



TRANSNET NATIONAL PORTS AUTHORITY
 TENDER NUMBER: TNPA/2023/08/0003/38950/RFP
 DESCRIPTION OF THE WORKS: DCT BERTHS 203 TO 205 RECONSTRUCTION, DEEPENING AND LENGTHENING

TRANSNET SOC LIMITED

TENDER NUMBER: TNPA/2023/08/0003/38950/RFP
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ADDENDUM NO. 001

DATED 12 December 2023

The following information is furnished in addition to, in amplification and substitution of, matters contained in the tender documents issued in respect of the abovementioned work.

1. T1.1 TENDER NOTICE AND INVITATION TO TENDER

Replace existing page 1 of 6 of the **T1.1 TENDER NOTICE AND INVITATION TO TENDER** with attached page 1 of 6 of **T1.1 TENDER NOTICE AND INVITATION TO TENDER**.

The address for the compulsory tender clarification meeting has changed.

From: ~~Transnet Engineering Main Building, 2nd Floor, 311 Solomon Mahlangu Street, Durban (Next to Barons)~~

To: N-Shed, Port of Durban, Entrance No.3

DIRECTIONS:

- From **Margaret Mncadi Avenue** turn onto **Quayside Road**.
- Proceed straight to the Security Check Point (**Entrance No. 3**).
- Proceed up the ramp to **Schoeman's Bridge** roundabout and take the fourth exit down the ramp towards the **Fresh Produce Terminal**.
- Proceed straight along the **Fresh Produce Terminal**, at the end of the **Fresh Produce Terminal** turn right onto the **N-Shed** parking and arrive at the **N-Shed**.

2. C2 Activity Schedule

Caisson #14 has been added on page 26 as item 327, therefore the rest of the items had to be re-numbered from caisson #15 onwards.

WITNESSES:

1. _____

2. _____

WITNESSES:

1.  N. Zikhali

2.  J. McCann

TENDERER / CONTRACTOR



J. Mokheseng
TRANSNET SOC LIMITED



TRANSNET NATIONAL PORTS AUTHORITY
TENDER NUMBER: TNPA/2023/08/0003/38950/RFP
DESCRIPTION OF THE WORKS: DCT BERTHS 203 TO 205 RECONSTRUCTION, DEEPENING AND LENGTHENING

FROM : _____

DATE : _____

TO : Transnet National Ports Authority
237 Mahatma Gandhi Road
Durban
4000
(Attention: Mrs J McCann - Email. TENDERENQUIRIES@transnet.net)

Dear Sirs / Madam

TENDER NUMBER: TNPA/2023/08/0003/38950/RFP
DESCRIPTION OF THE WORKS: DCT BERTHS 203 TO 205 RECONSTRUCTION, DEEPENING AND LENGTHENING

Receipt of **Addendum No. 001** dated **12 December 2023** is hereby acknowledged.

Kind regards

TENDERER

NOTE: This acknowledgement must be signed and returned to this office on or before closing date of tender.

Ref: TNPA/2023/08/0003/38950/RFP

T1.1 TENDER NOTICE AND INVITATION TO TENDER

SECTION 1: NOTICE TO TENDERERS

1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

DESCRIPTION	Durban Container Terminal (DCT) Berths 203 to 205 Reconstruction, Deepening and Lengthening								
TENDER DOWNLOADING	<p>This Tender may be downloaded directly from the National Treasury eTender Publication Portal at www.etenders.gov.za and the Transnet website at https://transnetetenders.azurewebsites.net (please use Google Chrome to access Transnet link) FREE OF CHARGE.</p>								
COMPULSORY TENDER CLARIFICATION MEETING	<p>A Compulsory Tender Clarification Meeting will be conducted at Transnet Engineering Main Building, 2nd Floor, 311 Solomon Mahlangu Street, Durban (Next to Barons) N-Shed, Port of Durban, Entrance No.3 (as per the attached directions) on 29/01/2024 & 30/01/2024 starting at 10h00, for a period of ± 3 (three) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually, and information will not be repeated for the benefit of Tenderers arriving late.</p> <p>The Agenda will be as follows:</p> <p>Day 1 – 29/01/2024</p> <table border="1" data-bbox="480 1742 1343 1980"> <tr> <td data-bbox="486 1751 683 1809">10h00-11h00</td> <td data-bbox="689 1751 1337 1809">Signing of attendance register</td> </tr> <tr> <td data-bbox="486 1818 683 1877">11h00-13h00</td> <td data-bbox="689 1818 1337 1877">Tender Clarification : Technical and Commercial</td> </tr> <tr> <td data-bbox="486 1886 683 1944">13h00-14h00</td> <td data-bbox="689 1886 1337 1944">Break</td> </tr> <tr> <td data-bbox="486 1953 683 2011">14h00-15h00</td> <td data-bbox="689 1953 1337 2011">Specific Goals</td> </tr> </table>	10h00-11h00	Signing of attendance register	11h00-13h00	Tender Clarification : Technical and Commercial	13h00-14h00	Break	14h00-15h00	Specific Goals
10h00-11h00	Signing of attendance register								
11h00-13h00	Tender Clarification : Technical and Commercial								
13h00-14h00	Break								
14h00-15h00	Specific Goals								

Day 2 – 30/01/2024 (Tenderers will meet at the Day 1 venue before going to site)

09h00-10h00	Signing of attendance register
10h00-12h00	Safety Induction and Site Walk
12h00-13h00	Break
13h00-15h00	Questions & Answers

Note: All the sessions are compulsory to all Tenderers, and Tenderers must ensure that all Qualified / Experienced Personnel attend these sessions.

1.1 Tenderers failing to attend the **compulsory Clarification meetings (office and site) on both Day 1 and Day 2** will be disqualified.

1.2 The briefing session will start punctually at **10h00 on day 1 (one) and at 10h00 on day 2 (two)** and information will not be repeated for the benefit of Tenderers arriving late.

1.3 Tenderers are required to wear safety shoes, glasses, long sleeve shirts and long pants, high visibility vests and hard hats. Tenderers without the Personal Protective Equipment (PPE) as stated will not be allowed on the site walk.

1.4 Tenderers and their employees, visitors, clients and customers entering Transnet Offices, Depots, Workshops and Stores will undergo breathalyser testing and inductions.

1.5 All forms of firearms are prohibited on Transnet properties and premises.

1.6 The relevant persons attending the meeting must ensure that their original identity documents, passports or drivers' licence are on them for inspection at the access control gates.

	<p>1.7 Transnet will not be held responsible if any Tenderer who did not attend the full duration of the compulsory briefing sessions and subsequently feels disadvantaged as a result thereof.</p> <p>1.8 Tenderers to ensure that the Certificates of Attendance (T2.2-01 – Day 1) and (T2.2-01 – Day 2) are signed at the end of each session including the attendance register as this will serve as proof of attendance.</p> <p>Tenderers are required to bring these Returnable Schedules T2.2-01 (Day 1 and Day 2) to the Compulsory Tender Clarification Meeting to be signed by the Employer’s Representative.</p>
CLOSING DATE	<p>16:00 on 29/03/2024</p> <p>Tenderers must ensure that tenders are uploaded timeously onto the system. If a tender is late, it will not be accepted for consideration.</p>

2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

Log on to the Transnet eTenders management platform website

(<https://transnetetenders.azurewebsites.net>);

- Click on “ADVERTISED TENDERS” to view advertised tenders;
- Click on “SIGN IN/REGISTER – for bidder to register their information (must fill in all mandatory information);
- Click on “SIGN IN/REGISTER” - to sign in if already registered;
- Toggle (click to switch) the “Log an Intent” button to submit a bid;

J McCann

- Submit bid documents by uploading them into the system against each tender selected.
 - **Tenderers are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders as a result of the technical challenges. Please do not wait for the last hour to submit. A Tenderer can upload 30mb per upload and multiple uploads are permitted.**
- b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.
- c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

3. CONFIDENTIALITY

All information related to this RFP is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non-Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

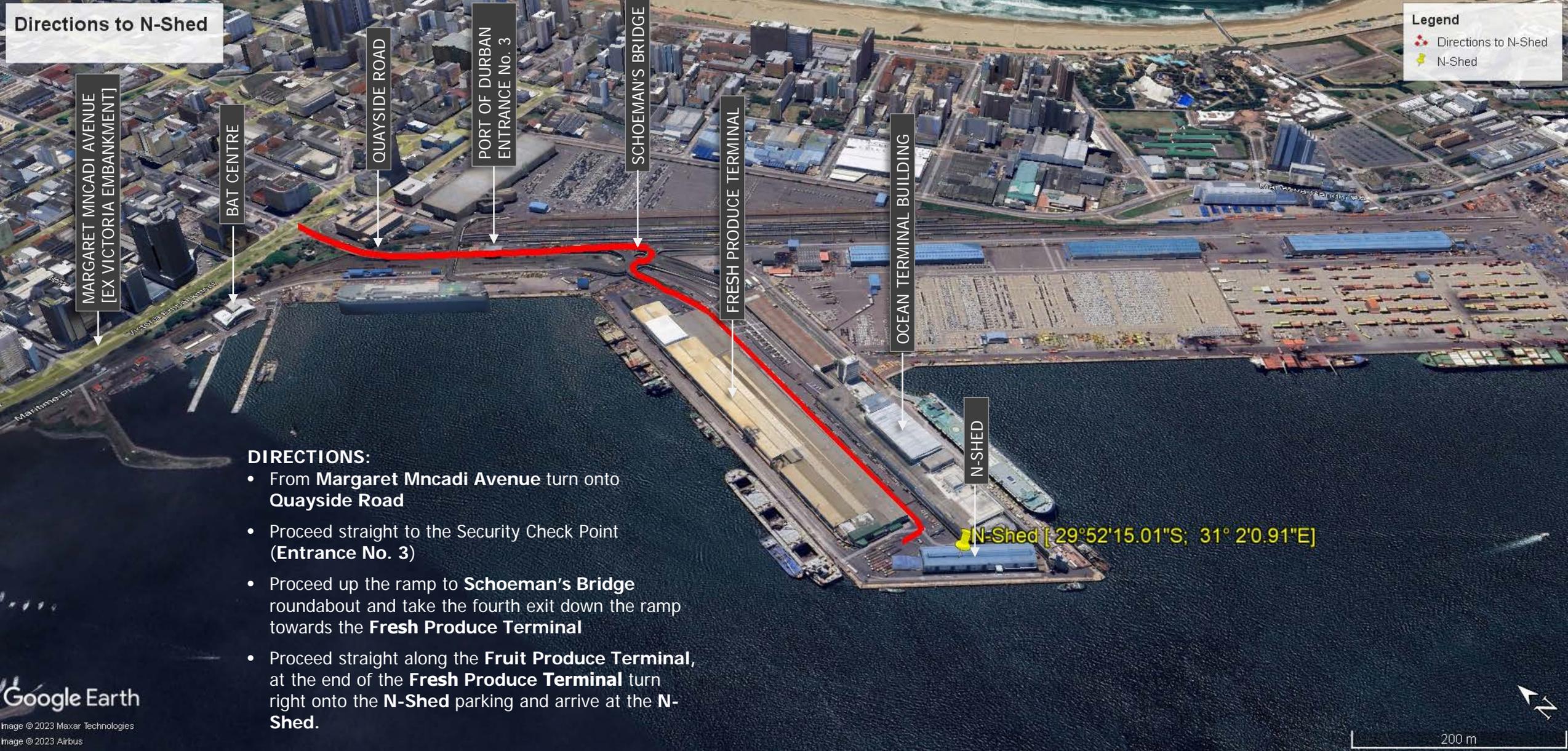
4. DISCLAIMERS

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer;

- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;
- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer;
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof;
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable on T2.2-23], [**Breach of Law**] whether or not they have been found guilty of a serious breach of law during the past 5 [five] years;
- 4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:
 - *unduly high or unduly low tendered rates or amounts in the tender offer;*
 - *contract data of contract provided by the tenderer; or*
 - *the contents of the tender returnables which are to be included in the contract.*

DIRECTIONS TO THE N-SHED, PORT OF DURBAN



Directions to N-Shed

MARGARET MNCADI AVENUE
[EX VICTORIA EMBANKMENT]

BAT CENTRE

QUAYSIDE ROAD

PORT OF DURBAN
ENTRANCE No. 3

SCHOEMAN'S BRIDGE

FRESH PRODUCE TERMINAL

OCEAN TERMINAL BUILDING

N-SHED

Legend

- Directions to N-Shed
- N-Shed

DIRECTIONS:

- From **Margaret Mncadi Avenue** turn onto **Quayside Road**
- Proceed straight to the Security Check Point (**Entrance No. 3**)
- Proceed up the ramp to **Schoeman's Bridge** roundabout and take the fourth exit down the ramp towards the **Fresh Produce Terminal**
- Proceed straight along the **Fruit Produce Terminal**, at the end of the **Fresh Produce Terminal** turn right onto the **N-Shed** parking and arrive at the **N-Shed**.

N-Shed [29°52'15.01"S; 31° 2'0.91"E]

Item No	Description	Activity Schedule Unit	Amount	
Section A	General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.			
	<u>PRELIMINARY AND GENERAL</u>			
	<u>FIXED CHARGE ITEMS</u>			
	1	Contractual requirements as per NEC3 ECC including all performance bonds, insurances etc.	Sum	
	Establishment of facilities and Equipment on the Site			
	Facilities for Engineer			
	2	Furnished offices at Lot 10 for Supervisor's Representatives	Sum	
	3	Nameboards, monthly progress photos and time lapse video	Sum	
	Facilities for Contractor			
	4	Offices and storage sheds	Sum	
	5	Workshops	Sum	
	6	Laboratories	Sum	
	7	Living accommodation and messing facilities	Sum	
	8	Ablution and latrine facilities	Sum	
	9	Tools and equipment	Sum	
	10	Water supplies, electric power and communications	Sum	
	11	Dealing with water	Sum	
	12	Access to site	Sum	
	Equipment			
	13	Provision of Equipment	Sum	
	Other fixed charge obligations			
14	Fencing, barriers and traffic control Equipment for quayside site	Sum		
15	Relocation of Contractor's and Employer's quayside site facilities from one phase to the next	Sum		
16	Removal of site establishment	Sum		
17	Survey of the site and setting out of the works	Sum		
18	Monitoring of existing block work quay wall	Sum		
19	Monitoring of new caisson quay wall	Sum		
20	Comply with all environmental and pollution control requirements as stipulated in the Environmental Management Plan and Environmental Specifications	Sum		
21	Comply with all Health and Safety Requirements	Sum		
Amount carried forward				

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
22	Comply with all industrial relations requirements	Sum	
23	red line / marked up drawings	Sum	
All other fixed charge obligations not covered elsewhere - tender to specify			
24	.....	Sum	
25	.....	Sum	
26	.....	Sum	
A.2	<u>TIME RELATED ITEMS</u>		
27	Contractual requirements as per NEC3 ECC including all performance bonds, insurances etc.	Sum	
Operation and Maintenance of Facilities on Site, for Duration of Construction, (unless otherwise stated)			
Facilities for Engineer			
28	Furnished offices at Lot 10 for Supervisor's Representatives	Sum	
29	Nameboards and monthly progress photos	Sum	
Facilities for Contractor			
31	Offices and storage sheds	Sum	
32	Workshops	Sum	
33	Laboratories	Sum	
34	Living accommodation and messing facilities	Sum	
35	Ablution and latrine facilities	Sum	
36	Tools and equipment	Sum	
37	Water supplies, electric power and communications	Sum	
38	Dealing with water	Sum	
39	Access	Sum	
Equipment			
40	Provision of Equipment	Sum	
Other Equipment (tenderer to specify)			
41	.....	Sum	
42	.....	Sum	
43	.....	Sum	
44	Supervision for duration of construction	Sum	
45	Company and head office overhead costs for duration of construction	Sum	
46	Other time related obligations	Sum	
47	Fencing, barriers and traffic control for quayside site	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
48	Survey of the site and setting out of the works	Sum	
49	Monitoring of existing block work quay wall	Sum	
50	Monitoring of new caisson quay wall	Sum	
51	Environmental Management Plan and Environmental Specifications	Sum	
52	Comply with all Health and Safety Requirements	Sum	
53	Comply with all industrial relations requirements	Sum	
54	Comply with all quality and document management and control requirements including provision of red line / marked up drawings	Sum	
55	All other time related obligations not covered elsewhere - tender to specify		
56	.....	Sum	
57	.....	Sum	
58	.....	Sum	
N. Zikhali Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount
	General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.		
Section B	<u>SITE CLEARANCE AND DEMOLITIONS</u>		
	Demolish, remove and dispose of structures/ buildings and dismantle steelwork, etc.		
1	Mess and ablution facility located at existing Berth 205	Sum	
2	Mess and ablution facility located at existing Berth 203	Sum	
3	Substation located at existing Berth 203	Sum	
4	Existing block quay wall at existing return quay	Sum	
5	Ro-Ro Ramp at end of existing Berth 205	Sum	
6	Existing service tunnel at Ro-Ro Ramp at existing 205 end	Sum	
7	Existing capping beam at Berth 203 Ro-Ro Ramp	Sum	
8	Ro-Ro Ramp at existing Berth 203	Sum	
9	Existing capping beam (including service tunnel) new cross service tunnel tie-in	Sum	
10	Existing busbar tunnel for new cross service tunnel tie-in	Sum	
11	Permanent STS Crane stop blocks	Sum	
12	Demolish and dispose of Shore Protection Concrete Beams	Sum	
	Demolitions and Site Clearance of existing crane yard at end of existing Berth 205		
13	Take down existing palisade fence and transport to Employer's salvage yard	Sum	
14	Demolish and dispose of reinforced concrete crane beams	Sum	
	Breaking up, demolish and dispose of existing flexible pavement in crane yard (Note - removal of existing back of quay flexible paving measured in Paving BoQ) Excavating and removing existing bitumous material to be disposed of with average depth of excavation:		
15	Exceeding 150mm but not exceeding 200mm	Sum	
	Breaking up, demolish and dispose of existing mass concrete pavement		
16	Unreinforced concrete of thickness greater than 300mm and less than 400mm	Sum	
	Sawing existing concrete for depths		
17	Exceeding 50mm but less than 300mm	Sum	
18	Exceeding 300mm but less than 425mm	Sum	
	Excavating and spoiling material from an existing pavement		
19	Cemented material	Sum	
20	Cut to spoil (dispose of) all remaining material to level of +2.2 CD. Material below +2.2 CD measured under dredging	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
Demolish/Remove electrical and comms infrastructure			
21	Take down existing high mast lights, demolish and dispose of plinth and base (located in 205 crane yard)	Sum	
22	Take down existing high mast lights, demolish plinth and make good paving (located back of quay)	Sum	
23	Relocate existing CCTV's, demolish and dispose of existing plinth and base (located in 205 crane yard)	Sum	
24	Take down existing CCTV/Radio mast, demolish plinth and make good paving (located back of quay)	Sum	
25	Relocate existing Minsubs, demolish plinth, remove armco barriers and make good paving	Sum	
26	Demolish and dispose of existing duct and chamber infrastructure within existing crane yard at 205	Sum	
27	Take down existing Navigation Light Masts, demolish and dispose of existing plinth and make good paving	Sum	
Decommission, dismantle and remove drainage, water and sewer infrastructure			
28	Existing slot drain	Sum	
29	Existing storm water pipe of max diameter 900mm	Sum	
30	Existing sewer pump stations	Sum	
31	Existing 110mm diameter sewer pipe in ground	Sum	
32	Existing 110mm diameter sewer pipe in service tunnel	Sum	
33	Existing 375mm diameter AC potable water main in ground	Sum	
34	Existing 275mm diameter potable water main in service tunnel	Sum	
Removal of existing quay furniture and services to Employer's designated storage site			
35	Tyre Fenders	Sum	
36	80 ton Bollards	Sum	
37	Quay Access Ladders	Sum	
38	Sole Plates	Sum	
39	A100 crane rails	Sum	
40	A150 crane rails	Sum	
41	Pipe cable protector	Sum	
42	Turn over drums	Sum	
43	Site Clearance of Lot 10	Sum	
N.. Zikhali			
Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount
Section C	General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.		
	<u>DREDGING, RECLAMATION AND SANDBANK EXTENSION</u>		
	Dredging		
	Mobilise dredging equipment (Tenderer to specify type and number of)		
1	Dredger type: _____	Sum	
2	Dredger type: _____	Sum	
	De-mobilise dredging equipment		
3	Dredger type: _____	Sum	
4	Dredger type: _____	Sum	
5	Excavate material other than rock by dredging from basin, channels (including caisson foundation trench and scour trench) to the levels and areas indicated on the drawings and dispose of at the permitted off-shore disposal site	Sum	
6	Excavate material other than rock by dredging from basin, existing sandbank and crane yard area to the levels and areas indicated on the drawings and deposit material in controlled manner for sandbank extension. Note, dredge quantity of material from existing crane yard is measured from +2.2CD. Removal of material above +2.2CD is measured under site clearance and demolitions	Sum	
7	Excavate material by dredging from off-shore borrow site and deposit material in controlled manner for sandbank extension	Sum	
8	Excavate material by dredging from off-shore borrow site and placement of material within reclamation area or within caisson	Sum	
9	Excavate material other than rock by dredging from Lot 10 and Lot 10 approach channel to the levels and areas indicated on the drawings and dispose of at the permitted off-shore disposal site	Sum	
10	Undertake surveys: In survey of basin, off shore disposal site, offshore borrow site and existing sandbank	Sum	
11	Out survey of basin	Sum	
12	Out survey of sandbank after deposition of off-shore material	Sum	
13	Final out survey of sandbank after deposition of material from Zones A and B	Sum	
14	Survey of phase 1 caisson and scour trench	Sum	
15	Survey of phase 2 caisson and scour trench	Sum	
16	Survey of phase 3 caisson and scour trench	Sum	
17	Out survey of offshore borrow site and offshore disposal site	Sum	
18	Maintenance dredging of towing route channels including surveys	Sum	
	Amount carried forward		

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
Compaction of reclamation			
19	Establishment on site for compaction and testing of reclamation	Sum	
20	Compaction of material within caissons	Sum	
21	Compaction of material between caissons and existing quay wall (Material placed and compacted above +2.885 CDP measured under Bill H - Paving)	Sum	
Undertake CPTu testing in accordance with performance based specification			
22	Phase 1	Sum	
23	Phase 2	Sum	
24	Phase 3	Sum	
Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount	
Section D	General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.			
	<u>PILING & GROUND IMPROVEMENT</u>			
	Rigid inclusion (RI) ground improvement			
	1	Establishment on site for rigid inclusions including demobilisation and remobilisation for phased construction	Sum	
	2	Move equipment to and set up at each RI position	Sum	
	Form hole for RIs of 750 mm diameter through material situated in the following successive depth ranges (measured from dredged seabed level):			
	3	Over 0m and up to 5 m.	Sum	
	4	Over 5m and up to 10 m.	Sum	
	5	Over 10m and up to 15 m.	Sum	
	6	Over 15 and up to 20 m.	Sum	
	7	Over 20 and up to 25 m.	Sum	
	8	Over 25 and up to 30 m.	Sum	
	Extra over D1.3, irrespective of depth, for forming holes through obstructions consisting of:			
	9	Cobbles, rock rubble or boulders of average dimension between 76 mm and 500 mm	Sum	
	10	Fibre reinforced concrete (28 day cube strength = 45 Mpa) to piles	Sum	
	Temporary Sheet pile / Combination pile walls			
	11	Establishment on site for sheetpiling including mobilisation for phase 1 works and phase 3 works	Sum	
	Move equipment to and set up at pile positions			
	12	HZ 880M C-C23 piles	Sum	
	13	HZ 880M C-12/AZ18-700 combination pile	Sum	
	14	HZ 880M C-24/AZ18-700 combination pile	Sum	
15	HZ880M-C-C1 pile	Sum		
16	HZ880M-C Special corner pile	Sum		
Manufacture, supply and deliver prefabricated piles (including connectors) consisting of				
17	HZ 880M C-C23 pile pairs (576 kg/m)	Sum		
18	HZ 880M C-12/AZ18-700 combination pile (451 kg/m)	Sum		
19	HZ 880M C-24/AZ18-700 combination pile (741 kg/m)	Sum		
20	HZ880M-C-C1 pile (283 kg/m)	Sum		
21	HZ880M-C Special corner pile ex 3xHZ880M-C Piles (630 kg/m)	Sum		
Amount carried forward				

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
22	C9 Corner Connector (9.3 kg/m)	Sum	
23	RZU Corner Connector (9.3 kg/m)	Sum	
Reinforce pile toe for driving through stone and rock rubble			
24	HZ 880M C-C23 pile pair toe modifications	Sum	
25	HZ880-C-C1 pile toe modifications	Sum	
26	Extra over for grouting attachments for HZ 880M C-C23 tie in pile	Sum	
Install prefabricated piles through material in the following depth ranges			
HZ 880M C-C23 pile pairs			
27	Up to 20m.	Sum	
28	Over 20 and up to 30m.	Sum	
HZ 880M C-12/AZ18-700 combination pile			
29	Up to 20m.	Sum	
30	HZ 880M C-24/AZ18-700 combination pile		
31	Up to 20m.	Sum	
32	Over 20 and up to 30m.	Sum	
33	Over 30 and up to 40m.	Sum	
HZ880-C-C1 pile			
34	Up to 20m.	Sum	
35	Over 20 and up to 30m.	Sum	
36	Over 30 and up to 40m.	Sum	
HZ880M-C Special corner pile			
37	Up to 20m.	Sum	
38	Over 20 and up to 30m.	Sum	
Extra over D2.4, irrespective of depth, for driving piles through obstructions consisting of existing foundation trench rockfill up to 76mm diameter			
39	HZ 880M C-C23 pile pairs (576 kg/m)	Sum	
40	HZ880M-C-C1 pile (283 kg/m)	Sum	
41	HZ880M-C Special corner pile ex 3xHZ880M-C Piles (630 kg/m)	Sum	
42	Extra over D2.4 to deal with scour rock up 1.5m thick, 500mm boulder diameter size before driving HZ880M-C-C1 pile Cut prefabricated piles to specified level	Sum	
43	HZ 880M C-C23 pile pairs	Sum	
44	HZ 880M C-12/AZ18-700 combination pile	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
45	HZ 880M C-24/AZ18-700 combination pile	Sum	
46	HZ880M-C-C1 pile	Sum	
47	HZ880M-C Special corner pile	Sum	
48	Construct grouted seal at sheetpile / existing quay wall interface	Sum	
Tie rods and walers			
49	Supply and install 90mm diameter tie rod	Sum	
50	Supply and install perpendicular connection between tie rod and HZ880M piles	Sum	
51	Supply and install angled connection between tie rod and HZ880 pile waler	Sum	
52	Supply and install back to back channel waler (2 x PC 300 x 100)	Sum	
Piling for cellular steel caissons			
53	Establishment on site for piling including all templates, guides etc	Sum	
Move equipment to and set up including all guides, templates etc at:			
54	Circular steel cells	Sum	
55	Junction Arcs	Sum	
Manufacture, supply and deliver piles:			
56	Straight web sheet pile AS 500-12.5 x 31m long	Sum	
57	AS 500 Bent Piles -12.5 x 31m long	Sum	
58	Junction Pile Type BP 35 x 31m long	Sum	
Install piles			
59	Straight web and bent sheet pile AS 500-12.5 x 31m long	Sum	
60	Junction Pile Type BP 35 x 31m long	Sum	
Cut prefabricated piles to specified level			
61	Straight web sheet pile AS 500-12.5 x 31m long	Sum	
62	Cut opening in piles to allow for stormwater pipe installation	Sum	
Corrossion Protection			
63	Supply and install 40 x 40 x 6mm, 75mm long, anode cleats (including holes)	Sum	
64	Supply 2000 x 190 x 120mm bolt-on aluminium anode including straps	Sum	
65	Install aluminium anodes	Sum	
66	Glass flake epoxy coating to piles	Sum	
Lot 10 stabilisation piling			
67	Establish on site for Lot 10 piling	Sum	
68	Move equipment to and set up at each pile position	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
69	Manufacture, supply and deliver 600mm dia steel tubular piles Drive permanent steel tube piles of diameter 600mm through material situated in the following successive depth ranges	Sum	
70	Over 0m and up to 10m.	Sum	
71	Over 10m and up to 15m.	Sum	
72	Strip/cut pile heads to level Driven Cast Insitu Piling (DCIS) - Rear crane rail and Bollard support	Sum	
73	Establish on site for DCIS piling	Sum	
74	Move equipment to and set up at each pile position Drive temporary casing for Driven Displacement Piling System to form holes for piles of 600mm diameter through material situated in the following successive depth ranges	Sum	
75	Over 0m and up to 10m.	Sum	
76	Over 10m and up to 15m.	Sum	
77	Extra over 8.2.6 for raking piles	Sum	
78	Forming of bulbous base for piles of 600mm diameter	Sum	
79	Steel reinforcement in Cast-in-Situ piles	Sum	
80	Concrete for cast-in-situ piles and bulbous bases	Sum	
81	Strip/cut pile heads to level	Sum	
82	Undertake static load test of pile as per specification Land based exploratory drilling for further site investigation - Provisional Allowance	Sum	
83	Establish on site for exploratory drilling	Sum	
84	Set up drilling rig at each location Rotary core drilling Nsize 54mm in:	Sum	
85	Category A (Soils and very weak rock with UCS < 3MPa)	Sum	
86	Category B (Soft to hard rock with UCS > 3MPa)	Sum	
87	Concrete	Sum	
88	Cobbles and boulders	Sum	
89	Gravel Install Nx casings for core drilling in:	Sum	
90	Category A material	Sum	
91	Boulders, cobbles or gravel	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
92	Core and material recovery of category B material	Sum	
93	Core boxes	Sum	
94	Conduct unconfined compressive strength tests on rock cores	Sum	
95	Grouting up of core holes	Sum	
Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount	
Section E	General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost. <u>FOUNDATION STONE BED AND SCOUR PROTECTION</u>			
	Provide and place geotextile			
	1	Reinforcement geotextile placed over RIs	Sum	
	2	Separation geotextile covering stone foundation trench	Sum	
	3	Separation geotextile covering scour protection trench and slopes	Sum	
	Provide and lay stone and rock for:			
	4	D ₅₀ = 90mm/T=500mm Lower Stone Layer for berth scour protection	Sum	
	5	D ₅₀ = 90mm/T=750mm Lower Stone Layer for berth scour protection	Sum	
	6	D ₅₀ = 540mm/T=850mm Upper Rock Layer for berth scour protection	Sum	
	7	D ₅₀ = 90mm/T=200mm Lower Stone Layer for basin scour protection	Sum	
8	D ₅₀ = 230mm/T=350mm Upper Rock Layer for basin scour protection	Sum		
Provide, lay, compact stone and level for:				
9	60mm <= D ₅₀ <=75mm for stone bed	Sum		
10	Provide, place and remove grouted scour mats for temporary scour protection at phase interfaces	Sum		
Amount carried forward to summary				

Item No	Description	Activity Schedule Unit	Amount
General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.			
Section F			
<u>CAISSON QUAY WALL</u>			
Caisson Manufacture			
1	Establish on site at Lot 10 for Caisson Manufacturing and Launching including mobilising slip form Equipment and Syncrolift	Sum	
Stabilise Lot 10 launching dock: Structural steel			
2	Manufacture, supply, galvanise and deliver prefabricated struts - Type A including shear connectors	Sum	
3	Manufacture, supply, galvanise and deliver prefabricated piling templates - Type B including shear connectors	Sum	
4	Install prefabricated struts including grouting	Sum	
5	Install prefabricated piling templates including grouting	Sum	
Formwork			
Rough finish			
Plane vertical to			
Caisson base sides			
6	Caisson No. 1	Sum	
7	Caisson No. 2	Sum	
8	Caisson No. 3	Sum	
9	Caisson No. 4	Sum	
10	Caisson No. 5	Sum	
11	Caisson No. 6	Sum	
12	Caisson No. 7	Sum	
13	Caisson No. 8	Sum	
14	Caisson No. 9	Sum	
15	Caisson No. 10	Sum	
16	Caisson No. 11	Sum	
17	Caisson No. 12	Sum	
18	Caisson No. 13	Sum	
19	Caisson No. 14	Sum	
20	Caisson No. 15	Sum	
21	Caisson No. 16	Sum	
22	Caisson No. 17	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
23	Caisson No. 18	Sum	
24	Caisson No. 19	Sum	
25	Caisson No. 20	Sum	
26	Caisson No. 21	Sum	
27	Caisson No. 22	Sum	
28	Caisson No. 23	Sum	
29	Caisson No. 24	Sum	
30	Caisson No. 25	Sum	
31	Caisson No. 26	Sum	
32	Caisson No. 27	Sum	
33	Caisson No. 28	Sum	
34	Caisson No. 29	Sum	
35	Caisson No. 30	Sum	
36	Caisson No. 31	Sum	
37	Caisson No. 32	Sum	
38	Caisson No. 33	Sum	
39	Caisson No. 34	Sum	
40	Caisson No. 35	Sum	
41	Caisson No. 36	Sum	
42	Caisson No. 37	Sum	
43	Caisson No. 38	Sum	
44	Caisson No. 39	Sum	
45	Caisson No. 40	Sum	
46	Caisson No. 41	Sum	
47	Caisson No. 42	Sum	
48	Caisson No. 43	Sum	
49	Caisson No. 44	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
50	Caisson No. 45	Sum	
51	Caisson No. 46	Sum	
52	Caisson No. 47	Sum	
53	Caisson No. 48	Sum	
54	Caisson No. 49	Sum	
55	Caisson No. 50	Sum	
56	Caisson No. 51	Sum	
57	Caisson No. 52	Sum	
58	Caisson No. 53	Sum	
59	Caisson No. 54	Sum	
60	Caisson No. 55	Sum	
61	Caisson No. 56	Sum	
62	Caisson No. 57	Sum	
63	Caisson No. 58	Sum	
64	Caisson No. 59	Sum	
65	Caisson No. 60	Sum	
66	Caisson No. 61	Sum	
67	Caisson No. 62	Sum	
68	Caisson No. 63	Sum	
69	Caisson No. 64	Sum	
70	Caisson No. 65	Sum	
71	Caisson No. 66	Sum	
72	Caisson No. 67	Sum	
73	Caisson No. 68	Sum	
74	Caisson No. 69	Sum	
75	Caisson No. 70	Sum	
76	Caisson No. 71	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
77	Caisson No. 72	Sum	
78	Caisson No. 73	Sum	
79	Caisson No. 74	Sum	
80	Caisson No. 75	Sum	
81	Caisson No. 76	Sum	
82	Caisson No. 77	Sum	
	Caisson cross walls	Sum	
83	Caisson No. 1	Sum	
84	Caisson No. 2	Sum	
85	Caisson No. 3	Sum	
86	Caisson No. 4	Sum	
87	Caisson No. 5	Sum	
88	Caisson No. 6	Sum	
89	Caisson No. 7	Sum	
90	Caisson No. 8	Sum	
91	Caisson No. 9	Sum	
92	Caisson No. 10	Sum	
93	Caisson No. 11	Sum	
94	Caisson No. 12	Sum	
95	Caisson No. 13	Sum	
96	Caisson No. 14	Sum	
97	Caisson No. 15	Sum	
98	Caisson No. 16	Sum	
99	Caisson No. 17	Sum	
100	Caisson No. 18	Sum	
101	Caisson No. 19	Sum	
102	Caisson No. 20	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
103	Caisson No. 21	Sum	
104	Caisson No. 22	Sum	
105	Caisson No. 23	Sum	
106	Caisson No. 24	Sum	
107	Caisson No. 25	Sum	
108	Caisson No. 26	Sum	
109	Caisson No. 27	Sum	
110	Caisson No. 28	Sum	
111	Caisson No. 29	Sum	
112	Caisson No. 30	Sum	
113	Caisson No. 31	Sum	
114	Caisson No. 32	Sum	
115	Caisson No. 33	Sum	
116	Caisson No. 34	Sum	
117	Caisson No. 35	Sum	
118	Caisson No. 36	Sum	
119	Caisson No. 37	Sum	
120	Caisson No. 38	Sum	
121	Caisson No. 39	Sum	
122	Caisson No. 40	Sum	
123	Caisson No. 41	Sum	
124	Caisson No. 42	Sum	
125	Caisson No. 43	Sum	
126	Caisson No. 44	Sum	
127	Caisson No. 45	Sum	
128	Caisson No. 46	Sum	
129	Caisson No. 47	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
130	Caisson No. 48	Sum	
131	Caisson No. 49	Sum	
132	Caisson No. 50	Sum	
133	Caisson No. 51	Sum	
134	Caisson No. 52	Sum	
135	Caisson No. 53	Sum	
136	Caisson No. 54	Sum	
137	Caisson No. 55	Sum	
138	Caisson No. 56	Sum	
139	Caisson No. 57	Sum	
140	Caisson No. 58	Sum	
141	Caisson No. 59	Sum	
142	Caisson No. 60	Sum	
143	Caisson No. 61	Sum	
144	Caisson No. 62	Sum	
145	Caisson No. 63	Sum	
146	Caisson No. 64	Sum	
147	Caisson No. 65	Sum	
148	Caisson No. 66	Sum	
149	Caisson No. 67	Sum	
150	Caisson No. 68	Sum	
151	Caisson No. 69	Sum	
152	Caisson No. 70	Sum	
153	Caisson No. 71	Sum	
154	Caisson No. 72	Sum	
155	Caisson No. 73	Sum	
156	Caisson No. 74	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
157	Caisson No. 75	Sum	
158	Caisson No. 76	Sum	
159	Caisson No. 77	Sum	
	Curved vertical to Inner caisson walls	Sum	
160	Caisson No. 1	Sum	
161	Caisson No. 2	Sum	
162	Caisson No. 3	Sum	
163	Caisson No. 4	Sum	
164	Caisson No. 5	Sum	
165	Caisson No. 6	Sum	
166	Caisson No. 7	Sum	
167	Caisson No. 8	Sum	
168	Caisson No. 9	Sum	
169	Caisson No. 10	Sum	
170	Caisson No. 11	Sum	
171	Caisson No. 12	Sum	
172	Caisson No. 13	Sum	
173	Caisson No. 14	Sum	
174	Caisson No. 15	Sum	
175	Caisson No. 16	Sum	
176	Caisson No. 17	Sum	
177	Caisson No. 18	Sum	
178	Caisson No. 19	Sum	
179	Caisson No. 20	Sum	
180	Caisson No. 21	Sum	
181	Caisson No. 22	Sum	
182	Caisson No. 23	Sum	
183	Caisson No. 24	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
184	Caisson No. 25	Sum	
185	Caisson No. 26	Sum	
186	Caisson No. 27	Sum	
187	Caisson No. 28	Sum	
188	Caisson No. 29	Sum	
189	Caisson No. 30	Sum	
190	Caisson No. 31	Sum	
191	Caisson No. 32	Sum	
192	Caisson No. 33	Sum	
193	Caisson No. 34	Sum	
194	Caisson No. 35	Sum	
195	Caisson No. 36	Sum	
196	Caisson No. 37	Sum	
197	Caisson No. 38	Sum	
198	Caisson No. 39	Sum	
199	Caisson No. 40	Sum	
200	Caisson No. 41	Sum	
201	Caisson No. 42	Sum	
202	Caisson No. 43	Sum	
203	Caisson No. 44	Sum	
204	Caisson No. 45	Sum	
205	Caisson No. 46	Sum	
206	Caisson No. 47	Sum	
207	Caisson No. 48	Sum	
208	Caisson No. 49	Sum	
209	Caisson No. 50	Sum	
210	Caisson No. 51	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
211	Caisson No. 52	Sum	
212	Caisson No. 53	Sum	
213	Caisson No. 54	Sum	
214	Caisson No. 55	Sum	
215	Caisson No. 56	Sum	
216	Caisson No. 57	Sum	
217	Caisson No. 58	Sum	
218	Caisson No. 59	Sum	
219	Caisson No. 60	Sum	
220	Caisson No. 61	Sum	
221	Caisson No. 62	Sum	
222	Caisson No. 63	Sum	
223	Caisson No. 64	Sum	
224	Caisson No. 65	Sum	
225	Caisson No. 66	Sum	
226	Caisson No. 67	Sum	
227	Caisson No. 68	Sum	
228	Caisson No. 69	Sum	
229	Caisson No. 70	Sum	
230	Caisson No. 71	Sum	
231	Caisson No. 72	Sum	
232	Caisson No. 73	Sum	
233	Caisson No. 74	Sum	
234	Caisson No. 75	Sum	
235	Caisson No. 76	Sum	
236	Caisson No. 77	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
	Plane vertical to	Sum	
	Outer caisson wall surface including caisson nibs, chamfers and narrow widths	Sum	
237	Caisson No. 1	Sum	
238	Caisson No. 2	Sum	
239	Caisson No. 3	Sum	
240	Caisson No. 4	Sum	
241	Caisson No. 5	Sum	
242	Caisson No. 6	Sum	
243	Caisson No. 7	Sum	
244	Caisson No. 8	Sum	
245	Caisson No. 9	Sum	
246	Caisson No. 10	Sum	
247	Caisson No. 11	Sum	
248	Caisson No. 12	Sum	
249	Caisson No. 13	Sum	
250	Caisson No. 14	Sum	
251	Caisson No. 15	Sum	
252	Caisson No. 16	Sum	
253	Caisson No. 17	Sum	
254	Caisson No. 18	Sum	
255	Caisson No. 19	Sum	
256	Caisson No. 20	Sum	
257	Caisson No. 21	Sum	
258	Caisson No. 22	Sum	
259	Caisson No. 23	Sum	
260	Caisson No. 24	Sum	
261	Caisson No. 25	Sum	
262	Caisson No. 26	Sum	
263	Caisson No. 27	Sum	
264	Caisson No. 28	Sum	
265	Caisson No. 29	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
266	Caisson No. 30	Sum	
267	Caisson No. 31	Sum	
268	Caisson No. 32	Sum	
269	Caisson No. 33	Sum	
270	Caisson No. 34	Sum	
271	Caisson No. 35	Sum	
272	Caisson No. 36	Sum	
273	Caisson No. 37	Sum	
274	Caisson No. 38	Sum	
275	Caisson No. 39	Sum	
276	Caisson No. 40	Sum	
277	Caisson No. 41	Sum	
278	Caisson No. 42	Sum	
279	Caisson No. 43	Sum	
280	Caisson No. 44	Sum	
281	Caisson No. 45	Sum	
282	Caisson No. 46	Sum	
283	Caisson No. 47	Sum	
284	Caisson No. 48	Sum	
285	Caisson No. 49	Sum	
286	Caisson No. 50	Sum	
287	Caisson No. 51	Sum	
288	Caisson No. 52	Sum	
289	Caisson No. 53	Sum	
290	Caisson No. 54	Sum	
291	Caisson No. 55	Sum	
292	Caisson No. 56	Sum	
293	Caisson No. 57	Sum	
294	Caisson No. 58	Sum	
295	Caisson No. 59	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
296	Caisson No. 60	Sum	
297	Caisson No. 61	Sum	
298	Caisson No. 62	Sum	
299	Caisson No. 63	Sum	
300	Caisson No. 64	Sum	
301	Caisson No. 65	Sum	
302	Caisson No. 66	Sum	
303	Caisson No. 67	Sum	
304	Caisson No. 68	Sum	
305	Caisson No. 69	Sum	
306	Caisson No. 70	Sum	
307	Caisson No. 71	Sum	
308	Caisson No. 72	Sum	
309	Caisson No. 73	Sum	
310	Caisson No. 74	Sum	
311	Caisson No. 75	Sum	
312	Caisson No. 76	Sum	
313	Caisson No. 77	Sum	
	Curved vertical to		
	Outer caisson wall surface	Sum	
314	Caisson No. 1	Sum	
315	Caisson No. 2	Sum	
316	Caisson No. 3	Sum	
317	Caisson No. 4	Sum	
318	Caisson No. 5	Sum	
319	Caisson No. 6	Sum	
320	Caisson No. 7	Sum	
321	Caisson No. 8	Sum	
322	Caisson No. 9	Sum	
323	Caisson No. 10	Sum	
324	Caisson No. 11	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
325	Caisson No. 12	Sum	
326	Caisson No. 13	Sum	
327	Caisson No. 14	Sum	
328	Caisson No. 15	Sum	
329	Caisson No. 16	Sum	
330	Caisson No. 17	Sum	
331	Caisson No. 18	Sum	
332	Caisson No. 19	Sum	
333	Caisson No. 20	Sum	
334	Caisson No. 21	Sum	
335	Caisson No. 22	Sum	
336	Caisson No. 23	Sum	
337	Caisson No. 24	Sum	
338	Caisson No. 25	Sum	
339	Caisson No. 26	Sum	
340	Caisson No. 27	Sum	
341	Caisson No. 28	Sum	
342	Caisson No. 29	Sum	
343	Caisson No. 30	Sum	
344	Caisson No. 31	Sum	
345	Caisson No. 32	Sum	
346	Caisson No. 33	Sum	
347	Caisson No. 34	Sum	
348	Caisson No. 35	Sum	
349	Caisson No. 36	Sum	
350	Caisson No. 37	Sum	
351	Caisson No. 38	Sum	
352	Caisson No. 39	Sum	
353	Caisson No. 40	Sum	
354	Caisson No. 41	Sum	
355	Caisson No. 42	Sum	
356	Caisson No. 43	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
357	Caisson No. 44	Sum	
358	Caisson No. 45	Sum	
359	Caisson No. 46	Sum	
360	Caisson No. 47	Sum	
361	Caisson No. 48	Sum	
362	Caisson No. 49	Sum	
363	Caisson No. 50	Sum	
364	Caisson No. 51	Sum	
365	Caisson No. 52	Sum	
366	Caisson No. 53	Sum	
367	Caisson No. 54	Sum	
368	Caisson No. 55	Sum	
369	Caisson No. 56	Sum	
370	Caisson No. 57	Sum	
371	Caisson No. 58	Sum	
372	Caisson No. 59	Sum	
373	Caisson No. 60	Sum	
374	Caisson No. 61	Sum	
375	Caisson No. 62	Sum	
376	Caisson No. 63	Sum	
377	Caisson No. 64	Sum	
378	Caisson No. 65	Sum	
379	Caisson No. 66	Sum	
380	Caisson No. 67	Sum	
381	Caisson No. 68	Sum	
382	Caisson No. 69	Sum	
383	Caisson No. 70	Sum	
384	Caisson No. 71	Sum	
385	Caisson No. 72	Sum	
386	Caisson No. 73	Sum	
387	Caisson No. 74	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
388	Caisson No. 75	Sum	
389	Caisson No. 76	Sum	
390	Caisson No. 77	Sum	
	Special off-form finish Washboard finish to caisson base	Sum	
391	Caisson No. 1	Sum	
392	Caisson No. 2	Sum	
393	Caisson No. 3	Sum	
394	Caisson No. 4	Sum	
395	Caisson No. 5	Sum	
396	Caisson No. 6	Sum	
397	Caisson No. 7	Sum	
398	Caisson No. 8	Sum	
399	Caisson No. 9	Sum	
400	Caisson No. 10	Sum	
401	Caisson No. 11	Sum	
402	Caisson No. 12	Sum	
403	Caisson No. 13	Sum	
404	Caisson No. 14	Sum	
405	Caisson No. 15	Sum	
406	Caisson No. 16	Sum	
407	Caisson No. 17	Sum	
408	Caisson No. 18	Sum	
409	Caisson No. 19	Sum	
410	Caisson No. 20	Sum	
411	Caisson No. 21	Sum	
412	Caisson No. 22	Sum	
413	Caisson No. 23	Sum	
414	Caisson No. 24	Sum	
415	Caisson No. 25	Sum	
416	Caisson No. 26	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
417	Caisson No. 27	Sum	
418	Caisson No. 28	Sum	
419	Caisson No. 29	Sum	
420	Caisson No. 30	Sum	
421	Caisson No. 31	Sum	
422	Caisson No. 32	Sum	
423	Caisson No. 33	Sum	
424	Caisson No. 34	Sum	
425	Caisson No. 35	Sum	
426	Caisson No. 36	Sum	
427	Caisson No. 37	Sum	
428	Caisson No. 38	Sum	
429	Caisson No. 39	Sum	
430	Caisson No. 40	Sum	
431	Caisson No. 41	Sum	
432	Caisson No. 42	Sum	
433	Caisson No. 43	Sum	
434	Caisson No. 44	Sum	
435	Caisson No. 45	Sum	
436	Caisson No. 46	Sum	
437	Caisson No. 47	Sum	
438	Caisson No. 48	Sum	
439	Caisson No. 49	Sum	
440	Caisson No. 50	Sum	
441	Caisson No. 51	Sum	
442	Caisson No. 52	Sum	
443	Caisson No. 53	Sum	
444	Caisson No. 54	Sum	
445	Caisson No. 55	Sum	
446	Caisson No. 56	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
447	Caisson No. 57	Sum	
448	Caisson No. 58	Sum	
449	Caisson No. 59	Sum	
450	Caisson No. 60	Sum	
451	Caisson No. 61	Sum	
452	Caisson No. 62	Sum	
453	Caisson No. 63	Sum	
454	Caisson No. 64	Sum	
455	Caisson No. 65	Sum	
456	Caisson No. 66	Sum	
457	Caisson No. 67	Sum	
458	Caisson No. 68	Sum	
459	Caisson No. 69	Sum	
460	Caisson No. 70	Sum	
461	Caisson No. 71	Sum	
462	Caisson No. 72	Sum	
463	Caisson No. 73	Sum	
464	Caisson No. 74	Sum	
465	Caisson No. 75	Sum	
466	Caisson No. 76	Sum	
467	Caisson No. 77	Sum	
	Box Out Holes / Form Voids		
	Form voids in cross walls of caissons	Sum	
	Form 78 m² void in cross wall of caisson typical	Sum	
468	Caisson No. 1	Sum	
469	Caisson No. 2	Sum	
470	Caisson No. 3	Sum	
471	Caisson No. 4	Sum	
472	Caisson No. 5	Sum	
473	Caisson No. 6	Sum	
474	Caisson No. 7	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
475	Caisson No. 8	Sum	
476	Caisson No. 9	Sum	
477	Caisson No. 10	Sum	
478	Caisson No. 11	Sum	
479	Caisson No. 12	Sum	
480	Caisson No. 13	Sum	
481	Caisson No. 14	Sum	
482	Caisson No. 15	Sum	
483	Caisson No. 16	Sum	
484	Caisson No. 17	Sum	
485	Caisson No. 18	Sum	
486	Caisson No. 19	Sum	
487	Caisson No. 20	Sum	
488	Caisson No. 21	Sum	
489	Caisson No. 22	Sum	
490	Caisson No. 23	Sum	
491	Caisson No. 24	Sum	
492	Caisson No. 25	Sum	
493	Caisson No. 26	Sum	
494	Caisson No. 27	Sum	
495	Caisson No. 28	Sum	
496	Caisson No. 29	Sum	
497	Caisson No. 30	Sum	
498	Caisson No. 31	Sum	
499	Caisson No. 32	Sum	
500	Caisson No. 33	Sum	
501	Caisson No. 34	Sum	
502	Caisson No. 35	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
503	Caisson No. 36	Sum	
504	Caisson No. 37	Sum	
505	Caisson No. 38	Sum	
506	Caisson No. 39	Sum	
507	Caisson No. 40	Sum	
508	Caisson No. 41	Sum	
509	Caisson No. 42	Sum	
510	Caisson No. 43	Sum	
511	Caisson No. 44	Sum	
512	Caisson No. 45	Sum	
513	Caisson No. 46	Sum	
514	Caisson No. 47	Sum	
515	Caisson No. 48	Sum	
516	Caisson No. 49	Sum	
517	Caisson No. 50	Sum	
518	Caisson No. 51	Sum	
519	Caisson No. 52	Sum	
520	Caisson No. 53	Sum	
521	Caisson No. 54	Sum	
522	Caisson No. 55	Sum	
523	Caisson No. 56	Sum	
524	Caisson No. 57	Sum	
525	Caisson No. 58	Sum	
526	Caisson No. 59	Sum	
527	Caisson No. 60	Sum	
528	Caisson No. 61	Sum	
529	Caisson No. 62	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
530	Caisson No. 63	Sum	
531	Caisson No. 64	Sum	
532	Caisson No. 65	Sum	
533	Caisson No. 66	Sum	
534	Caisson No. 67	Sum	
535	Caisson No. 68	Sum	
536	Caisson No. 69	Sum	
537	Caisson No. 70	Sum	
538	Caisson No. 71	Sum	
	Form 57 m² void in cross wall of caisson type 4	Sum	
539	Caisson 1	Sum	
540	Caisson 2	Sum	
541	Caisson 3	Sum	
	Form 36 m² void in cross wall of caisson type 5&8	Sum	
542	Caisson 1	Sum	
543	Caisson 2	Sum	
544	Caisson 3	Sum	
	Form void in caisson wall for storm water pipe diameter 900mm including casting in of connection gasket	Sum	
545	Caisson No. 1	Sum	
546	Caisson No. 2	Sum	
547	Caisson No. 3	Sum	
548	Caisson No. 4	Sum	
549	Caisson No. 5	Sum	
550	Caisson No. 6	Sum	
551	Caisson No. 7	Sum	
552	Caisson No. 8	Sum	
553	Caisson No. 9	Sum	
554	Caisson No. 10	Sum	
555	Caisson No. 11	Sum	
556	Caisson No. 12	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
557	Caisson No. 13	Sum	
558	Caisson No. 14	Sum	
559	Caisson No. 15	Sum	
560	Caisson No. 16	Sum	
561	Caisson No. 17	Sum	
562	Caisson No. 18	Sum	
563	Caisson No. 19	Sum	
564	Caisson No. 20	Sum	
565	Caisson No. 21	Sum	
566	Caisson No. 22	Sum	
567	Caisson No. 23	Sum	
568	Caisson No. 24	Sum	
569	Caisson No. 25	Sum	
570	Caisson No. 26	Sum	
571	Caisson No. 27	Sum	
572	Caisson No. 28	Sum	
573	Caisson No. 29	Sum	
574	Caisson No. 30	Sum	
575	Caisson No. 31	Sum	
576	Caisson No. 32	Sum	
	REINFORCED CONCRETE		
	Grade 40MPa/19mm to caisson base	Sum	
577	Caisson 1	Sum	
578	Caisson 2	Sum	
579	Caisson 3	Sum	
580	Caisson 4	Sum	
581	Caisson 5	Sum	
582	Caisson 6	Sum	
583	Caisson 7	Sum	
584	Caisson 8	Sum	
585	Caisson 9	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
586	Caisson 10	Sum	
587	Caisson 11	Sum	
588	Caisson 12	Sum	
589	Caisson 13	Sum	
590	Caisson 14	Sum	
591	Caisson 15	Sum	
592	Caisson 16	Sum	
593	Caisson 17	Sum	
594	Caisson 18	Sum	
595	Caisson 19	Sum	
596	Caisson 20	Sum	
597	Caisson 21	Sum	
598	Caisson 22	Sum	
599	Caisson 23	Sum	
600	Caisson 24	Sum	
601	Caisson 25	Sum	
602	Caisson 26	Sum	
603	Caisson 27	Sum	
604	Caisson 28	Sum	
605	Caisson 29	Sum	
606	Caisson 30	Sum	
607	Caisson 31	Sum	
608	Caisson 32	Sum	
609	Caisson 33	Sum	
610	Caisson 34	Sum	
611	Caisson 35	Sum	
612	Caisson 36	Sum	
613	Caisson 37	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
614	Caisson 38	Sum	
615	Caisson 39	Sum	
616	Caisson 40	Sum	
617	Caisson 41	Sum	
618	Caisson 42	Sum	
619	Caisson 43	Sum	
620	Caisson 44	Sum	
621	Caisson 45	Sum	
622	Caisson 46	Sum	
623	Caisson 47	Sum	
624	Caisson 48	Sum	
625	Caisson 49	Sum	
626	Caisson 50	Sum	
627	Caisson 51	Sum	
628	Caisson 52	Sum	
629	Caisson 53	Sum	
630	Caisson 54	Sum	
631	Caisson 55	Sum	
632	Caisson 56	Sum	
633	Caisson 57	Sum	
634	Caisson 58	Sum	
635	Caisson 59	Sum	
636	Caisson 60	Sum	
637	Caisson 61	Sum	
638	Caisson 62	Sum	
639	Caisson 63	Sum	
640	Caisson 64	Sum	
641	Caisson 65	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
642	Caisson 66	Sum	
643	Caisson 67	Sum	
644	Caisson 68	Sum	
645	Caisson 69	Sum	
646	Caisson 70	Sum	
647	Caisson 71	Sum	
648	Caisson 72	Sum	
649	Caisson 73	Sum	
650	Caisson 74	Sum	
651	Caisson 75	Sum	
652	Caisson 76	Sum	
653	Caisson 77	Sum	
	Grade 40MPa/19mm to caisson walls and nibs	Sum	
654	Caisson 1	Sum	
655	Caisson 2	Sum	
656	Caisson 3	Sum	
657	Caisson 4	Sum	
658	Caisson 5	Sum	
659	Caisson 6	Sum	
660	Caisson 7	Sum	
661	Caisson 8	Sum	
662	Caisson 9	Sum	
663	Caisson 10	Sum	
664	Caisson 11	Sum	
665	Caisson 12	Sum	
666	Caisson 13	Sum	
667	Caisson 14	Sum	
668	Caisson 15	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
669	Caisson 16	Sum	
670	Caisson 17	Sum	
671	Caisson 18	Sum	
672	Caisson 19	Sum	
673	Caisson 20	Sum	
674	Caisson 21	Sum	
675	Caisson 22	Sum	
676	Caisson 23	Sum	
677	Caisson 24	Sum	
678	Caisson 25	Sum	
679	Caisson 26	Sum	
680	Caisson 27	Sum	
681	Caisson 28	Sum	
682	Caisson 29	Sum	
683	Caisson 30	Sum	
684	Caisson 31	Sum	
685	Caisson 32	Sum	
686	Caisson 33	Sum	
687	Caisson 34	Sum	
688	Caisson 35	Sum	
689	Caisson 36	Sum	
690	Caisson 37	Sum	
691	Caisson 38	Sum	
692	Caisson 39	Sum	
693	Caisson 40	Sum	
694	Caisson 41	Sum	
695	Caisson 42	Sum	
696	Caisson 43	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
697	Caisson 44	Sum	
698	Caisson 45	Sum	
699	Caisson 46	Sum	
700	Caisson 47	Sum	
701	Caisson 48	Sum	
702	Caisson 49	Sum	
703	Caisson 50	Sum	
704	Caisson 51	Sum	
705	Caisson 52	Sum	
706	Caisson 53	Sum	
707	Caisson 54	Sum	
708	Caisson 55	Sum	
709	Caisson 56	Sum	
710	Caisson 57	Sum	
711	Caisson 58	Sum	
712	Caisson 59	Sum	
713	Caisson 60	Sum	
714	Caisson 61	Sum	
715	Caisson 62	Sum	
716	Caisson 63	Sum	
717	Caisson 64	Sum	
718	Caisson 65	Sum	
719	Caisson 66	Sum	
720	Caisson 67	Sum	
721	Caisson 68	Sum	
722	Caisson 69	Sum	
723	Caisson 70	Sum	
724	Caisson 71	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
725	Caisson 72	Sum	
726	Caisson 73	Sum	
727	Caisson 74	Sum	
728	Caisson 75	Sum	
729	Caisson 76	Sum	
730	Caisson 77	Sum	
REINFORCEMENT (Mild steel, which is used in small quantities is not measured separately and is included with the quantities for high tensile bars)			
High Tensile Bars (fy = 450 MPa)			
731	Nominal diameter 25mm, basic price	Sum	
Extra over or under F1.5.1.1 for bars of diameter			
732	10mm	Sum	
733	12mm	Sum	
734	16mm	Sum	
735	20mm	Sum	
736	32mm	Sum	
Unformed surface finishes: Wood float finish to Caisson base			
737	Caisson No. 1	Sum	
738	Caisson No. 2	Sum	
739	Caisson No. 3	Sum	
740	Caisson No. 4	Sum	
741	Caisson No. 5	Sum	
742	Caisson No. 6	Sum	
743	Caisson No. 7	Sum	
744	Caisson No. 8	Sum	
745	Caisson No. 9	Sum	
746	Caisson No. 10	Sum	
747	Caisson No. 11	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
748	Caisson No. 12	Sum	
749	Caisson No. 13	Sum	
750	Caisson No. 14	Sum	
751	Caisson No. 15	Sum	
752	Caisson No. 16	Sum	
753	Caisson No. 17	Sum	
754	Caisson No. 18	Sum	
755	Caisson No. 19	Sum	
756	Caisson No. 20	Sum	
757	Caisson No. 21	Sum	
758	Caisson No. 22	Sum	
759	Caisson No. 23	Sum	
760	Caisson No. 24	Sum	
761	Caisson No. 25	Sum	
762	Caisson No. 26	Sum	
763	Caisson No. 27	Sum	
764	Caisson No. 28	Sum	
765	Caisson No. 29	Sum	
766	Caisson No. 30	Sum	
767	Caisson No. 31	Sum	
768	Caisson No. 32	Sum	
769	Caisson No. 33	Sum	
770	Caisson No. 34	Sum	
771	Caisson No. 35	Sum	
772	Caisson No. 36	Sum	
773	Caisson No. 37	Sum	
774	Caisson No. 38	Sum	
775	Caisson No. 39	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
776	Caisson No. 40	Sum	
777	Caisson No. 41	Sum	
778	Caisson No. 42	Sum	
779	Caisson No. 43	Sum	
780	Caisson No. 44	Sum	
781	Caisson No. 45	Sum	
782	Caisson No. 46	Sum	
783	Caisson No. 47	Sum	
784	Caisson No. 48	Sum	
785	Caisson No. 49	Sum	
786	Caisson No. 50	Sum	
787	Caisson No. 51	Sum	
788	Caisson No. 52	Sum	
789	Caisson No. 53	Sum	
790	Caisson No. 54	Sum	
791	Caisson No. 55	Sum	
792	Caisson No. 56	Sum	
793	Caisson No. 57	Sum	
794	Caisson No. 58	Sum	
795	Caisson No. 59	Sum	
796	Caisson No. 60	Sum	
797	Caisson No. 61	Sum	
798	Caisson No. 62	Sum	
799	Caisson No. 63	Sum	
800	Caisson No. 64	Sum	
801	Caisson No. 65	Sum	
802	Caisson No. 66	Sum	
803	Caisson No. 67	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
804	Caisson No. 68	Sum	
805	Caisson No. 69	Sum	
806	Caisson No. 70	Sum	
807	Caisson No. 71	Sum	
808	Caisson No. 72	Sum	
809	Caisson No. 73	Sum	
810	Caisson No. 74	Sum	
811	Caisson No. 75	Sum	
812	Caisson No. 76	Sum	
813	Caisson No. 77	Sum	
	Caisson walls	Sum	
814	Caisson No. 1	Sum	
815	Caisson No. 2	Sum	
816	Caisson No. 3	Sum	
817	Caisson No. 4	Sum	
818	Caisson No. 5	Sum	
819	Caisson No. 6	Sum	
820	Caisson No. 7	Sum	
821	Caisson No. 8	Sum	
822	Caisson No. 9	Sum	
823	Caisson No. 10	Sum	
824	Caisson No. 11	Sum	
825	Caisson No. 12	Sum	
826	Caisson No. 13	Sum	
827	Caisson No. 14	Sum	
828	Caisson No. 15	Sum	
829	Caisson No. 16	Sum	
830	Caisson No. 17	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
831	Caisson No. 18	Sum	
832	Caisson No. 19	Sum	
833	Caisson No. 20	Sum	
834	Caisson No. 21	Sum	
835	Caisson No. 22	Sum	
836	Caisson No. 23	Sum	
837	Caisson No. 24	Sum	
838	Caisson No. 25	Sum	
839	Caisson No. 26	Sum	
840	Caisson No. 27	Sum	
841	Caisson No. 28	Sum	
842	Caisson No. 29	Sum	
843	Caisson No. 30	Sum	
844	Caisson No. 31	Sum	
845	Caisson No. 32	Sum	
846	Caisson No. 33	Sum	
847	Caisson No. 34	Sum	
848	Caisson No. 35	Sum	
849	Caisson No. 36	Sum	
850	Caisson No. 37	Sum	
851	Caisson No. 38	Sum	
852	Caisson No. 39	Sum	
853	Caisson No. 40	Sum	
854	Caisson No. 41	Sum	
855	Caisson No. 42	Sum	
856	Caisson No. 43	Sum	
857	Caisson No. 44	Sum	
858	Caisson No. 45	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
859	Caisson No. 46	Sum	
860	Caisson No. 47	Sum	
861	Caisson No. 48	Sum	
862	Caisson No. 49	Sum	
863	Caisson No. 50	Sum	
864	Caisson No. 51	Sum	
865	Caisson No. 52	Sum	
866	Caisson No. 53	Sum	
867	Caisson No. 54	Sum	
868	Caisson No. 55	Sum	
869	Caisson No. 56	Sum	
870	Caisson No. 57	Sum	
871	Caisson No. 58	Sum	
872	Caisson No. 59	Sum	
873	Caisson No. 60	Sum	
874	Caisson No. 61	Sum	
875	Caisson No. 62	Sum	
876	Caisson No. 63	Sum	
877	Caisson No. 64	Sum	
878	Caisson No. 65	Sum	
879	Caisson No. 66	Sum	
880	Caisson No. 67	Sum	
881	Caisson No. 68	Sum	
882	Caisson No. 69	Sum	
883	Caisson No. 70	Sum	
884	Caisson No. 71	Sum	
885	Caisson No. 72	Sum	
886	Caisson No. 73	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
887	Caisson No. 74	Sum	
888	Caisson No. 75	Sum	
889	Caisson No. 76	Sum	
890	Caisson No. 77	Sum	
Inserts and Miscellaneous			
891	Supply and cast in 1100mm long x 200mm diameter pipe for caisson drainage	Sum	
Caisson transfer, launching and placing			
892	Design and cast in attachment points in caisson (Contractor to design)	Sum	
893	Transfer caisson base from casting bed to slip form location	Sum	
894	Transfer complete caisson from slipform location to launching dock	Sum	
895	Launch and tow caisson including temporary set down of caisson in storage zone and refloating if required	Sum	
896	Place caisson in final position at quay wall	Sum	
Seals, joints, stone infill and miscellaneous			
897	Graded stone filling in gap between caissons and infill panels	Sum	
898	Form rear seal between Caissons with grout sock, placed and filled in position with graded stone filler as per detail	Sum	
899	Form front seal between Caissons with grout sock placed in position and filled in with 50MPa/9mm grout as per detail	Sum	
900	Form seal between Infill Panel 1 and steel caisson return quay (grout sock and grout)	Sum	
901	Form conveyor belt seal 1m wide at front face of gap between caissons as per detail	Sum	
902	Provide and place filter fabric to:		
903	Top of caisson over stone infill	Sum	
904	Rear of caisson joint	Sum	
905	Over stone bed to rear of caisson	Sum	
906	Over gravel fill for return walls	Sum	
907	Capping beam expansion joint	Sum	
908	Provide and place drainage strip over drainage pipe	Sum	
909	Construct horizontal subsoil drain behind Caisson as per detail	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
Precast concrete infill panels and retaining unit			
Provide Structural Precast Units:			
910	Precast Infill Unit Type 1A	Sum	
911	Precast Infill Unit Type 1B	Sum	
912	Precast Infill Unit Type 1C	Sum	
913	Precast Infill Unit Type 2A	Sum	
914	Precast Infill Unit Type 2B	Sum	
915	Precast Infill Unit Type 2C	Sum	
916	Precast Infill Unit Type 3A	Sum	
917	Precast Infill Unit Type 3B	Sum	
918	Precast Infill Unit Type 3C	Sum	
919	Precast Infill Unit Type 4A	Sum	
920	Precast Infill Unit Type 4B	Sum	
921	Precast Infill Unit Type 4C	Sum	
922	Precast Retaining Unit Type 1	Sum	
Erection and installation of Structural Precast Units including all temporary works, launching, towing etc.:			
923	Precast Infill Unit Type 1A	Sum	
924	Precast Infill Unit Type 1B	Sum	
925	Precast Infill Unit Type 1C	Sum	
926	Precast Infill Unit Type 2A	Sum	
927	Precast Infill Unit Type 2B	Sum	
928	Precast Infill Unit Type 2C	Sum	
929	Precast Infill Unit Type 3A	Sum	
930	Precast Infill Unit Type 3B	Sum	
931	Precast Infill Unit Type 3C	Sum	
932	Precast Infill Unit Type 4A	Sum	
933	Precast Infill Unit Type 4B	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
934	Precast Infill Unit Type 4C	Sum	
935	Precast Retaining Unit Type 1	Sum	
<u>GABION RETAINING WALL AT RETURN CAISSON BASES</u>			
936	Surface preparation for bedding of gabions (Cavities to be filled with approved foundation stone material)	Sum	
937	Supply and install gabions	Sum	
Miscellaneous			
938	Monitoring of quay wall	Sum	
939	Turbidity and desolve oxygen monitoring	Sum	
940	Fencing New Jersey Barriers for phase 1 and phase 2 and later relocate then reuse in phase 3	Sum	
941	Tide in current monitoring	Sum	
942	Stop blocks	Sum	
Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount
General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.			
Section G	<u>CAPPING BEAM, SERVICE TUNNEL, REAR CRANE RAIL BEAM AND QUAY FURNITURE</u>		
Precast Concrete Cope Panel Provide Structural Precast Units:			
1	Type 1A	Sum	
2	Type 1B	Sum	
3	Type 2A	Sum	
4	Type 3	Sum	
5	Type 4	Sum	
6	Type 5	Sum	
7	Type 6	Sum	
8	Type 7	Sum	
9	Type 8	Sum	
10	Type 9	Sum	
11	Type 10	Sum	
Erection and installation of Structural Precast Units including all temporary works:			
12	Type 1A	Sum	
13	Type 1B	Sum	
14	Type 2A	Sum	
15	Type 3	Sum	
16	Type 4	Sum	
17	Type 5	Sum	
18	Type 6	Sum	
19	Type 7	Sum	
20	Type 8	Sum	
21	Type 9	Sum	
22	Type 10	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
	Insitu Capping Beams, crane beam and service tunnel		
	Earthworks		
23	Excavate for restricted foundations and footings	Sum	
	FORMWORK		
	Rough finish		
	Plane vertical to		
24	Landside side and ends of capping beam including expansion joints	Sum	
25	Outside/buried face of service tunnel walls	Sum	
26	Bollard support beam	Sum	
27	Rear crane rail beam	Sum	
	Curved vertical to		
28	Landside side of cellular caisson capping beam	Sum	
	Smooth finish		
	Plane vertical to		
29	Inner face of tunnel walls	Sum	
30	Tunnel sump	Sum	
31	New Permanent stop block (2.5mx1.0mx1.8m high)	Sum	
	Curved vertical to		
32	Seaside face of cellular caisson capping beam	Sum	
	Horizontal and inclined plane to		
33	Soffit of tunnel slabs including top chamfers	Sum	
	Narrow Widths:		
34	Smooth crane rail recess (210mm deep by 520mm wide)	Sum	
35	100mm wide drainage channel in service tunnels	Sum	
36	150mm wide drainage channel in service tunnels	Sum	
37	200mm wide drainage channel in service tunnels	Sum	
	Box Out Holes / Form Voids		
38	Fire hydrant and electrical chambers	Sum	
39	Bollard recess	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
40	Shear key groove - 0.75m x 0.25m	Sum	
41	Shear key tongue - 0.75m x 0.25m	Sum	
42	Ladder recesses in insitu cope	Sum	
43	200 x 250mm void in tunnel centre wall at turn over drum positions	Sum	
REINFORCED CONCRETE			
Blinding Layer / Levelling concrete to			
44	Cope and capping beam levelling slab (Theoretical 130mm thickness) - 45 MPa	Sum	
45	Tunnels and rear crane rail beam - 15 MPa	Sum	
Concrete Grade 40MPa to:			
46	Main quay capping beam & service tunnels	Sum	
47	Cellular caisson capping beam	Sum	
48	Stop block	Sum	
49	Rear crane rail beam	Sum	
50	Bollard support beam	Sum	
51	Unformed surface finishes		
52	Wood float finish to		
53	Tunnel floor slab	Sum	
54	Top of capping beam and service tunnel	Sum	
55	Top of Rear Crane Rail Beam	Sum	
56	Floor of tunnel Sump	Sum	
57	New Permanent stop block Top (2.5mx1.0mx1.8m high)	Sum	
REINFORCEMENT			
58	Supply, bend and place high tensile bars		
59	Diameter 25mm basic price	Sum	
Extra over or under G2.4.1.1 for bars of diameter			
60	12mm	Sum	
61	16mm	Sum	
62	20mm	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
63	32mm Joints Form Joints in capping beam and service tunnel	Sum	
64	Expansion Joint Type 1a	Sum	
65	Expansion Joint Type 1b	Sum	
66	Expansion Joint Type 1c	Sum	
67	Expansion Joint Type 1d	Sum	
68	Shear Key Joint Type 2a	Sum	
69	Shear Key Joint Type 2b	Sum	
70	Shear Key Joint Type 2c	Sum	
71	Construction Joint Type 3a	Sum	
72	Construction Joint Type 3b	Sum	
73	Construction Joint Type 3c	Sum	
74	Tied Construction Joint Type 4	Sum	
75	Expansion joint in rear crane rail beam	Sum	
76	Connection of new capping at Berth 202 to existing capping beam to form continuous tunnel Inserts and Miscellaneous Construct access manholes in new capping beam and service tunnels complete	Sum	
77	Electrical chamber covers	Sum	
78	Fire Hydrant chambers covers	Sum	
79	Wet services tunnel pipe slot	Sum	
80	Wet services tunnel access manhole	Sum	
81	Electrical service tunnel cable slot	Sum	
	Supply and cast-in ducts		
82	100mm diameter sleeve in capping beam for sump pump discharge	Sum	
83	200mm dia hydrant and electrical chamber ducts	Sum	
84	50mm Crane Rail Earthing ducts	Sum	
85	160mm Electrical long radius bend ducts in capping beam	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
86	110mm Comms long radius bend ducts in capping beam	Sum	
87	100mm electrical duct at tunnel sumps	Sum	
88	75mm drainage duct at tunnel sumps	Sum	
89	Extra over for casting pipes and ducts of max diameter 250mm into tunnel walls for connection of services - Pipe and duct material measured under Bill J	Sum	
90	Temporarily brick up service tunnels at phase interface and remove once adjacent phase complete.	Sum	
Quay furniture			
91	Supply new 300 ton double bit bollards(including all anchor bolts etc.) including 2 spare	Sum	
92	Install new 300 ton double bit bollards (including all anchor bolts etc.)	Sum	
93	Supply new super cone fenders including 2 spare	Sum	
94	Install new super cone fenders	Sum	
95	Supply and Install quay furniture		
96	Storm pin anchors	Sum	
97	Sea-side tie-down anchors	Sum	
98	Land-side tie-down anchors	Sum	
99	Land-side earth box & spike sleeve	Sum	
100	Turn-over drum	Sum	
101	New quay access ladders	Sum	
102	Turnover funnel	Sum	
103	Paint surface of stop block	Sum	
104	Supply and install pipe cable protector units in 6.0m lengths complete	Sum	
105	Install existing 80 ton bollards on Berth 202	Sum	
105	Manufacture complete temporary stop blocks	Sum	
106	Supply, install and commission type S1 sump pump assembly	Sum	
107	Supply, install and commission type S3 sump pump assembly	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
Crane Rails			
108	Supply new type A150 crane rail - land and sea side	Sum	
109	and 1 No. off nylon washer	Sum	
110	Supply and install sole plates units in 2.990m lengths to land and sea side crane rails	Sum	
111	Supply and install rail pads	Sum	
112	Supply and install rail clips	Sum	
113	Supply and install rail studs including 1 No.off nut & 1 No. off washer	Sum	
114	Install new type A150 crane rails including welding into long lengths	Sum	
115	Install Re-used type A150 crane rails including welding into long lengths	Sum	
116	Grout sole plates	Sum	
Modification of existing quayside infrastructure			
Modify existing bus bar and RMG tunnels, slots and crane rail recesses			
117	Seal existing Busbar & RMG Tunnels as per the drawings	Sum	
118	Fill A100 Rail Recess with reinforced concrete	Sum	
119	Fill A150 Rail Recess with reinforced concrete	Sum	
120	Repair existing Slot Drains	Sum	
121	Install cable slots in existing Busbar and RMG Tunnels	Sum	
Fill voids in existing quay			
122	Tie Down Anchor slots (30.48m Gauge) with non-shrink grout	Sum	
123	Storm Pin Anchor slots (30.48m Gauge) with non-shrink grout	Sum	
124	Storm Bollard Slot with mass concrete	Sum	
125	Tie Down Anchor slots (20m Gauge) with non-shrink grout	Sum	
126	Storm Pin Anchor slots (20m Gauge) with non-shrink grout	Sum	
127	Existing Fire Hydrant chambers with mass concrete	Sum	
128	Existing Fuel Bunkers with mass concrete	Sum	
129	Telephone Access Pits with mass concrete	Sum	
Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount
	General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.		
Section H	<u>PAVING AND BACK OF QUAY WORKS</u>		
	Mass earthworks		
	Cut to fill including freehaul of up to 1,0 km - excavate material from behind existing quay wall and use for G7 fill		
1	Material compacted in layer thickness of maximum 200mm compacted to 93% Mod AASHTO density (100% for sand)	Sum	
	Roadbed preparation and compaction of material		
2	Compaction to 93% of Mod AASHTO density (100% for sand)	Sum	
3	Extra-over item 33.01 for excavating material from existing pavement	Sum	
4	Filling of voids under existing cantilever	Sum	
	Pavement layers of gravel		
	Pavement layers constructed from gravel obtained from commercial source		
5	G7 selected layer compacted in layer thickness of maximum 200mm compacted to 93% Mod AASHTO density (100% for sand)	Sum	
6	G6 gravel subbase (chemically stabilised) compacted in layer thickness of 150mm compacted to 97% Mod AASHTO density	Sum	
	Stabilisation: Chemical stabilisation extra over unstabilised compacted layers		
7	C3 subbase	Sum	
8	C1 subbase	Sum	
	Chemical stabilising agent		
9	Cement (CEM II, 32.5)	Sum	
10	Curing of stabilised layer in accordance with specification	Sum	
	Crushed stone base		
	Crushed stone base from commercial source		
11	G1 crushed stone base base (chemically stabilised) compacted in layer thickness of 150mm compacted to 88% apparent density	Sum	
12	G2 crushed stone base base (chemically stabilised) compacted in layer thickness of 150mm compacted to 98% Mod AASHTO density	Sum	
	Breaking up, demolish and dispose of existing flexible pavement strip behind existing quay wall		
	Excavating and removing existing bitumous material to be disposed of with average depth of excavation:		
13	Exceeding 50mm but not exceeding 100mm	Sum	
14	Exceeding 100mm but not exceeding 150mm	Sum	
15	Exceeding 150mm but not exceeding 200mm	Sum	
16	Exceeding 200mm but not exceeding 250mm	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
	Excavating and spoiling material from an existing pavement		
17	Cemented material	Sum	
	Sawing or cutting asphalt or cemented pavement layers		
18	Sawing asphalt	Sum	
19	Sawing cemented layers	Sum	
	Asphalt base and surfacing		
20	Construct continuously graded 26,5mm aggregate asphalt base layer (200mm thick layer, 35/50 penetration grade bitumen binder)	Sum	
21	Construct open graded asphalt surfacing filled with resin modified cementitious grout, 13.2mm max aggregate, penetration grade 35/50, 50mm thick	Sum	
22	Construct medium continuously graded, 13.2mm aggregate asphalt bond breaker (25mm thick layer, 35/50 penetration grade bitumen binder)	Sum	
23	Tack coat of 30% stable grade anionic bitumen emulsion	Sum	
24	Prime coat MC-30 cut back	Sum	
	Fencing		
25	New personnel gate at new return quay	Sum	
	Erect permanent terminal fence (pallisade) with:		
26	Existing recovered material	Sum	
27	New material	Sum	
	Road markings		
	Road marking paint		
28	100mm wide white lines (dashed and solid)	Sum	
29	100mm wide yellow lines (dashed and solid)	Sum	
	Lettering, symbols, stack markings and chevrons		
30	White	Sum	
31	Yellow	Sum	
32	Black	Sum	
33	Setting out and pre-marking the lines (excluding lettering, symbols and stack markings)	Sum	
34	Removing existing, temporary or permanent road markings by sandblasting	Sum	
	Concrete pavements		
35	Concrete pavement, Grade 35 Mpa excluding texturing and curing		
36	375mm thick	Sum	
37	Concrete overlay - average thickness 330mm	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
	Reinforcement		
38	Jockey slabs	Sum	
39	Re-entrant corners (Y12s - 1000mm long)	Sum	
40	Mesh reinforcement REF 617	Sum	
	Texturing and curing the concrete pavement		
41	Burlap-dragged and grooved texture	Sum	
42	Curing	Sum	
	Joints		
43	Expansion Joint	Sum	
44	Isolation Joint - Non Thickened Edge	Sum	
45	Isolation Joint - Thickened Edge	Sum	
46	Weakend Plane Joint	Sum	
47	Keyed Construction Joint	Sum	
48	Butt joint between concrete and concrete	Sum	
49	Butt Joint between concrete and asphalt	Sum	
50	Dowelled Transverse/Longitudinal Joint	Sum	
	Dowel bars, 40mm diameter, 500mm long		
51	Installed in new concrete	Sum	
52	Installed in existing concrete in rehabilitation work	Sum	
	Tie bars - Y20, 1000mm long		
53	End caps for 40mm diameter dowels	Sum	
	Edge thickening to slab at:		
54	Jockey slab	Sum	
55	Typical slab (around manholes, crane beam, service tunnels and busbars)	Sum	
56	Repair existing joints	Sum	
57	Repair existing cracks	Sum	
58	Grit or high pressure blast existing capping beam to receive overlay	Sum	
59	Scabble existing capping to receive asphalt	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
Miscellaneous works to existing infrastructure			
Extensions of existing service tunnel access manholes through new overlay as per details on drawing 1370-CO-160-C-DWG-0005-01 to 06			
60	Access Extension Type 1	Sum	
61	Access Extension Type 2	Sum	
62	Access Extension Type 3	Sum	
63	Access Extension Type 4	Sum	
64	Access Extension Type 5	Sum	
65	Access Extension Type 6	Sum	
Extensions of existing bollard plinth through new overlay as per detail on drawing 2122830-1-024-C-GA-0003-03			
66		Sum	
67	Clean paved area	Sum	
68	Sandblast existing stack markings and reinstate	Sum	
Amount carried forward to summary			

Item No	Description	Activity Schedule Unit	Amount
General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost.			
Section I			
SERVICES			
Earthworks (Pipe Trenches) - Storm water pipes			
1	Excavate in all materials for trenches, backfill, compact & dispose of surplus material, for all storm water pipes up to 900mm diameter for depth up to 3.5m	Sum	
2	Excavate in all materials for slot drains, backfill, compact and dispose of surplus/unsuitable material, for depths up to 1m	Sum	
3	Excavation of cross trenches by hand to locate existing services	Sum	
Cable ducts (Electrical and comms)			
Excavate in all materials for trenches, backfill, compact and dispose of surplus materials			
4	Trenches for single ducts	Sum	
5	Trenches for width of two ducts (1 layer)	Sum	
6	Trenches for width of two ducts (2 layers)	Sum	
7	Trenches for width of four ducts (1 layer)	Sum	
8	Trenches for width of four ducts (2 layers)	Sum	
9	Trenches for width of eight ducts (2 layers)	Sum	
Extra-over item J.2.1 for trenching in and making good of paved areas			
10	Flexible pavement	Sum	
11	Concrete pavement	Sum	
Supply, lay, bed and prove ducts including draw wires			
12	Single 160mm diameter duct	Sum	
13	Duct group comprising 2 layers of 2 ducts - 160mm diameter	Sum	
14	Duct group comprising 2 layers of 4 ducts - 160mm diameter	Sum	
15	Duct group comprising 2 layers of 8 ducts - 160mm diameter	Sum	
16	Single 110mm diameter duct	Sum	
17	Duct group comprising 1 layer of 2 ducts - 110mm diameter	Sum	
18	Duct group comprising 1 layer of 4 ducts - 110mm diameter	Sum	
19	Import bedding material - non plastic bedding sand	Sum	
Supply and installation of concrete slabs for protection of new services			
20	1.5m x 2m (Type 1)	Sum	
21	1.5m x 1m (Type 2)	Sum	
22	1.5m x 1m (Type 3)	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
Connection to existing tunnels			
23	Connection of new single duct group to existing tunnels	Sum	
24	Connection of new 2 x 2 duct group to existing tunnels	Sum	
25	Connection of new 2 x 4 duct group to existing tunnels	Sum	
26	Connection of new 2 x 8 duct group to existing tunnels	Sum	
27	Connection of new 1 x 2 duct group to existing tunnels	Sum	
28	Connection of new 1 x 4 duct group to existing tunnels	Sum	
Construction of reinforced concrete chambers for:			
29	Mini-sub chamber	Sum	
30	Type E7 electrical chamber	Sum	
31	Type E5 electrical chamber	Sum	
32	Type T3 comms chamber	Sum	
Construct new mast foundations for:			
34	High mast lights	Sum	
35	CCTV masts	Sum	
36	Navigation Light Masts	Sum	
37	Radio Masts	Sum	
Stormwater drainage			
38	Supply and lay concrete pipe culvert (100D 900mm ND includes filter fabric around joints)	Sum	
39	Extra over item J3.1 for placement within caisson	Sum	
40	Provide flexible connection to caisson wall	Sum	
41	Construction of reinforced concrete storm water manhole		
42	Type 1A - 5.4m deep (includes flexible connections, and filter fabric)	Sum	
43	Type 1B - 5.345m deep (includes flexible connections and filter fabric)	Sum	
44	Type 2 - 1.06m deep	Sum	
45	STW 41 Junction box	Sum	
46	Seal existing slot drains	Sum	
47	Construction of new slot drain in accordance with standard details		
48	Precast slotted top element	Sum	
49	Cast in situ bottom element		
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
50	Base depth between 350mm and 450mm	Sum	
51	Base depth between 450mm and 550mm	Sum	
52	Base depth between 550mm and 650mm	Sum	
53	Reinforcing steel to chambers and slot drains	Sum	
Sewers			
54	Excavate in all materials for trenches, backfill, compact and dispose of surplus materials Extra-over item J.4.1 for trenching in and making good of paved areas	Sum	
55	Flexible pavement	Sum	
56	Concrete pavement	Sum	
Supply, lay, joint, bed and test pipeline			
57	125mm HDPe sewer line in trench	Sum	
58	125mm HDPe sewer line in service tunnel	Sum	
59	HDPe Fittings		
60	125mm electrofusion coupling	Sum	
61	125mm 90 degree electrofusion coupling	Sum	
62	125mm HDPe puddle pipe. 700mm long. Both ends plain.	Sum	
63	125mm 45 degree electrofusion coupling	Sum	
64	125mm HDPe pipe with two puddle flanges. 3800mm long. Both ends plain.	Sum	
65	125mm HDPe spool piece 350mm long. One end flanged.	Sum	
66	125mm HDPe spool piece. 600mm long. One end flanged.	Sum	
67	125mm Adjustable elbow electrofusion coupling	Sum	
68	125mm 22.5 degree electrofusion coupling	Sum	
69	125mm HDPe pipe with two puddle flanges. 5650mm long. Both ends plain	Sum	
70	125mm HDPe pipe with two puddle flanges. 2575mm long. Both ends plain	Sum	
71	Cast Iron Fittings		
72	100mm Cast iron flanged bellmouth.	Sum	
73	100mm Cast iron 90 degree elbow. Both ends flanged.	Sum	
74	100mm Cast iron straight though gate valve	Sum	
75	Supply and installation of concrete slabs for protection of new services		
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
76	1.5m x 1m (Type 2)	Sum	
77	Connection to existing tunnels		
78	Connection of single duct to existing tunnels	Sum	
79	Connection of new 1 x 2 duct group to existing tunnels	Sum	
80	Construction of reinforced concrete manholes / pumpstations		
81	Pump Station Type 1	Sum	
82	Pump Station Type 2	Sum	
83	Sewer rising main access hatches	Sum	
84	Sewer Stilling Chamber	Sum	
85	Connecting to existing sewer at existing pump station	Sum	
86	Pipe support brackets	Sum	
Water			
87	Excavate in all materials for trenches, backfill, compact and dispose of surplus materials	Sum	
	Extra-over item J.5.1 for trenching in and making good of paved areas		
88	Flexible pavement	Sum	
89	Concrete pavement	Sum	
Supply and lay pipes within service tunnel and ducts			
90	250mm diameter HDPe class 16	Sum	
91	90mm diameter HDPe class 16	Sum	
92	Supply and lay pipes in trenches		
93	160mm diameter HDPe class 16	Sum	
94	250mm diameter HDPe class 16	Sum	
95	90mm diameter HDPe class 16	Sum	
Installation of concrete slabs for protection of new services			
96	1.5m x 1m (Type 1)	Sum	
HDPe Fittings			
97	250x90x250mm HDPe reducing tee Electrofusion coupling.	Sum	
98	90mm HDPe Electrofusion coupling	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
99	90mm HDPe spool piece 245mm long. One end flanged. One end plain.	Sum	
100	90mm HDPe spool piece 430mm long. One end flanged. One end plain.	Sum	
101	90mm HDPe 90 degree elbow Electrofusion coupling.	Sum	
102	90mm HDPe puddle pipe. 2800mm long. Both ends plain.	Sum	
103	90mm HDPe spool piece 1000mm long. One end flanged. One end plain.	Sum	
104	90mm Temporary HDPe end cap	Sum	
105	90mm HDPe spool piece 150mmlong. One end flanged. One end plain.	Sum	
106	250x160x250mm HDPe reducing tee.	Sum	
107	160mm HDPe Electrofusion coupling.	Sum	
108	160mm HDPe spool piece 160mm long. One end flanged. One end plain.	Sum	
109	160mm HDPe spool piece 200mm long. One end flanged. One end plain.	Sum	
110	160mm HDPe 90 degree elbow Electrofusion coupling.	Sum	
111	160mm HDPe puddle pipe. 2700 Long. Both ends plain.	Sum	
112	160mm HDPe spool piece 1000mm long. One end flanged. One end plain.	Sum	
113	160mm Temporary HDPe end cap	Sum	
114	160mm HDPe pipe with two puddle flanges. 5650mm long. Both ends plain	Sum	
115	160mm HDPe pipe with two puddle flanges. 2575mm long. Both ends plain	Sum	
116	250mm HDPe spool piece. One end flanged.	Sum	
117	250mm HDPe Electrofusion coupling.	Sum	
118	250mm HDPe 45 degree elbow Electrofusion coupling.	Sum	
119	250mm HDPe 90 degree elbow Electrofusion coupling.	Sum	
120	250mm HDPe puddle pipe. Both ends plain.	Sum	
121	250mm to 225mm HDPe reducer. Both ends plain,	Sum	
122	225mm HDPe Electrofusion coupling	Sum	
123	225mm HDPe spool piece. One end flanged.	Sum	
Other Fittings			
124	80mm Cast iron straight through gate valve.	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
125	80mm Cast iron spool piece 1405mm long. Both ends flanged.	Sum	
126	80mm Cast iron Inline strainer. Both ends flanged.	Sum	
127	80mm Cast iron spool piece 500mm long. Both ends flanged.	Sum	
128	80mm Water meter.	Sum	
129	80mm Cast iron spool piece 1430mm long. Both ends flanged.	Sum	
130	80mm Galvanised steel hydrant pipe	Sum	
131	150mm Cast iron straight through gate valve.	Sum	
132	150mm Cast iron spool piece 1280mm long. Both ends flanged.	Sum	
133	150mm Cast iron Inline strainer. Both ends flanged.	Sum	
134	150mm Cast iron spool piece 500mm long. Both ends flanged.	Sum	
135	150mm Water meter.	Sum	
136	150mm Cast iron spool piece 1300mm long. Both ends flanged.	Sum	
137	400mm Ranger coupling.	Sum	
138	400mm Ductile iron spool piece. One end flanged. One end plain.	Sum	
139	400mm TO 250mm ductile iron reducer. Both ends flanged.	Sum	
140	250mm Ductile iron spool piece. Both ends flanged.	Sum	
141	250mm Cast iron straight through gate valve.	Sum	
142	250mm Cast Iron segmented 112 degree lobster back bend. Both ends flanged.	Sum	
143	225mm Steel spool piece. One end flanged.	Sum	
144	225mm Ranger coupling.	Sum	
145	Pipe support brackets	Sum	
Install Valve Chambers and Water Meter Assemblies			
146	Install buried valve chamber for 250mm Cast Iron Gate Valve	Sum	
147	Install water metering connection assembly at 203 Mess & ablutions Facility	Sum	
148	Install water metering connection assembly at 205 Mess & ablutions Facility	Sum	
Navigation lights			
149	Relocate floating navigation lights	Sum	
150	Relocate landside navigation light	Sum	
Amount carried forward			

Item No	Description	Activity Schedule Unit	Amount
Amount brought forward			
	Miscellaneous		
151	Underground services detection	Sum	
152	Shoring of excavations	Sum	
153	Dewatering of excavations	Sum	
154	Clean stormwater pipes in slot drains	Sum	
155	Contaminated material disposal	Sum	
156	Aerial photography	Sum	
157	Video recording and timelapse video	Sum	
158	Supply and install weather station	Sum	
159	Demolition of Berth 203	Sum	
Amount carried forward to summary			

Item No	Description	Unit	Quantity	Rate	Amount
General Note: The Contractor must refer to Annexure "L" (Part of Works Information) when Pricing the Activity Schedule as this will form part of the basis of Activity Cost. PROVISIONAL ITEMS					
Section J					
1	Ground penetration radar for possible underground inspections	Sum	1	2,100,000	2,100,000.00
2	Corrosion Protection Inspections and Commissioning	Sum	1	2,100,000	2,100,000.00
3	Employer's wave and current measuring instrumentation	Sum	1	5,250,000	5,250,000.00
4	Employer's laboratory testing	Sum	1	3,150,000	3,150,000.00
5	Diving Inspection Services	Sum	1	51,693,000	51,693,000.00
6	Hydrographic Survey	Sum	1	1,632,000	1,632,000.00
7	Site Establishment: Security Services	Sum	1	9,421,000	9,421,000.00
8	Site Establishment: Cleaning Services	Sum	1	8,447,000	8,447,000.00
9	Site Office Communications: Data & Communications	Sum	1	12,957,000	12,957,000.00
10	Maintenance of TNPA site offices	Sum	1	4,653,000	4,653,000.00
11	Decontamination/Deep Cleaning and Fogging/Demisting of Offices	Sum	1	101,000	101,000.00
12	CCTV	Sum	1	1,707,000	1,707,000.00
13	ICT: TNPA Project Office - DCT	Sum	1	4,104,000	4,104,000.00
14	ICT: TNPA Project Office - Lot 10	Sum	1	3,320,000	3,320,000.00
15	Third Party Inspections	Sum	1	7,000,000	7,000,000.00
16	Provision of a ferry in case of heavy traffic	Sum	1	1,364,000	1,364,000.00
17	Load testing of modified STS cranes	Sum	1	424,000	424,000.00
18	Electrical SAT AND FAT testing	Sum	1	2,240,000	2,240,000.00
19	Employer's Mini weather station	Sum	1	740,000	740,000.00
Amount carried forward to summary					122,403,000.00

Section	Description	Amount
	Summary	
A	PRELIMINARY AND GENERAL	
B	SITE CLEARANCE AND DEMOLITIONS	
C	DREDGING, RECLAMATION AND SANDBANK EXTENSION	
D	PILING & GROUND IMPROVEMENT	
E	FOUNDATION STONE BED AND SCOUR PROTECTION	
F	CAISSON QUAY WALL	
G	CAPPING BEAM, SERVICE TUNNEL, REAR CRANE RAIL BEAM AND QUAY FURNITURE	
H	PAVING AND BACK OF QUAY WORKS	
I	SERVICES	
J	PROVISIONAL ITEMS	R 122,403,000.00
Amount carried forward to form of Offer and Acceptance		122,403,000.00