Survey and Site Clearance

4.1.1 The *Contractor* carries out the following investigations at the Site:

The investigation and testing shall commence as soon as practicably possible after site establishment has begun and shall be completed within a maximum period of 3 days.

The *Contractor* shall inform the *Project Manager* on completion of the investigation and shall submit a repair pack for approval within 5 days following this notice.

Conducts an investigation to determine all the existing services on the site, marks and records all these services.

Maintains a concise record of the conditions of all existing site infrastructure and services

4.2 Building works

4.2.1 In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in the *Works Information* and the *conditions of contract*, the *conditions of contract* take precedence within the ECC Contract.

4.2.2 In case of any conflict in interpretation, ambiguity or discrepancy between any Model Preamble for Trades 1999 (whether standard or written as a particular project specification) contained in this paragraph 4.2 of C3.1 *Employer's Works Information* and specific statements contained elsewhere in C3.1 *Employer's Works Information*, the specific statements contained elsewhere shall prevail, without prejudice to the *Project Manager's* express duty to resolve any ambiguity or inconsistency in the *Works Information* under ECC Clause 17.1.

4.2.3 Within the Model Preambles for Trades 1999, the following amendments and interpretations shall apply:

Where the word or expression "Principal Agent" is used, read "*Project Manager*" or "*Supervisor*" as the context requires.

Where the word or expression "*Contractor*" is used, read "*Contractor*".

Where the word or expression "Engineer" is used, read "*Project Manager*" or "*Supervisor*" as the context requires.

Where the Model Preambles for Trades1999 mention "rates" for measured work and any contractual statements relating to payment, all such statements shall be discounted, with the ECC *conditions of contract* taking precedence.

4.2.4 Within the Model Preambles for Trades 1999, A. GENERAL, the following amendments and interpretations shall apply:



Where the word or expression “bills of quantities” is used, this shall be discounted for the purposes of the *Works Information*. The ECC Contract Data - Part One states the main option to apply within the ECC Contract between the Parties.

- 4.2.5 Within the Model Preambles for Trades 1999, B. ALTERATIONS, B.2 MATERIALS FROM THE ALTERATIONS, CREDIT, ETC and C. EARTHWORKS, C1.4 Materials from demolitions shall not apply. C3.1 *Employer's Works Information* paragraph 3.1.6 states details of the *Contractor's* title (if any) to Materials arising from excavations and/or demolitions and how such Materials are either to be disposed of or re-used in the *works*.
- 4.2.6 Within the Model Preamble for Trades 1999 Q. PLUMBING AND DRAINAGE, Q.24 TESTS shall be deemed to be included within paragraph 3.2.1 of C3.1 *Employer's Works Information*.
- 4.2.7 Within the Model Preamble for Trades 1999 U. EXTERNAL WORKS, U.3.8 Process control tests shall be deemed to be included within paragraph 3.2.1 of C3.1 *Employer's Works Information*.
- 4.2.8 The principles, meanings and interpretation stated and established within paragraphs 6.2.1 to 6.2.8 with respect to the Model Preambles for Trades 1999 equally apply to the other Model Preambles for Trades 1999 references used within this paragraph 4.2 of C3.1 *Employer's Works Information*.

4.3 Civil Engineering and Structural Works

- 4.3.1 The Standard Specifications for Road and Bridge Works for State Road Authorities (1998 edition) prepared by the Committee of Land Transport Officials, (COLTO), as amended, shall apply to this contract. The amendments are those issued by COLTO
- 4.3.2 In certain clauses the Standard Specifications allow a choice to be specified in the project specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this part of the project specifications. It also contains some additional specifications required for this particular contract.
- 4.3.3 The number of each clause and each payment item in this part of the project specifications consists of the prefix B followed by a number corresponding to the number of the relevant clause or payment item in the standard specifications. The number of a new series, new clause or a new payment item which does not form part of a series, clause or a payment item in the standard specifications and which is included here, is also prefixed by B followed by a new number. The new numbers follow on the last clause or item number used in the relevant section of the standard specifications.
- 4.3.4 The tenderer shall note that the standard COLTO specification is based on the COLTO General Conditions of Contract. References to specific COLTO General Conditions of Contract clauses will need to be exchanged for the equivalent clause in the NEC3. The Employer assumes no responsibility for the contractor's interpretation of which is the correct relevant clauses.
- 4.3.5 The terms “Schedule of Quantities”, (used throughout the Standard Specifications) and “Bill of Quantities”, (used in all other documents forming part of this contract), and “Pricing Schedule” are synonymous.

4.4 Electrical & mechanical engineering works

- 4.4.1 Not applicable.

4.5 Process control and IT works

4.5.1 Not applicable.

4.6 Quality Plan

The QCP shall be supplied by the *Contractor* and approved by the *Project Manager* and shall conform to the requirements of ISO 9001 (2000) and shall incorporate the following as a minimum:

- (a) A detailed organisation chart;
- (b) A list of Subcontractors;
- (c) A list of the applicable quality assurance procedures;
- (d) A list of applicable Codes and Standards for design, construction, inspection and tests;
- (e) The *Contractor's* inspection plans;
- (f) Any Subcontractor's inspection plans;
- (g) Provisional programmes for expediting Works to be executed by Subcontractors;
- (h) Procedures to manage the non-conformance of Plant and Materials
- (i) An audit schedule for *Contractor/Subcontractor* activities.

The QCP shall indicate Hold Points and Witness Points proposed by the *Contractor*. The *Supervisor* will determine, in consultation with the *Contractor* and the *Project Manager*, and notify the *Contractor*, the Hold Points and Witness Points to be witnessed by the *Supervisor* and/or the *Project Manager*.

The Taking-Over Certificate shall not be issued to the *Contractor* until all the Hold Points on the QCP have been witnessed and approved by the *Project Manager* or *Supervisor* and/or *Employer* as required.

The *Contractor* shall be responsible for updating the QCP regularly throughout the Contract. The QCP shall be required to demonstrate compliance with the requirements of the Contract.

The *Project Manager/ Supervisor* shall be entitled to audit any aspect of the QCP and details of all procedures and compliance documents shall be submitted to the *Project Manager* or *Supervisor* for information, before each design and execution stage is commenced. When any document of a technical nature is issued to the *Project Manager*, evidence of the prior approval by the *Contractor* itself shall be apparent on the document itself.

The *Contractor* shall maintain the *Contractor's* Data Book for the *Works* at all times, and the *Contractor's* Data Book for the *Works* shall be made available to the *Employer* at all times during the Contract for review and approval by a Third Party Inspector.

4.7 Storage of existing Plant and Materials

Plant and Material to be stored for future use by the *Employer* shall be transported by the *Contractor* to a storage area to be advised by the *Employer*. All Plant and Materials shall as far as practically possible.

4.8 Health, Safety and Environmental requirements

The *Contractor* shall comply with all applicable health, safety and environmental regulations and requirements for all persons entitled to be on the Site.

The *Contractor* shall be responsible for the precautions and measures to ensure the health and safety of all individuals on the Site and temporary areas (if applicable) outside of the Site, but utilised by the *Contractor*, with the prior approval of the *Employer*.



This shall also include any areas that may adjoin those areas or otherwise be affected or potentially endangered by the Works. The *Contractor* shall be responsible for the adequacy, stability and safety of all Site and Temporary Areas operations, methods of construction, all *Contractor's* Equipment, Temporary Works and structures.

The contractor will be required to follow all the Government regulations and any additional measures stipulated by TNPA regarding COVID 19. This includes screening of people who enter and exit their site, wearing of correct PPE, sanitizing stations and maintaining social distance.

The *Contractor* shall comply with the *Employer's* Environmental Management Plan Requirements.

5 List Of Drawings

5.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information.

Drawing number	Revision	Title
XEL010-1001-00	00	Section 1: Layout, Long Section and Cross Section
XEL010-1002-00	00	Section 2: Layout and Long Section
XEL010-1003-00	00	Section 3: Layout, Long Section and Cross Section
XEL010-2001-00	00	Setting Out Data for Section 1,2 and 3
XEL010-3001-00	00	Section 2: Cross Section
XEL010-4001-00	00	Section 1, 2 & 3: Road Marking Layout
XEL010-6001-00	00	Typical Cross Sections, Kerb and Channel Details & Subsoil Drains Details
XEL010-6002-00	00	Grid Inlet Details
XEL010-7001-00	00	Cable Ducting

Table 4: Drawing Register

SECTION 2

6 Management and start up

6.1 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Every second week	East London	<i>Project Manager</i> (and appropriate delegates), <i>Supervisor</i> (as necessary and appropriate delegates) and <i>Contractor</i> (appropriate key persons)
Overall contract progress and feedback	Every last week of the months	East London	<i>Employer, Contractor, Supervisor</i> and <i>Project Manager</i> (and appropriate delegates)
Technical Meetings	Every second week	East London	<i>Project Manager, Contractor, Supervisor, (and appropriate delegates)</i>
Design review meetings	Every month	East London	<i>Project Manager, Contractor, Supervisor, (and appropriate delegates)</i>
SHE meetings	Every 2 weeks	East London	CSHEO, CM, <i>Project Manager</i> , SHEC, ProjEM, etc as appropriate
Risk register and compensation events	Every second week	East London	<i>Project Manager</i> (and appropriate delegates), <i>Supervisor</i> (as necessary and appropriate delegates) and <i>Contractor</i> (appropriate key persons)

Table 5: Management Meeting

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings are to be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings are to be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register are not to be used for the purpose of confirming actions or instructions under the contract as these are to be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

6.2 Documentation Control

In undertaking the '*Works*' (including all incidental services required), the *Contractor* shall conform and adhere to the requirements of the following standards:

- SANS 10111 - Code of Practice for Engineering Drawings, or
- ISO 9001:2000 - Quality Management Systems Requirements.

The *Contractor* is to ensure that the latest versions of the required application software and a suitable 'IT' Infrastructure are in place to support the electronic transmission of documentation.

6.3 Safety risk management

All health and safety matters associated with the works will be dealt with in accordance with Occupational Health & Safety Act, 1993 (Act No. 85 of 1993) and the Transnet National Ports Authority Health and Safety Specifications contained in **Annexure A** to this Works Information.

The *Contractor* shall prepare, implement and administer the *Contractor's* Health and Safety Management Plan (CHSMP). The Health and Safety Management Plan must provide a systematic method of managing hazards and implementing control measures.

The *Contractor* ensures that its Subcontractors comply with the requirements of the SMP.

The *Contractor* performs the *works* having due regard to the HSSP.

The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to the SMP and health and safety issues are as stated in the paragraphs following:

The CM is responsible (in the context of the SMP only) for health and safety on the Site and Working Areas and reports to the *Project Manager*.

The CM specific tasks (in the context of the SMP) are:

- Implement the Employers safety management system.
- Monitor Contractor's compliance to the CHSMP.
- Ensure risk is at an acceptable level.
- Ensure the Contractor's workforce and Construction Management Team is competent.

The PSSM is responsible for ensuring that the *Contractor* complies with the SMP. The PSSM acts on behalf of the *Project Manager*.

The PSSM specific tasks are:

- Ensure that the overall project safety requirements are complied with
- Provide guidance on safety related issues arising during the execution of the project

6.4 Environmental constraints and management

6.4.1 The *Contractor* complies with the following CEMP:

The *Contractor* performs the *works* and all construction activities within the Site and Working Areas having due regard to the environment and to environmental management practices as more particularly described within the SES.

The SES describes the minimal acceptable standard for environmental management for a range of environmental aspects commonly encountered on construction projects and sets environmental objectives and targets, which the *Contractor* observes and complies.

The PES describes more particularly the environmental standards applicable to the *works*, the Site and the Working Areas and sets out variance (including additions) to the SES. The PES may require higher minimal standards than those described in the SES as may be required by the *Project Manager* or Others.

The overarching obligations of the *Contractor* under the CEMP before construction activities commence on the Site and/or Working Areas is to provide an environmental method statement for a particular construction operation at the Site and/or Working Area by the *Contractor* and where requested by the Construction Manager and to comply with the following:

Where relevant, method statements, as detailed in the SES, shall be provided by the *Contractor*. These include, but are not limited to, the following where applicable:

- Establishment of construction lay down area
- Hazardous and non-hazardous solid waste management
- Storm water management
- Contaminated water management
- Prevention of marine pollution
- Hydrocarbon spills



- Diesel tanks and refuelling procedures
- Dust control
- Spoil dumping
- Sourcing, excavating, transporting and dumping of fill material
- Noise and vibration control
- Removal of rare, endemic or endangered species
- Removal and stockpiling of topsoil
- Rodent and pest control
- Environmental awareness training
- Site division
- Emergency procedures for environmental incidents
- *Contractor's* SHE Officer
- Closure of construction laydown area

The *Contractor* shall ensure that his management, foremen and the general workforce, as well as all suppliers and visitors to Site have attended the Induction Programme prior to commencing any *work* on Site. If new personnel commence work on the Site during construction, the *Contractor* shall ensure that these personnel undergo the Induction Programme and are made aware of the environmental specifications on Site.

Where applicable, the *Contractor* ensures that he appoints a suitably qualified Subcontractor, to be approved by the *Project Manager*, to undertake the "Removal of rare, endemic or endangered species". This appointment must be completed at least three weeks before commencement of any other work on Site.

The Protection of the Environment Form shall be signed and submitted to the CM within 14 days after the Contract Date.

Where required, one of the first actions to be undertaken by the *Contractor* shall be to erect and maintain a temporary fence along the boundaries of the Site and Working Areas as applicable, and around any no-go areas identified on the layout plans, to the satisfaction of the *Project Manager*.

The plant search and rescue (if applicable) must be undertaken and completed prior to any Site clearance or any other construction activity that may damage the vegetation can commence on Site.

The *Contractor* must appoint a sufficient number of named assistants to the CSHEO to monitor environmental issues e.g. litter, spills, illegal activities, fence patrol, dust etc. These appointments, along with details of the individuals being appointed and job descriptions, must be sent to the *Project Manager* for his approval.

During the construction period, the *Contractor* complies with the following:

A copy of the SES, and the relevant PES shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including Subcontractors and their staff) as well as suppliers are familiar with and understand the specifications contained in the SES (as amended by the PES).

Method statements that are required during construction must be submitted to the *Project Manager* for approval at least 20 days prior to the proposed commencement of the activity. Emergency construction activity method statements may also be required. The activities requiring method statements cannot commence if they have not been approved by the *Project Manager*.

Where applicable, the *Contractor* shall provide job-specific training on an *ad hoc* basis when workers are engaged in activities, which require method statements.

The *Contractor* shall ensure that any Materials delivery drivers are informed of all procedures and restrictions (e.g. which access roads to use, no go areas, speed limits, noise, etc.) required by the CEMP before they arrive at Site and off load any Materials.

The *Contractor* shall be responsible for rehabilitating and re-vegetating all areas to the satisfaction of the *Project Manager* as detailed in the SES and PES.



The list below is a list of some of the other issues that the *Contractor* must ensure he has planned for to meet the requirements of the environmental specifications. It is not a comprehensive list but serves as a guide:

- Cement and concrete batching
- Workshop and maintenance of plant
- Protection of natural fauna and flora
- Protection of historical and archaeological artefacts

The *Contractor* shall clear and clean the Site and Working Areas and ensure that everything not forming part of the *works* is removed from the Site and Working Areas and that all rehabilitation has taken place in accordance with the PES. An Environmental Closure Certificate has been issued by the SHEC and signed off by the *Project Manager*.

The *Contractor* complies with environmental inspections and audits as contained within Annexure B.

The *Contractor* makes use of the CEMP, SES and PES available at the offices of the *Contractor* on Site. The *Contractor* ensures that all personnel on Site (including Subcontractors) are familiar with and understand the requirements of the CEMP.

6.4.2 The *Contractor* complies with the following SES:

The *Contractor* shall identify the kinds of environmental impacts that will occur as a result of his activities and then prepare separate method statements describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved. These method statements will be prepared in accordance with the requirements set out in the CEMP.

To ensure that environmental issues are taken into account in the establishment of the Site offices and all other facilities on Site.

Scope

The standard applies to all activities relating to the planning of the Site, Site establishment, operation of the Site and closure of the Site.

Site plan

The *Contractor* shall establish his construction camps, offices, *workshops*, staff accommodation and any other facilities on the Site and Working Areas in a manner that does not adversely affect the environment. However, before construction can begin, the *Contractor* shall submit to the *Project Manager* for his approval, plans of the exact location, extent and construction details of these facilities and the impact mitigation measures the *Contractor* proposes to put in place.

The plans shall detail the locality as well as the layout of the waste treatment facilities for litter, kitchen refuse, sewage and *workshop*-derived effluents. The Site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles are located as far away as possible from any water course as possible. Regardless of the chosen Site, the *Contractor's* intended mitigation measures shall be indicated on the plan.

Sewage

Particular reference in the Site establishment plan shall be given to the treatment of sewage generated at the site offices and staff accommodation and at all localities on the Site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the CM.

Safe and effective sewage treatment will require one of the following sewage handling methods: septic tanks and soak-aways, dry-composting toilets such as "enviro loos", or the use of chemical toilets which are supplied and maintained by a Subcontractor. The type of sewage treatment will depend on the location of the Site and the surrounding land uses, the duration of the contract and proximity (availability) of providers of chemical toilets. Should a soak-away system be used, it shall not be closer than 800 metres from any natural watercourse or water retention system. The waste material generated from these facilities shall be serviced on a regular basis.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the *works*. Use of the veld shall not, under any circumstances, be allowed.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. The toilets shall also be placed outside areas susceptible to flooding. The *Contractor* shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such latrines in a clean, orderly and sanitary condition to the satisfaction of the *Project Manager*.

Effluent Management

All effluent water from the camp / office Sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect water sources (streams, rivers, pans dams etc.). Only domestic type wastewater shall be allowed to enter this drain.

Waste Management Objective

To ensure that all waste generated during construction and commissioning of the facilities is properly disposed of.

Examples of typical construction waste which, could be expected on the Site are indicated in the following table:

TABLE 2: EXAMPLE OF CONSTRUCTION WASTE CLASSIFICATION

WASTE	CLASSIFICATION	
	HAZARDOUS	NON-HAZARDOUS
Clean soil		X
Construction debris contaminated by oil or organic compounds	X	
Empty drums (depends on prior use)	X	X
Empty paint and coating containers		X
Waste paint and/or solvent	X	
Waste oil	X	
Phenolic waste	X	
Waste concrete		X
Rubble (not contaminated by oil or organic compounds)		X
Waste containing appreciable properties of fibrous asbestos	X	
Sewerage sludge	X	
Scrap metal		X
Explosive waste	X	
Waste timber		X
Waste Cable		X
PCB waste	X	
Waste plastic		X
Aerosol containers	X	
Batteries, light bulbs, circuit boards, etc.	X	X
Domestic waste		X

Table 6: Waste Classification

Scope

The standard applies to all construction, commissioning and Site activities that may lead to the generation of waste.

Approach

Waste is grouped into general or hazardous, depending on its characteristics. The classification determines handling methods and the ultimate disposal of the Material.

General waste to be expected during construction includes the following:

- Trash (waste paper, plastics, cardboard, etc.) and food waste from offices, warehouses and construction personnel.
- Uncontaminated construction debris such as used wood and scrap metal.
- Uncontaminated soil and non-hazardous rubble from excavation or demolition.

Hazardous waste is waste, which has the potential, even in low concentrations, to have a significant adverse effect on public health and/or the environment. This would be on account of its inherent chemical and physical characteristics, such as toxic, ignitable, corrosive, carcinogenic or other property.

Waste avoidance and minimisation

A ladder approach to waste management is encouraged. Waste should preferably be managed in the following order:

- Prevent: by waste avoidance and minimisation during production
- Recycle: waste recycling, recovery and utilisation
- Treat: waste treatment in order to reduce toxicity and to minimise the quantities of waste
- Disposal: waste disposal, probably by incineration, destruction or landfill

Waste Management

The *Contractor* is responsible for the removal from Site of all waste generated through the *Contractor's* activities. The *Contractor* shall ensure that all waste is removed to appropriate licensed waste management facilities.

- The classification of waste determines handling methods and the ultimate disposal of the Material. The *Contractor* shall manage hazardous wastes that are anticipated to be generated by his operations as follows:
- Characterise the waste to decide if it is general or hazardous
- Obtain and provide an acceptable container with label
- Place hazardous waste material in container
- Inspect the container on a regular basis as prescribed by the *Contractor's* waste environment management plan
- Track the accumulation time for the waste
- Haul the full container to the disposal Site
- Provide documentary evidence of proper disposal of the waste

The Environmental Officer will work in conjunction with the *Contractor's* construction safety and industrial hygiene personnel to create a *Contractor's* Hazardous Materials Management Program. This program will establish the necessary protocol for proper handling and removal of hazardous Materials on the Site.

Information on each hazardous substance will be available to all persons on Site with the EO. Training and education about the proper use, handling, and disposal of the material will be available to all workers who will be handling the Material.

The Environmental Officer must be informed of all activities that involve the use of hazardous substances to facilitate prompt response in the event of a spill or release.

The *Contractor* shall manage NON-HAZARDOUS / GENERAL WASTE that are anticipated to be generated by operations as follows:

- Determine if waste is non-hazardous and obtain containers for waste storage



- Notify waste hauler when container is full so that it can be removed and replaced with an empty

On the Project, however, waste generating entities are directed to control the generation of non-hazardous waste by:

- Eliminating waste generation or reducing the total volume
- Reducing the degree of contamination of waste generated
- Reclaiming materials otherwise considered waste

The *Contractor* shall therefore recycle NON-HAZARDOUS / GENERAL WASTE that are anticipated to be generated by its operations as follows:

Obtain and label recycling containers for:

- Office Waste
- Aluminium and steel cans
- Glass Bottles
- Scrap Metals
- Waste Timber
- And locate them within temporary office building and trailers
- Establish recycled material collection schedule
- Arrange for full bins to be hauled away

Spent batteries, circuit boards, and bulbs, while non-hazardous, require special collection and handling.

Vehicle and Equipment Refuelling Objective

To eliminate / control fuel and oil spillage at refuelling facilities

Scope

The standard applies to all refuelling, lubrication and oil changing requirements on all vehicles and machinery.

Refuelling

Engine driven compressors, pumps, air conditioners, and arc welders can have small leaks (usually oil) that can accumulate to become spills, which require clean up. These leaks become more evident if the equipment remains in the same place for an extended period of time. Damaged fuel tanks, fuel hoses, and fuel pumps can be sources of significant fuel leaks. Hydraulic systems can blow gaskets or hoses resulting in large quantities of hydraulic fluid spilled to the ground and under lock and key arrangements.

Control

No vehicles or machines shall be serviced or refuelled on Site except at designated servicing or refuelling locations, no oil or lubricant changes shall be made except at designate locations, or in case of breakdown or emergency repair.

The *Contractor* shall store fuel and oil at a secure area, which shall be bunded and designed with a liner or paved surface to prevent spillage from entering the ground.

The *Contractor* shall provide details of its proposed fuel storage and fuelling facility to the EO for approval, the design shall comply with the regulations of the *Water Act* (Act 36 of 1998), the *Hazardous Substances Act* (Act 15 of 1973), and the *Environment Conservation Act* (Act 73 of 1989).

Spill Response

The *Contractor* shall comply with the regulations of the *Water Act* (Act 36 of 1998), the *Hazardous Substances Act* (Act 115 of 1973), and the *Environment Conservation Act* (Act 73 of 1989).

The *Contractor* shall provide details for approval of its spill response plan in the event of any spills of fuel, oils, solvents, paints or other hazardous Materials. The plan will show measures to be



taken to remove contaminated soils from Site and demonstrate complete removal of contamination.

The *Contractor* shall instruct construction personnel on the following spill prevention and containment responsibilities:

- Repair all leaks of hydrocarbons or chemicals as soon as possible
- Take all reasonable means to prevent spills or leaks
- Do not allow sumps receiving oil or oily water to overflow
- Prevent storm water run-off from contamination by leaking or spilled drums of oil or chemicals
- Do not discharge oil or contaminants into storm sewer system

If a spill to land occurs, the *Contractor* is responsible for:

- Immediate action to stop or reduce the spill and contain it
- Actions necessary to prevent the spill from contaminating groundwater or off Site surface water
- Disposal of contaminated Material to location designated thereto
- Any spill to water has the potential to disperse quickly; therefore, the spill must be contained immediately using appropriate containment Equipment.

If a spill to water occurs, the *Contractor* is responsible for:

- Immediate action to stop or reduce the spill and contain it
- Notifying the appropriate on-Site authorities
- Actions necessary to prevent the spread of the contamination by deploying booms and/or absorbent Material
- Proper disposal of spilled Material

Spray Painting and Sandblasting

N/A

Dust Management

Objective

The *Contractor* (associated with activities such as earth works, geotechnical surveys, piling, storm water drainage, construction of roads and railways, foundations, brick building, operating workshops, fencing, erecting construction camps, and batch plant activities, etc.) shall submit a dust control plan for approval by the EO.

Scope

Control of dust on the construction Site and access roads

Dust Management

Material in transit should be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin to prevent dust.

Dust to be controlled on unsurfaced access roads and Site roads using sprayed water . The *Contractor* is responsible for managing dust generated as a result of his activities. The CM will be responsible for the dust control of the Site and Working Areas.

Some dust control measures, which are normally applied during construction, are presented in this section for inclusion by the *Contractor* in the *Contractor's* dust control method statement.

These dust-mitigating procedures include the following:

- Limit vehicle speeds on unpaved roads to 20 km/h
- Wash the paved surfaces within the construction area twice a week
- Minimise haulage distances



- Apply water to gravel roads with a spraying truck when required

Environmental friendly soil stabilisers may be used as additional measures to control dust on gravel road and construction area

- Dust suppression measures will also apply to inactive construction areas. (An inactive construction Site is one on which construction will not occur for a month or more.)
- Construction Material being transported by trucks must be suitable moistened or covered to prevent dust generation.
- Strip and store topsoil in separate stockpiles with mounds not exceeding 2m in height to, among other things, to prevent wind-blown dust.
- Minimise disturbance of natural vegetation during right-of-way construction (e.g. transmission lines and erection of fences) to reduce potential erosion, run-off, and air-borne dust.
- Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training).

Water for dust control shall be taken only from approved sources.

Storm Water and Dewatering Management

Objective

To ensure that storm water and dewatering drainage across the Site occurs in a manner that will negate contamination by oils, fuels, litter and other waste and that will prevent erosion of the construction terrace.

Scope

All dewatering activities

Storm Water and Dewatering Management

Water is a valuable resource in the area. Both the quality and quantity of water used by the *Contractor* should be considered in making resource conservation plans.

Potential construction phase impacts on surface water and groundwater are associated with construction are run-off and percolation, dewatering activities, and miscellaneous liquid wastes associated with construction activities.

In general, construction activities may affect water quality and/or quantity of ground water and/or surface water of the area.

The *Contractor* shall be aware that, apart from run-off from overburden emplacements and stock piles, storm water can also be contaminated from batch plants, *workshops*, vehicle wash-down pads, etc., and that contaminants during construction can include hydrocarbons from fuels and lubricants, sewerage from Employee ablutions, even excess fertiliser from rehabilitation areas, etc.

The *Contractor* shall take cognisance of the fact that discharges to controlled waters such as the sea, rivers, or groundwater or to sewerage systems are controlled under the South African Water Legislation.

Surface run-off

Construction activities such as surface grading and excavation will disturb surface areas on Site. This will increase the potential for soil erosion and subsequent sediment transport during periods of precipitation run-off or when excavation dewatering is required. Construction activities also have the potential to change local surface drainage and sediment transport patterns, Site floodplain delineation, and percolation rates into the soil.

Dewatering

Dewatering during the groundwork produces a surface water discharge that may require collection and sedimentation. Dewatering has also the potential to effect groundwater quality and quantity.

Wastewater

Liquid wastes including used solvents, used lubricating oils, chemical flushing agents, spill cleanup wastes, painting wastes, and concrete mixing drum washings, etc., have the potential to affect surface water and groundwater quality.

General

- Temporary drainage must be established on Site during the construction period and until permanent drainage is in place. *Contractors* are responsible for maintaining the temporary drainage in their areas. The *Contractors* must provide secondary drainage that prevents erosion
- *Contractors* must effect good housekeeping in their areas to prevent contamination of drainage water
- The *Contractor* shall clear stagnant water

Specific water Management measures (surface and groundwater) for incorporation by the *Contractor* in the CEMP include the following:

- The *Contractor* shall ensure that no contaminated surface water shall flow off Site as a result of *Contractor* operations. Silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no run-off from the SITE except at points where silt traps are provided.
- If applicable, the *Contractor* shall be responsible for collection, management, and containment within the Site boundaries of all dewatering from all general Site preparation activities. The dewatering water shall be contained within the Site boundaries by sequentially pumping or routing water to and from sub-areas within the Site as the construction activities proceed. No discharge of dewatering water to off Site land or surface water bodies will be allowed.
- On Site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches, and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0,2% or as otherwise indicated.
- Ditches shall be designed to carry a 25-years storm event with velocities in accordance to minimise erosion. Erosion protection shall consist of suitable stabilising surfaces in all ditches
- Culverts shall be designed to ensure passage of the 25-year storm peak run-off flow.
- Both structural and non-structural (vegetative) erosion control measures will be designed, implemented, and properly maintained in accordance with best management practices which will include the following:
 - Scheduling of activities to minimise the amount of disturbed area at any one time
 - Implementation of re-vegetation as early as feasible
 - Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extent feasible at drainage ditches.
 - Compacting loose soil as soon as possible after excavation, grading, or filling
 - Using silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary beams or swales, small sedimentation basins, and gravelled roads to minimise transport of sediment
 - Implementing the erosion and sedimentation control plan and ensuring that construction personnel are familiar with and adhere to the plan
 - Managing run-off during construction
- The *Contractor* shall be responsible for checking and maintaining all erosion and sedimentation controls

Rehabilitation

Objective

To ensure that all areas affected by the project are appropriately rehabilitated and re-vegetated in a manner congruent with the surrounding biophysical environment. The prevention of the spread of alien invasive species.

Scope

All areas affected by the project including laydown areas.

Rehabilitation

The *Contractor* shall rehabilitate their laydown area upon Completion of work on Site. A rehabilitation plan will be submitted to the EO for approval at least six weeks before Completion. The following are critical issues to be included in that rehabilitation plan:

- Details of soil preparation procedures including proposed fertilisers or other chemicals being considered for use.
- A list of the plant species that will be used in the rehabilitation process. Note that these should all be indigenous species, and preferably species that are endemic to the area. The assistance of an appropriately qualified botanist should be sought in developing this list.
- Procedures for watering the planted areas (frequency of watering, methodology proposed).
- An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring the rehabilitation successful).
- Procedures for the prevention of the establishment and spread of alien invasive species.

Noise Management

Objective

To maintain construction noise at the Site within required limits.

Scope

Construction noise at the construction site.

Noise Management

- Keep all Equipment in good working order
- Operate Equipment within its specification and capacity and don't overload machines
- Apply regular Maintenance, particularly with regards to lubrication
- Operate Equipment with appropriate noise abatement accessories, such as sound hoods

Noise control measures for incorporation by the *Contractor* in its noise control plan shall include the following:

- Ensure that the potential noise source will conform to the South African Bureau of Standards recommended code of practice, *SABS Code 0103:1983*, so that it will not produce excessive or undesirable noise when it is released.
- All the *Contractors'* Equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, *SABS Code 0103:1983*, for construction plant noise generation.
- All the *Contractors'* vehicles shall be fitted with effective exhaust silencers and shall comply with *Road Traffic Act (Act 29 of 1989)* when any such vehicle is operated on a public road.
- If on Site noise control is not effective, protect the victims of noise (e.g. ear-plugs) by ensuring that all noise-related occupational health provisions are met. (*Occupational Health and Safety Act (Act 85 of 1993)*).
- Normal machine working hours will be 06:00 – 22:00 Monday to Saturday. Outside these hours machine operations will be subject to approval. This does not define shift hours

Protection of heritage resources

Objective



To ensure the protection of archaeological, historical artefacts, or heritage resources discovered during construction activities.

Scope

Archaeological, historical artefacts or heritage resources discovered on or near the Site.

Archaeological Sites

If an artefact on Site is uncovered, work in the immediate vicinity shall be stopped immediately. The *Contractor* shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the engineer of such discovery. The South African Heritage Resources Agency is to be contacted who will appoint an archaeological consultant. The *work* may only resume once clearance is given in writing by the archaeologist.

Discovery of an item of historical value or stopping the works would fall under compensation events 60.1(4) and/or (7), despite the manner in which the Works Information is written here.

Graves and middens

If a grave or midden is uncovered on Site, or discovered before the commencement of *work*, then all *work* in the immediate vicinity of the graves/middens shall be stopped and the engineer informed of the discovery. The National Monuments Council should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the National Monuments Council, be responsible for attempts to contact family of the deceased and for the Site where the exhumed remains can be re-interred.

Fire prevention

Objective

To minimise the risk of uncontrolled fires.

Scope

All activities on or near the Site that could initiate an uncontrolled fire.

Fire control

Fires shall only be allowed in facilities or Equipment specially constructed for this purpose. A firebreak shall be cleared and maintained around the perimeter of the camp and office Sites. All conditions incorporated in the requirements of the Occupational Health and Safety Act shall also be implemented.

Supply of water for human use

Objective

To ensure that there is an adequate, safe water supply for all personnel on Site.

Scope

Managing the water supply on Site and controlling the abstraction of water from natural resources in the area.

Collection of water from natural resources

No water for domestic use (drinking water or for bathing or washing) shall be abstracted from any water resource (stream, river, or dam) without the express permission of the *Project Manager*. Such permission shall only be granted once it can be shown that the water is safe for use that there is sufficient water in the resource to meet the demand, and once permission has been obtained from the Department of Water Affairs in accordance with the requirements of the Water Act.

Provision of drinking water



Water for human consumption shall be available at the Site offices and at other convenient locations on site. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction Site.

Protection of livestock or game and the collection of firewood

Objective

To prevent illegal activities potentially perpetrated by Site staff and to prevent the killing of any animals trapped in construction *works* or discovered on the construction Site or surroundings.

Scope

Managing the activities of Site staff during and after hours

Poaching of livestock or game

On no account shall any hunting or fishing activity of any kind be allowed. This includes the setting of traps, or the killing of any animal caught in construction *works*.

Killing of animals

On no account shall any animal, reptile or bird of any sort be killed. This specifically includes snakes or other creatures considered potentially dangerous discovered on Site. If such an animal is discovered on Site an appropriately skilled person should be summoned to remove the creature from the Site. Consideration should be given to selection and nomination of such a person prior to Site establishment. Where appropriate, training should be provided to at least two Site staff members.

Collection of firewood

The *Contractor* shall provide adequate facilities for all his staff so that they are not encouraged to supplement their comforts on Site by accessing what can be taken from the natural surroundings. The *Contractor* shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.

Environmental Awareness Training

An Environmental Awareness Program is considered a necessary part of the Construction Environmental Management Plan for the Project. Training of the appropriate construction personnel will help ensure that all environmental regulations and requirements are followed to be defined in the relevant Method Statement to be prepared by the *Contractor*.

Objectives of environmental awareness training are:

- Environmental Management – protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources
- Regulatory compliance – complying with requirements contained in project – specific permit conditions, also complying with requirements in regional and local regulations
- Problem recognition and communication – training personnel to recognise potential environmental problems, i.e. spills, and communicate the problem to the proper person for solution
- Liability control - non-compliance with regulatory requirements can lead to personal and corporate liability.

All individuals on the Project construction Site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have the same degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental Sections and the least for the manual personnel.

The *Contractor* shall keep a record of all the environmental related training of the personnel.

The lines of communication of the various personnel acting on behalf of the *Project Manager* who communicate to the *Contractor* and his keys persons with respect to the CEMP are contained below:



- a) The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to environmental issues are stated in the paragraphs following.
- b) The ProjEM is responsible for ensuring that the *Contractor* complies with the CEMP. The ProjEM acts on behalf of the *Project Manager*.
- c) The CM is responsible (in the context of the CEMP only) for environmental management on the Site and Working Areas and reports to the *Project Manager*. The CM acts on behalf of the *Project Manager*.
- d) The SHEC is responsible, inter alia, for day-to-day environmental management on the Site and Working Areas through the implementation of the CEMP. The SHEC reports directly to the CM.
- e) The EO is responsible for conducting day-to-day tasks required to ensure the CEMP is correctly implemented at the Site and Working Areas. The EO reports to the SHEC and the ProjEM
- f) The CSHEO submits daily, weekly and monthly checklists to the SHEC. The role of the CSHEO is stated under paragraph 6.7 of the Works Information.

The *Contractor* complies with the CEMP, SES and PES. The *Contractor* abides by the instructions of the *Project Manager* regarding the implementation of the CEMP.

6.5 Quality assurance requirements

6.5.1 Quality system

The *Contractor* shall maintain an effective quality system in accordance with the relevant requirements of SABS/ISO9000 Series, or equivalent standard, to ensure and demonstrate that material, workmanship, procedures and services conform to the specified requirements.

A copy of the *Contractor's* Quality Manual may be requested for review by *Employer* followed, at *Employer's* option, by Quality Assessments or Surveillance's to obtain evidence that a satisfactory quality system is being maintained.

6.5.2 Work Procedures Plan

Following a maximum of 1week after Contract Award, the Contractor shall produce a Work Procedure Plan. This Procedure Plan, as a MINIMUM, identifies the following:

- Order Number, Job Title.
- Organogram with nominated personnel, including signatures and initials.
- Scope of Job, Equipment, Structure(s)
- Basis for Designs and Fabrication, e.g. codes and specifications.
- Communication e.g. contacts address, telephone number, facsimile number, numbering systems and formats.
- Bar Chart (Time Schedule) for production, supplies and repair works including Sub-Suppliers.
- Control documents, e.g. issuing and receiving, transmittals.
- Numbering of Documents.
- Specific Procedures and/or General Procedures list to be utilized.
- Internal Quality Audits and/or Surveillance's to be performed with actual dates.

6.5.3 Quality Control Plan

- (a) The *Contractor* shall provide a Quality Control Plan (Inspection and Test Plan) specifying his proposed quality control activities for the entire scope of supply and scope of works. The Quality Control Plan shall incorporate, as a minimum, an **INSPECTION CHECK LIST**. The Quality Control Plan shall reference the procedures, codes and standards which apply to the listed activities, the acceptance criteria, the records to be produced

and similarly it shall incorporate all Sub-contractors and suppliers activities. The Quality Control Plan shall be prepared on the Contractors / Suppliers standard format.

- (b) Deviations from this Quality Control Plan may only be permitted following acceptance in writing by the Engineer and/or the appointed Third Party Inspection Authority.
- (c) The Contractor shall not undertake any work in advance of the review and acceptance of the Quality Control Plan without the written consent of Transnet.
- (d) During the review of the Quality Control Plan / Inspection and Test Plan, Inspection and Test intervention points will be included by Transnet and, where applicable, the Third Party Inspection Authority to indicate their intended monitoring during manufacturing, fabrication and installation.
- (e) The *Contractor* / Supplier shall ensure that any work sub-contracted will be covered by Quality Control Plans / Inspection and Test Plans generated by the relevant Sub-contractor or Supplier.

6.5.4 Pre Inspection Meetings

Pre-inspection meetings may be held at the discretion of the *Employer*. In such cases, the content of the agenda shall include, but not be limited to, the following:

- Documentation: Method of Submission reviews etc.
- Quality Control Plan: Agreement of inspection, witness, review and hold points, Agreement of contacts for notification, etc.
- Code Data book / QC Dossier: Agreement to contents and format.
- QC Procedures: Agreement to Scope.
- AIA: Authorised Inspection Authority requirements.
- Communications: Responsible persons.
- Non-destructive Testing: Personnel qualification, method and extend required.

6.5.5 Inspection

(a) Definition: Inspection means all activities such as measuring, examining, testing, gauging one or more characteristics of material or service and comparing these with specified requirements to determine conformity.

(b) Inspection Point Definition:

- **Hold Point = H:** This indicates an inspection or test which is considered vital to quality, integrity and safe functioning of the material or services and which can only be achieved at this point. The *Contractor* shall not proceed beyond this point beyond this point without written approval by Transnet and/or the appointed Third Party Inspection Authority.
- **Witness Point – W:** This indicates an inspection or test which may be equally as important as a Hold Point, but which can be waived by the appointed Third Party Inspection Authority or Transnet.
- **Review Point – R:** This indicates that information collected is required to be reviewed and approved. The job may continue past the review point, however, if the information is inadequate or does not satisfy the requirements, may necessitate additional work.
- **Inspection Points – I:** During the review of the Quality Control Plan, Inspection points will be added by Transnet and where relevant, the Third Party Inspection Authority to indicate the intended monitoring of the *Contractor's* and/or Subcontractor's quality control.

(c) *Contractor's* Inspection

The *Contractor* shall as a minimum, carry out the inspections as detailed in the Quality Control Plan and maintain the required records for verification by the *Employer* and/or Third Party Inspection Authority. For sub-contracted material or services, the *Contractor* shall ensure that controls are effective, including, where necessary, monitoring at the

Subcontractor's works and retention of the necessary records. Signing-off of the Quality Control Plan progressively by all relevant parties is a mandatory requirement following the indicated inspection activity.

(d) Readiness for Inspection

Material or services shall be deemed ready for inspection by the *Employer* and/or *Project Manager* only when:

- The *Contractor* has firstly carried out his own inspection at the stage identified on the relevant Quality Control Plan and is satisfied that material, workmanship and services meet the specified requirements. Documented evidence shall be maintained by the *Contractor* including signing-off the Quality Control Plan.
- All applicable certificates and quality documents are available for review at the inspection location. Immediately following receipt by the *Contractor* ALL material and certification (including welding consumables), the *Contractor* shall review these certificates and endorse them "Verified to Code/Specification Requirements" including date and name. Immediately following, the material and certification shall be presented to the *Project Manager* and/or the appointed Third Party Inspection Authority for review and endorsement.

(e) Notification for Readiness for Inspection

Notification by fax/email/ telephone is required for both Hold and Witness points at least two (2) working days in advance of "Readiness of Inspection" or as agreed at the pre-inspection meeting. Review points do not require prior notification.

- The *Contractor* shall ensure that the latest revisions of approved drawings and/or procedures with evidence of acceptance by Transnet, his nominated representative or Third Party Inspection Authority are available.
- *Contractors* are advised that it is a condition of Purchase / Contract that all costs of Employer's inspector, *Project Manager* and/or Third Party Inspection Authority will be passed on to the *Contractor* for aborted inspection visits. A visit is considered aborted if:
 - The *Contractor* advises "readiness" for inspection and upon arrival of *Employer's* Inspectors, *Project Manager* or Third Party Inspection Authority, the material or Services and/or the associated documentation is not ready; or
 - If *Employer's* personnel identifies that material or services are to specification such that the *Contractor's* Inspector should have identified the non-conformity prior advising readiness for *Employer's* or Third Party Inspection Authority inspection.

NOTE: An inspection report to this effect shall be generated by the *Employer's* Inspector, *Project Manager* or Third Party Inspection Authority and countersigned by the *Contractor's* duly authorised representative. This report shall form the basis of back-charges to the *Contractor* / Supplier by *Employer*. In addition, a non-conformance report shall be raised by *Employer*, the *Project Manager* or the Third Party Inspection Authority which shall be replied to by the *Project Manager* within twenty-four (24) hours.

(f) Inspection Waiver

Any *Employer's* Witness, or review or Hold point may, at the sole discretion of *Employer*, be waived, which will be followed by an inspection waiver report.

6.5.6 Materials of Construction

All material shall be purchased and certified in accordance with EN 10204 ff. requirements as a minimum. The term "Purchaser" in EN 10204 shall mean the *Contractor*. The certificates shall report mechanical properties in the heat treated condition and must be accompanied by the relevant verified furnace charts.

6.5.7 Assessment/Audit/Surveillance



- a) The *Employer* reserves the right to conduct a Supplier Quality Assessment, prior to the award of any Purchase Order, to verify that the *Contractor's* system complies with the relevant quality standard. Additionally, the *Employer* may conduct a Quality Assurance Audit or Surveillance at any time after the award of a Purchase Order. Four (4) days notification of a QA Audit and twenty-four (24) hours notification of a QA Surveillance will be given by facsimile / email to the *Contractor's* nominated QA/QC representative.
- b) Should the *Contractor's* quality system be found deficient during their assessments, audits or surveillance's, the *Contractor* will be given opportunity to carry out corrective action within a period of time to bring his system up to the required standard. A follow up audit surveillance will be carried out to verify that the *Contractor* has carried out the necessary corrective actions.
- c) If, during a follow-up audit or surveillance, it is found that the required corrective actions have not been carried out, the *Employer* reserves the right to take such actions as necessary to rectify the deficiencies. It is a pre-requisite that the *Contractor* fully supports any such actions
- d) Surveillance by Inspectors will also be carried out by the *Employer* as an alternative method of monitoring the *Contractor's* quality control. This will normally take the form of a verification of a Section of the Quality Control Plan where the physical and documentary evidence will be required to verify compliance with the Quality Control Plan.

6.5.8 Non-Conformities

- a) Non-Conformity is defined as a deficiency in characteristic, documentation or procedure which renders the quality of an item, work or service unacceptable or indeterminate in accordance with specified requirements. Such Non-Conformities shall be identified by the *Contractor/Employer* and/or Third Party Inspection Authority.
- b) Such non-conformities require the issue of a Non-Conformity Report (NCR) by the *Contractor* in compliance with his own QA system. The NCR then becomes the means by which the Non-Conformity is identified and triggers the need for corrective action and measures.
- c) The non-conforming material, work or service shall be reviewed by the *Contractor* in accordance with documented procedures and it might be:
 - o Re-worked to meet the specified requirements
 - o Accepted, with or without repair; or
 - o Re-graded for alternative application; or
 - o Scrapped
- d) All proposed re-working or repair shall, together with the relevant procedures, be firstly reviewed by *Employer* and/or Third Party Inspection Authority where applicable.
- e) In the event that the *Employer's* Inspector and/or Third Party Inspection Authority identifies a Non-Conformity that is not subject to a *Contractor/Supplier* NCR, the *Employer's* Inspector and/or Third Party Inspection Authority will raise an NCR on the *Contractor*. The *Contractor* must issue to the *Employer's* Inspector in writing within twenty-four (24) hours a response indicating the corrective action he propose to make.
- f) Material, work and services which do not conform to requirements shall not be used unless written authority, on the returned NCR, is obtained for the Non-Conformity.
- g) The *Contractor* shall maintain a register of his NCR's and shall submit this register to *Employer* monthly. The *Project Manager* will audit the register. *Employer* reserves the right to request copies of NCR's for review of deviation and disposition.
- h) Corrective actions will necessitate additional inspections and/or tests shall be included in an updated Quality Control Plan which shall be submitted for review to *Employer*.
- i) The *Contractor* shall ensure that his procedures provide for the identification and segregation of all non-conforming materials, work or services.

6.5.9 Recording 'AS-BUILT' sizes

- a) The *Contractor* shall complete the "as-built" details wherein all actual weld sizes, material thicknesses shall be recorded.



- b) The actual point of measurement will be clearly indicated.

6.5.10 Contractor Document Submissions

When the *Contractor* submits his documents for re-view, he shall, where relevant, submit them to the *Employer* document handling nominated contact.

Transmittals shall only cover one item per PO and shall be submitted in complete sets in order to perform a full review, e.g. WPS's, weld procedure, weld map summary, material lists and GA drawings and calculation, etc.

6.5.11 Handover Acceptance System

The purpose of this system is to provide essential handover and acceptance information to all parties engaged in the construction, modification, demolition, refurbishment and commissioning of plant and equipment at the Princess Elizabeth dry dock. The information and guidelines required to achieve a smooth sequence between all construction and commissioning activities, and thereafter the successful start-up operations and transfer of ownership of plant and equipment to the *Employer*, Princess Elizabeth dry dock.

- a) This procedure provides for a sequenced, construction completion and checkout of plant / equipment leading up to the transfer of care, custody and control to the *Employer*.
- b) This procedure adopts a two package handover system:
- Quality Control Dossier
 - Management Package
- c) Quality Control Dossier and Management Package Compilation
- The *Contractor* shall in accordance with this procedure and requirements in the Purchase Order / Technical Specifications, compile the Quality Control Dossier and Management Package with the accepted contents.
 - The *Contractor* shall compile the Quality Dossier which includes the Code Data Book (format as stipulated in this document) in accordance with this procedure to ensure that all requirements have been met and the relevant documents are included in the Quality Control Dossier.
 - For multiple disciplines e.g. new installations, fabrications, modification or welding works, the QC Dossier shall be developed for each discipline or system.
 - Management Package: consists of:
 - Completed "Punch-List", signed off by operations, area manager and the Engineers appointed 16.2 responsible for the area/unit.
 - Drawing Package "as-built"
 - Vendor Data Documentation as per Bill of Material of detail designs and as built documentation.

The Engineer shall:

Collect and compile the Management Package in accordance with this procedure, to ensure all requirements have been met. This ensures that:

- The QC Dossier has been signed off by the *Employer* and the Inspection Authority (where applicable)
- The plant/facility/equipment has been commissioned (or handed over) by and with operations,
- All required performance tests have been successfully carried out by operations and maintenance department,
- Copies of approved test run certificates have been inserted into the Management Package.
- All maintenance documents have been updated and new instructions been inserted.

- d) 'Punch List' category Items:



- Category 1: Items which compromise safety and integrity of personnel, plant, equipment and infrastructure.
- Category 2: Items which require correction prior operational acceptance.
- Category 3: Items which can be rectified after plant start-up and must be completed prior to final acceptance of plant or equipment.

6.5.12 Code Data Book

The Code Data Book shall have the following content and format:

- Cover Page:
- A MANUFACTURER / CONTRACTOR
- B ENGINEERING CONTRACTOR (if applicable)
- C AUTHORISED INSPECTION AUTHORITY (or certifying body)
- D PURCHASE ORDER NUMBER
- E CONTRACT NUMBER
- F EQUIPMENT / PLANT / WORKS DESCRIPTION
- G MANUFACTURERS SERIAL NUMBER (if applicable)
- H CODES AND STANDARDS USED

1. Index of Contents
2. Release of Notes (Contractor/AIA/Client)
3. "As-Built" drawings
4. Authorised Inspection Authority Certificate of Compliance
5. Design Calculations
6. MATERIAL AND CONSUMABLES CERTIFICATIONS
 - 6.1 *Material List*
 - 6.2 *Material Map (Outline Drawings)*
 - 6.3 *Mill Test Certificates marked with item number.*
 - 6.4 *Heat treatment charts, NDE and mechanical testing.*
7. WELDING DOCUMENTS
 - 7.1 *Weld Map(s)*
 - 7.2 *Weld Procedure Specification Summary*
 - 7.3 *Welding Procedure Specifications*
 - 7.4 *Procedure Qualification Records*
 - 7.5 *Welder Performance Qualification Test Record Summary*
 - 7.6 *Weld Consumables Certification*
 - 7.7 *Pre- and Post-heating Procedures*
8. INSPECTION REPORTS
 - 8.1 *Quality Control Plan*
 - 8.2 *Dimensional Inspection Report (sizes etc.)*
 - 8.3 *Heat Charts and Certificates.*
- 9 NON-DESTRUCTIVE TESTING DOCUMENTS
 - 9.1 *NDT Map*

- 9.2 *NDT Procedure Record Summary*
- 9.3 *NDT Personnel Qualification Record Summary*
- 9.4 *NDT Reports*
- 10 PRESSURE TEST DOCUMENTS
 - 10.1 *Applicable Standards*
 - 10.2 *Inspection Authority*
 - 10.3 *Pressure Gauge Calibration certificates*
 - 10.4 *Pressure Test certificate*

6.6 Programming constraints

6.6.1 Tender Program

- (a) A summary program, hereinafter referred to as the "Tender Program" for the duration of the contract are submitted by the *Contractor*, reflecting all Milestone deliverables and Events.
- (b) The level of this program must at least be "compatible" to the Price Schedule columns and or the breakdown of sections in the bills of quantities as applicable. The incidence of Payment Schedules or Cash Flow Forecast, submitted with the *Contractor's* program must be based on this program.
- (c) The *Contractor's* Programs are evaluated by the *Project Manager* to assess the *Contractor's* ability to plan his portion of the project to the extent necessary for the high degree of mutual co-ordination demanded by the project.
- (d) Non-compliance with this specification may lead to the disqualification of the tenderer. At the *Project Manager's* discretion, the *Contractor* may be requested to prepare and submit a new Contract Program.

6.6.2 Initial Program, Contract Program and Subsequent Revisions

- (a) The *Contractor* submits a program within 1 weeks of the date on which he was notified of having been awarded the contract / order.
- (b) Any program submitted which does not supply all the required documentation set out in this document shall be deemed to be rejected, whether or not the *Project Manager* does so in writing.
- (c) This Initial Contract Program, hereinafter referred to as the "Initial Program", is be drawn up at the level of detail necessary in the opinion of the Project Manager to ensure effective control over the work, usually to Level 4 detail.
- (d) A "Summary" or "ham-mocked" program is submitted with the Initial Program. The summarized activities are inserted in such a way that the Milestone Dates as well as major interfaces of services and/or other contracts logically required for the completion of the contract are clearly shown. The start and finish of the summarized or ham-mocked activities are clearly indicated on the detailed network.
- (e) Unless stated to the contrary, the *Project Manager* will examine and comment on the Initial Program within 2 weeks of submission and the *Contractor* amends and submits this program, hereinafter referred to as the "Contract Programme" for approval within a further period of 5 days.
- (f) The *Project Manager* may not in every instance be able to provide all information or working drawings, where applicable, of every aspect of the Works but such non-availability will not be deemed to be an excuse for non-presentation of programs. In such instances the relevant part of the program should be based on the *Contractor's* best estimate with a statement on which assumptions or drawings it is based.
- (g) Should the *Project Manager* so require, or should problems occur during the execution of the contract, the *Project Manager* might request that portions of the program be expanded to enable closer control to be exercised e.g. site construction and



commissioning programs. In such cases the more detailed *Works* fit exactly into the logic and time span of the Contract Program, but may be presented as separate programs.

- (h) Minor revisions to the Contract Program may be introduced from time to time by mutual agreement. Should the *Project Manager* require a major revision to the Contract Program, such revision will be specified to the *Contractor* in writing.
- (i) The *Project Manager* specifies the date by which the *Contractor* is required to submit the revision in question. This date is not, unless otherwise agreed, be less than 2 weeks from the date of notice.
- (j) Revised Payment Schedules are required based on the revised Contract Program. These revisions are made when changes occur in this program and must be updated every month to include actual payments.
- (k) Should the *Contractor* require a major revision affecting the logic or dates of the program, such revision will be specified to the *Project Manager* in writing for approval before the revision is performed.
- (l) A revision to the program does not invalidate the "Date of Completion" in terms of the General Conditions of Contract and as given in the appropriate schedules. Changes to these dates can only be effected through a contract amendment.
- (m) Progress is monitored against the latest revised program and payments controlled by the latest revised Payment Schedule accepted by the *Project Manager*.

6.6.3 Progress Reporting

- (a) The *Contractor* updates the program and supplies the progress reports to show actual and expected progress compared to the latest agreed Contract Program. Progress information may be verified by the *Project Manager* at any stage.
- (b) Progress reports on design, manufacturing, shipping, transport and site progress are submitted separately as per Table 1: Progress Reporting Requirements.
- (c) The methodology to define work content in the progress curves needs to be agreed to between the *Contractor* and *Employer* within 5 days of Contract Award and may include parameters such as man-hours, m3 concrete, tons of steel, length of cable and cable rack to be installed, number of terminations, etc.
- (d) The work content needs to be specifically designed to suit the type of work and to effectively indicate actual progress against planned progress.
- (e) Progress reports are submitted in line with the requirements as specified in the table below.

ITEM	DESCRIPTION	FREQUENCY
1.	General Planning Report and revised network if logic has changed since the previous report.	Weekly
2.	Critical Activities Report. (Look ahead)	Weekly
3.	Milestone Report.	Weekly
4.	Updated Bar Charts.	Weekly
5.	Updated Program Graphs.	Weekly
7.	Progress S-Curves.	Weekly
8.	Expediting Report	Weekly
9.	Milestones of Deliverables	Weekly

Table 7: PROGRESS REPORTING REQUIREMENTS

- (f) The *Contractor* uses Microsoft Projects for his programme submissions or a similar programme software package equivalent to Microsoft Projects 2003 or later version subject to and with the prior written notification and acceptance by the *Project Manager*.

6.6.4 Reporting and monitoring



The *Contractor* submits programme narrative report to the *Project Manager* at weekly intervals in addition to the intervals for submission of revised programmes stated under Contract Data Part One. *Contractor* submits monthly programme narrative report to the *Project Manager*.

The *Contractor* completes an assessment of all activities in progress and to completion to determine percentage complete, forecast completion dates, deviations from the Accepted Programme and proposes remedial actions to rectify deviations.

The *Contractor* shows on each revised programme he submits to the *Project Manager* a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the *Contractor*.

- (a) The *Contractor* submits the programme narrative report detailing the status and performance of operations on the Site and Working Areas; status and performance of operations outside the Working Areas; manpower histograms; plant and equipment histograms; S-curve of overall progress; and critical action items (top 10). Report indicates “progress this period” and “progress to date”.
- (b) The *Contractor’s* weekly programme narrative report, updated and issued weekly, includes:
 - (i) Level 4 Project Schedule – showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted Programme.
 - (ii) 3-week Look-ahead Schedule – showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted Programme.
 - (iii) Manpower Histogram – reflecting actual, forecast and planned activities
 - (iv) Plant and Equipment Histogram – reflecting actual, forecast and planned activities
 - (v) S-curves – reflecting the actual percentage complete versus the planned percentage for the overall contract utilising the earned values.
- (c) The *Contractor’s* monthly programme narrative report is submitted a week before the last Friday of each month, or as required by the *Project Manager*. The report indicates “progress this period” and “progress to date” and include, but is not limited to, the following:
 - (i) Summary of progress achieved during the reporting period.
 - (ii) Latest Accepted Programme.

6.7 Contractor’s management, supervision and key people

(Health, safety and environmental)

The *Contractor* employs a CSHEO, based on the Site, as a key person under ECC3 Clause 24.1.

The CSHEO reports to the PSSM in respect of issues relating to safety risk management. The CSHEO submits the CHSMP to the *Project Manager* for approval and ensures that the *Contractor* implements the CHSMP.

The CSHEO reports to the ProjEM on the Site in respect of issues relating to environmental management. The CSHEO submits the CEMP to the *Project Manager* for approval and ensures that the *Contractor* implements the CEMP.

The CSHEO tasks include but are not limited to:

- Reports a safety incident to the *Project Manager*;
- Attends all SHE meetings, toolbox talks, induction programmes and monitors compliance with the CHSMP;
- Submits daily, weekly and monthly reports and data as required by the CHSMP to the PSSM;
- Reports an environmental incident to the *Project Manager*;



- Undertakes daily, weekly and monthly inspections of the Site and Working Areas as required by the CEMP and submits reports to the ProjEM;
- Monitors compliance with the CEMP and the environmental method statements submitted to the Project Manager; and
- Litter control and ensuring the *Contractor* clears litter from the Site and Working Areas.

Quality management

The *Contractor* employs a QA/QC Manager (CQA/QCM), based on the Site, as a key person under ECC3 Clause 24.1.

The CQA/QCM reports to the *Supervisor*. The CQA submits the PQP to the *Project Manager* for approval and ensures that the *Works* meet the standards stated in the Works Information.

The CQA/QCM tasks include but are not limited to:

- Maintains the comprehensive register of documents required by the PQP;
- Undertakes all inspections and testing required by the PQP;
- Prepares and regularly updates the CDR,

Industrial relations

The *Contractor* employs a Contractor's Industrial Relations Practitioner (CIRP), based on the Site, as a key person under ECC3 Clause 24.1.

The CIRP ensures that all reports and Industrial Relation requests are submitted accurately and in a timely manner to the *Project Manager*.

The CIRP tasks include but are not limited to:

- Dedicated to human resources, industrial relations and any other *Contractor* employee related function;
- Resolve all human resources and industrial relations matters arising from the *Contractor's* employees;

Scheduling

The *Contractor* employs the *Contractor's* Planner (CP), based on site, as a key person under ECC3 Clause 24.1.

The CP is based on the Site and is responsible for all construction programming, planning and reporting as stated under paragraph 2.6 of this Works Information.

The CP tasks include but are not limited to:

- Undertakes the planning and scheduling of all activities comprising the *Works*.
- Ensures the *Contractor* submits the first and all subsequently revised programmes accurately and in a timely manner to the *Project Manager*.
- Ensures the *Contractor* submits programme narrative report to the *Project Manager* at weekly intervals.

The *Contractor* provides an Organogram and Curriculum Vitae's of all his Key people (both as required by the *Employer* and as independently stated by the *Contractor* under Contract Data Part Two) and shows how such key people communicate with the *Project Manager* and the *Supervisor* and their delegates.

6.8 Training workshops and technology transfer



6.8.1 The contractor will provide skills transfer and mentorship as prescribed by the Project Management Act of 2000 and CIDB Standards for Developing Skills through Infrastructure Contract gazette.

6.8.2 The *Contractor* facilitates the following requirements for training Workshops:

- A safety pre-mobilisation Workshop.
- *Contractor* employee safety training programme.
- The *Contractor* utilises local people for staffing up some of his requirements and ensures that there is adequate skills transfer taking place.

6.9 Insurance provided by the Employer

6.9.1 Insurance provided by the *Employer* is contained in the Contract Data – Part 1.

The procedure manual further details the cover to be arranged by the *Contractor* and subcontractors as well as exclusions and deductibles.

The *Contractor* liaises with the *Employer* and the *Project Manager* at the Contract Date to declare the ECC3 contract details to the *Employer's* insurance brokers.

Where the *Works* involve the assembly, erection and installation of Plant, the *Contractor* declares the full replacement value and not the value included in the ECC3 contract.

The *Contractor* liaises with the *Employer* and the *Project Manager* when a claim is made and assists in completing the Claims Advice Forms that are provided.

6.10 Contract change management

6.10.1 The proposed contracting strategy to be used in Execution phase will be the NEC3 Engineering Construction Contract (ECC), Option B (with BoQ) for the appointment of a contractor.

6.10.2 The CIDB grading for this project is level 6 CE.

6.10.3 No additional requirements apply to ECC Clause 60 series.

At the Contract kick off meeting, the *Contractor* will be provided with the format of the standard forms to be used for communication of Contract change management (ECC3 Clause 60).

6.11 Provision of bonds and guarantees

6.11.1 The form in which a bond or guarantee required by the conditions of contract (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

6.11.2 The *Contractor* provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC contract.

6.12 Records of Defined Cost, payments & assessments of compensation events kept by *Contractor*

6.12.1 The *Contractor* keeps the following records available for the *Project Manager* to inspect:

- Records of design employees location of work (if appropriate);
- Records of Equipment used and people employed outside the Working Areas (if applicable).



7 Procurement

7.1 Code of Conduct

Transnet aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Procedures Manual (PPM);
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (B-BBEE); and
- The Anti-Corruption Act.

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices

Transnet is in the process of transforming itself into a self-sustaining State Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

1. *Transnet will not participate in corrupt practices and therefore expects its suppliers to act in a similar manner.*
 - Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with and payments to our suppliers.
 - Employees must not accept or request money or anything of value, directly or indirectly, to:
 - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
 - Win or retain business or to influence any act or decision of any decision stakeholders involved in sourcing decisions; or
 - Gain an improper advantage.
 - There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our "Tip-offs Anonymous" Hot line to report these acts. (0800 003 056).
2. *Transnet is firmly committed to the ideas of free and competitive enterprise.*
 - Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust.
 - Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing B-BBEE spend (fronting)
3. *Transnet's relationship with suppliers requires us to clearly define requirements, exchange information and share mutual benefits.*
 - Generally, Suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
 - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc.);
 - Collusion;
 - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, B-BBEE status, etc.);
 - Corrupt activities listed above; and
 - Harassment, intimidation or other aggressive actions towards Transnet employees.



- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

Conflicts of Interest

1. *A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet.*
 - Doing business with family members
 - Having a financial interest in another company in our industry

7.2 Technical evaluation criteria

7.2.1 Below is the technical evaluation criteria that will be used to measure the *Contractor*. A detailed technical evaluation criteria will be supplied by the Employer.

Quality criteria	Scoring
Experience of Tenderer/Company (including its team of specialised subcontractors) in this type of work (i.e. renovation of heritage buildings)	20
Capability and capacity of the Key Personnel to support the execution of the works based on their detailed CV's on the previous similar project experience. All personnel to be in employ of the bidder, proof submitted in the form of payslip, appointment letter and employment contract. A letter of intent for personnel outside the employ of the bidder to be included with CV.	20
Proposed Approach/ Methodology/Method Statement: Bidders exhibits a clear understanding of the Project and has shown correct sequencing with a concise method statement for all activities incorporating best practices.	25
Work Plan or Schedule or Programme: Submission of work organisation programme and schedule listing	15
Quality Management and inspection tests.	5
Environmental Compliance	5
Safety & Health Compliance	10

Table 8: Evaluation Criteria Scoring

7.3 The Contractor's Invoices

- 7.3.1 When the *Project Manager* certifies payment (see ECC Clause 51.1) following an assessment date, the *Contractor* complies with the *Employer's* procedure for invoice submission.
- 7.3.2 The invoice must correspond to the *Project Manager's* assessment of the amount due to the *Contractor* as stated in the payment certificate.
- 7.3.3 The invoice states the following:
Invoice addressed to Transnet SOC Ltd;



Transnet SOC Limited's VAT No: 4720103177;

Invoice number;

The *Contractor's* VAT Number; and

The Contract number.

The invoice contains the supporting detail.

7.3.4 The invoice is presented either by post or by hand delivery.

7.3.5 Invoices submitted by post are addressed to:

Transnet National Ports Authority
P.O. Box 101
Quigney
East London
5201

For the attention of the Project Manager, Transnet National Ports Authority

7.3.6 Invoices submitted by hand are presented to:

Transnet National Ports Authority
CRD Building
1 Hely-Hutchinson Road
Quigney
East London

For the attention of the Project Manager, Transnet National Ports Authority

7.3.7 The invoice is presented as an original.

7.4 People

7.4.1 The *Contractor* shall employ suitably qualified and certified persons are allocated to tasks.

7.4.2 The *Contractor* performs the *works* having due regard to the PLA that are negotiated between the *Employer* and the appropriate trade unions on this contract.

7.4.3 The *Contractor* complies with the requirements of the IRCC involving the engineering construction *Contractors* engaged (including all future *Contractors*) by the *Employer* [include details as appropriate ex:

7.4.4 The roles and responsibilities of the various personnel acting on behalf of the *Project Manager* with respect to IR issues are stated in the paragraphs following:

The PIRM is responsible for ensuring that the Contractor complies with the PIRPMP. The PIRM acts on behalf of the *Project Manager*.

7.4.5 The PIRM specific tasks are:

- To complete the PLA prior to the Contract Date; and
- To assign specific duties to the PSIRM.

7.4.6 The PSIRM is responsible for IR (to include the PLA) on the Site and Working Areas and reports to the *Project Manager*.

7.4.7 The SIRM is responsible, *inter alia*, for day-to-day IR on the Site and Working Areas through the implementation of the PIRPMP. The SIRM reports directly to the PSIRM and the *Project Manager*.

7.4.8 The SIRM specific tasks are:

- To liaise with the Contractor prior to the commencement of construction activities (as per the Contractor's programme accepted by the Project Manager) with respect to IR issues under the SIP.



7.4.9 B-BBEE and preferencing scheme

Points will be awarded to tenderers based on preferencing using the balanced Department of Trade and Industry (DTI) scorecard. The application of the Broad-Based Black Economic Empowerment recognition levels and score preferencing points are as follows:

Contribution Level	Qualification Points on the generic scorecard	Broad-Based BEE Recognition Level	Preferencing Points Scored
Level 1	Greater than or equal to 100 points	135%	10
Level 2	Greater than or equal to 85 points but less than 100 points	125%	9.26
Level 3	Greater than or equal to 75 points but less than 85 points	110%	8.15
Level 4	Greater than or equal to 65 points but less than 75 points	100%	7.41
Level 5	Greater than or equal to 55 points but less than 65 points	80%	5.95
Level 6	Greater than or equal to 45 points but less than 55 points	60%	4.44
Level 7	Greater than or equal to 40 points but less than 55 points	50%	3.70
Level 8	Greater than or equal to 30 points but less than 40 points	10%	.74
Level 9	Less than 30 points	0%	0.00

Table 9: BBBEE and preferencing

On the basis the tenderer with a B-BBEE recognition level of 135% will achieve 10 points, and the points will be allocated accordingly on a pro-rata basis as per the table above.

In addition to the above, provision is made for the case where a tenderer has greater than 50% black ownership. In this instance, provided the requisite documentary evidence is supplied, the tenderer will then be awarded preference points one level above that awarded based on the DTI scorecard. For example, a tenderer with > 50% black ownership obtaining a Level 6 contribution equating to 4.44 points will be awarded 5.95 preferencing points (Level 5).

Tenderers claiming Preference Points must submit together with the tender document their generic scorecard, evaluated by an independent accreditation agency. Transnet therefore requires tenderers to have been accredited by one of the various SANAS Accreditation Agencies in accordance with the latest relevant Codes of Practice applicable not more than 3 months prior to the date of tender. Should the B-BBEE rating not be provided, Transnet reserves the right to award no points and/or declare the tender void. Transnet also reserves the right to carry out an independent audit of the tenderers scorecard components at any stage from the date of close of the tenders until completion of the contract.

Tenderers with no accreditation will score zero points for preferencing.

7.5 Subcontracting

7.5.1 Preferred subcontractors

The Contractor may use any specialists and suppliers as his Subcontractors

7.5.2 Subcontract documentation, and assessment of subcontract tenders

There are no constraints on how the Contractor is to prepare subcontract documentation, whether use of the NEC system is compulsory or not and how subcontract tenders are to be issued, received, assessed and awarded.

Where the Contractor employs a Subcontractor who constructs or installs part of the works or who supplies Plant and Materials for incorporation into the works which involves a Subcontractor



operating on the Site and/or Working Areas, then the Contractor ensures that any such Subcontractor complies with the CEMP, SES and PES (described under paragraph 2.4 of the Works Information) as appropriate and that the subcontract documentation places back-to-back obligations on the Subcontractor which reflect the Contractor's obligations under the CEMP, SES and PES, all within the Contractor's Quality Management System as per paragraph 2.5 of the Works Information.

Where the Contractor employs a Subcontractor who constructs or installs part of the works or who supplies Plant and Materials for incorporation into the works which involves a Subcontractor operating on the Site and/or Working Areas, then the Contractor ensures that any such Subcontractor complies with the PIRPMP (described under paragraph 4.1.1 of the Works Information) as appropriate and that the subcontract documentation places back-to-back obligations on the Subcontractor which reflect the Contractor's obligations under the PIRPMP, all within the Contractor's Quality Management System as per paragraph 2.5 of the Works Information.

The Contractor invites a minimum of three (3) subcontract tenders for any of the element(s) of the works he wishes to subcontract.

7.5.3 Limitations on subcontracting

The Contractor may subcontract certain specialised work, however, the Contractor shall not subcontract more than 25 percent of the whole of the contract.

Where under the CEMP as described under the Works Information, the Contractor is required to remove an animal, reptile or bird from the Site and/or Working Areas, the Contractor engages a Subcontractor who is a specialist and qualified for the removal of such animal, reptile or bird (to include the removal of rare, endemic or endangered species). The Contractor's attention is drawn to ECC Clauses 26.2 & 26.3.

7.5.4 Attendance on Subcontractors

The subcontractor form part of the Contractor personnel and may from time to time be required to attend meetings including risk reduction meetings and others as and when required to attendance.

Contractor shall manage any attendance required for any particular Subcontractor.

7.5.5 The Contractor requires a Subcontract, where an NEC3 contract is used, to state the same main option as this contract between the Contractor and the Employer Insert relevant details

7.5.6 Where under the CEMP as described under paragraph 6.4 of the Works Information, the Contractor is required to remove an animal, reptile or bird from the Site and/or Working Areas, the Contractor engages a Subcontractor who is a specialist and qualified for the removal of such animal, reptile or bird (to include the removal of rare, endemic or endangered species). The Contractor's attention is drawn to ECC Clauses 26.2 & 26.3.

7.6 Plant and Materials

7.6.1 Quality

The Contractor provides Plant and Materials for inclusion in the works in accordance with SANS 1200A sub-paragraph 2.1, unless otherwise stated elsewhere in the Works Information provided by the Employer. All Plant and Materials are new, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this Works Information or as may be subsequently instructed by the Project Manager.

Where Plant and Materials for inclusion in the works originate from outside the Republic of South Africa, all such Plant and Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

The Contractor replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the Project Manager and the Supervisor on each occasion where replacement is required.

7.6.2 Plant & Materials provided "free issue" by the Employer



The Employer will not be providing any Plant and Materials for the Contractor to use in the works. The Contractor shall provide all Plant and Materials necessary to provide the works as required by this Works Information.

7.7 Tests and inspections before delivery

The Contractor submits to the Supervisor details to certify that tests and inspections have been carried out on Plant and Materials by others.

At the discretion of the Project Manager some equipment and components is inspected at place of manufacturer before it is delivered to site.

7.8 Preparation of post Completion contracts

7.8.1 Quality

The *Contractor* provides Plant and Materials for inclusion in the *works* in accordance with SANS 1200A sub-paragraph 2.1, unless otherwise stated elsewhere in the *Works Information* provided by the *Employer*. All Plant and Materials are new, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this *Works Information* or as may be subsequently instructed by the *Project Manager*.

Where Plant and Materials for inclusion in the *works* originate from outside the Republic of South Africa, all such Plant and Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

The *Contractor* replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the *Project Manager* and the *Supervisor* on each occasion where replacement is required.

7.8.2 Plant & Material provided "free issue" by the *Employer*

The *Employer* generally provides no "free issue" Plant and Materials.

The *Contractor* provides all other Plant and Materials necessary for the *works* not specifically stated to be provided "free issue" by the *Employer*.

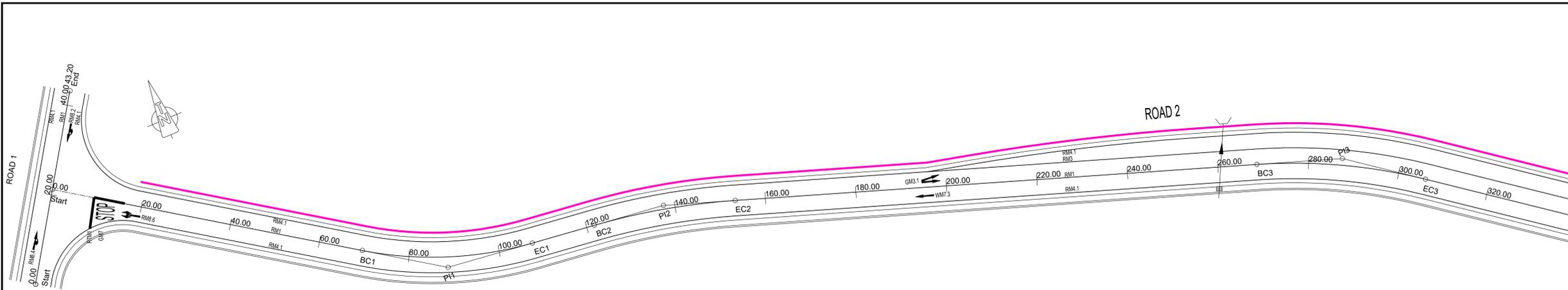
7.9 Tests and inspections before delivery

At the discretion of the *Project Manager* some equipment and components is inspected at place of manufacturer before it is delivered to site.

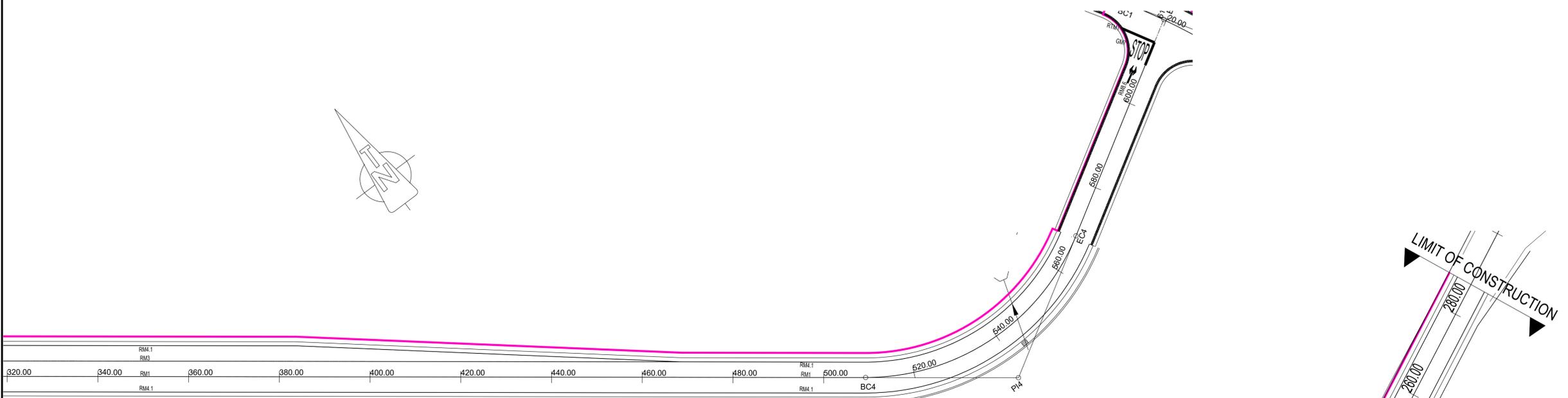
The *Contractor* submits to the *Project Manager/Supervisor* details to certify that tests and inspections have been carried out on Plant and Materials by others prior to delivery.

SECTION 3

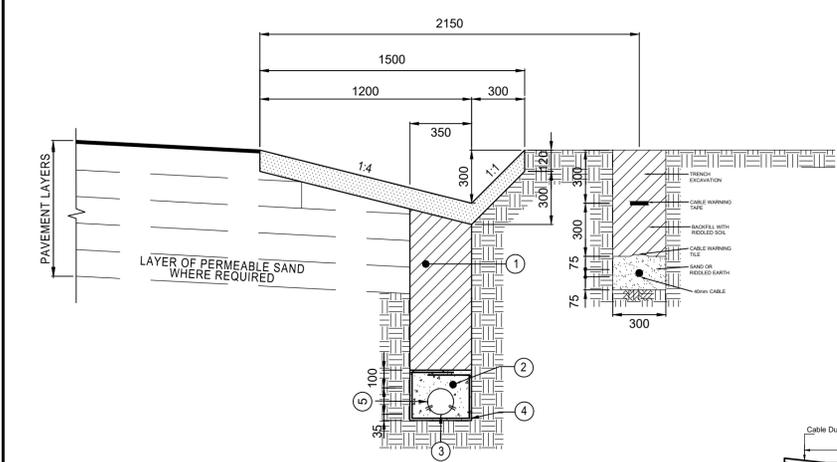
C3.2 CONTRACTOR'S WORKS INFORMATION



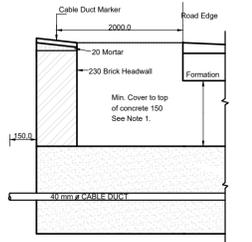
ROAD 1 and 2 ROAD MARKINGS
SCALE 1 : 500



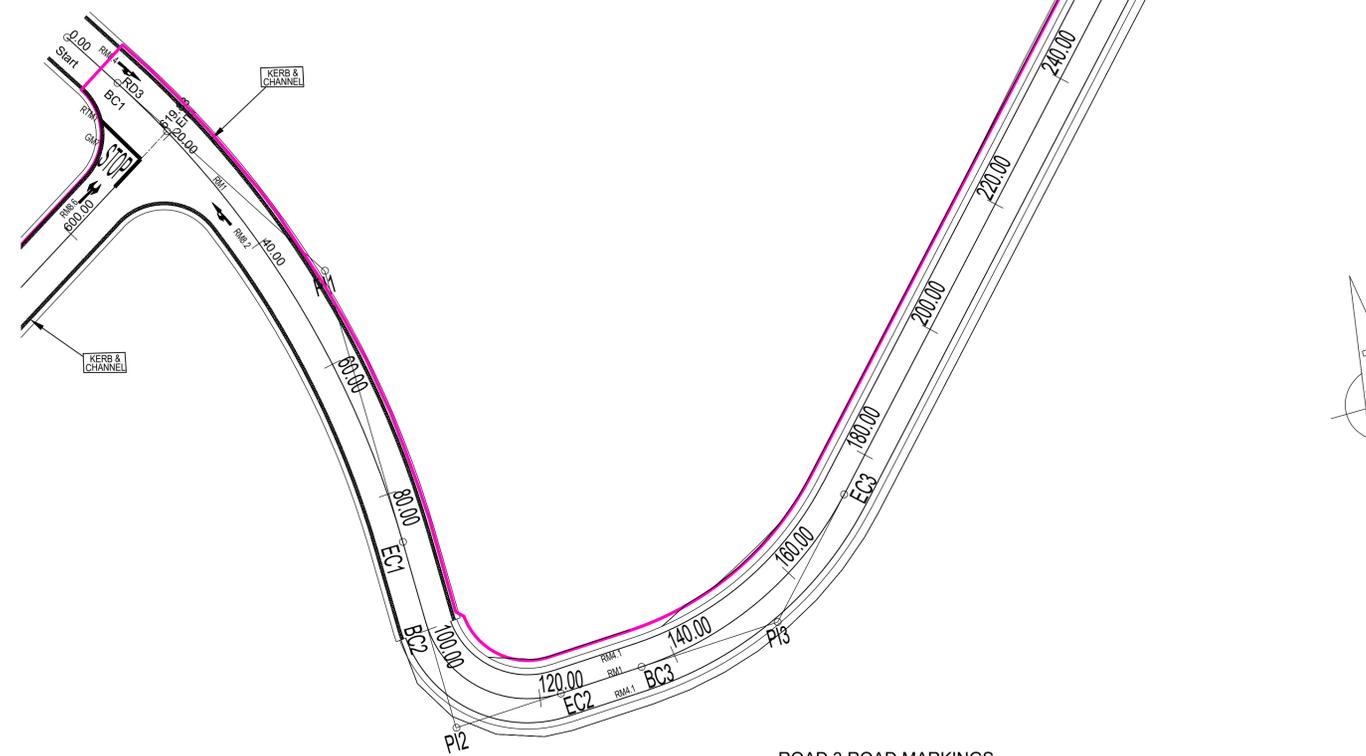
ROAD 2: CONTINUATION OF ROAD MARKINGS
SCALE 1 : 500



DETAIL OF SUBSOIL DRAIN AND CABLE DUCT
SCALE 1 : 20



DETAIL OF CABLE DUCT MARKER AND HEADWALL
SCALE 1 : 20



ROAD 3 ROAD MARKINGS
SCALE 1 : 500

NOTES:

- SETTING OUT
 - 1.1 ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - 1.2 ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 Lo27*) CO-ORDINATE SYSTEM.
 - 1.3 NO DIMENSIONS SHALL BE SCALED ON SITE.
- DESIGN STANDARD
 - 2.1 ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
- DRAINAGE
 - 3.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 3.2 FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
- GUARDRAILS
 - 4.1 GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- SERVICES
 - 5.1 EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL
- NEW CABLE DUCTING

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



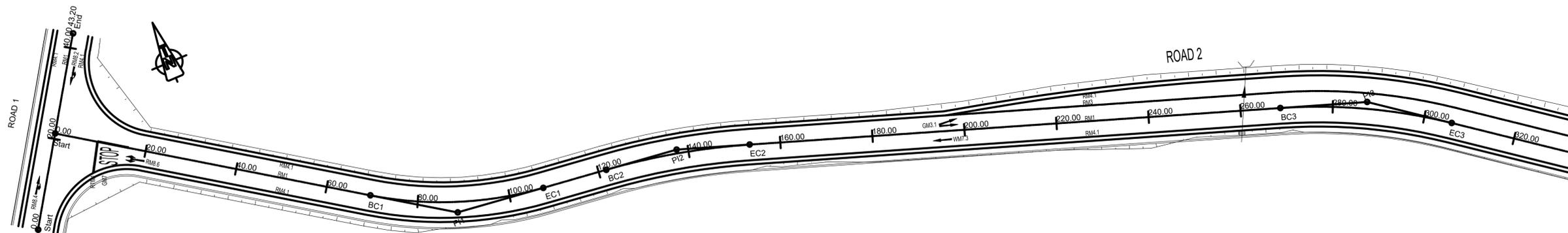
PROJECT / AREA / ASSET / SUBJECT
PORT OF EAST LONDON

DRAWING TITLE
CABLE DUCTING

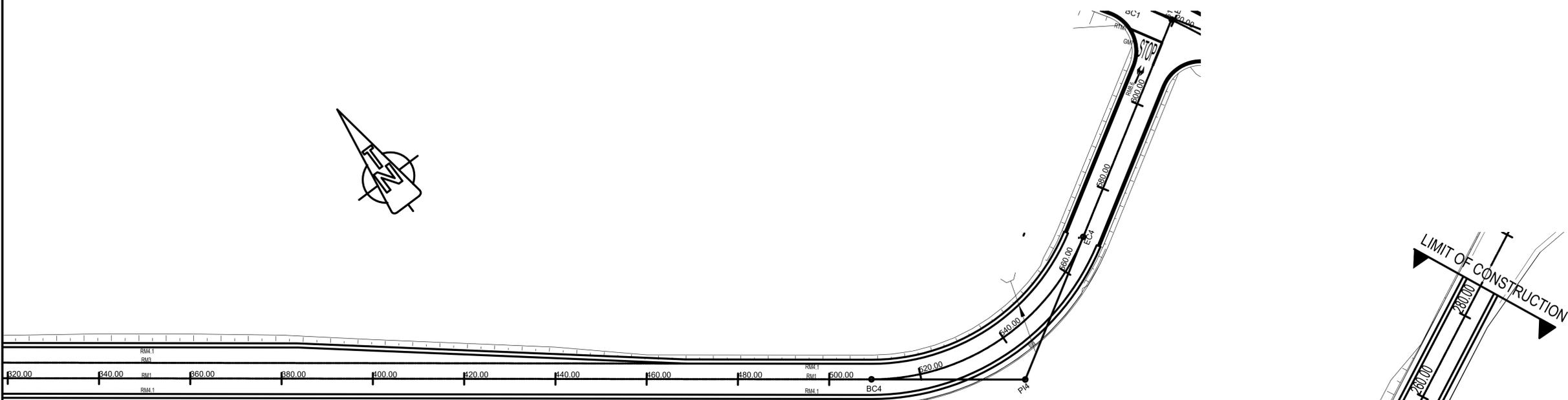
DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. MHEMBU 09/10/2020
SCALE	AS SHOWN	
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028
CHECKED BY	SN	09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA
CHECKED BY	SN	09/10/2020

PAPER SIZE	A1	TRANSNET DRW. NO.	XLE010-7001-00	SHEET	REV.
		CONSULTANT / CONTRACTOR DRW. NO.			

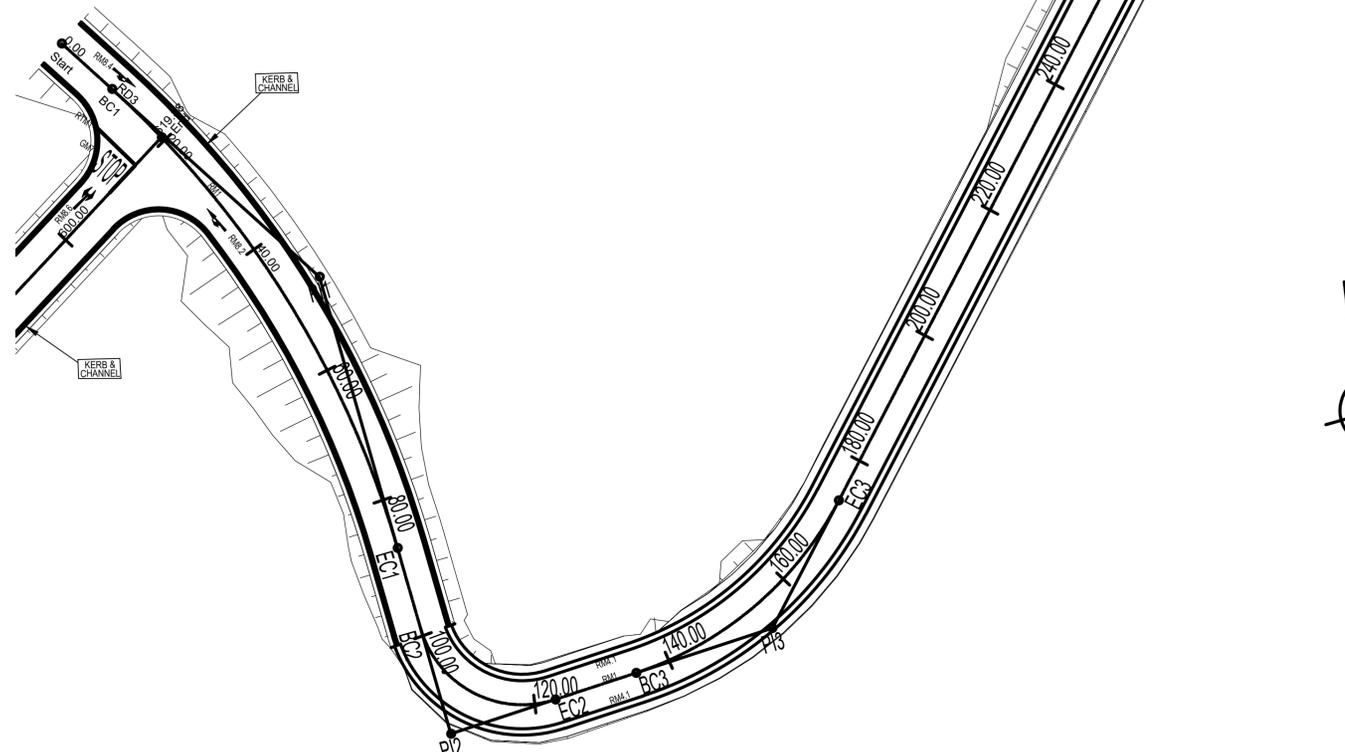
© Copyright vest in TPA Port of East London. No parts of the drawing may be copied, manipulated or used for personal gain without the permission of TPA Port of East London.



ROAD 1 and 2 ROAD MARKINGS
SCALE 1 : 500



ROAD 2: CONTINUATION OF ROAD MARKINGS
SCALE 1 : 500



ROAD 3 ROAD MARKINGS
SCALE 1 : 500

NOTES:

- 1 SETTING OUT
 - 1.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 1.2 ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 Lo27") CO-ORDINATE SYSTEM.
 - 1.3 NO DIMENSIONS SHALL BE SCALED ON SITE.
- 2 DESIGN STANDARD
 - 2.1 ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
- 3 DRAINAGE
 - 3.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 3.3 FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
- 4 GUARDRAILS
 - 4.1 GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- 5 SERVICES
 - 5.1 EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL

FOR TENDER

09	ISSUED FOR TENDER PACK	2020-09-18
No.	DESCRIPTION / REVISIONS	DATE



PROJECT / AREA / ASSET / SUBJECT

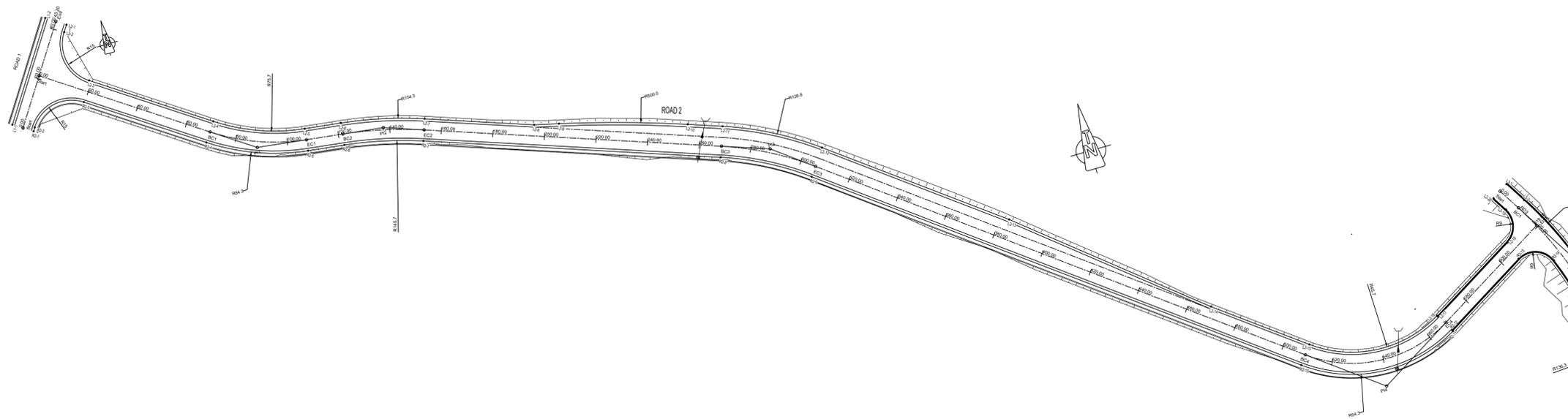
PORT OF EAST LONDON

ROADS 1, 2 & 3 : ROAD MARKINGS LAYOUT

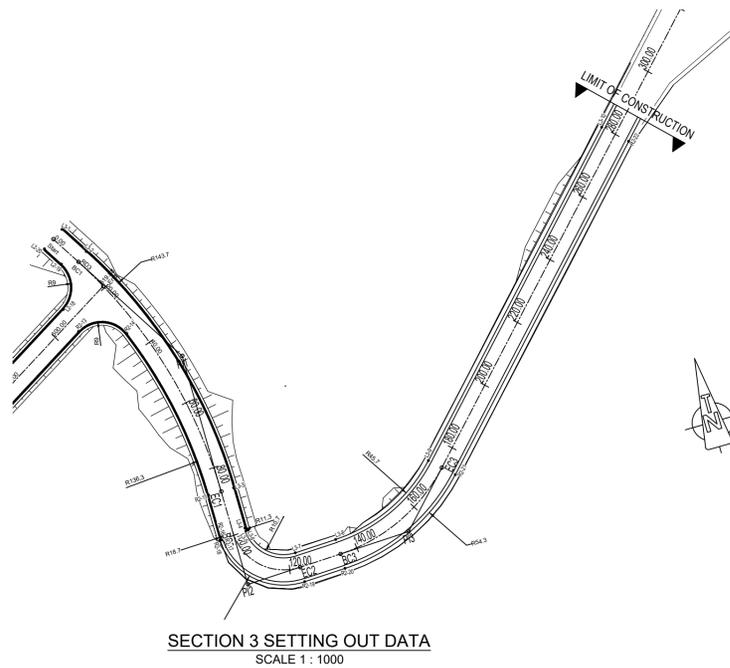
DATE	2020-09-18	ML - PROJECT MANAGER	08/10/2020
SCALE	AS SHOWN	ML - SURVEY ENGINEER	
DESIGNED BY	BM	ML - TRAFFIC PLANNING	
CHECKED BY	SN	ML - CIVIL ENGINEER	
DRAWN BY	BM	ML - A. SINGH	
CHECKED BY	SN		

PAPER SIZE	A1	TRANSNET DRV. NO.	XEL010-4001-00	SHEET	REV.
		CONSULTANT / CONTRACTOR DRV. NO.	1900001-T-2701		

© Copyright vest in TNPFA Port of East London. No parts of this drawing may be copied, manipulated or used for personal gain without the permission of TNPFA Port of East London.



SECTION 1 and 2 SETTING OUT DATA
SCALE 1 : 1000



SECTION 3 SETTING OUT DATA
SCALE 1 : 1000

BM BENCH MARKS (WGS 84 Lo = 27)			
12mm PEG IN CONCRETE			
Name	Y Cord	X Cord	Height
BM1	-84687.52	3656266.98	27.117
BM2	-85081.42	3656475.04	16.152
BM3	-85391.89	3656509.82	4.579

COORDINATES WGS 84 (Lo27°)			
Name	Y	X	
L1 - 1	-84 685,279	3 656 290,862	
L1 - 2	-84 708,826	3 656 254,639	
L2 - 1	-84 715,999	3 656 259,385	
L2 - 2	-84 714,369	3 656 261,892	
L2 - 3	-84 718,547	3 656 282,496	
L2 - 4	-84 760,505	3 656 310,847	
L2 - 5	-84 793,762	3 656 323,272	
L2 - 6	-84 807,856	3 656 324,984	
L2 - 7	-84 839,491	3 656 332,266	
L2 - 8	-84 879,672	3 656 346,102	
L2 - 9	-84 889,061	3 656 348,320	
L2 - 10	-84 936,910	3 656 362,172	
L2 - 11	-84 949,695	3 656 366,575	
L2 - 12	-84 984,505	3 656 385,036	
L2 - 13	-85 046,592	3 656 431,615	
L2 - 14	-85 112,544	3 656 485,344	
L2 - 15	-85 145,219	3 656 509,858	
L2 - 16	-85 200,173	3 656 520,106	
L2 - 17	-85 196,117	3 656 513,211	
L2 - 18	-85 229,741	3 656 492,949	
L2 - 19	-85 232,724	3 656 480,466	
L2 - 20	-85 229,287	3 656 474,975	
L3 - 1	-85 235,560	3 656 471,049	
L3 - 2	-85 240,500	3 656 478,941	
L3 - 3	-85 262,390	3 656 554,640	
L3 - 4	-85 262,384	3 656 566,435	
L3 - 5	-85 262,420	3 656 567,286	
L3 - 6	-85 263,068	3 656 567,234	
L3 - 7	-85 274,168	3 656 577,080	
L3 - 8	-85 286,195	3 656 576,592	
L3 - 9	-85 317,560	3 656 562,315	
L3 - 10	-85 390,576	3 656 485,034	

COORDINATES WGS 84 (Lo27°)			
Name	Y	X	
R2 - 1	-84 692,489	3 656 295,550	
R2 - 2	-84 693,328	3 656 294,260	
R2 - 3	-84 714,302	3 656 290,007	
R2 - 4	-84 755,690	3 656 317,973	
R2 - 5	-84 792,725	3 656 331,810	
R2 - 6	-84 806,819	3 656 333,521	
R2 - 7	-84 836,691	3 656 340,397	
R2 - 8	-84 945,762	3 656 377,955	
R2 - 9	-84 977,525	3 656 394,801	
R2 - 10	-85 140,058	3 656 516,737	
R2 - 11	-85 200,173	3 656 520,106	
R2 - 12	-85 199,868	3 656 519,589	
R2 - 13	-85 232,206	3 656 500,104	
R2 - 14	-85 245,204	3 656 504,464	
R2 - 15	-85 254,990	3 656 554,668	
R2 - 16	-85 255,046	3 656 567,054	
R2 - 17	-85 255,093	3 656 567,867	
R2 - 18	-85 254,494	3 656 567,914	
R2 - 19	-85 274,517	3 656 585,673	
R2 - 20	-85 286,544	3 656 585,185	
R2 - 21	-85 323,811	3 656 568,221	
R2 - 22	-85 396,828	3 656 490,940	

SETTING OUT DATA FOR
SECTION 1, 2 & 3

NOTES:

- 1 SETTING OUT
 - 1.1 ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - 1.2 ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (Lo27°) CO-ORDINATE SYSTEM.
 - 1.3 NO DIMENSIONS SHALL BE SCALED ON SITE.
- 2 DESIGN STANDARD
 - 2.1 ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
- 3 DRAINAGE
 - 3.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 3.3 FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
- 4 GUARDRAILS
 - 4.1 GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- 5 SERVICES
 - 5.1 EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



PROJECT / AREA / ASSET / SUBJECT

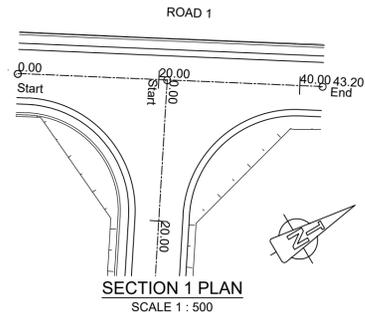
PORT OF EAST LONDON

DRAWING TITLE

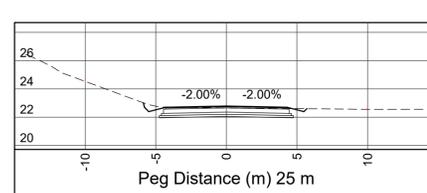
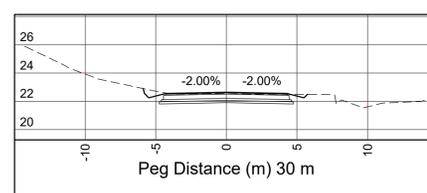
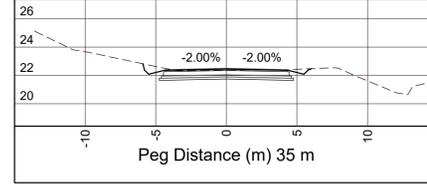
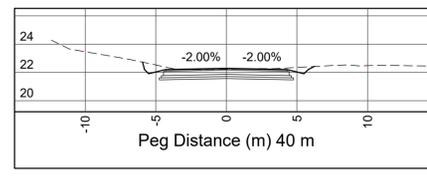
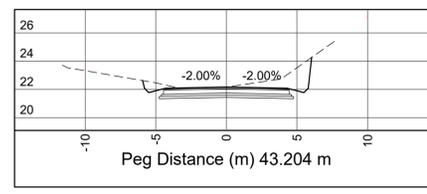
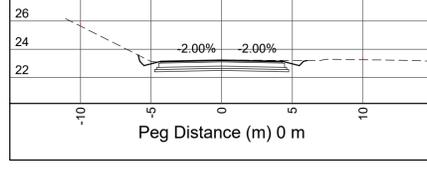
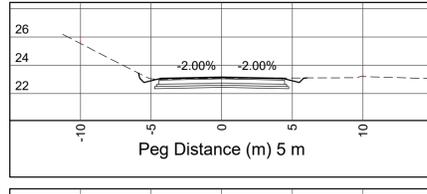
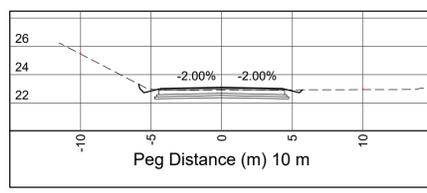
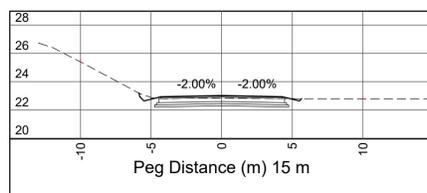
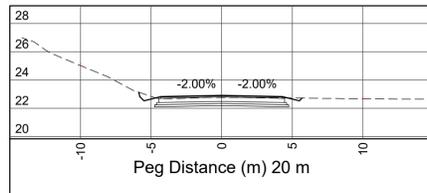
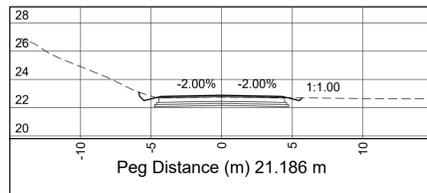
SETTING OUT DATA FOR
SECTION 1, 2 AND 3

DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. MTHEMBU	09/10/2020
SCALE	AS SHOWN		
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028	
CHECKED BY	SN		09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA	
CHECKED BY	SN		09/10/2020

PAPER SIZE	A1	TRANSNET DRW. NO.	XEL010-2001-00	SHEET	REV.
		CONSULTANT / CONTRACTOR DRW. NO.	1900001-T-2101		



RD 1 SCALE : Vert 1 : 100 Hor 1 : 500		DESIGN LEVEL		EXISTING GROUND LEVEL	
DATUM : 20.00		CH = 22.81 VPI = 22.93			
Peg Distance (m)	0	5	7.81	10	15
Vertical Alignment	V-cl K-val		7.81	30.000 12.250	22.81 22.93
Grade (%)			-1.320		-3.773
Design Level (m)	Left	4.30m	23.15	23.08	23.17
	Center		23.23	23.13	23.04
	Right	4.30m	23.15	23.01	22.93
Ground Level (m) (@GLO)		23.23	23.08	22.98	22.91
Horizontal Alignment	Rad Tan H-cl		213.01.36		
Road Profile	(+) L (-) R				
Foundation layers			45AC 80BC 300C3 150G7 150G9/G10		



CROSS SECTIONS
SCALE Vert 1 : 250
Hor 1 : 250

NOTES:

- SETTING OUT
 - 1.1 ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACTOR ON SITE PRIOR TO CONSTRUCTION.
 - 1.2 ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (Lo27) CO-ORDINATE SYSTEM.
 - 1.3 NO DIMENSIONS SHALL BE SCALED ON SITE.
- DESIGN STANDARD
 - 2.1 ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
- DRAINAGE
 - 3.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 3.2 FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
- GUARDRAILS
 - 4.1 GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- SERVICES
 - 5.1 EXISTING SERVICES TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
08	ISSUED FOR TENDER PACK	2020-09-18

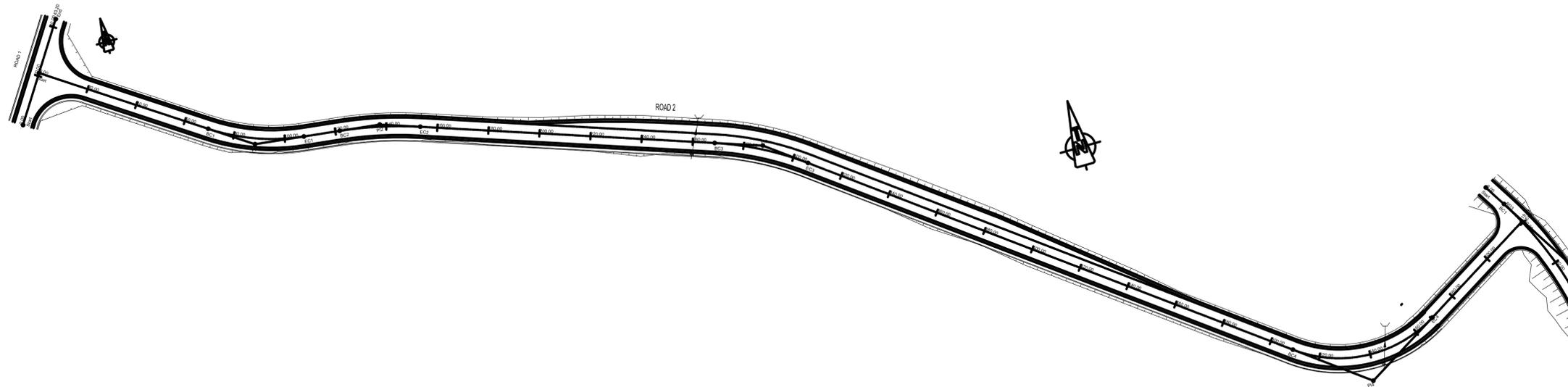


PROJECT / AREA / ASSET / SUBJECT
PORT OF EAST LONDON

DRAWING TITLE
SECTION 1 : LAYOUT, LONG SECTION AND CROSS SECTIONS

DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. MTHEMBU 09/10/2020
SCALE	AS SHOWN	
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028
CHECKED BY	SN	09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA
CHECKED BY	SN	09/10/2020

PAPER SIZE	A1	TRANSNET DRW. NO. XEL010-1001-00	SHEET REV.	
		CONSULTANT / CONTRACTOR DRW. NO.	190001-T-2001	



- NOTES:
- SETTING OUT
 - 1.1 ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - 1.2 ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (Lo27) CO-ORDINATE SYSTEM.
 - 1.3 NO DIMENSIONS SHALL BE SCALED ON SITE.
 - DESIGN STANDARD
 - 2.1 ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLT SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
 - DRAINAGE
 - 3.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 3.2 FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
 - GUARDRAILS
 - 4.1 GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
 - SERVICES
 - 5.1 EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

ROAD 2 PLAN
SCALE 1 : 1000

- LEGEND
- NEW V-DRAINS
 - NEW STORMWATER PIPE
 - NEW HEADWALL
 - NEW GRID INLET
 - KERB & CHANNEL

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



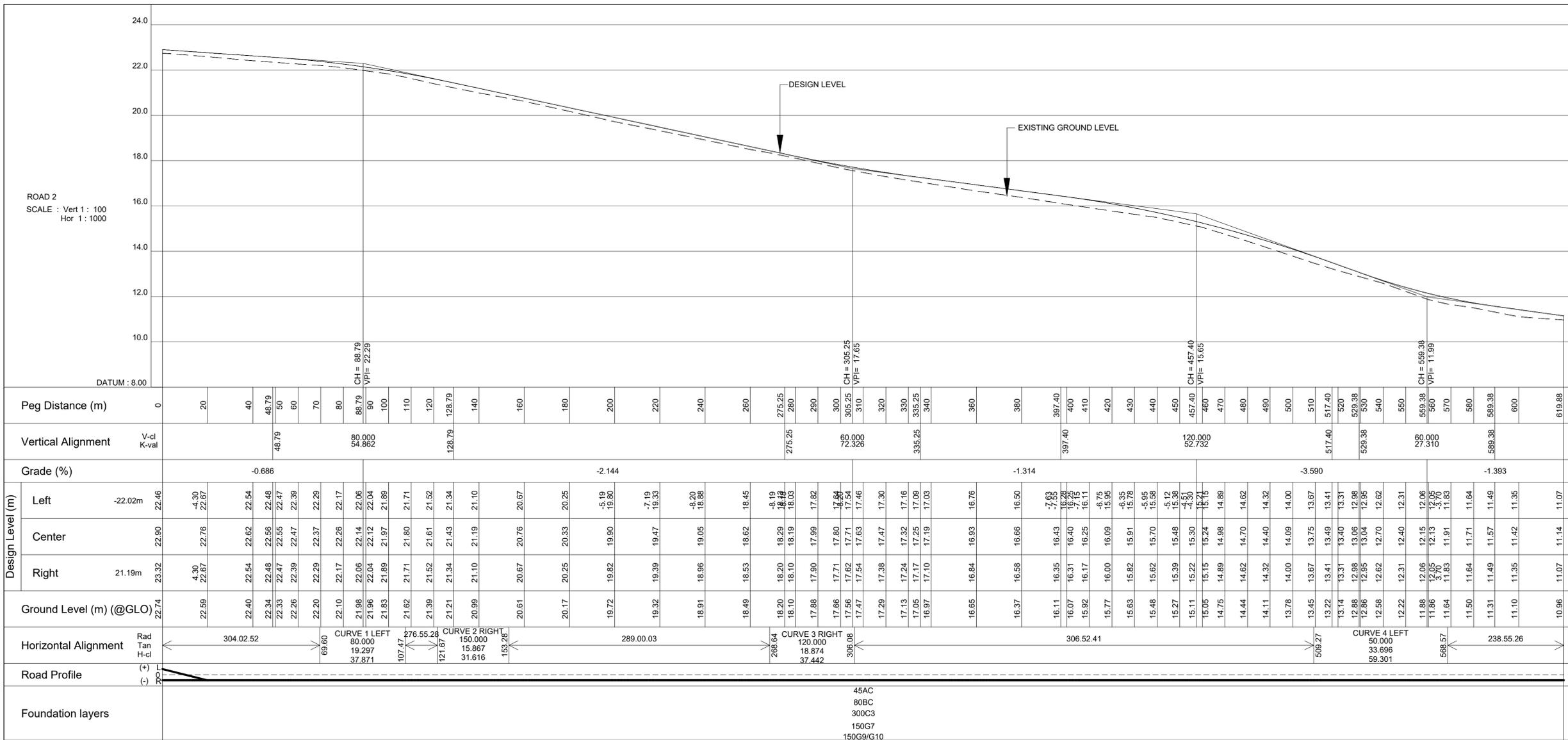
PROJECT / AREA / ASSET / SUBJECT

PORT OF EAST LONDON

ROAD 2 : LAYOUT AND LONG SECTION

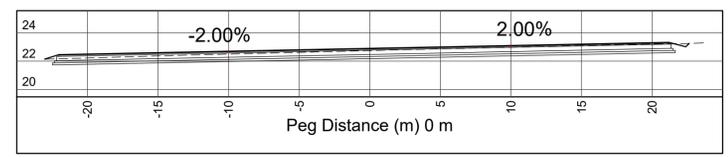
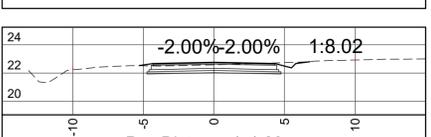
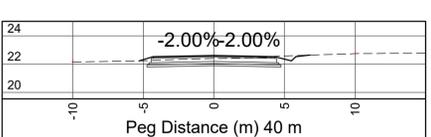
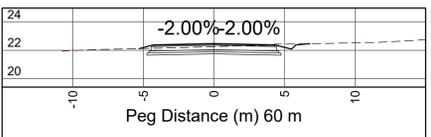
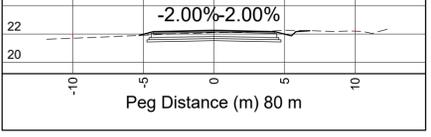
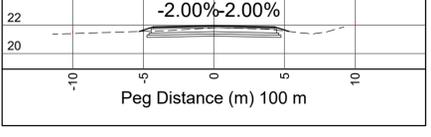
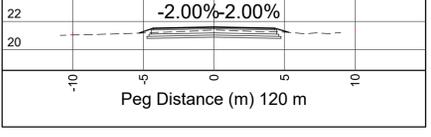
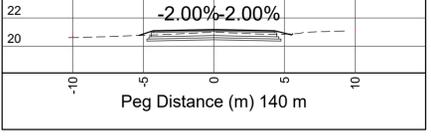
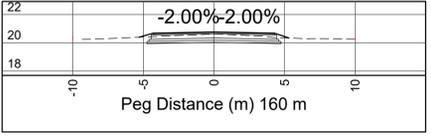
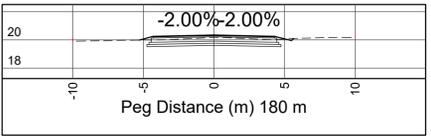
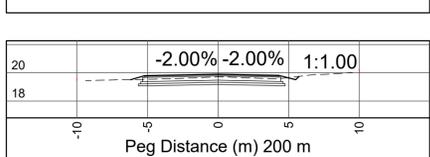
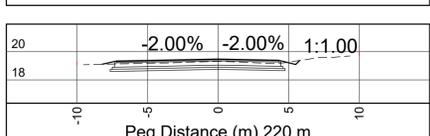
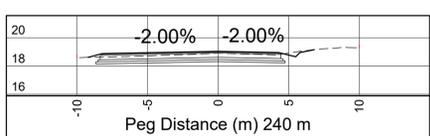
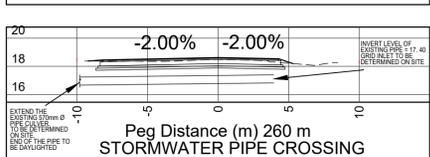
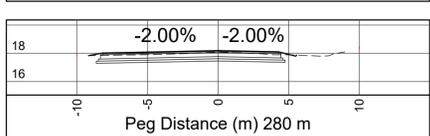
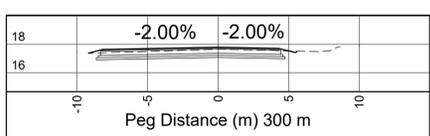
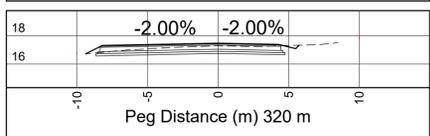
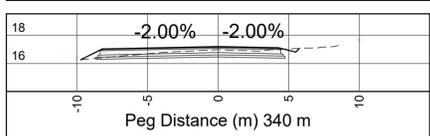
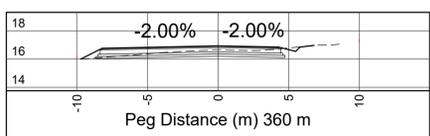
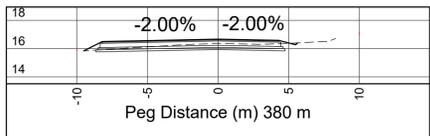
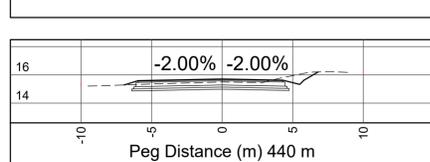
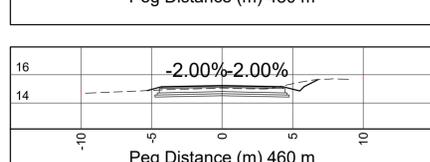
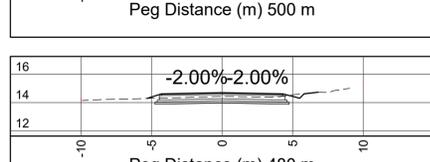
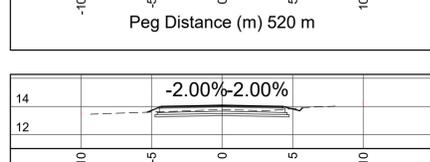
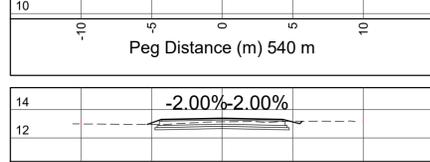
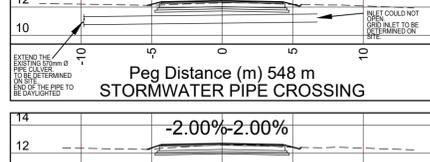
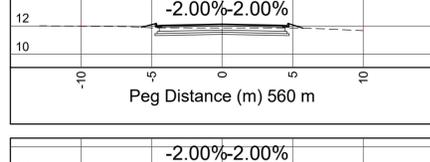
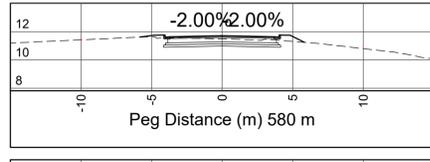
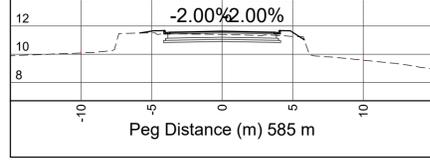
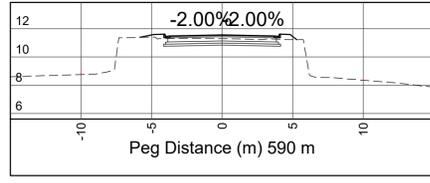
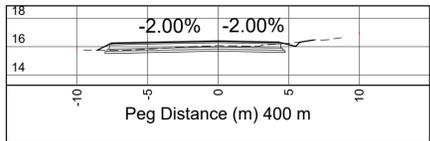
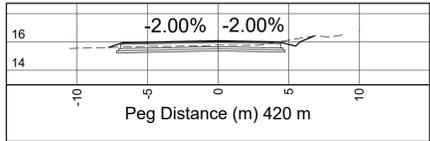
DATE	2020-09-18	PROJECT NUMBER	XEL010-1002-00
SCALE	AS SHOWN	DATE	08/10/2020
DESIGNED BY	BM	PROJECT ENGINEER	MR. A. ZINBA
CHECKED BY	SN	PROJECT ENGINEER	MR. A. ZINBA
DRAWN BY	BM	PROJECT ENGINEER	MR. A. ZINBA
CHECKED BY	SN	PROJECT ENGINEER	MR. A. ZINBA

PAPER SIZE	A1	TRANSNET DRW. NO.	XEL010-1002-00	SHEET REV.	
		CONSULTANT / CONTRACTOR DRW. NO.	1900001-T-2002		



Horizontal Alignment	Rad Tan H-cl	304.02.52	CURVE 1 LEFT 276.55.28 150.000 19.297 37.871	CURVE 2 RIGHT 289.00.03	CURVE 3 RIGHT 306.08 120.000 18.874 37.442	306.52.41	CURVE 4 LEFT 509.27 50.000 33.696 59.301	238.55.26
Road Profile	(+) (-)	L R						
Foundation layers		45AC 80BC 300C3 150G7 150G9/G10						

© Copyright vest in TPA Port of East London. No parts of the drawing may be copied, reproduced or used for personal gain without the permission of TPA Port of East London.



NOTES:

- SETTING OUT
 - ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (L27) CO-ORDINATE SYSTEM.
 - NO DIMENSIONS SHALL BE SCALED ON SITE.
- DESIGN STANDARD
 - ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
- DRAINAGE
 - ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
- GUARDRAILS
 - GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- SERVICES
 - EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



PROJECT / AREA / ASSET / SUBJECT

PORT OF EAST LONDON

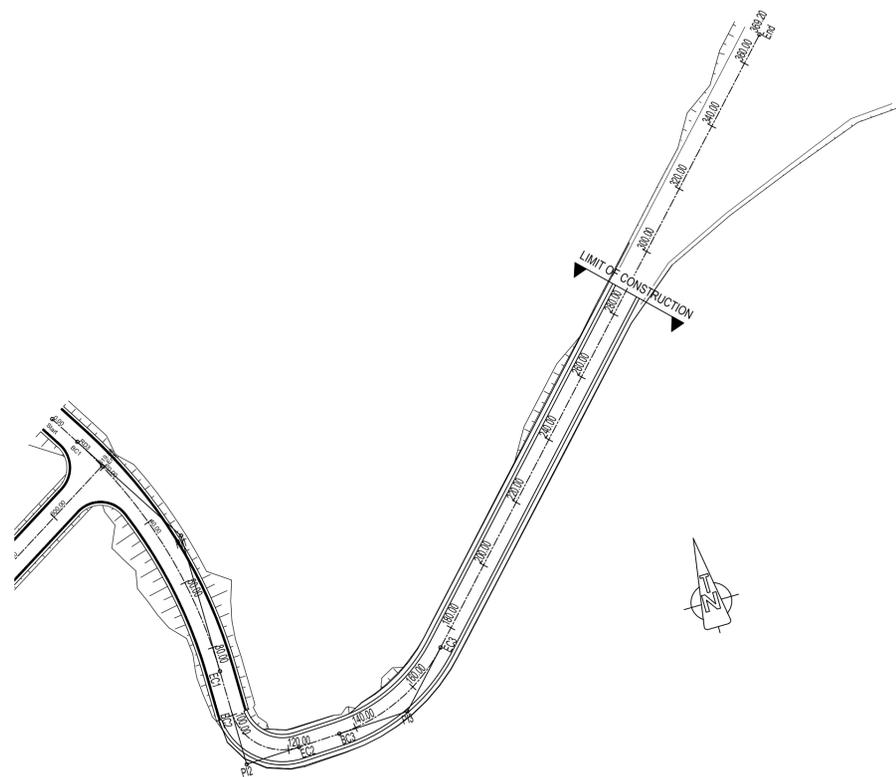
SECTION 2: CROSS SECTIONS

DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. MTHEMBU
SCALE	Vert 1 : 250 Hor 1 : 250	09/10/2020
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028
CHECKED BY	SN	09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA
CHECKED BY	SN	09/10/2020

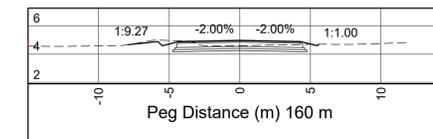
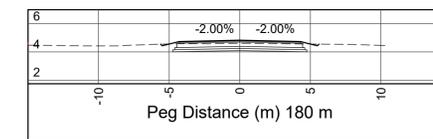
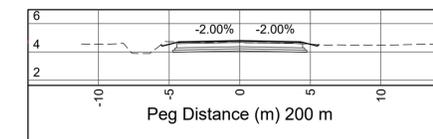
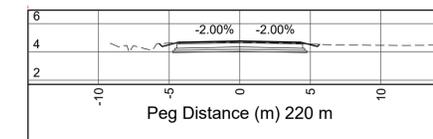
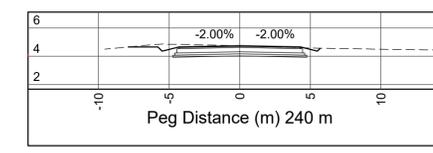
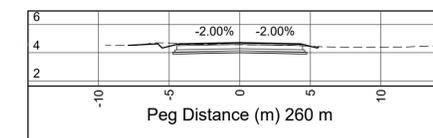
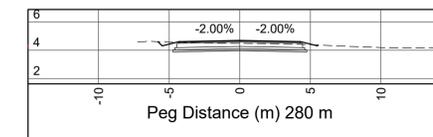
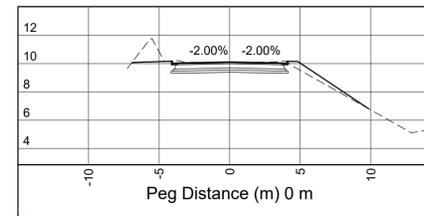
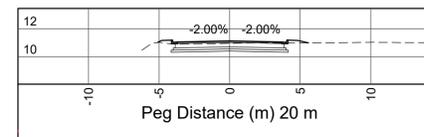
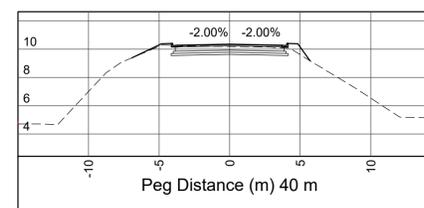
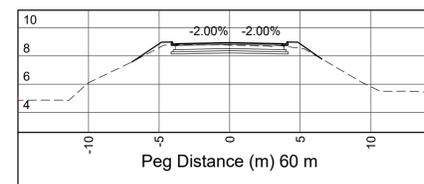
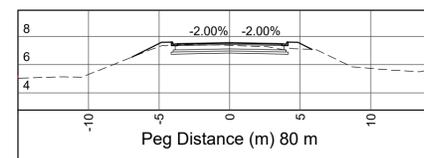
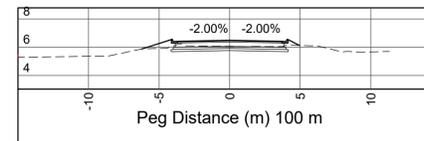
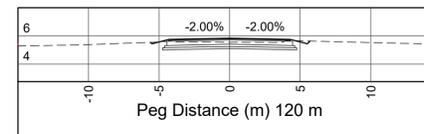
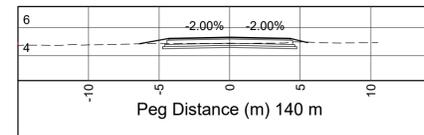
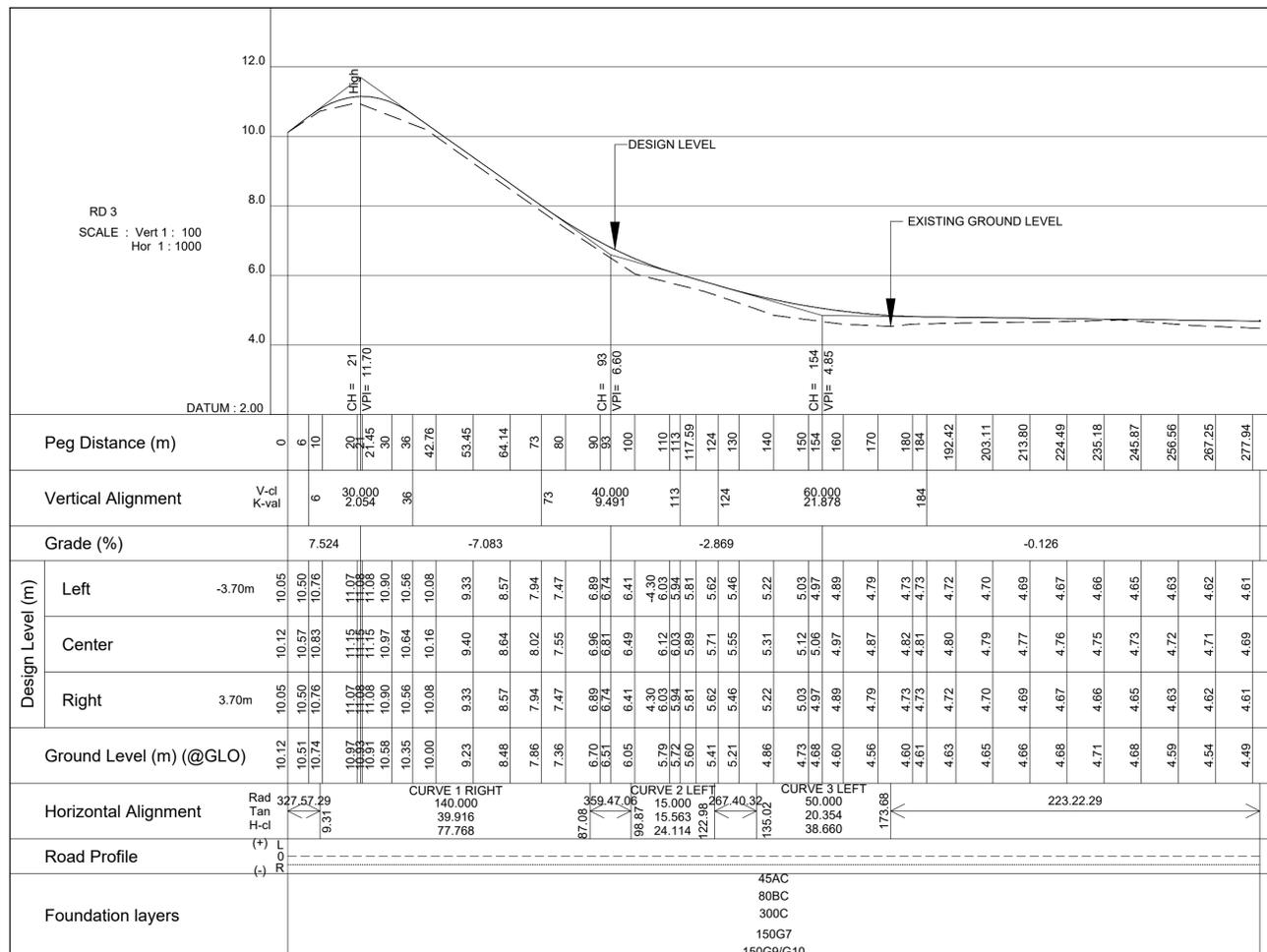
PAPER SIZE	A1	TRANSNET DRW. NO.	XEL010-3001-00	SHEET	REV.
		CONSULTANT / CONTRACTOR DRW. NO.	1900001-T-2201		

SECTION 2

© Copyright vest in TPA Port of East London. No parts of this drawing may be copied, manipulated or used for personal gain without the permission of TPA Port of East London.



SECTION 3 PLAN
SCALE 1 : 1000



SECTION 3 CROSS SECTIONS
SCALE 1 : 250

- NOTES:
- SETTING OUT
 - ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (L27) CO-ORDINATE SYSTEM.
 - NO DIMENSIONS SHALL BE SCALED ON SITE.
 - DESIGN STANDARD
 - ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
 - DRAINAGE
 - ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
 - GUARDRAILS
 - GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
 - SERVICES
 - EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

- LEGEND
- NEW V-DRAINS
 - NEW STORMWATER PIPE
 - NEW HEADWALL
 - NEW GRID INLET
 - KERB & CHANNEL

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



PROJECT / AREA / ASSET / SUBJECT

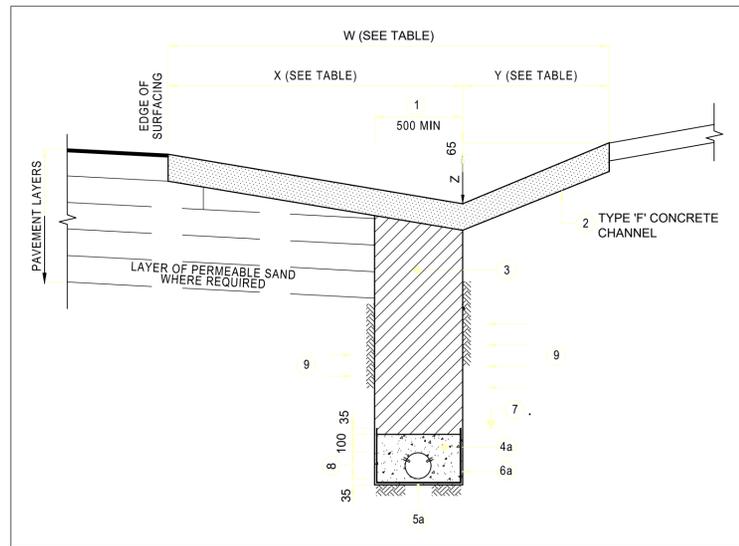
PORT OF EAST LONDON

SECTION 3 : LAYOUT, LONG SECTION AND CROSS SECTIONS

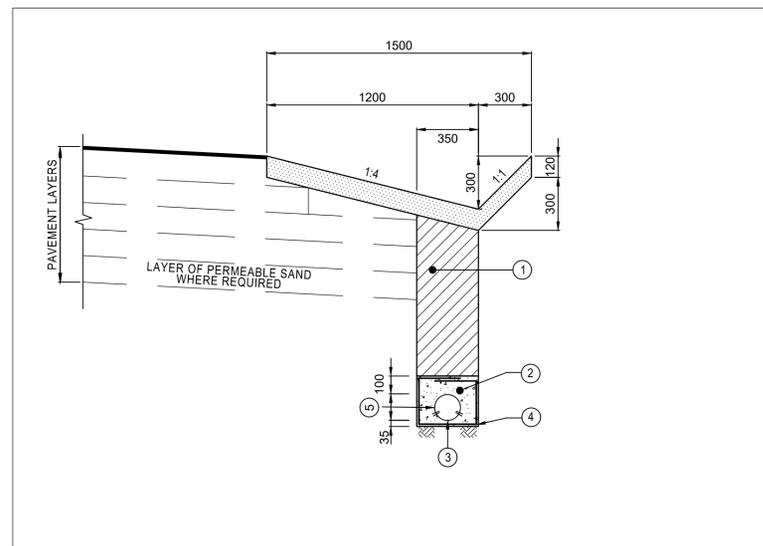
DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. NTHEMBU	09/10/2020
SCALE	AS SHOWN		
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR.2018300028	09/10/2020
CHECKED BY	SN		
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA	09/10/2020
CHECKED BY	SN		

PAPER SIZE	A1	TRANSNET DRW. NO.	XEL010-1003-00	SHEET	REV.
		CONSULTANT / CONTRACTOR	DRW. NO.	1900001-T-2003	

© Copyright vest in TPA Port of East London. No parts of the drawing may be copied, manipulated or used for personal gain without the permission of TPA Port of East London.



SUBSOIL DRAIN WITH POLYETHYLENE LINING
SCALE 1:20



SUBSOIL DRAIN WITH SYNTHETIC FIBRE FILTER FABRIC
SCALE 1:20

W	X	Y	Z	D UNREINFORCED	D REINFORCED
1000	670	330	110	125	100
1500	1000	500	170	125	100
2000	1330	670	220	150	100
2500	1670	830	280	150	100

DIMENSIONS OF TYPE 'F' CONCRETE CHANNEL

FILTER CRITERIA

A. "D x" IS THE SIZE OF SIEVE THROUGH WHICH x % OF THE FILTER MATERIAL WILL PASS.
 $D_{50}(FS)$ = AVERAGE SIZE OF THE OPENINGS OF THE SYNTHETIC FIBRE FILTER FABRIC.

B. FILTER SAND (FS) IN RELATION TO WATER BEARING STRATA (WS)

- FOR $D_{85}(WS) > 0.05mm$:
 - TO PREVENT BLOCKING OF FILTER SAND:
 $D_{15}(FS) < 5 \times D_{85}(WS)$
 $D_{50}(FS) < 25 \times D_{50}(WS)$
 - FOR PERMEABILITY OF FILTER SAND:
 $D_{15}(FS) > 5 \times D_{15}(WS)$

- FOR $D_{85}(WS) < 0.05mm$:
 - TO PREVENT BLOCKING OF FILTER SAND:
 $D_{15}(FS) < 0.25mm$
 $D_{05}(FS) > 0.075mm$
 - PERMEABILITY REQUIREMENTS NOT NECESSARY

C. FILTER STONE (FSN) IN RELATION TO FILTER SAND (FS)

- TO PREVENT BLOCKING OF FILTER STONE:
 $D_{15}(FSN) < 5 \times D_{85}(FS)$
 $D_{50}(FSN) < 25 \times D_{50}(FS)$
- PERMEABILITY: FILTER STONE MUST BE COARSER THAN SAND AT ALL PERCENTAGES

D. FILTER STONE (FSN) IN RELATION TO PERFORATIONS IN PIPES

- TO PREVENT BLOCKING OF PERFORATIONS IN PIPES:
- $D_{85}(FSN) > 1.2 \times \text{DIAMETER OF ROUND PERFORATIONS}$
 - $D_{85}(FSN) > 1.2 \times \text{WIDTH OF SLOTS}$

E. SYNTHETIC FIBRE FILTER FABRIC (SF) IN RELATION TO FILTER SAND (FS)

- TO PREVENT CLOGGING OF SYNTHETIC FIBRE FILTER FABRIC:
 $O_{50}(SF) < D_{85}(FS)$
- FOR PERMEABILITY OF SYNTHETIC FIBRE FILTER FABRIC:
 $O_{50}(SF) > D_{15}(FS)$

No	DESCRIPTION
1	THIS DIMENSION MAY BE REDUCED TO A MINIMUM OF PIPE DIAMETER + 200mm PROVIDED THAT THE CROSS-SECTIONAL AREA IS ADEQUATE (SEE SUBCLAUSE 2104(b) OF THE STANDARD SPECIFICATIONS).
2	IMPERMEABLE BACKFILL MATERIAL. (MIN 150mm THICK) TAKEN TO TOP OF WATER BEARING LAYER IN CASES WHERE NO CONCRETE SIDE DRAIN IS PROVIDED.
3	FILTER SAND OF APPROVED SOURCE AND GRADE.
4a 4b	FILTER STONE: FINE OR COARSE GRADE AS REQUIRED. (SEE SUBCLAUSE 2104(a)(ii) OF THE STANDARD SPECIFICATIONS).
5a 5b 5c	PERFORATED / SLOTTED SUBSOIL DRAINAGE PIPES. (POSITION OF PERFORATIONS INDICATED).
6a	POLYETHYLENE 0.15mm THICKNESS.
6b	SYNTHETIC FIBRE FILTER FABRIC WITH 200mm OVERLAP (GRADE 2 OR APPROVED EQUIVALENT).
7	LEVEL TO WHICH SURROUNDING AREA IS TO BE DRAINED.
8	INTERNAL PIPE DIAMETER: 110mm OR 150mm.
9	WATER BEARING STRATA.

NOTES:

- ALL CRITERIA ASSUMES THAT FILTER SAND AND FILTER STONE ARE CONTINUOUSLY GRADED FROM COARSE TO FINE.
- USE THE ENVELOPE CURVES FOR THE WATER BEARING STRATA, FILTER SAND AND FILTER STONE GRADINGS AND APPLY TO MOST CRITICAL COMBINATIONS.
- IF REQUIRED BY THE ENGINEER, SUBSOIL DRAINAGE MUST ALSO BE PROVIDED ON THE INSIDE OF BENCHING, WHERE USED.
- WHERE SUBSOIL DRAINAGE IS INSTALLED IN SOLID ROCK THE POLYETHYLENE LINING MAY BE OMITTED.
- TYPE A OUTLET PREFERABLY TO BE USED WHERE THE NATURAL GROUND LEVELS ALLOW IT. OUTLETS MAY ALSO BE COMBINED WITH CULVERT IN- OR OUTLETS.
- ALL CONCRETE SHALL BE CLASS 20/19.
- SPACING OF CLEANING EYES TO BE AS FOLLOWS:
 - 100mm MAX ON STRAIGHT SECTIONS.
 - AT ALL BENDS.
 - OR AS DIRECTED BY THE ENGINEER.
- TRANSVERSE SUBSOIL DRAINAGE TO BE PROVIDED AT ALL CUT TO FILL TRANSITIONS.
- PLATE WITH THE INSCRIPTION "CLEANING EYE FOR SUBSOIL DRAIN" STAMPED ON TO BE AFFIXED TO CONCRETE COVER.
- LETTER SIZE ON PLATE: 10mm SERIES C, CAPITAL LETTERS.
- SYNTHETIC FIBRE FILTER FABRIC TO BE REPLACED WITH POLYETHYLENE LINING IN THE FOLLOWING INSTANCES:
 - WHERE THE SURROUNDING SOIL IS VERY PERMIOUS.
 - WHERE THE SURROUNDING SOIL HAS A HIGH FINES CONTENT WHICH COULD LEAD TO CLOGGING OF FILTER FABRICS.
- STEEL PLATE TO BE FIXED TO TOP PORTION OF FENCE LINE OPPOSITE THE SUBSOIL OUTLET STRUCTURE.
- BACKGROUND : MATT-WHITE
TEXT : DIN A, MATT-BLACK

ADDITIONAL SIGNATORIES

NH - HARBOUR MASTER	NH - FINANCIAL MANGER
NH - RISK MANAGER	NH - ENVIRONMENTAL MANAGER
NH - SECURITY MANAGER	NH - PROPERTY MANAGER
NH - CORPRATE AFFAIRS MANAGER	NH - MARINE OPERATIONS MANGER
NH - MARKETING MANAGER	NH - CHIEF FIRE OFFICER

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



PROJECT / AREA / ASSET / SUBJECT

PORT OF EAST LONDON

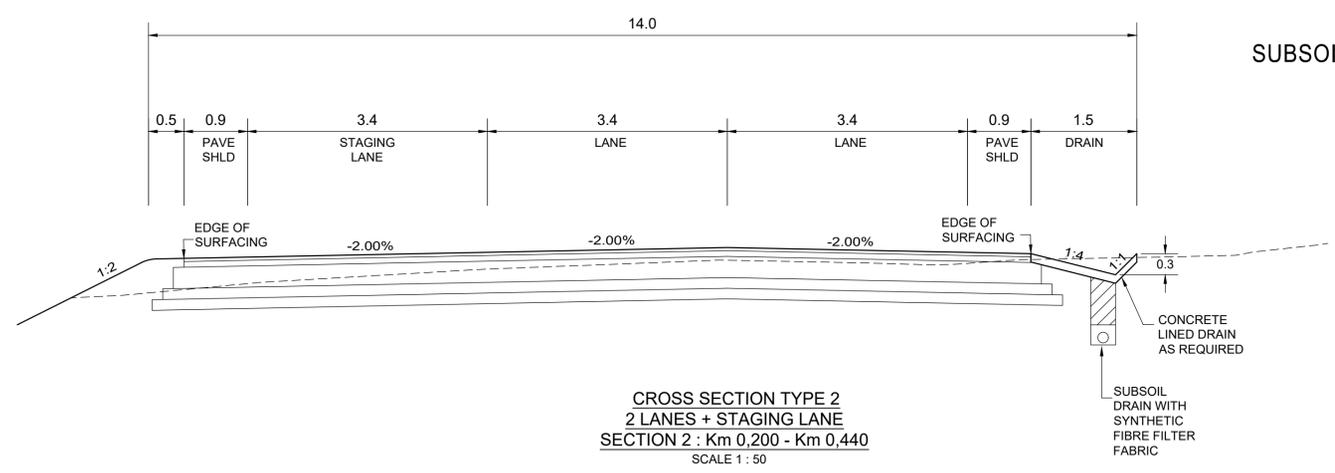
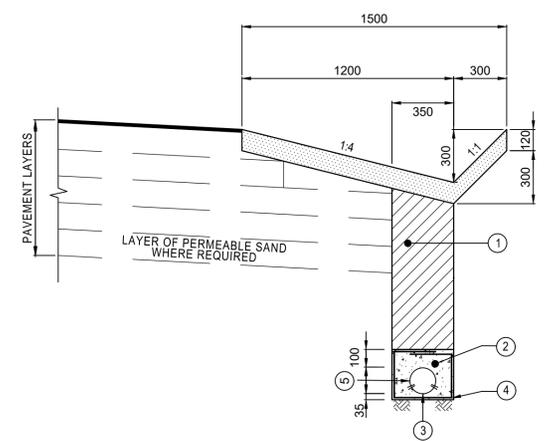
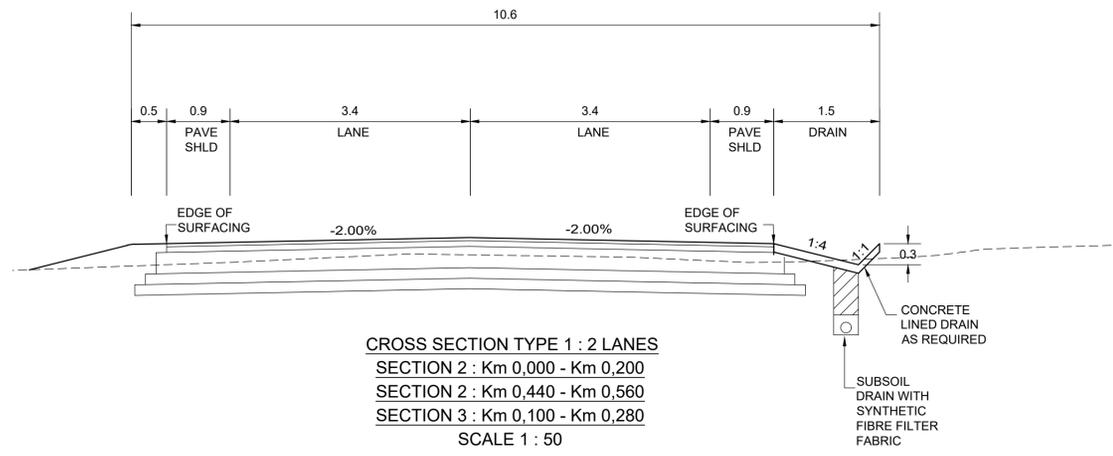
DRAWING TITLE

SUBSOIL DRAINAGE DETAILS

DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. NTHEMBU	09/10/2020
SCALE	AS SHOWN	SIGNATURE	DATE
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028	
CHECKED BY	SN		09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA	
CHECKED BY	SN		09/10/2020

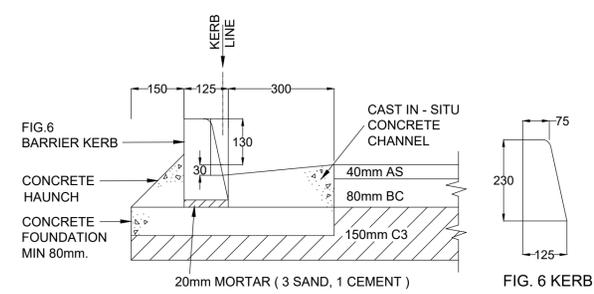
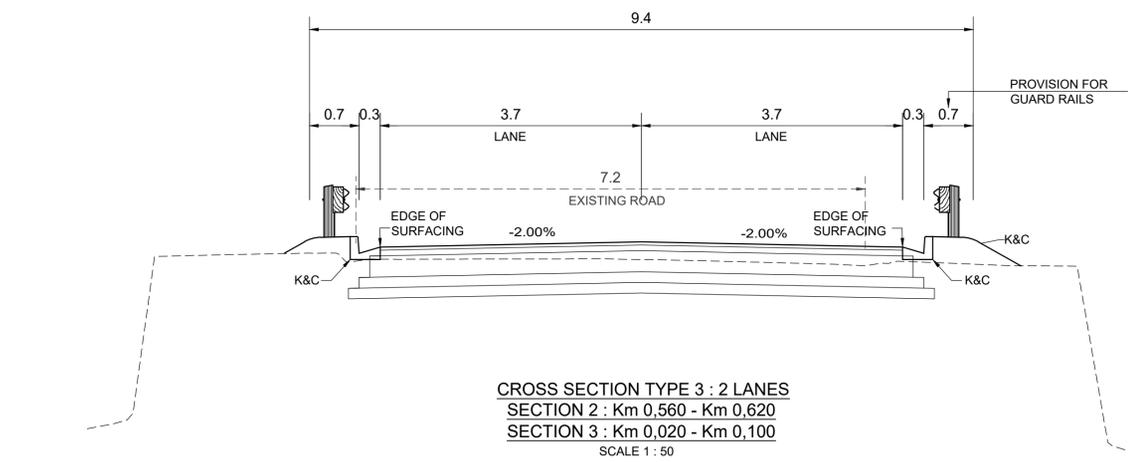
PAPER SIZE	TRANSNET DRW. NO.	SHEET	REV.
A1	XEL010-7002-00		

CONSULTANT / CONTRACTOR DRW. NO.



SUBSOIL DRAIN WITH SYNTHETIC FIBRE FILTER FABRIC
 NOT TO SCALE

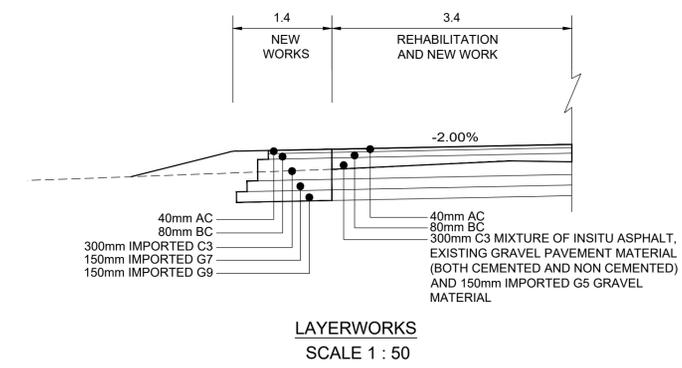
No	DESCRIPTION
①	FILTER SAND OF APPROVED SOURCE AND GRADE.
②	FILTER STONE: FINE OR COARSE GRADE AS REQUIRED.
③	PERFORATED / SLOTTED SUBSOIL DRAINAGE PIPES. (POSITION OF PERFORATIONS INDICATED).
④	SYNTHETIC FIBRE FILTER FABRIC WITH 200mm OVERLAP (GRADE 2 OR APPROVED EQUIVALENT).
⑤	INTERNAL PIPE DIAMETER: 110mm OR 150mm.



BARRIER KERB WITH CAST IN SITU CHANNEL / FILLET
 SCALE: 1 : 10

- NOTES: KERB AND CHANNEL**
- ALL CAST IN SITU CONCRETE IS TO BE GRADE 20 / 19.
 - THE SURFACES OF THE CAST IN SITU CHANNEL / FILLET ARE TO HAVE A STEEL FLOAT FINISH
 - EXPANSION JOINTS TO BE FORMED THROUGH THE KERBING, CHANNEL / FILLET AND FOUNDATIONS AT INTERVALS NOT EXCEEDING 18.0m.
 - CONTRACTION JOINTS TO BE FORMED THROUGH THE CHANNEL / FILLET AT 20m INTERVALS.
 - WHERE KERB RADIUS IS LESS THAN 25m THE KERB LENGTH SHALL BE 300mm. WHERE THE KERB RADIUS IS LESS THAN 2m. THE KERBING SHALL BE CAST IN SITU.
 - PRECAST KERBS ARE TO BE LAID WITH A 13mm GAP BETWEEN KERBS, WHICH SHALL THEN BE FILLED WITH A CEMENT MORTAR.
 - CONCRETE HAUNCH TO BE LAID ALONG THE LENGTH OF THE ENTIRE KERB.

BARRIER KERB WITH CAST IN SITU CHANNEL / FILLET
 SCALE: 1 : 10,000



- NOTES:**
- SETTING OUT
 - ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (L27) CO-ORDINATE SYSTEM.
 - NO DIMENSIONS SHALL BE SCALED ON SITE.
 - DESIGN STANDARD
 - ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
 - DRAINAGE
 - ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
 - GUARDRAILS
 - GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
 - SERVICES
 - EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL

FOR TENDER

No.	DESCRIPTION / REVISIONS	DATE
09	ISSUED FOR TENDER PACK	2020-09-18



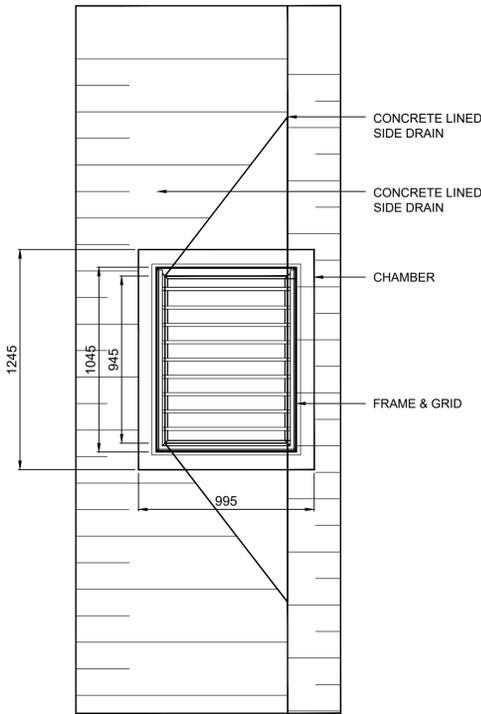
PROJECT / AREA / ASSET / SUBJECT
PORT OF EAST LONDON

DRAWING TITLE
TYPICAL CROSS SECTIONS, KERB AND CHANNEL DETAILS & SUBSOIL DRAIN DETAILS

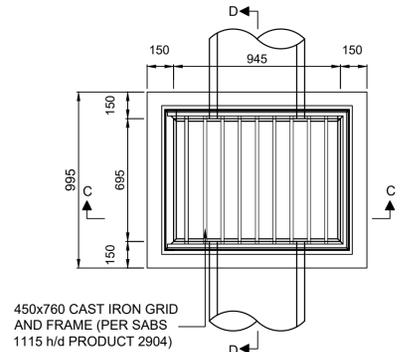
DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. NTHENBU	09/10/2020
SCALE	AS SHOWN		
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028	
CHECKED BY	SN		09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA	
CHECKED BY	SN		09/10/2020

PAPER SIZE	TRANSNET DRW. NO.	SHEET	REV.
A1	XEL010-6001-00		
CONSULTANT / CONTRACTOR DRW. NO.			
190001-T-3301			

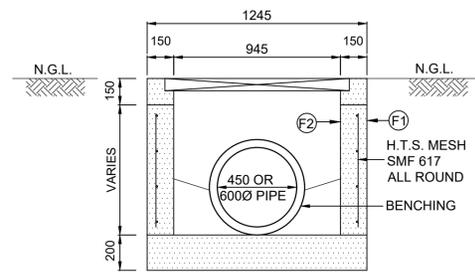
© Copyright vest in TPA Port of East London. No parts of this drawing may be copied, manipulated or used for personal gain without the permission of TPA Port of East London.



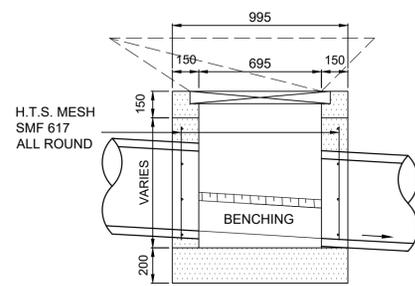
PLAN VIEW: V - DRAIN AND GRID INLET
SCALE 1:20



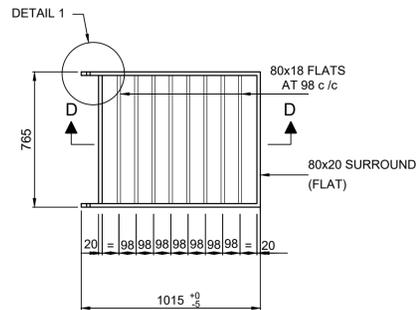
PLAN VIEW: GRID INLET
SCALE 1:20



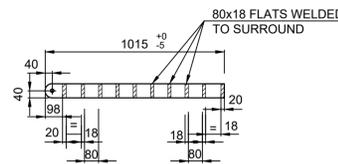
SECTION C-C
SCALE 1:20



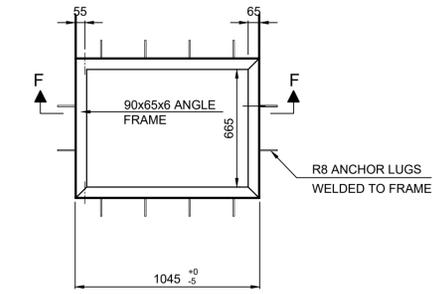
SECTION D-D
SCALE 1:20



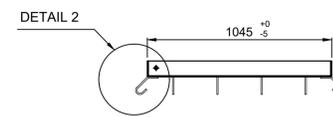
PLAN
GRID DETAIL
SCALE 1:20



SECTION D-D
SCALE 1:20



PLAN
FRAME DETAIL (SINGLE)
SCALE 1:20



SECTION F-F
SCALE 1:20

NOTES:

- 1 SETTING OUT
 - 1.1 ALL SETTING OUT DATA LEVELS AND DIMENSIONS SHALL BE PROVIDED IN ELECTRONIC FORMAT AND VERIFIED BY CONTRACT ON SITE PRIOR OF CONSTRUCTION.
 - 1.2 ALL SURVEY AND SETTING OUT DATA SHALL BE PROVIDED ON WGS 84 (L27) CO-ORDINATE SYSTEM.
 - 1.3 NO DIMENSIONS SHALL BE SCALED ON SITE.
- 2 DESIGN STANDARD
 - 2.1 ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE COLTO SPECIFICATION FOR ROADS AND BRIDGE WORK FOR STATE ROAD AUTHORITIES.
- 3 DRAINAGE
 - 3.1 ALL PIPE CULVERTS SHALL BE CHECKED BY ACCURATE FIELD SURVEY AND THE DESIGN CONFIRMED ON SITE BEFORE CONSTRUCTION.
 - 3.2 FOR ALL TYPICAL DRAWINGS DETAILS REFER TO DRAWING No. XEL010-6001-00 / 190001-T-3301
- 4 GUARDRAILS
 - 4.1 GUARDRAILS TO BE ERECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
- 5 SERVICES
 - 5.1 EXISTING SERVICE TO BE IDENTIFIED AND PROTECTED OR RELOCATED PRIOR TO CONSTRUCTION OF THE ROAD WORKS.

LEGEND

- NEW V-DRAINS
- NEW STORMWATER PIPE
- NEW HEADWALL
- NEW GRID INLET
- KERB & CHANNEL

FOR TENDER

09	ISSUED FOR TENDER PACK	2020-09-18
No.	DESCRIPTION / REVISIONS	DATE



PROJECT / AREA / ASSET / SUBJECT

PORT OF EAST LONDON

DRAWING TITLE
GRID INLET DETAILS

DATE	2020-09-18	NH - PROJECT MANAGER MRS. B. MTHEMBU 09/10/2020
SCALE	AS SHOWN	SIGNATURE DATE
DESIGNED BY	BM	NH - SENIOR ENGINEER MR. S. NKABINDE PR2018300028
CHECKED BY	SN	09/10/2020
DRAWN BY	BM	NH - PORT ENGINEER MR. A. SINGAMA
CHECKED BY	SN	09/10/2020

PAPER SIZE	TRANSNET DRW. NO.	SHEET	REV.
A1	XEL010-6002-00		
CONSULTANT / CONTRACTOR DRW. NO.		190001-T-3302	

PART 4: SITE INFORMATION

1. Description of the Site and its surroundings

1.1. General description

The Port View Road is located within the Port of East London on the west bank and serves as access to the West bank Foreshore, Tanker berth, Grain Elevator, etc. Topographically Port View Road occurs along a ridge that has a gradual fall towards the harbour. The road trends in a northwest to southeast direction until it turns, crossing a railway and then trends from the southwest to north east.

Figure1: Locality Map



The road condition was visually assessed and classified as poor in accordance with TMH 9 Visual Assessment for Flexible Pavement. A number of different pavement distress types were observed from crocodile cracks, longitudinal cracks, block cracks, pumping across the length of the road.

The total length of Port View road under consideration for this project is approximately 1.1km long. This comprises of three individual roads that tie into each other at T-Junction intersections as shown below:



a) Section 1 (Km 0.00 to Km 0.043)

Section 1 is a short section, only 43m long, of the existing access road beyond the security control. The road comprises of a 2-lane single carriageway, approximately 6-7m wide with gravel shoulders.

b) Section 2 (Km 0.00 to Km 0.620)

This section constitutes the major portion of the access road, approximately 620m long. The road also comprises of a 2-lane single carriageway, approximately 6-7m wide with gravel shoulders. The horizontal alignment includes curves of 50 – 120m generally fitted to the alignment of the existing road. At Km 0.600 the road crosses a narrow road-over-rail bridge.

c) Section 3 (km 0.00 to Km 0.370)

The section of the road also comprises of a 2-lane single carriageway, approximately 370m long and 6-7m wide with gravel shoulders. The portion of Road 3 from Km 0+020 to Km 0+100 is on a 140m radius curve and on fill of up to 5.0m high. At Km 0 - 110 the existing road follows a 15.0m radius horizontal curve which is undesirable for the turning of the WB50 design vehicle.

1.2. Geotechnical investigations

Transnet contracted a service provider to conduct conditional assessment including geotechnical investigation, traffic study and surveys for Port view road. The findings from the geotechnical study revealed that:

- The pavement layers vary in thickness and these inconsistencies would accelerate degradation, especially with the heavy haulage truck trafficking.
- Perched groundwater encountered. Here the subgrades are saturated, and pumping occurs.
- Soft saturated residual clay intersected directly below road layer works. Expansion and shrinkage, with variations in perched groundwater conditions may occur over time.
- Soft subgrade conditions with cobble size fragments occur. Compaction shadows, settlement and pumping could occur.
- Phenolphthalein tests indicate cement or lime stabilization in road layers. As this pavement is located over reclaimed land it is possible that stabilization was undertaken as a precaution

1.3. Visual inspections

The following are the defects/cracks which were identified:

- Fatigue/Alligator cracks
- Longitudinal cracks
- Transverse Cracks
- Poor Drainage
- Poor road Marking
- Pumping
- Poor Skid Resistance
- Block Cracking
- Poor Texture
- Loss of Aggregate
- Rutting

1.4. Contractor Establishment

Upon receipt of site access certificate, the contractor will be required to establish a site offices and laydown area. The facilities established on site will remain for the duration of the works, connection points will be available for the contractor, however the contractor will be required to pay for services utilised during the duration of the contract. The proposed contractor site establishment and laydown area is shown below.



The proposed site establishment, including site office, storage facility, plant storage and ablution will be accommodated on an open field next to the road. The contractor will bring their own ablution facilities. The *Contractor* must adhere to the COVID 19 regulations as gazetted, and any additional requirements stipulated by TNPA. They must adhere to the COVID 19 screening requirements at all entry and exit points



of the Port. If the contractor or its employees tested positive during the screening, entry will not be permitted.

1.5. Operations on the site

The works will be performed in an operational environment; the road will remain operational with on-going traffic for the entire duration of the contract. The contractor is to take cognisance of the TNPA employees and its stakeholders in and around the road.

1.5.1. Sectional Access

Port View Road is located on an operational area and provides access to tenants that operate within the West bank and such the contractor will be required to ensure that the works do not interfere or obstruct access for tenants. The contractor will provide and maintain temporal access to the premises of the tenants within the West Bank. The contractor will also be required to notify the Project Manager 5 working days prior to such work that will result in obstruction of access taking place.

1.5.2. Construction Sequence

To ensure that the operations in West Bank are not hindered as result of the works, the contractor will schedule the works in order to allow the pavement layers to be constructed in sequence. The construction sequence will ensure that at any given instance, a single lane remains open for traffic and there are traffic management measures in place to monitor and ensure traffic flow. A drawing showing traffic diversion and road closures is provided.

1.6. Existing buildings, structures, and plant & machinery on the Site

Port View Road is bounded by a housing development on the western side and a railway line on the east and largely within a green belt that is free of buildings and structures, and plant & machinery except for the last 400m where it crosses two railway lines via a level crossing and road over rail bridge respectively. It also passes under a conveyor bridge where it also comes within close proximity to the grain silos.

1.7. Subsoil information

The general geology of the area comprises sedimentary mudstone, siltstone and sandstone. The sedimentary unit's form part of the Lower Beaufort Stage; Beaufort Group; Karoo Super-Group. The site is overlain by fill (road layer works and reclaimed land), colluvial and residual soils which occurs above sedimentary rock.

According to the investigation results, the pavement is comprised of asphalt surfacing underlain by subbase quality materials and selected sub grade quality materials.

1.8. Hidden services

There are no Known Services shown on the drawings, but the Contractor shall nevertheless carry out visual inspections, using detecting apparatus, to identify Unknown Services and by making excavations to expose position of the service at critical points.

1.9. Other reports and publicly available information

This report is to be read in conjunction with the Geotechnical Investigation Report provided.