

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF PETROLEUM RESOURCES DEVELOPMENT

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

BIDDING DOCUMENT

FOR

**BALANCE WORK OF PROPOSED 6 NOS. STORAGE TANKS AT KOLONNAWA
INSTALLATION – STAGE 2**

CONTRACT NO: KPR/58/2024

Employer:

Chairman / Managing Director
Ceylon Petroleum Storage Terminals Limited,
Oil Installation,
Kolonnawa,
Wellampitiya,
Sri Lanka.

Issued to:

Issued by:

Date:

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DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
Invitation for Bids (IFB)
MINISTRY OF PETROLEUM RESOURCES DEVELOPMENT
CEYLON PETROLEUM STORAGE TERMINALS LIMITED

**BALANCE WORK OF PROPOSED 6 NOS. STORAGE TANKS AT KOLONNAWA
INSTALLATION – STAGE 2**

CONTRACT NO: KPR/58 /2024

1. The Chairman, Standing Cabinet Appointed Procurement Committee (SCAPC) on behalf of the Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka now invites sealed bids from eligible and qualified bidders for “**Balance Work of Proposed 6 Nos. Storage Tanks at Kolonnawa Installation – Stage 2**” in two packages as described below. Eligible bidders may bid for Package 1 or Package 2 or Package 1&2.
2. Above work consist of two packages as follows;

SCENARIO	PACKAGE	TANK	CAPACITY (M ³)	CONSTRUCTION PERIOD	ESTIMATED TO COST (LKR MN)
Scenario 1	Package 1	B	15,000	24 months	2,030
		C	15,000		
		D	15,000		
Scenario 2	Package 2	G	7,000	24 months	1,158
		H	7,000		
		J	5,000		
Scenario 3	Package 1 & 2	B	15,000	24 months	3,188
		C	15,000		
		D	15,000		
		G	7,000		
		H	7,000		
		J	5,000		

Scope of Work includes procurement of required materials, carrying out completion works of incomplete foundation structures, piling works, RCC raft foundations, soil improvements, steel storage tanks construction and associated works including procurement and supply of materials.

3. Bidding will be conducted through **International Competitive Bidding** Procedure.
4. To be eligible for contract award, the successful bidder shall not have been blacklisted and shall meet the following requirements.
 - 4.1 For domestic Bidders, **ICTAD (CIDA) registration is required as follows;**

PACKAGE	SPECIALTY	GRADE	PARTY
Package 1	Heavy Steel Fabrication	EM1	Bidder or Partner in Charge of Joint Venture (JV)

Package 2	Heavy Steel Fabrication	EM1	Bidder or Partner in Charge of Joint Venture (JV)
	Geotechnical Piling Board Cast Insitu (GP-B)	GP-B2 or above	Bidder or Partner in Charge of JV or Partner of JV
Package 1 & 2	Heavy Steel Fabrication	EM1	Bidder or Partner in Charge of Joint Venture (JV)
	Geotechnical Piling Board Cast Insitu (GP-B)	GP-B2 or above	Bidder or Partner in Charge of JV or Partner of JV

4.2 For foreign bidders, **ICTAD (CIDA) registration is not required at the Bid submission**, but additional experience is required as per 5.3.

In case of foreign bidder is selected for contract award, particular bidder shall obtain **temporary registration as a foreign contractor under Construction Industry Development Act No. 33 of 2014 and other required registrations under the laws of Sri Lanka.**

5. Qualification requirements to qualify for contract award include

5.1 Average annual volume of construction work performed in last five years shall be at least as follows for the packages;

5.2 The minimum amount of liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments, which may be made under the Contract, until the project is taken over by the CPSTL, shall be not less than as follows for the packages;

PACKAGE	5.1 Average annual volume of construction work performed in last five years <u>(in LKR million or equal amount in foreign currency)</u>	5.2 The minimum amount of liquid assets and/or credit facilities <u>(in LKR million or equal amount in foreign currency)</u>
Package 1	1,142	254
Package 2	652	145
Package 1 & 2	1,794	399

5.3 The experience of the Bidder/JV in “tank construction” and “piling work” during last ten years shall be as follows.

- To comply with this requirement, works cited should be at least 70% complete.
- At least one project in each speciality for domestic bidder/ domestic partner of JV/ domestic JV while two projects in each specialty for foreign bidder/ foreign partner of JV.

PACKAGE	Construction Component	Required Experience
Package 1	Steel Tank Construction	Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 10,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard 650 with Internal Floating Roof, maximum of two tanks in a single project) during last ten years

Package 2	Steel Tank Construction	Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 5,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard 650, maximum of two tanks in a single project) during last ten years
	Tank foundation with piles	Bidder or Partner in Charge of JV or Partner of JV should possess experience in the construction of 600mm or higher diameter Bored Cast Insitu piling work in to the bedrock
Package 1 & 2	Steel Tank Construction	Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 10,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard 650 with Internal Floating Roof, maximum of two tanks in a single project) during last ten years
	Tank foundation with piles	Bidder or Partner in Charge of JV or Partner of JV should possess experience in the construction of 600mm or higher diameter Bored Cast Insitu piling work in to the bedrock

6. Interested bidders may obtain further information from the Manager Procurement of the Ceylon Petroleum Storage Terminals Limited, (Tele Phone+94 112572156, 5750764 and Tele Fax: +94 11 2572155 and Email: procure@cpstl.lk) and inspect the bidding documents free of charge during any working days from 0900 hrs to 1500 hrs. at the address given below. However, the bidders can inspect the bidding document (excluding drawings) from CPSTL website; www.cpstl.lk .
7. A complete set of Bidding Documents in English language may be purchased by interested bidders on the submission of a written application to the address below from **14th August 2024** until **26th September 2024** from 0900 hrs. to 1400 hrs. Sri Lanka local time (GMT +5.30) on any working day upon cash payment of a non-refundable fee of LKR 250,000.00 or remittance of USD 835 directly to the CPSTL bank account, details given below. All bank charges (foreign & local) shall be borne by bidder and proof of remittance (copy of TT) is required along with a written request before 14 days to the Bid closing date to issue the bidding document by courier service. No liability will be borne by CPSTL on loss or late delivery. Bidding Document (excluding drawings) available in the web is only for viewing purpose and Bids shall be submitted using Hard Copy of the Bidding Document purchased from CPSTL.

Account Holder : Ceylon Petroleum Storage Terminals Limited,

Account No : 074733828 US\$

Swift : BCEYLKLX

Branch Code : 7010

Bank & Branch : Bank of Ceylon
Corporate Branch
Head Office, Head Office Building
No. 04, Bank of Ceylon Mawatha
Colombo 01
Sri Lanka

8. Bids shall be submitted on the bidding document issued by the Procurement Function - CPSTL and the original of the duly filled bids may be sent by post/courier under registered cover or sealed cover to reach the Chairman, Standing Cabinet Appointed Procurement Committee (SCAPC), C/o Manager Procurement, Ceylon Petroleum Storage Terminals Limited, Procurement Function, 01st Floor, New Building, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka or could be deposited in the tender box kept at the main entrance of CPSTL, on or before 1400 hrs. Sri Lanka local time (GMT+5:30) on 27th September 2024. Late bids will be rejected.
9. Bids will be closed at 1400 hrs. Sri Lanka local time (GMT+5:30) on **27th September 2024** and will be opened immediately thereafter at the office of Manager (Procurement) in the presence of the authorized representatives of the bidders who chose to attend. Only one authorized member of respective bidder is allowed to participate /witness the tender opening procedure.
10. In case the bidders are unable to submit the original bids as above, they could submit the scanned copy of the duly filled bidding documents in PDF format via email to tenders@cpstl.lk to reach on or before **1400 hrs.** Local time (+ 5.30 GMT) **27th September 2024, subject** to following conditions.
- Submission of the bid via email is at own discretion of the bidder.
 - The title and the closing date of the tender shall be indicated as the subject of the email.
 - Size of an email (with attachment) shall be limited to the maximum of 20 MB. In case the size of an attachment exceeds 20 MB, the bidder is requested to split the attachments and send as separate emails (i.e., 01 of 03, 02 of 03 etc.,).
 - Do not CC/BCC to any other official/personal email IDs of CPSTL staff. Bids sent to any other email IDs is strictly not entertained.
 - However, the original bids will be obtained only for the filing purpose, not for verification against the e-bid.
11. Bids shall be valid up to **04th April 2025**.
12. All bids shall be accompanied by a Bid Security as follows; Bid Security shall be valid up to **02nd May 2025**.

PACKAGE	AMOUNT OF BID SECURITY
Package 1	LKR 21,320,000.00 or USD 68,500.00
Package 2	LKR 12,150,000.00 or USD 39,000.00
Package 1 & 2	LKR 33,740,000.00 or USD 104,500.00

13. A pre-bid meeting will be held at 0930 hrs Sri Lanka local time (GMT+5:30) on **02nd September 2024** at the office of DGM (Engineering and Support Services), Oil Installation, Kolonnawa, Sri Lanka.

In case, the bidders are unable to participate the pre bid meeting, they can participate via **video conferencing method**. Interested parties who wish to participate in the Pre bid meeting shall send their request to email procure@cpstl.lk at or before **1400 hrs. Sri Lanka local time (GMT+5.30) on Thursday 30th August 2024**.

The address referred to above is

**The Chairman, Standing Cabinet Appointed Procurement Committee (SCAPC),
C/o Manager Procurement,
Ceylon Petroleum Storage Terminals Limited,
Procurement Function, New Building,
Oil Installation, Kolonnawa, Wellampitiya,
Sri Lanka.**

Postal Code : 10600

Telephone : +94 11 2572156, +94 112572155

Facimile : +94112074299

E-mail : procure@cpstl.lk

Bid Submission : tenders@cpstl.lk

DUPLICATE

SECTION - 1

INSTRUCTIONS TO BIDDERS

DUPLICATE

Instructions to Bidders

Instructions to Bidders applicable to this contract are that given in Section-I of the Standard Bidding Document for Procurement of Works - Major Contracts. CIDA Publication No. CIDA/SBD/02, Second Edition, January 2007, published by the Construction Industry Development Authority (CIDA), "Savsiripaya", 123, Wijerama Mawatha, Colombo 07.

This publication will not be issued with the Bidding Document and the Bidder is advised to purchase it from CIDA.

Instructions to Bidders shall be read in conjunction with the Bidding Data provided under Section-2 of the Bidding Document (Volume 2)

Instructions to Bidders will not be a part of the contract and will cease to have effect once the Contract is signed.

SECTION - 2**BIDDING DATA**

This section shall be read in conjunction with Section I – Instructions to Bidders, and is intended to provide specific information in relation to corresponding clauses in Section I. Whenever there is a discrepancy, the provisions in Section 2 – Bidding Data shall supersede these provided in the Section I - Instructions to Bidders.

Bidding Data																																			
Instructions to Bidders Clause Reference																																			
1.1	<p>Employer's Name and Address:</p> <p>Chairman / Managing Director Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.</p>																																		
1.1	<p>Scope of Works</p> <p>“Balance Work of Proposed 6 Nos. Storage Tanks at Kolonnawa Installation – Stage 2”</p> <p>The works consist of procurement of required materials and construction of 3 Nos. 15,000 m³, 2 Nos. 7,000 m³ and 1 No. 5,000 m³ steel, vertical, above ground storage tanks as per API Standard 650 Twelfth Edition, March 2013, including piling works, RCC raft foundations, dykes, extension of existing product piping system/firefighting system/tank gauging system/oily water system and associated works in two packages.</p> <p>Packages are as follows;</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>SCENARIO</th> <th>PACKAGE</th> <th>TANK</th> <th>CAPACITY (M³)</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center;">Scenario 1</td> <td rowspan="3" style="text-align: center;">Package 1</td> <td style="text-align: center;">B</td> <td style="text-align: center;">15,000</td> </tr> <tr> <td style="text-align: center;">C</td> <td style="text-align: center;">15,000</td> </tr> <tr> <td style="text-align: center;">D</td> <td style="text-align: center;">15,000</td> </tr> <tr> <td rowspan="3" style="text-align: center;">Scenario 2</td> <td rowspan="3" style="text-align: center;">Package 2</td> <td style="text-align: center;">G</td> <td style="text-align: center;">7,000</td> </tr> <tr> <td style="text-align: center;">H</td> <td style="text-align: center;">7,000</td> </tr> <tr> <td style="text-align: center;">J</td> <td style="text-align: center;">5,000</td> </tr> <tr> <td rowspan="6" style="text-align: center;">Scenario 3</td> <td rowspan="6" style="text-align: center;">Package 1 & 2</td> <td style="text-align: center;">B</td> <td style="text-align: center;">15,000</td> </tr> <tr> <td style="text-align: center;">C</td> <td style="text-align: center;">15,000</td> </tr> <tr> <td style="text-align: center;">D</td> <td style="text-align: center;">15,000</td> </tr> <tr> <td style="text-align: center;">G</td> <td style="text-align: center;">7,000</td> </tr> <tr> <td style="text-align: center;">H</td> <td style="text-align: center;">7,000</td> </tr> <tr> <td style="text-align: center;">J</td> <td style="text-align: center;">5,000</td> </tr> </tbody> </table>	SCENARIO	PACKAGE	TANK	CAPACITY (M ³)	Scenario 1	Package 1	B	15,000	C	15,000	D	15,000	Scenario 2	Package 2	G	7,000	H	7,000	J	5,000	Scenario 3	Package 1 & 2	B	15,000	C	15,000	D	15,000	G	7,000	H	7,000	J	5,000
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<p>2.1</p>	<p>Source of funds The source of funds is Ceylon Petroleum Storage Terminals Limited.</p>																						
<p>4.1</p>	<p>Qualification Information The following information shall be provided in Section 9 - Schedules:</p> <ul style="list-style-type: none"> • ICTAD (CIDA) registration (for domestic bidders only) <ul style="list-style-type: none"> Registration number Grade Specialty Expiry date • Copy of Business Registration of the Company/ies (if a foreign company, Business registration issued by the relevant country) • VAT registration number (if applicable) • Form PCA 03 (if applicable) • Construction program • Legal status (Sole proprietor, Partnership, Company etc.) • Authentication for signatory in the form of Power of Attorney (Specifically for this Bid) • Total monetary value of construction work performed for each of the last five years • Experience in works of a similar nature and size for each of the last ten years • Construction equipment • Staffing • Work plan, method statements, QA/QC procedures and HSE policy • Details of the suppliers and manufactures 																						
<p>4.2</p>	<p>To qualify for the award of the Contract, bidder shall meet the following minimum qualifying criteria specified under 4.2 (a), 4.2 (b), 4.2 (c), 4.2 (d), 4.2 (e) and 4.2 (f) of “Bidding Data”. Any bidder who does not submit required details in the requested manner will be liable for rejection of his bid without requesting any clarification.</p>																						
<p>4.2(a)</p>	<p>CIDA registration required (i) For domestic Bidders:- CIDA registration is required as follows;</p> <table border="1" data-bbox="384 1512 1404 2042"> <thead> <tr> <th>PACKAGE</th> <th>SPECIALTY</th> <th>GRADE</th> <th>PARTY</th> </tr> </thead> <tbody> <tr> <td>Package 1</td> <td>Heavy Steel Fabrication</td> <td>EM1</td> <td>Bidder or Partner in Charge of Joint Venture (JV)</td> </tr> <tr> <td rowspan="2">Package 2</td> <td>Heavy Steel Fabrication</td> <td>EM1</td> <td>Bidder or Partner in Charge of Joint Venture (JV)</td> </tr> <tr> <td>Geotechnical Piling Board Cast Insitu (GP-B)</td> <td>GP-B2 or above</td> <td>Bidder or Partner in Charge of JV or Partner of JV</td> </tr> <tr> <td rowspan="2">Package 1 & 2</td> <td>Heavy Steel Fabrication</td> <td>EM1</td> <td>Bidder or Partner in Charge of Joint Venture (JV)</td> </tr> <tr> <td>Geotechnical Piling Board Cast Insitu (GP-B)</td> <td>GP-B2 or above</td> <td>Bidder or Partner in Charge of JV or Partner of JV</td> </tr> </tbody> </table>	PACKAGE	SPECIALTY	GRADE	PARTY	Package 1	Heavy Steel Fabrication	EM1	Bidder or Partner in Charge of Joint Venture (JV)	Package 2	Heavy Steel Fabrication	EM1	Bidder or Partner in Charge of Joint Venture (JV)	Geotechnical Piling Board Cast Insitu (GP-B)	GP-B2 or above	Bidder or Partner in Charge of JV or Partner of JV	Package 1 & 2	Heavy Steel Fabrication	EM1	Bidder or Partner in Charge of Joint Venture (JV)	Geotechnical Piling Board Cast Insitu (GP-B)	GP-B2 or above	Bidder or Partner in Charge of JV or Partner of JV
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	<p>(ii) For foreign bidders, CIDA registration is not required at the Bid submission, but additional experience is required as per 4.2 (c).</p> <p>In case of a foreign bidder is selected for contract award, particular bidder shall obtain temporary registration as a foreign contractor under Construction Industry Development Act No. 33 of 2014 and other required registrations under the laws of Sri Lanka.</p>									
4.2(b)	<p>Average annual volume of construction work performed in last 5 years</p> <p>Average annual volume of construction work performed in last five years shall be at least as follows for the packages; Details shall be entered in Schedule 2 of Section 9; “Schedules”. Documentary evidence such as copies of audited financial statement/accounts certified by an Attorney at Law for the last five (05) years (2018/2019, 2019/2020, 2020/2021, 2021/2022 and 2022/2023) shall be submitted.</p> <table border="1" data-bbox="384 757 1409 1048"> <thead> <tr> <th>PACKAGE</th> <th>Average annual volume of construction work performed in last five years <u>(in LKR million or equal amount in foreign currency*)</u></th> </tr> </thead> <tbody> <tr> <td>Package 1</td> <td>1,142</td> </tr> <tr> <td>Package 2</td> <td>652</td> </tr> <tr> <td>Package 1 & 2</td> <td>1,794</td> </tr> </tbody> </table> <p>* For evaluation of Bids, Average annual volume of construction work stated in foreign currencies by the bidders will be converted to Sri Lanka Rupees using “Indicative Exchange Rate” published by Central Bank of Sri Lanka, on the date 28 Days prior to date of closing of Bids.</p>	PACKAGE	Average annual volume of construction work performed in last five years <u>(in LKR million or equal amount in foreign currency*)</u>	Package 1	1,142	Package 2	652	Package 1 & 2	1,794	
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4.2(c)	<p>Experience</p> <p>The experience of the Bidder/JV in “tank construction” and “piling work” during last ten years shall be as follows.</p> <ol style="list-style-type: none"> To comply with this requirement, works cited should be at least 70% completed. At least one project in each speciality for domestic bidder/ domestic partner of JV/ domestic JV while two projects in each speciality for foreign bidder/ foreign partner of JV. <table border="1" data-bbox="384 1608 1426 2054"> <thead> <tr> <th>PACKAGE</th> <th>Construction Component</th> <th>Required Experience</th> </tr> </thead> <tbody> <tr> <td>Package 1</td> <td>Steel Tank Construction</td> <td>Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 10,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard 650 with Internal Floating Roof, maximum of two tanks in a single project) during last ten years</td> </tr> <tr> <td>Package 2</td> <td>Steel Tank Construction</td> <td>Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 5,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard</td> </tr> </tbody> </table>	PACKAGE	Construction Component	Required Experience	Package 1	Steel Tank Construction	Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 10,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard 650 with Internal Floating Roof, maximum of two tanks in a single project) during last ten years	Package 2	Steel Tank Construction	Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 5,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard
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			650, maximum of two tanks in a single project) during last ten years
		Tank foundation with piles	Bidder or Partner in Charge of JV or Partner of JV should possess experience in the construction of 600mm or higher diameter Bored Cast Insitu piling work in to the bedrock
	Package 1 & 2	Steel Tank Construction	Bidder or Partner in Charge of JV should possess experience as a main contractor in the construction of a nature and complexity similar to the Works (with a 10,000 m3 combined total capacity or higher vertical, above-ground storage tanks as per API Standard 650 with Internal Floating Roof, maximum of two tanks in a single project) during last ten years
		Tank foundation with piles	Bidder or Partner in Charge of JV or Partner of JV should possess experience in the construction of 600mm or higher diameter Bored Cast Insitu piling work in to the bedrock
	<p>Details shall be entered in Schedule 4 of Section 9; “Schedules”. Documentary proof (Copy of Purchase Order, performance certificate, completion certificate, agreement etc.) for successful completion of the work relating to experience shall be submitted with the offer. For projects completed in Sri Lanka, Documentary proof shall be certified by an Attorney at Law. For projects completed in foreign countries, Documentary proof shall be certified by the Embassy/ Consular General Office or Foreign Ministry of the relevant country.</p> <p>The bidders shall have very clear documentary evidence in English Language as proof of above experience.</p>		
4.2(d)	<p>Essential equipment</p> <p>Proposals for the timely acquisition (own, lease, hire, etc.) of the following minimum required essential equipment as applicable for relevant package shall be entered in Schedule 5 of Section 9 “Schedules”.</p> <p>Piling machines & desanders -1 no, bar bending machines -2 nos, Concrete Mixers -2 nos, Poker Vibrators -5 nos, Plate Compactors -2 nos, Scaffoldings, Excavator/JCB -2 nos, Surveying Equipment -2 nos, concrete breakers & compressors -2 nos, , 50-ton Cranes -4 nos, welding generators -20 nos, grit/sand blasting equipment -2 nos, heat treatment equipment -1 no.</p>		
4.2(e)	<p>Managerial and Technical staff</p> <p>Following minimum staff shall be available and deployed to the Contract. Details shall be entered in Schedule 6 of Section 9; “Schedules”. The bidder shall produce documentary proof for availability of following staff and their detailed Bio-Data.</p> <p>(i) Managerial:</p> <ol style="list-style-type: none"> a. A Project Manager, a Chartered Engineer with minimum 10 years’ experience full time basis for the project. b. An Engineer with B.Sc. (Eng.) or equivalent with more than 8 years’ experience in works of similar nature tank construction including not less than three years as a Manager full time basis at site during tank construction. 		

	<p>c. An Engineer with B.Sc. (Eng.) or equivalent with more than 8 years experience in works of similar nature pile construction including not less than three years as a Manager full time basis at site during foundation construction.</p> <p>(ii) Technical:</p> <p>a. An engineer with B.Sc. (Eng) or equivalent with more than 4 years experience who is conversant with API Standard 650 and other relevant standards and codes.</p> <p>b. A Mechanical Engineer with B.Sc. (Eng) or equivalent with more than 4 years experience in similar tank fabrication works should be assigned to the project full time basis at site during tank construction.</p> <p>c. A Civil Engineer with B.Sc. (Eng) or equivalent with more than 4 years experience in similar pile foundation works should be assigned to the project full time basis at site during foundation construction.</p> <p>d. A Welding Inspector with AWS Certification or equivalent with more than 4 years experience in similar tank fabrication works should be assigned to the project full time basis at site during tank construction.</p> <p>e. Safety officer with more than 4 years experience in similar projects.</p> <p>This is the minimum requirement and the successful bidder shall assign all other necessary staff to enable compliance with all other contractual stipulations.</p>								
4.2(f)	<p>Liquid assets and /or credit facilities required</p> <p>The minimum amount of liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments, which may be made under the Contract, until the project is taken over by the CPSTL, shall be not less than as follows for the packages;</p> <table border="1" data-bbox="384 1301 1426 1592"> <thead> <tr> <th data-bbox="384 1301 730 1397">PACKAGE</th> <th data-bbox="730 1301 1426 1397">The minimum amount of liquid assets and/or credit facilities (in LKR million or equal amount in foreign currency*)</th> </tr> </thead> <tbody> <tr> <td data-bbox="384 1397 730 1462">Package 1</td> <td data-bbox="730 1397 1426 1462">254</td> </tr> <tr> <td data-bbox="384 1462 730 1527">Package 2</td> <td data-bbox="730 1462 1426 1527">145</td> </tr> <tr> <td data-bbox="384 1527 730 1592">Package 1 & 2</td> <td data-bbox="730 1527 1426 1592">399</td> </tr> </tbody> </table> <p>* For evaluation of Bids, minimum amount of liquid assets and/or credit facilities stated in foreign currencies by the bidders will be converted to Sri Lanka Rupees using “Indicative Exchange Rate” published by Central Bank of Sri Lanka, on the date 28 Days prior to date of closing of Bids.</p>	PACKAGE	The minimum amount of liquid assets and/or credit facilities (in LKR million or equal amount in foreign currency*)	Package 1	254	Package 2	145	Package 1 & 2	399
PACKAGE	The minimum amount of liquid assets and/or credit facilities (in LKR million or equal amount in foreign currency*)								
Package 1	254								
Package 2	145								
Package 1 & 2	399								
5.1(c)	<p>One of the partners who satisfy minimum criteria 4.2 (c) shall be nominated as partner in charge by others authorizing to act for and on behalf of the joint venture. This authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners;</p>								
5.2	<p>One of the partners shall have the qualification requirement for 4.2 (a) and 4.2 (c). The qualification for each of the partners of a joint venture shall be added together to determine the bidder’s compliance with the minimum qualifying criteria of Sub-Clause 4.2 (b) and 4.2 (f); however, for a joint venture to qualify,</p>								

	<p>each of its partners must meet at least 25 percent of minimum criteria 4.2 (b), (c) and 4.2 (f); and the partner in charge must satisfy at least 40 percent of those minimum criteria 4.2 (c). Failure to comply with this requirement will result in rejection of the joint venture's Bid. Subcontractor's experience and resources will not be taken into account in determining the bidder's compliance with the qualifying criteria.</p>
8	<p>Site Visit</p> <p>Prior to submitting a bid, bidders shall familiarize themselves and shall be deemed to have done so. The bidders shall inform DGM (E & SS), Engineering Function, Oil Installation, CPSTL, Kolonnawa, Wellampitiya (Tel. +94-11-2572214, Fax No. 0094-11-2531328) at least 02 days in advance with their names, NIC Numbers/Passport Numbers so that the CPSTL will arrange required permits for the site visit.</p> <p>The bidders are advised to limit the number of persons, for the visit, due to the security reasons. Site visit will be permitted during 0830 – 1600 hrs except Sundays and Mercantile Holidays. The cost of such visits shall be borne by the bidder.</p>
10.1	<p>Clarification of Bidding Documents</p> <p>Employer's address for clarification in bidding document is as below.</p> <p style="text-align: center;">The Chairman, Standing Cabinet Appointed Procurement Committee (SCAPC), C/o Manager Procurement, Ceylon Petroleum Storage Terminals Limited, Procurement Function, New Building, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka. Postal Code : 10600</p> <p>Telephone : +94 11 2572156, +94 11 2572155 Facimile : +94112074299 E-mail : procure@cpstl.lk</p>
13	<p>Documents comprising the Bid</p> <p>The Bid submitted by the bidder shall comprise the following:</p> <p>(A) Enclosed in the envelope marked as "ORIGINAL" ;</p> <p>(a) Duly filled and signed Form of Bid (in the format indicated in section 7);</p> <p>(b) Bid Security (in the format indicated in section 11);</p> <p>(c) Power of attorney for the signatory to the Bid in English language.</p> <p>(d) Original of Form PCA 03 (if applicable)</p> <p>(e) Section 2 - Bidding Data</p> <p>(f) Section 4 - Contract Data</p> <p>(g) Section 6 - Specifications;</p> <p>(h) Section 8 - Priced Bill of Quantities;</p> <p>(i) Section 9 - Duly filled Schedules;</p> <p>(j) Section 10 - Drawings; and</p>

	<p>(k) Detailed “Construction Procedure” of the project including related procurement, construction, workshop procedures, testing, commissioning and documentation such as catalogues, literature, write-ups to supplement with adequate information. Manufacture/supplier, country of origin, country of manufacture of plates, pipes, fittings, flanges, valves, nozzles, foam pourer, internal floating roof, cathodic protection system, sensors, cables, dip hatch, leak detection system, other instruments and equipment shall be clearly mentioned.</p> <p>(B) Enclosed in the envelope marked as "COPY"</p> <p>(a) Duly filled and signed Form of Bid (in the format indicated in section 7);</p> <p>(b) Section 8 - Priced Bill of Quantities;</p> <p>(c) Section 9 - Duly filled Schedules;</p> <p>(d) Detailed “Construction Procedure” of the project including related procurement, construction, workshop procedures, testing, commissioning and documentation such as catalogues, literature, write-ups to supplement with adequate information. Manufacture/supplier, country of origin, country of manufacture of plates, pipes, fittings, flanges, valves, nozzles, foam pourer, internal floating roof, cathodic protection system, sensors, cables, dip hatch, leak detection system, other instruments and equipment shall be clearly mentioned.</p>
14.3	<p>SSCL component and VAT component shall not be included in the rates.</p> <p>If bidder is registered for VAT, the bidder shall indicate the amount of VAT claimed separately at the end of the Bill of Quantities, in addition to the net value of the bid, along with VAT registration number. The amount written on the Form of bid shall be without VAT.</p> <p>If any bidder is not registered for VAT, he shall indicate the net value of the bid. Under the category bidder shall obtain a letter from the Commissioner of Inland Revenue Department, certifying the Company has not been registered for VAT, shall be attached to the bid. Any bidder who does not comply with this requirement will be liable for rejection of his bid.</p>
14.4	<p>Adjustments for change in cost</p> <p>The Contract is subjected to price adjustment.</p>
15.1	<p>Currency of Bid</p> <p>In order to minimize the risk of fluctuation in foreign currency exchange rate, the bidders are allowed to bid partially in United States Dollars (USD). Hence, the Bid shall be quoted in mixed currencies (LKR and USD).</p> <p>In the case of mixed currencies, foreign currency component shall be 25% of the total Bid Price and the bidders are allowed to bid in foreign currency only for importation of material, plant, equipment & machinery, and payment of remuneration for expatriates etc.</p> <p>If any bid has been quoted without considering foreign currency component limitation of 25%, such bidder will be requested to adjust his foreign currency component as per the limitation without changing the total bid price. If the bidder</p>

	<p>does not agree for such adjustment, his bid will be rejected.</p> <p>For evaluation and comparison of Bids under Sub-Clause 30.2, rates and prices quoted in foreign currencies by the bidders will be converted to Sri Lanka Rupees using “Indicative Exchange Rate” published by Central Bank of Sri Lanka, on the date 28 Days prior to date of closing of Bids.</p>								
16.1	<p>Period of Bid validity: The Bid shall be valid up to 04th April 2025</p>								
17.1	<p>The amount of Bid Security The Amount of Bid Security for the packages are as follows;</p> <table border="1"> <thead> <tr> <th>PACKAGE</th> <th>AMOUNT OF BID SECURITY</th> </tr> </thead> <tbody> <tr> <td>Package 1</td> <td>LKR 21,320,000.00 or USD 68,500.00</td> </tr> <tr> <td>Package 2</td> <td>LKR 12,150,000.00 or USD 39,000.00</td> </tr> <tr> <td>Package 1 & 2</td> <td>LKR 33,740,000.00 or USD 104,500.00</td> </tr> </tbody> </table>	PACKAGE	AMOUNT OF BID SECURITY	Package 1	LKR 21,320,000.00 or USD 68,500.00	Package 2	LKR 12,150,000.00 or USD 39,000.00	Package 1 & 2	LKR 33,740,000.00 or USD 104,500.00
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17.2	<p>Validity of Bid Security The Bid Security shall be valid up to 02nd May 2025 as per attached specified format.</p> <p>Securities and Guarantees shall be irrevocable and unconditionally en-cashable upon the first written request from the Procuring Entity.</p> <p>The bid securities issued by the following agencies are acceptable;</p> <ul style="list-style-type: none"> • a commercial bank operating in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka, • a bank based in another country but the guarantee “backed and confirmed” by a bank in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka. (Local bank and the bank based in another country shall jointly bear the responsibility in case of encashment of the security) 								
19.1	<p>Pre-Bid meeting A pre-bid meeting will be held at 0930 hrs. Sri Lanka Local time (GMT+5.30) on 02nd September 2024 at the office of Deputy General Manager (E & SS), Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Sri Lanka. Subsequently, a site visit will be arranged.</p> <p>In case, the bidders are unable to participate the pre bid meeting, they can participate via video conferencing method. Interested parties who wish to participate in the Pre bid meeting shall send their request to email procure@cpstl.lk at or before 1400 hrs. Sri Lanka local time (GMT+5.30) on Thursday 30th August 2024.</p> <p>All costs incurred in attending to this pre bid meeting and site visit will have to be borne by the Bidder.</p>								

21.2 (a)	<p>Employer's Address for Bid submission</p> <p>Employer's address for the purpose of bid submission is the Office of the The Chairman, Standing Cabinet Appointed Procurement Committee, C/o Manager Procurement, Ceylon Petroleum Storage Terminals Limited, Procurement Function, New Building, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka. Postal Code : 10600</p>
21.2 (b)	<p>Identification number of Contract</p> <p>Identification Numbers of the Contract: KPR/58/2024</p>
22.1	<p>Deadline for submission of Bids</p> <p>Deadline for submission of Bids: 1400 hrs. Local time (+ 5.00 GMT) 27th September 2024</p>
25.1	<p>Bid opening</p> <p>Venue: Office of Manager Procurement, Ceylon Petroleum Storage Terminals Limited, Procurement Function, New Building, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.</p> <p>Time: 1400 hrs. Local time (+ 5.00 GMT) Date: 27th September 2024</p>
31.1	<p>Preference for Domestic Bidders</p> <p>Domestic Contractors are eligible for a 15% margin of preference in the comparison of their Bids with those of bidders who do not qualify for the preference. To eligible for domestic preference the bidders & joint ventures shall meet the following criteria:</p> <ul style="list-style-type: none"> (a) For an individual/sole proprietorship the bidder shall be a Sri Lankan; (b) For partnerships more than fifty percent (50%) of the members of the partnership, shall be Sri Lankans; (c) For an individual firm – <ul style="list-style-type: none"> (i) such firms shall be registered in Sri Lanka; (ii) should have more than fifty percent (50%) ownership by Sri Lankans; and (iii) should not sub contract more than ten percent (10%) of the contract price, excluding provisional sums to foreign contractors.

	<p>(d) The application of the margin of preference for a joint venture of domestic firms:</p> <ul style="list-style-type: none"> (i) Would be limited only to joint ventures of individual firms who meet the criteria stipulated in (c) (i) & (ii) above; (ii) The joint venture should be registered in Sri Lanka; and (iii) Should not sub contract more than ten percent (10%) of the contract price, excluding provisional sums to foreign contractors. <p>Domestic Bidders shall submit the documentary proof for above requirements under Schedule -1 “General Information” in order to consider for domestic preference.</p> <p>The following procedure will be used to apply the margin of preference: Responsive bids will be classified into the following groups:</p> <ul style="list-style-type: none"> (i) Group A : Bids offered by domestic bidders ; and (ii) Group B : all other Bids <p>For the purpose of evaluation and comparison of Bids only, an amount equal to 15% of the evaluated bid prices determined in accordance with Sub- Clause 30.2 will be added to all Bids classified in Group B.</p>
32	<p>Award of Contract</p> <p>After evaluation of Bids in accordance with the procedure described under Clause 28, 29, 30 and 31, the Employer will inform to all the bidders in writing the selection of the successful bidder and the intention of contract award to such bidder. The unsuccessful bidders if they so wish, within one week of such notice may make representation to the Procurement Appeal Board at the address given below. Such representation shall be self-contained to enable the Appeal Board to arrive at a conclusion and a cash deposit to amount given below shall be made. The Appeal Board may request the bidder who had made representation to submit further evidence during the investigations. The cash deposit will be forfeited unless the Employer has changed the original contract award decision in favour of the bidder who has made such representation.</p> <p style="text-align: right;">Address: The Chairman Procurement Appeal Board Presidential Secretariat Colombo.</p> <p style="text-align: right;">Cash Deposit: LKR 100,000/=</p>
35.1	<p>Amount of Performance Security</p> <p>Performance Security acceptable to the Employer given in the Form for Performance Security given in the bidding document shall be a Guarantee obtained from;</p> <ul style="list-style-type: none"> • a commercial bank operating in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka, • a bank based in another country but the guarantee “backed and confirmed”

	<p>by a bank in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka. (Local bank and the bank based in another country shall jointly bear the responsibility in case of encashment of the security)</p> <p>The amount of Performance Security is 5% of the Initial Contract Price, in the currencies and proportions in which the Contract Price is payable.</p> <p>The Performance Security shall be valid until 28 days beyond the expected completion date of Defects Liability Period.</p>
37	<p>Dispute Adjudication Board (DAB)</p> <p>Fees and types of reimbursable expenses to be paid to the Dispute Adjudication Board (DAB) shall be on a case to case basis and shall be shared equally by the Contractor and the Employer. (As the estimated cost of this contract exceeds Rs. 500mn, DAB has to be appointed)</p>
37.1	<p>Within 28 days from the Commencement Date each of the Parties shall appoint one member to serve on the DAB. The Parties shall consult both these members and shall agree upon the third member, who shall be appointed to act as the chairman.</p> <p>If either Party fails to nominate a member to the DAB or the Parties fail to agree upon the third member or the Parties fail to agree on the appointment of a replacement person to DAB, then upon the request of either or both Parties the Construction Industry Development Authority (CIDA) shall appoint the relevant member to the DAB.</p>

SECTION - 3
CONDITIONS OF CONTRACT

Conditions of Contract shall be read in conjunction with the Section 4 – Contract Data in Volume 2, which shall take precedence over the Conditions of Contract.

Conditions of Contract

Conditions of Contract that will be applicable for this Contract is that given in section- 3 of the Standard Bidding Document for Procurement of Works- Major Contracts, CIDA Publication No. CIDA/SBD/02, Second Edition, January 2007, Addendum 01 issued in October 2009, published by the Construction Industry Development Authority (CIDA)“Savsiripaya” 123, Wijerama Mawatha, Colombo 7.

This publication will not be issued with the Bidding Document and Bidder is advised to purchase it from CIDA.

Conditions of Contract shall be read in conjunction with the Section 4 – Contract Data, which shall take precedence over the Conditions of Contract.

DUPLICATE

SECTION - 4**CONTRACT DATA**

This section shall be read in conjunction with Section 3 – Condition of Contract, and is intended to provide specific information in relation to corresponding clauses in Section 3. Whenever there is a discrepancy, the provisions in Section 4 – Contact Data shall supersede these provided in the Section 3 - Condition of Contract.

DUPLICATE

Contract Data										
Conditions of Contract Clause Number/s										
1.1.2.2 & 1.3	Employer's Name and Address	Name: Chairman / Managing Director Address: Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.								
	Employer's Representative	Name: Deputy General Manager (Engineering and Support Services) Deputy General Manager (Finance) Deputy Engineering Manager (Planning) Address: Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.								
1.3	Contractor's Name & Address:	Name: Address:								
1.1.2.4 & 1.3	Engineer's name & Address	Name: Engineering Manager Address: Engineering Function, Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.								
1.1.3.3	Time for Completion of the Works	Time for completion of the packages shall be as follows; <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">PACKAGE</th> <th style="text-align: center;">TIME FOR COMPLETION</th> </tr> </thead> <tbody> <tr> <td>Package 1</td> <td style="text-align: center;">24 months</td> </tr> <tr> <td>Package 2</td> <td style="text-align: center;">24 months</td> </tr> <tr> <td>Package 1 & 2</td> <td style="text-align: center;">24 months</td> </tr> </tbody> </table>	PACKAGE	TIME FOR COMPLETION	Package 1	24 months	Package 2	24 months	Package 1 & 2	24 months
PACKAGE	TIME FOR COMPLETION									
Package 1	24 months									
Package 2	24 months									
Package 1 & 2	24 months									
1.1.3.7	Defects Notification Period	Defects Notification Period is Three Hundred Sixty Five (365) Days for all packages								

2.1	Right of access to the Site	14 days after Letter of Acceptance
4.2.1	Amount of Performance Security	<p>The amount of Performance Security is 5% of the Initial Contract Price, in the currencies and proportions in which the Contract Price is payable.</p> <p>Performance Security acceptable to the Employer given in the Form for Performance Security given in the bidding document shall be a Guarantee obtained from;</p> <ul style="list-style-type: none"> • a commercial bank operating in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka, • a bank based in another country but the guarantee “backed and confirmed” by a bank in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka. (Local bank and the bank based in another country shall jointly bear the responsibility in case of encashment of the security) <p>The Performance Security shall be valid until 28 days beyond the expected completion date of Defects Liability Period.</p>
4.8	Safety Procedure	<p>Special Safety Conditions</p> <ol style="list-style-type: none"> i. Fire barriers to be erected and Fire blanket are to be laid before starting hot work at site where ever required. ii. The work/workers should conform to the Fire & Safety rules and regulations of CPSTL and they should wear safety belts when working at high elevations. iii. Before work of any nature is commenced in any area it is necessary to obtain excavation permits, safety certificates and if the work involves sparks or flames a hot work permit from the Fire & Safety Section of the CPSTL, Kolonnawa depending on nature of work. All precautions stipulated in these documents must be adhered by the contractor and his employees. If the work cannot be completed in the period for which these documents are valid, the work shall be discontinued until the documents have been renewed. iv. The CPSTL Kolonnawa Terminal is security-restricted area and all contractor’s personnel shall abide by the security regulations prevailing and those which might be enforced as and when necessary due to changed circumstances. v. All contractor’s personnel and their vehicles will be required to obtain gate passes before enter in to the CPSTL Kolonnawa Terminal. Safety clearances to be obtained before enter to the tank farm. vi. All contractor’s personnel should possess valid police clearance certificate (Police Report) to obtain gate passes.

		<p>vii. The contractor shall, except if and so far as the contract provides otherwise, indemnify the CPSTL against all losses and claims in respect of injuries or damage to any person or material or physical damage to any property whatsoever which may arise out of or in consequence of the execution of the works and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect of or in relation thereto except any compensation or damages for or with respect to:</p> <ol style="list-style-type: none"> a. the permanent use or occupation of land by the works or any part thereof; b. the right of the CPSTL to execute the works or any part thereof on, over, under, in or through any land; c. injuries or damage to persons or property resulting from any act or neglect of the CPSTL, his agent, servants or other Contractors, not being employed by the Contractor, or for or in respect of any claims proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or where the injury or damage was contributed to by the Contractor, his servants or agents such part of the compensation as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the damage or injury.
6.4	Working Hours	<ol style="list-style-type: none"> i. Normal working hours of CPSTL from Monday to Friday is from 0730 hrs. to 1630 hrs. ii. In the work programme, contractor can consider Saturday and period from 1630 hrs to 1800 hrs on weekdays as a working period, for which the contractor is required to obtain prior permission since the offices are normally closed on Saturdays and after hours. iii. However, working on Statutory holidays, Sundays and after 1800 hrs. on working days will not be permitted. <p>Provided always that provision of above (iii) shall not be applicable in case of any work which is customary to carry out, outside normal working hours.</p>
8.7	Liquidated damages for the Works	0.1% of the Initial Contract Price per day
8.7	Maximum amount of liquidated damages	10% of the Initial Contract Price
12.2 (b)	Method of Measurement	Sri Lanka Standard 573: 1999 UDC 69(08374)

13.4(b)	Percentage for Adjustment of Provisional Sums	Not applicable																																				
13.7	Weightings of Inputs	<table border="1" data-bbox="598 389 1391 913"> <thead> <tr> <th data-bbox="598 389 703 510">ITEM</th> <th data-bbox="703 389 836 510">CIDA Index No.</th> <th data-bbox="836 389 1270 510">DESCRIPTION</th> <th data-bbox="1270 389 1391 510">% Contribution</th> </tr> </thead> <tbody> <tr> <td data-bbox="598 510 703 555">1</td> <td data-bbox="703 510 836 555">M13</td> <td data-bbox="836 510 1270 555">Reinforcement Steel</td> <td data-bbox="1270 510 1391 555">14.1%</td> </tr> <tr> <td data-bbox="598 555 703 600">3</td> <td data-bbox="703 555 836 600">M39</td> <td data-bbox="836 555 1270 600">Ready mixed Concrete</td> <td data-bbox="1270 555 1391 600">4.3%</td> </tr> <tr> <td data-bbox="598 600 703 645">4</td> <td data-bbox="703 600 836 645">L1</td> <td data-bbox="836 600 1270 645">Skilled Labour</td> <td data-bbox="1270 600 1391 645">32.4%</td> </tr> <tr> <td data-bbox="598 645 703 689">5</td> <td data-bbox="703 645 836 689">L3</td> <td data-bbox="836 645 1270 689">Unskilled Labour</td> <td data-bbox="1270 645 1391 689">13.5%</td> </tr> <tr> <td data-bbox="598 689 703 734">6</td> <td data-bbox="703 689 836 734">P1</td> <td data-bbox="836 689 1270 734">Small Equipment</td> <td data-bbox="1270 689 1391 734">8.1%</td> </tr> <tr> <td data-bbox="598 734 703 779">7</td> <td data-bbox="703 734 836 779">P2</td> <td data-bbox="836 734 1270 779">Heavy Equipment</td> <td data-bbox="1270 734 1391 779">14.0%</td> </tr> <tr> <td data-bbox="598 779 703 824">8</td> <td data-bbox="703 779 836 824">P3</td> <td data-bbox="836 779 1270 824">Fuel</td> <td data-bbox="1270 779 1391 824">3.6%</td> </tr> <tr> <td colspan="3" data-bbox="598 824 1391 869" style="text-align: center;">Total</td> <td data-bbox="1270 824 1391 869">90.0%</td> </tr> </tbody> </table> <p data-bbox="598 972 1062 1005">Non-Adjustable Elements shall be:</p> <p data-bbox="598 1016 1070 1050">BILL 01: B1-B9, B15, B30-B37, B61</p> <p data-bbox="598 1061 1090 1095">BILL 02: C1-C10, C30, C39-C46, C70</p> <p data-bbox="598 1106 1015 1140">BILL 03: D1-D9, D17, D27-D37</p> <p data-bbox="598 1151 1015 1184">BILL 04: G1-G9, G16, G31-G38</p> <p data-bbox="598 1196 1015 1229">BILL 05: H1-H9, H14, H29-H36</p> <p data-bbox="598 1240 962 1274">BILL 06: J1-J8, J31, J40-J47</p>	ITEM	CIDA Index No.	DESCRIPTION	% Contribution	1	M13	Reinforcement Steel	14.1%	3	M39	Ready mixed Concrete	4.3%	4	L1	Skilled Labour	32.4%	5	L3	Unskilled Labour	13.5%	6	P1	Small Equipment	8.1%	7	P2	Heavy Equipment	14.0%	8	P3	Fuel	3.6%	Total			90.0%
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8	P3	Fuel	3.6%																																			
Total			90.0%																																			
14.2	Total Advance Payment	<p data-bbox="598 1319 1402 1391">20 % of the Initial Contract Price excluding Provisional Sums & Contingencies in applicable currencies.</p> <p data-bbox="598 1402 1402 1473">The advance payment securities issued by the following agencies are acceptable;</p> <ul data-bbox="647 1485 1402 1785" style="list-style-type: none"> <li data-bbox="647 1485 1402 1556">• a commercial bank operating in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka, <li data-bbox="647 1568 1402 1785">• a bank based in another country but the guarantee “backed and confirmed” by a bank in Sri Lanka with a valid licence issued by the monetary board of Sri Lanka. (Local bank and the bank based in another country shall jointly bear the responsibility in case of encashment of the security) 																																				
14.2	Number and timing of instalment for Advance Payment	<p data-bbox="598 1807 1402 1879">20% of Initial Contract Price in applicable currencies, will be paid in two equal instalments.</p> <p data-bbox="598 1890 707 1924">Stage 1-</p> <p data-bbox="598 1935 1402 2078">The first ten percent (10%) of Initial Contract Price will be paid within 14 days from receipt of both Performance Security and Advance Payment Guarantee as required under clause 4.2 and 14.2 respectively.</p>																																				

		<p>Stage II- Balance ten percent (10%) of Initial Contract Price will be paid after successfully mobilization at the site after receipt of mobilization Advance Payment Guarantee.</p>								
14.3(c)	Percentage of Retention	10% of certified value of works								
14.3(c)	Limit of Retention	5% of the Initial Contract Price								
14.5	Minimum amount of interim payment certificates	<table border="1"> <thead> <tr> <th>PACKAGE</th> <th>LKR</th> </tr> </thead> <tbody> <tr> <td>Package 1</td> <td>45 million</td> </tr> <tr> <td>Package 2</td> <td>25 million</td> </tr> <tr> <td>Package 1 & 2</td> <td>70 million</td> </tr> </tbody> </table>	PACKAGE	LKR	Package 1	45 million	Package 2	25 million	Package 1 & 2	70 million
PACKAGE	LKR									
Package 1	45 million									
Package 2	25 million									
Package 1 & 2	70 million									
14.6	Payment	<p>All other conditions including currencies, taxes and other statutory levies, except domestic preferences consideration, shall be applicable equally to foreign and domestic bidders.</p> <p>To be eligible for foreign currency payment, bidders are required to submit justification to that effect. Import of materials, plant, equipment and machinery, and payment of remuneration for expatriates, would for instance be deemed to be valid justifications.</p> <p><u>Payments for foreign contractors</u> Payments will be made for USD component in USD and LKR component in LKR.</p> <p><u>Payments for domestic contractors</u> According to the Chapter 422, 4(1) of Monetary Law Act, local contractors are not allowed to receive the payment in foreign currencies. Hence, the payments will be made by converting the USD component into LKR using the "Indicative Exchange Rate" published by Central Bank of Sri Lanka at the date of invoice and LKR component in LKR. In case Indicative Exchange Rate is not published, same of immediate previously available date will be applicable.</p>								
14.8	Alternative method for Payment of Retention	Not applicable								
18.1 (a)	Insurance for Works	For an amount not less than 115% of Initial Contract Price.								
18.1 (b)	Insurance for Contractor's Equipment	Contractor's responsibility								

18.2	Third Party Insurance (including Employer's Property)	Insurance cover to the amount of LKR 100 Million for the entire period of construction work. The contractor shall take special measures to safeguard the adjacent storage tanks and allied facilities at the site.
18.3	Insurance for Contractor's Personnel	A copy of insurance policy for the workmen of the contractor as per the Workmen Compensation Act shall be forwarded to CPSTL prior to commencement of the work.

DUPLICATE

SECTION - 5

Standard Forms (Contract)

- **Form of Letter of Acceptance**
- **Form of Agreement**
- **Form of Performance Security**
- **Form of Advance Payment Security**

Notes on Standard Forms(Contract):

Bidders should not complete the Form of Agreement at the time of preparing of bids. The successful Bidder will be required to sign the Form of Agreement, after the award of contract. Any corrections or modifications to the accepted bid resulting from arithmetic corrections, acceptable deviations, or quantity variations in accordance with the requirements of the bidding documents should be incorporated into the Agreement.

The Form of Performance Security, Form of Advance Payment Security and Form of Retention Money Guarantee should not be completed by the Bidders at the time of preparation of bids. The successful Bidder will be required to provide these securities in compliance with the requirements herein or as acceptable to the Employer.

FORM OF LETTER OF ACCEPTANCE

[Letter heading paper of the procuring entity]

..... *[date]*

To:*[name and address of the Contractor]*.....

This is to notify you that your bid dated*[insert date]* for the construction and remedying defects of the *[name of the Contract and identification number]* for the Contract price of *[name of currency]* *[amount in figures and words]* as corrected in accordance with Instructions to Bidders and/ or modified by a Memorandum of Understanding, is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

The Commencement date shall be:*(fill the date as per Clause 8.1 of Conditions of Contract)*.

The amount of Performance Security is:..... *(fill the amount as per Clause 4.2 of Conditions of Contract)*.

The Performance Security shall be submitted on or before*(fill the date as per Clause 4.2 of Conditions of Contract)*.

Authorized Signature :

Name and title of Signatory :

FORM OF AGREEMENT

This Agreement made the[day] of [month] 20.....[year], between **Chairman / Managing Director, Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya** [name and address of Employer] (hereinafter called and referred to as “the Employer”), of the one part, and [name and address of Contractor] (hereinafter called and referred to as “the Contractor”), of the other part:

Whereas the Employer desires that the Contractor execute [name and identification no of Contract] (hereinafter called and referred to as “the Works”) and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and remedying of any defects therein.

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract.
2. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
3. The Employer hereby covenants to pay the Contractor in consideration of the execute and complete the Works and remedy any defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties hereto have caused this Agreement to be executed the day and year aforementioned in accordance with laws of Sri Lanka.

.....
Authorised signature of Contractor

.....
Authorised signature of Employer

COMMON SEAL

COMMON SEAL

In the presence of
 Witnesses :

Name and NIC No.
 Signature
 Address

.....
 Name and NIC No.
 Signature
 Address

**FORM OF PERFORMANCE SECURITY
(Unconditional)**

.....[Issuing Agency's Name and
Address of Issuing branch or Office]

**Beneficiary : Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa,
Wellampitiya**

Date:.....

PERFORMANCE GUARANTEE No:.....

We have been informed that
.....[Name of Contractor](Hereinafter called "The Contractor") has entered into
Contract No. [Reference number of the contract] dated
..... with you, for the
.....(insert "Construction") of
..... (Name of Contract and
brief description) (hereinafter called "the Contract").

Furthermore we understand that according to the conditions of the Contract, a performance
guarantee is required.

At the request of the contractor, we [Name of
agency]hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount
of.....[amount in figures]
..... [amount in
words]Upon receipt by us of your first demand in writing accompanied by a written statement
stating that the Contractor is in breach of its obligation (s) under the Contract without your needing
to prove or to show grounds for your demand or the sum specified therein .

This guarantee shall expire, no later than theday of 20.....[insert date,28 days
beyond the time of completion] and any demand for payment under it must be received by us at
this office on or before that date.

[Signature(s)]

FORM OF ADVANCE PAYMENT SECURITY

..... [Name and address of Agency, and Address of Issued branch or Office]

Beneficiary: Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya

Date:

ADVANCE PAYMENT GUARANTEE No:.....

We have been informed that [Name of Contractor] (hereinafter called “ The Contractor”) has entered into Contract No. [reference number of the contract] dated with you , for the Construction of (Name of Contract and brief description) (hereinafter called “ the Contract”).

Furthermore we understand that according to the conditions of the Contract, an advance Payment in the Sum [amount in figures] (.....) [amount in words] is to be made against an advance payment guarantee.

At the request of the contractor, we [Name of issuing agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [amount in figures] (.....) [amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation in repayment of the Advance Payment under the Contract.

The Maximum amount of this guarantee shall be progressively reduced by the amount of the Advance payment repaid by the Contractor.

This guarantee shall expire, on (insert the date, 28 days beyond the Time of Completion)

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

[Signature(s)]

SECTION - 6

SPECIFICATIONS

DUPLICATE

Specifications

6.1 CPSTL Scope of supply

6.1.1 Construction Utilities

- 6.1.1.1 Electricity and drinking water that would be supplied to the contractor to undertake this work would be charged from the contractor as per meter/estimate. The prospective contractor is required to indicate his requirements of power from the CPSTL in his offer for evaluation purposes.
- 6.1.1.2 The electrical power supply is available to the contractor subjected to following conditions.
- i. CPSTL shall provide only the power supply tapping point with a meter at the nearest switch room.
 - ii. Contractor shall supply and install his own feeder cables and power distribution board required for the work site from the tapping point.
 - iii. The maximum power CPSTL shall supply is 63A, 400V, 50Hz, 3 Phase.
 - iv. The electricity charge shall be deducted from the Final Bill of the Contractor.
 - v. A fixed charge of Rs. 3,000/= one-off payment and a consumption charge as per applicable tariff rate for the concerned period shall be deducted as the electricity charge.
 - vi. Engineer shall estimate the bill on above basis in occasions the power supply is provided without a meter.

6.2 Contractor's Scope of Supply and Scope of Works

The scope of work of the contractor is defined in general and shall include the following, but not limited to the same. The Contractor shall carry out the Works as per the specifications, drawings, BOQ and Engineer's directions. The Contractor shall also carry out all the related works that are not listed in this document, but required for completion of the entire work as specified in this Bidding Document.

- 6.2.1 The Contractor shall check the design sufficiency of proposed foundation of tank J and all six steel tanks with all accessories and inform the suitability of design to CPSTL before commencement of the work in writing as the contractor is responsible for the total construction work. In addition, the Contractor shall submit design review report for foundation of tank J from one of Engineering Faculties of State Universities or Central Engineering Consultancy Bureau and design review report for all six steel tanks from an entity who has experience in steel tank designing as per API Standard 650. The Contractor can vary the diameters and heights of the tanks in his design review, without changing the total volumes & type of foundations of each tank and shall get the prior approval from the Engineer.
- 6.2.2 The Contractor shall prepare detail drawings of the tanks as per API Standard 650 – Twelfth Edition, March 2013 and all related documents. Layout and General Assembly drawings of the tanks are annexed. The Contractor shall obtain prior approval for all drawings and documents from CPSTL before commencement of the Work.
- 6.2.3 The Contractor shall submit soft copies and two sets of hard copies of as built drawings, all catalogues, manuals, reports and required documents in English language as directed by the Engineer. Drawings to be submitted in ACAD (dwg) format.

- 6.2.4** The Contractor shall carryout the project planning considering that all the modifications, constructions and installations shall be attended while operations are going on and with minimum impact to the operation in the Kolonnawa Installation.
- 6.2.5** The contractor shall submit project time schedule with critical path, manpower schedule, equipment schedule and cash flow schedule (including S-curves) using MS Project.
- 6.2.6** The Contractor shall carryout the procurement of all material, equipment, machinery, tools, consumables, etc., necessary for all construction works. Loading, handling and transportation of all materials from supply point / store at work site / Contractor's store as per the requirement of the project.
- 6.2.7** The Contractor shall erect temporary fire barriers and fire blankets as required for a petroleum terminal in order to protect the surrounding piping, other tanks and filling gantries in service and construct temporary access roads as required.
- 6.2.8** The Contractor shall carryout construction of the tanks foundations including earth work, piling work, concrete work, sand filling beneath the bottom plate, leak detection system and sand bitumen laying or suitable protection.
- 6.2.9** The Contractor shall carryout construction of 6 nos. steel tanks including bottom, shell, roof structures, roof supports, top angles, wind girders, settlement angles, spiral stair ways, hand rails, nozzles, manholes, floating suction system, water drencher system, foam top pourer system, vapour detection system, earthing systems and cathodic protection systems etc-
- 6.2.10** The Contractor shall procure, supply and install Internal Floating Roofs (IFR), vent systems and fire detection systems for 2 Tanks (Tank No. B and C).
- 6.2.11** Grit/ Sand blasting and painting of 6 nos. steel tanks and all accessories as required.
- 6.2.12** Third party inspection of plates shall be carried out by a reputed third-party inspector approved by CPSTL, witnessed by two CPSTL engineers and submission of inspection report to CPSTL and obtain approval before shipment.
- 6.2.13** Third party inspection of Internal Floating Roof shall be carried out by a reputed third-party inspector approved by CPSTL, witnessed by two CPSTL engineers and submission of inspection report to CPSTL and obtain approval before shipment.
- 6.2.14** Third party inspection of pipes and fittings, valves, materials of cathodic protection systems shall be carried out by a reputed third-party inspector approved by CPSTL, submission of inspection report to CPSTL and obtain approval before shipment.
- 6.2.15** The inspection charges and all expenses for CPSTL engineers including visa chargers, return air tickets, accommodation, internal transport and food will be arranged and borne by the Contractor for above inspections mentioned in 6.2.12 and 6.2.13.
- 6.2.16** The Contractor shall carry out required testing and inspection to determine the integrity and strength of foundations and steel tanks as required.
- 6.2.17** The Contractor shall carry out the calibration of 6 nos. steel tanks by a reputed calibration company acceptable to CPSTL and submit calibration charts and soft copies.
- 6.2.18** The Contractor shall carry out hydro test and other required testing and relevant inspection to determine the integrity and strength of steel tanks as required and as per API 650.
- 6.2.19** The Contractor shall construct product piping system and connect to the existing system as directed by the Engineer.
- 6.2.20** The Contractor shall construct dyke walls of all 6 nos. tanks as directed by the Engineer.
- 6.2.21** The Contractor shall box up the tanks and hand over to CPSTL.
- 6.2.22** The contractor shall submit 1 year Manufacturer's Warranty for valves, top pourer units, and level gauge from the date of commissioning, in the name of CPSTL; And 10 years

Supplier's/Principal's Warranty for IFRs and cathodic protection systems from the date of commissioning, in the name of CPSTL.

6.2.23 The Contractor shall carryout site cleaning, temporary site offices and other facilities for the contractor's personal, mobilization and demobilization work.

6.3 Site conditions

6.3.1 The Bidder is responsible for its own investigations to establish sufficient and accurate information for the construction of proposed 6 nos. steel storage tanks. The Bidder shall visit the proposed sites and shall ascertain the nature and location thereof and all conditions which may affect construction of the 6 nos. steel storage tanks.

6.3.2 The Bidder shall make its own assessment of any and all of the information provided in this bidding document and collect own information. CPSTL is not responsible for the accuracy or completeness of any such information.

6.4 Design Basis

6.4.1 The designs of foundation of Tank No. B, C, D, G and H has been carried out and construction is partially completed.

6.4.2 Soil investigation at the nearby location of the Tank No. J has been conducted by M/s. Soil Tech Private Limited and copies of borehole logs are annexed in **Annex 1** for reference.

6.4.3 The design of steel tanks as per the API 650 was carried out by CPSTL and relevant drawings are annexed.

6.4.4 The proposed tank capacities and the products to be stored are as follows,

Tank No.	B	C	D	G	H	J
Tank capacity/m ³	15,000	15,000	15,000	7,000	7,000	5,000
Product	Gasoline	Gasoline	Jet A1	Gas Oil	Kerosene	Gas Oil

6.4.5 The design of piping system was carried out by CPSTL and relevant drawings are annexed.

6.4.6 The design of dyke walls was carried out by CPSTL and relevant drawings are annexed.

6.5 General specifications

6.5.1 Work Execution

All the modifications, constructions and installations shall be carried out while operations are going on in the oil installation, Kolonnawa. Therefore, the work shall be executed in a manner with minimum impact to the ongoing operations in the oil installation.

6.5.2 Permits, Licenses and Consents

It is the sole responsibility of the Contractor to identify, to obtain, to complete, and maintain any permits and any other consent, licenses and approvals that are required for construction of the tanks. CPSTL will co-ordinate with the Contractor in identifying, applying, and processing such permits, consents, licenses and approvals.

6.5.3 Quality Assurance and Control

During project execution, the Contractor shall be required to develop, implement and

maintain a project specific quality plan covering all aspects of the project. The Contractor shall provide a quality assurance manual applicable to the design, procurement, construction, commissioning and testing of the Plant and evidence of accreditation to a national or international assurance standard equal to ISO 9001.

6.5.4 Health, Safety and Environmental (HSE) Requirements

The Contractor is requested to provide a sound-working environment to all employees involved in the construction, testing and commissioning. This includes the consideration of but not limited to:

- All applicable national and international laws, guidelines and standards
- All applicable national and international codes and standards with respect to Occupational Health and Safety and Environmental Protection.

The Contractor shall be requested to submit a detailed HSE Plan considering the site configuration and the site conditions. The final HSE Plan must include the following content and objectives as a minimum:

- i. Project policy statement
- ii. Roles and responsibilities
- iii. Site regulation, incl. E.g. Housekeeping, barricades, excavations, tools and equipment, electrical work, ladders and scaffolds etc.
- iv. Risk management & hazard identification
- v. HSE training
- vi. HSE management of subcontractors
- vii. Work permit system
- viii. Personnel protective equipment
- ix. Inspection & auditing
- x. HSE meetings
- xi. Incident investigation & reporting
- xii. Site security
- xiii. Medical care & first aid.

The detailed HSE Plan shall demonstrate the Contractor's commitment to the highest standards of personal and general safety standards, health and occupational hygiene of the construction workforce during construction of the 6 nos. steel storage tanks as well as the concept of an accident and injury free project.

The safety track record of the Contractor in previous projects should also be highlighted, as well as the methodology that it will adopt, particularly in the intense environmental conditions of the region, in order to ensure the highest standards of health & safety management on the construction site.

6.5.5 Packing and Transport Identification

All parts of the tanks and Equipment shall be well packed and protected against loss or damage during the transport by sea and over land and whilst in storage under adverse climatic conditions. All packing shall be performed in such a way that overturning of the packages will not damage the equipment. Dimensions of packages, crates, etc., shall be suitable for road transport. Instruction for handling shall be clearly marked on all parts, packages and crates.

All parts, packages and crates shall be adequately marked in order to enable identification. Each item contained in a package shall be clearly identified on the packing list by its

description and part number and assembly drawing reference, and each item shall be marked or labelled to correspond with the packing list. The identification system to be used shall be as instructed by the Employer.

The Contractor shall be entirely responsible for all packing and any loss or damage shall be replenished/ fixed by the Contractor and, except where otherwise provided, at the Contractor's own expense.

Any transshipment of materials and equipment through countries shall be the Contractor's responsibility. Any cost(s) associated with transshipment of materials and equipment shall be deemed to be included in the Bid Price.

Identification and preparation of access to the site and transportation of equipment and materials shall be the responsibility of the Contractor. Any costs associated with identification and preparation of access to the site shall be deemed to be included in the offered Price.

6.5.6 Material Properties

- i. Materials selected by the Bidder shall be proven adequate and sufficient for the complete term of the Project.
- ii. The Contractor shall carefully consider all corrosion and erosion possibilities subject to the environment of the Site and nearby facilities.
- iii. Where materials are specified in any part of the Employers Requirements, those materials are to be considered as minimum requirement.

6.5.7 Corrosion protection

The Bidder shall be aware of and take into account the corrosion problems to be encountered on site due to the severe weather conditions, especially with equipment installed outdoors.

The Bidder shall provide with their Bid the civil design criteria they intends to follow, in which details regarding his proposed methods of corrosion protection for reinforced concrete and steel structures are given and procedures described.

6.5.8 Reinforced concrete

The guidance for a suitable concrete design, it is recommended that reference should be made to BS standards for the verification of the structural design.

Prior to detail engineering, the successful Bidder is required to describe their minimum requirements for concrete covers and proposed method of concrete production considering the local conditions. The quality control system on site to guarantee the quality shall be described in detail.

Special care shall be taken for concrete production under hot weather conditions. Explanations shall be given with regard to crack-free concrete design, in particular concerning groundwater structures and monolithic elements, if applicable.

6.5.9 Environmental Management Requirements

The Contractor shall avoid any environmental damage and/or concerns to the environment during any phase of the project.

The Contractor shall demonstrate during the construction, testing and commissioning that work is able to comply with all applicable environmental regulations and standards. Applicable standards for environmental protection must be fulfilled without any restrictions. This applies in particular but not limited to:

- i. Air emission limit values and standards
- ii. Air quality limit values

- iii. Limit values for environmental noise
- iv. Health and safety of construction workers and permanent staff.

6.5.10 Codes and Standards

The Bidder shall ensure that the engineering, design, construction, testing, etc. of steel storage tanks including all auxiliary facilities and systems, are according to Government and Local Authority Requirements, International Codes, Latest revisions of the following codes shall be governed.

Document Title	Document Number
BS Structural use of concrete	BS 8110: Part 1 : 1985
BS Structural use of Steel work	BS 5950 – 1: 2000
Code of Practice for Foundation	BS 8004
Design loads for buildings	BS 6399: Part I
Code of Practice for Earth retaining structures	BS 8002
Design of buildings for high winds in Sri Lanka – July 1980	CP3 Chapter V- Part2:1972[2]
Inspection Documents for Metallic Products	EN 10204
Standard for Welding Pipelines and Related Facilities	API 1104
Process Piping (Pressure piping)	ASME B 31.3
Pipeline Transportation Systems for Liquid Hydrocarbon and Other Liquids	ASME B31.4
Specification for Line Pipe	API 5L
Specifications for Pipeline Valves	API 6D
Valve inspection & Testing	API 598
ANSI – Pipe Flanges and Flanged Fittings	ANSI B 16.5
Large Diameter Steel Flanges	ASME B16.47
Welded Steel Tanks for Oil Storage	API STD 650 Twelfth Edition, March 2013. (including all Addenda and Errata)
Tank Inspection, Repair, Alteration and Reconstruction Welded Steel Tanks For Oil Storage	API 653
Manual of Petroleum Measurement Standards	API-MPMS

Document Title	Document Number
Automatic level gauges for measuring the level of liquid in stationary storage tanks	OIML R 85-1 & 2
Design, Construction, Operation, Maintenance and Inspection of Terminal and Tank Facilities	API Standard 2610, Third Edition, September 2018
Overfill protection for storage tanks in petroleum facilities Aboveground storage tanks	API 2350 4th edition
Boiler and Pressure Vessel Code (Welding and Brazing Qualification)	ASME Sec IX
Electrical Equipment For Explosive Gas Atmosphere (International Electro technical Commission) Part 10	IEC 60079
Tests On Electrical Cables Under Fire Conditions Part 3	IEC 60332
Recommended Practice Classification of Locations For Electrical Installations At Petroleum Facilities Classified As Class 1, Division 1 And Division 2	API RP 500
Applicable codes and Standards published by National Fire Protection Association (NFPA)	NFPA 11, NFPA 15, NFPA 20, NFPA 30
Specification for bored and cast in-situ reinforced concrete piles, 1st Edition-March 2016.	CIDA/SP/101
Specifications for Building Works (Vol. I) – [3rd Edition (Revised) – July 2004]	SCA/4/I
Specifications for Building Works (Vol. II) – [2nd Edition (Revised) – October 2001]	SCA/4/II
Standard Specifications for Construction and Maintenance of Roads and Bridges [2nd Edition – June 2009]	SCA/5
Specifications for Irrigation & Land Drainage – [1st Edition – January 2017]	CIDA/SP/102
Specifications for Water Supply Sewerage & Storm Water Drainage - [2nd Edition (Revised)– April 2002]	SCA/3/2
Specifications for Electrical & Mechanical Works - [2nd Edition (Revised) – August 2000]	SCA/8

Document Title	Document Number
Specifications for Fire Detection, Protection & Suppression Systems	SCA/9

It is implied that the eligible Bidders are fully acquainted with the above Documents and therefore, those will not be issued to the Bidders with this Bidding Document. However, Bidders may purchase the same, if necessary, from CIDA, Savsiripaya”, 123, Wijerama Mawatha, Colombo 7, Sri Lanka or other relevant organisation.

In case of any conflict between the codes and standards, the following order of precedence shall govern: -

- i. Local laws (Sri Lankan Authorities)
- ii. CPSTL Specifications and Guidelines
- iii. International Codes and Standards

6.6 Technical specifications

6.6.1 Construction of Foundations

The Contractor shall procure, supply all material and construct the foundation of Tank No. J and complete the balance work of foundations for Tank No. B, C, D, G and H as follows,

6.6.1.1 Balance work of foundation for Tank No. B (15,000m³, Gasoline) and Tank No. C (15,000m³, Gasoline)

Site Clearing

The construction site shall be cleared by removing vegetation, debris, top soil etc. before commencement of piling works.

Piling work

Piling work shall be carried out as per the “Specification for bored and cast in-situ reinforced concrete piles” - CIDA/SP/101, 1st Edition-March 2016.

- i. Concrete Mixes
Concrete mixes shall conform to Grade 30 of BS 5328, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Bentonite
Bentonite, as supplied to the site and prior to mixing, shall be in accordance with the specifications DFCP 4 of the Oil Companies Materials Association, London.
- iv. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.
- v. Pile testing
 - a. Static load test of piles (4 Nos. piles per tank) as per CIDA/SP/101, 1st Edition-March 2016
 - b. Integrity Testing of Piles as per Clause-6.1 of CIDA/SP/101, 1st Edition-March 2016 - 100% of piles

- c. Pile Dynamic Analyzer Testing as per Clause-6.2 of CIDA/SP/101, 1st Edition-March 2016 – 15 Nos. piles per tank
- d. Investigation of failure and remedial action as per Section-8 of CIDA/SP/101, 1st Edition-March 2016

Raft Slab (Tank No. B and C, Gasoline)

- i. Concrete Mixes
Concrete mixes shall conform to Grade 30 of, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.

Sand Layer (Tank No. B and C, Gasoline)

Lay 500mm thick layer of sand using river sand on raft slab as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

Laying of Sand Tar mixture

Lay 100mm thick layer of sand tar mixture using river sand mixed with hot bitumen (80%-100% penetration grade) and percentage of bitumen used should be 5% by weight of sand. The mix to be laid hot and compacted as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

6.6.1.2 Foundation for Tank No. D (15,000 m³, Jet A1)

Site Clearing

The construction site shall be cleared by removing vegetation, debris, top soil etc. before commencement of ground improvements.

RCC Ring Beam

- i. Concrete Mixes
Concrete mixes shall conform to Grade 30 of, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.

Sand Layer

Lay 300mm thick layer of sand using river sand on the compacted ABC layer as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

Laying of Sand Tar mixture

Lay 100mm thick layer of sand tar mixture using river sand mixed with hot bitumen (80%-100% penetration grade) and percentage of bitumen used should be 5% by weight of sand.

The mix to be laid hot and compacted as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

6.6.1.3 Foundation for Tank No. G (7,000m³, Gas Oil) and Tank No. H (7,000m³, Kerosene)

Site Clearing

The construction site shall be cleared by removing vegetation, debris, top soil etc. before commencement of ground improvements.

Ground Improvement

The tank shall be placed on the ground after top 3m (minimum) in an area at least 2m wider than the base is replaced with well compacted ABC which should have an allowable bearing capacity of 175kN/m².

RCC Ring Beam

- i. Concrete Mixes
Concrete mixes shall conform to Grade 30 of, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.

Sand Layer

Lay 300mm thick layer of sand using river sand on raft slab as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

Laying of Sand Tar mixture

Lay 100mm thick layer of sand tar mixture using river sand mixed with hot bitumen (80%-100% penetration grade) and percentage of bitumen used should be 5% by weight of sand. The mix to be laid hot and compacted as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

6.6.1.4 Foundation for Tank No. J (5,000m³, Diesel)

Site Clearing

The construction site shall be cleared by removing vegetation, debris, top soil etc. before commencement of piling works.

Piling work

Piling work shall be carried out as per the "Specification for bored and cast in-situ reinforced concrete piles" - CIDA/SP/101, 1st Edition-March 2016.

- i. Concrete Mixes
Concrete mixes shall conform to Grade 30 of BS 5328, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Bentonite
Bentonite, as supplied to the site and prior to mixing, shall be in accordance with the specifications DFCP 4 of the Oil Companies Materials Association, London.

- iv. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.
- v. Pile testing
 - a. Static load test of piles (4 Nos. piles per tank) as per CIDA/SP/101, 1st Edition-March 2016
 - b. Integrity Testing of Piles as per Clause-6.1 of CIDA/SP/101, 1st Edition-March 2016 - 100% of piles
 - c. Pile Dynamic Analyzer Testing as per Clause-6.2 of CIDA/SP/101, 1st Edition-March 2016 – 15 Nos. piles per tank
 - d. Investigation of failure and remedial action as per Section-8 of CIDA/SP/101, 1st Edition-March 2016

Raft Slab (Tank No. B and C, Gasoline)

- i. Concrete Mixes
Concrete mixes shall conform to Grade 30 of, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.

Sand Layer

Lay 300mm thick layer of sand using river sand on the compacted ABC layer as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

Laying of Sand Tar mixture

Lay 100mm thick layer of sand tar mixture using river sand mixed with hot bitumen (80%-100% penetration grade) and percentage of bitumen used should be 5% by weight of sand. The mix to be laid hot and compacted as instructed by the Engineer. The layer to be graded to suit the slope of the bottom plates.

6.6.2 Construction of Bund Walls

- i. Concrete Mixes
Concrete mixes shall conform to Grade 25 of, SCA/4/I and SCA/4/II or equivalent.
- ii. Steel Reinforcement
Steel reinforcement shall conform to BS 4449, SCA/4/I and SCA/4/II or equivalent.
- iii. Form work
Form Work shall conform to SCA/4/I and SCA/4/II or equivalent.

6.6.3 Construction of Tanks

6.6.3.1 The Contractor shall procure, supply, fabricate and construct Tank No. B, C, D, G, H and J

as per following data

Data	Tank No					
	B	C	D	G	H	J
Tank Working Capacity /m ³	15,000	15,000	15,000	7,000	7,000	5,000
Tank Diameter/m	36	36	36	24.62	24.62	24.62
Tank height/m	17.82	17.82	17.82	17.50	17.50	17.50
Max. Operating Temperature/°C	60	60	60	60	60	60
Product to be Stored	Gasoline	Gasoline	Jet A1	Gas Oil	Kerosene	Gas Oil
Minimum shell plate, roof plate, bottom plate and annular plate thicknesses	As per drg. no. 1891-2	As per drg. no. 1891-3	As per drg. no. 1891-4	As per drg. no. 1891-5	As per drg. no. 1891-6	As per drg. no. 1891-7
Specific gravity of content	0.720-0.785	0.720-0.785	0.775-0.840	0.820-0.860	0.775-0.840	0.820-0.860
Design metal Temperature/°C	60	60	60	60	60	60
Vapour Pressure/ Psia	10	10	-	-	-	-
Corrosion allowance	2 mm for shell	2 mm for shell	2 mm for shell	2 mm for shell	2 mm for shell	2 mm for shell
Roof type	Cone	Cone	Dome	Dome	Dome	Dome
Filling Rate/ m ³ /h	1000	1000	1000	1000	1000	1000
Emptying Rate/ m ³ /h	1000	1000	1000	1000	1000	1000
Max. wind velocity/ km/h	160	160	160	160	160	160
Max rainfall/ mm per hour	150	150	150	150	150	150

6.6.3.2 Erection of Tank

Erection of the tank shall be done as per details provided in the bidding document and API Standard 650 Twelfth Edition, March 2013 (Clause No.7).

6.6.3.3 Welding Procedure and Welder Qualification

Qualification of Welding Procedure & Qualification of Welders shall be as per the API Standard 650 Twelfth Edition, March 2013 (Section 9).

6.6.3.4 The Contractor shall procure, supply, fabricate, install and welding of following tank accessories as required,

Accessory (Please refer drawings for more details)	Number in each tank					
	Tank No. B	Tank No. C	Tank No. D	Tank No. G	Tank No. H	Tank No. J

	15,000 m ³	15,000 m ³	15,000 m ³	7,000 m ³	7,000 m ³	5,000 m ³
Product*	Gasoline	Gasoline	Jet A1	Gas Oil	Kerosene	Gas Oil
16" inlet nozzle	1	1	1	-	-	-
12" inlet nozzle	-	-	-	1	1	1
12" outlet nozzle	1	1	1	1	1	1
6" standby outlet	1	1	1	1	1	1
4" dia Draw off nozzle	2	2	1	2	2	2
3" High/low level sensor nozzle	2	2	2	2	2	2
2" dia shell nozzle	1	1	2	1	1	1
2" dia Multi Point Temperature sensor roof nozzle with pipe	1	1	1	1	1	1
30" dia shell manhole	2	2	2	2	2	2
24" dia shell manhole	-	-	1	-	-	-
24" roof manhole	3	3	3	2	2	2
24" dia side access manhole	1	1	-	-	-	-
16" DBB Valve	1	1	1	-	-	-
12" DBB Valve	1	1	1	2	2	2
16" Gate Valve	1	1	2	-	-	-
12" Gate Valve	1	1	2	5	5	2
10" Gate Valve	-	-	-	2	2	-
6" Gate Valve	1	1	3	1	1	1
4" Gate Valve	2	2	2	2	2	2
3" Gate Valve	2	2	2	2	2	2
2" Gate Valve	-	-	1	-	-	-
8" dia. vertical pipe for radar gauge and 6" dia. vertical pipe for dipping, including ladder between these pipes.	1	1	-	-	-	-
8" & 6" dia. vertical gauging nozzles	-	-	1	1	1	1
Roof centre air vent	1	1	-	1	1	1
Roof air vent with flame arrester	-	-	1	-	-	-
Roof vents near roof perimeter	-	-	2	2	2	2
Rim vent system	1 set	1 set	-	-	-	-
6" dia Dip hatch unit	1	1	1	1	1	1
4" dia Draw off nozzle piping	2	2	1	2	2	2
2" dia Draw off nozzle piping	-	-	1	-	-	-
48" Drawoff sump	2	2	1	1	1	1
Water drencher System	1 set	1 set	1 set	1 set	1 set	1 set
Foam pourer system	1	1	1	1	1	1
IFR with Foam damp	1	1	-	-	-	-
12" dia floating suction arm	-	-	1	-	-	-
Drain water flushing system	-	-	1	-	-	-
Manual gauging unit	1	1	1	1	1	1
Spiral staircase with hand rail	1 set	1 set	1 set	1 set	1 set	1 set
Roof, crown & other hand rails as required	1 set	1 set	1 set	1 set	1 set	1 set
16" dia flexible blows	1	1	1	-	-	-
12" dia flexible blows	1	1	1	2	2	2

6.6.3.5 Provision for installation of radar gauges and RTDS multipoint temperature measurements with water bottom sensor for each tank.

- 6.6.3.6 The Contractor shall procure, supply and install Internal Floating Roofs, vent systems compatible with tank filling/emptying rates and fire detection system for Tank No B and C as per API 650. Fire detection systems to be installed at IFR in the tanks, required instrumentation/electrical cables to be laid from tanks to alarming siren which shall be installed in fire control room at Zone 6. The Bidder shall submit the details for the review of CPSTL.
- 6.6.3.7 The Contractor shall procure, supply and install Foam Top Pourer System for each tank as per the NFPA-11 requirements. The piping system shall be hot dip galvanised and painted. The inlet manifold to be installed outside the dike wall.
- 6.6.3.8 The Contractor shall procure, supply and installation of a Water Drencher System for roof and shell of each tank as per the NFPA-15 and NFPA-30 requirements. The piping system shall be hot dip galvanised and painted. The new system shall be connected to existing fire water network.
- 6.6.3.9 The Contractor shall supply and construct pressure relief system for inlet and outlet pipes.
- 6.6.3.10 The Contractor shall procure, supply and install floating suction system for tank No. D.
- 6.6.3.11 The Contractor shall procure, supply and installation of leak detection system at each drawoff sump of 6 tanks as per the API Standard 650 Twelfth Edition, March 2013 and NFPA-30 requirements. The Bidder shall submit the details for the review of CPSTL.
- 6.6.3.12 The Contractor shall procure, supply and install cathodic protection system for the tank bottom of each tank as per API RP 651.
- 6.6.3.13 The Contractor shall procure, supply and install drain water flushing system for the Tank No. D similar to the existing drain water flushing system of Tank No. 6 & 7.
- 6.6.3.14 The Contractor shall procure, supply and install Side mounted sour service Mechanical Level Gauges with grease sealed pulley system compatible with internal floating roof movements where applicable. Easy to read indicator and sign board. Provision to be kept for High/ Low level alarms. Level gauge material shall be corrosion free aluminium.
- 6.6.3.15 The Contractor shall procure, supply, fabricate and install Spiral staircases consisting of 2 stringers, intermediate landings with supporting arrangement, hot dip galvanised gratings and handrail for each tank. The Bidder shall submit the details for the review of CPSTL.
- 6.6.3.16 The Contractor shall procure, supply and install Earthing system as per API Standard 650 Twelfth Edition, March 2013.
- 6.6.3.17 The Contractor shall procure, supply and install Pressure relief system. Piping shall be 1" dia. and 2 mm thick and material shall be SS 316. Gate valves, non-return valves & pressure relief valves to be complied with hydro carbon and material shall be SS 316.
- 6.6.3.18 The Contractor shall procure, supply and install product piping system for six tanks as per ASME B 31.4 and API 1104 from the tank to existing piping system.

6.6.4 Painting of Tanks

The Contractor shall Grit/ Sand blast and paint bottom underside, tank interior bottom and 1m height of bottom most shell course, roof structure, interior roof and 1m height of top most shell course and tank exterior of Tanks No. B, C, G, H and J.

The Contractor shall Grit/ Sand blast and paint bottom underside, tank interior including all the shell courses, roof structure, roof interior and tank exterior of Tank No. D. Paint for interior shall be suitable for storing Jet A1.

1 m band on tank exterior of bottom most shell course shall be painted with additional 100 microns intermediate coat before finish coat to accomplish total overall thickness of 310 microns.

Tanks shall be marked with tank identification number and CPSTL logo as directed by the Engineer.

6.6.4.1 Bottom Underside Coating System

The undersides of the bottom plates are to be painted after grit blast cleaning specified under Clause 6.6.4.6. Approval for painting to be obtained as described in Clause 6.6.4.7.

a. **Primer**

- i. An Epoxy primer shall be provided.
- ii. The primer shall be compatible with Carbon Steel which is abrasive blast cleaned to a visual standard in accordance with ISO 8501-1, SA 2 ½ near white metal finish.
- iii. The primer shall be compatible with the coating system to be applied over it.
- iv. The DFT shall be 60 µm.
- v. Method of Application method shall be Air Less Spray.

b. **Coating System - Thin Film Chemically Resistant Epoxy Polyamine Adduct-Cured, Anticorrosive, Water-Resistant Coal Tar Tank Coating.**

- i. The coating system shall be as follows.

Paint System	Adduct Cured Coal Tar Epoxy
No. of Coats	2 nos.
Minimum Dry Film Thickness per Coat	150 µm
Minimum Total Dry Film Thickness	300 µm

- ii. The coating system shall be applied on Primer coating and it shall be fully compatible with the Primer
- iii. Method of Application method shall be Air Less Spray.

The Coating system shall be fully resistant to refined petrochemicals including Diesel, Gasoline, Kerosene, Fuel Oil, Jet Fuel and all the additives such as MTBE, Ethanol, GTBE and other derivatives and seawater.

6.6.4.2 Tank Interior Coating System

The entire roof structure and 1 meter height of the top most shell course from the roof shall be painted, and under side of the roof plates shall be painted before plates are installed and touch-up paintings shall be done on welding joints as necessary and the entire bottom of the tank interior and the bottom most shell course up to 1 meter height from the bottom to be painted as above, after grit blast cleaning specified under clause 6.6.4.6. Application of paint and obtaining of approval for painting shall be carried out as described in clause 6.6.4.7.

Interior Coating system shall comply with ISO 12944-2018, C5 category (or ISO 16961:2015: Petroleum, Petrochemical and Natural Gas Industries - Internal Coating and Lining of Steel Storage Tanks) with minimum of High durability class (15-25 years of durability).

a. Primer

- i. An Epoxy primer shall be provided.
- ii. The primer shall be compatible with Carbon Steel which is abrasive blast cleaned to a visual standard in accordance with ISO 8501-1, SA 2 ½ near white metal finish.
- iii. The primer shall be compatible with the coating system to be applied over it.
- iv. The DFT shall be 60 µm.
- v. Method of Application method shall be Air Less Spray.

b. Coating System - Thin Film Chemically Resistant Epoxy Phenolic Tank Coating

- i. The coating system shall be as follows.

Paint System	Amine cured Phenolic Epoxy
No. of Coats	2 nos.
Minimum Dry Film Thickness per Coat	150 µm
Minimum Total Dry Film Thickness	300 µm

- ii. The coating system shall be applied on Primer coating and it shall be fully compatible with the Primer
- iii. Each coat shall be Light Grey or Light Green colour and there should be contrasting colour shades between each coat.
- iv. Method of Application method shall be Air Less Spray/ Air Spray.

The Coating system shall be fully resistant to refined petrochemicals including Diesel, Gasoline, Kerosene, Fuel Oil, Jet Fuel and all the additives such as MTBE, Ethanol, GTBE and other derivatives and seawater.

6.6.4.3 Tank Exterior Coating System

Exterior Coating system (for shell exterior surface and roof external surfaces with all attachments, Stairway and its supportive structure, hand rail and crown hand rail with all attachments including stanchions, Piping systems of foam top pourer system and water drencher system, rim air vents and tank internal piping system of drawoff sump) shall comply with ISO 12944/2018, C4 category with minimum High durability class (15 -25) years of durability.

a. Primer

- i. An Epoxy primer shall be provided.
- ii. The primer shall be compatible with Carbon Steel which is abrasive blast cleaned to a visual standard in accordance with ISO 8501-1, Sa 2 1/2 near white metal finish.
- iii. The primer shall be compatible with the coating system to be applied over it.
- iv. The DFT shall be 60 µm.
- v. Method of Application method shall be Air Less Spray.

b. Exterior Coating system

Coating System shall be as follows.

Intermediate Coat/s	polyamide-cured epoxy (Coating Thickness 75 μm)
Top (Final) Coat	Aliphatic Polyurethane (Coating Thickness 75 μm)
No. of Coats	2 nos.
Minimum Total Dry Film Thickness	150 μm

- i. There should be contrasting colour shades between each coat.
- ii. The coating system shall be applied on Primer coating and it shall be fully compatible with the Primer
- iii. Method of Application method shall be Air Less Spray.
- iv. Coating System shall be fully resistant to abrasion, UV and adverse weather conditions.
- v. Coating system durability shall be 15 to 25 years period.
- vi. Recoating interval of top coating shall be unlimited.

6.6.4.4 Solvents

Compatible and manufacture approved solvents in quantities as specified in the manufactures datasheets shall be supplied for mixing each product in the coating systems.

6.6.4.5 Other Requirements

a. **Coating Composition**

- i. The paint shall not contain metallic zinc, Aluminium, lead, cadmium, copper or copper alloys for internal coating systems.
- ii. The paint shall not contain metallic Aluminium, lead, cadmium, copper or copper alloys for external coating systems.
- iii. The colour is left to the discretion of the manufacturer but it shall be sufficiently different to distinguish it from other coats in the same system. The final finish colour shall be Light Gray or Light Green for Interior coating system and Light Grey, Yellow (RAL1003) and Red (RAL3000) for Exterior Coating System (Refer schedule in Section 04).
- iv. It is the manufacturer's responsibility to ensure that the paint shall not contain ingredients which may be harmful during application or subsequent removal when operations are carried out in accordance with the manufacturers' instructions.

b. **Shelf Life**

The paint, when stored in the original, sealed containers at a temperature between 0 and 35°C, shall retain the properties for a period not less than 12 months from the date of dispatch by the Supplier. The age of materials components shall not exceed the recommended shelf-life as limited by the manufacturers.

c. **Curing**

Curing time shall be dependent on ambient temperature only.

d. **Application Relative Humidity**

Maximum relative humidity approved by the manufacturer shall be not less than 85%.

e. Documents

- i. Comprehensive paint system detail report including all technical information, shall be submit along with the bid.
- ii. Conformation of the paint system from paint manufacture.
- iii. Product Data Sheets (PDS) and Safety Data Sheets (SDS) shall be supplied for each and every product in the coating systems.

6.6.4.6 Surface Preparation

All the surfaces which are to be painted to be blast cleaned to conform to Swedish Standard SA 2 ½ by grit blasting.

6.6.4.7 Details of application and approval

- a. All painting work shall be done as per the manufactures' "datasheet". The whole area specified above to be painted with primer, intermediate and finish paint. The primer paint is recommended to apply by Air Spray or Airless spray. The intermediate and finish coats are recommended to apply by Airless spray.
- b. Stripe coating 3 times on welding joins & sharp edges before each paint code and other required are to be stripped coated as required.
- c. Required overall paint thickness should not be less than 360 microns DFT for under sides of roof and roof structure, 360 microns DFT for tank interior and 210 microns DFT for tank exterior/stairway/handrails while first coat, intermediate coat and final coat thickness to be not less than what is specified.
- d. Approval for painting should be obtained from the Inspection Engineer of CPSTL or his representative as follows.
 - Prior to application of first primer coat after satisfactory cleaning of surfaces.
 - Prior to application of first intermediate coat after applying the required thickness of primer.
 - Prior to application of first finish coat after applying the required thickness of intermediate coat.
 - Required total DFT indicated in specifications to be applied and the first coat of Paint shall be applied as soon as possible after surface preparation is approved by Engineer. The preparation of paint before application is to be done as per the instruction stated by the paint manufacturer.
 - Time interval between two coatings shall comply with paint manufactures instructions
 - The Engineer reserves the authority to accept or reject.
 - Prepared surface before painting depending on his observations.
 - Application of paint depending on the preparation of paint and the weather.

Painting carried out under doubtful weather condition is the responsibility of contractor. If any painting is found to be unacceptable the particular surfaces shall be made paint free and repainted at contractor's expense.

6.6.4.8 Hot dip Galvanising

All hot dip galvanizing work shall conform to ASTM A 123 or BS EN ISO 1461:2009.

Average mean coating thickness of galvanizing is 70 microns for lids of rim air vents and 85 microns for all other pipes, fittings, flanges, supports and gratings.

Touch up painting with Zn rich paint shall be attended on the galvanized surfaces wherever required after installation.

Certificate from the galvanizing company stating that all the specifications of the bidding document were met shall be submitted to CPSTL after completion of galvanizing work.

6.6.4.9 Painting Colours

The painting colours to be used will be as specified in the following table. However, the Employer could advice his preferable colour. Prior approval from CPSTL shall be obtained for the top Coat.

Item	Description	Colour
1	Tanks (Interior / Exterior)	1st Coat: Light Gray 2nd Coat: Light Green
2	Fire Water pipe lines	Red
3	Pumps	Gray
4	Motors	Blue
5	Foam Pipelines	Yellow
6	Other Pipes / Valve Body	Gray
7	Valve Handle	Blue
8	Steel Structures / Platforms	Gray
9	Hand Rails	Yellow
10	Tank Bottom (External Ring including Annular plate External	Black

6.6.5 **Internal floating roof**

Aluminium internal floating roofs on floats having their deck above the liquid, supported by closed pontoon compartments for buoyancy as per API Standard 650 Twelfth Edition, March 2013.

Appendix H Section H.2.2 e inside the Fixed Roof Tank to minimize breathing losses and thereby reduce the overall Hydrocarbon loss from the tank.

Filling rate and emptying rate are given in design data.

a. Material

The material of floating roof is Aluminium. Aluminium shall conform to the requirements of Section 2 of ASME B96.1. Aluminium skin shall be 0.51 mm (0.020 in.) minimum nominal thickness. Aluminium floats shall be 1.3 mm (0.050 in.) minimum nominal thickness.

b. Peripheral Seals

Primary Seals shall be vapour-mounted rim seal (flexible wiper seal) as per clause H.4.4.4.b of API 650 Primary seal material shall be able to use with gasoline. Secondary seal shall be flexible wiper seal.

c. Roof Penetrations

Columns, ladders, and other rigid vertical appurtenances that penetrate the deck shall be provided with a seal that will permit a local deviation of ± 125 mm (± 5 in.). Appurtenances shall be plumb within a tolerance of ± 75 mm (± 3 in.).

d. Roof Supports

The floating roof shall be provided with adjustable supports.

The height of the floating roof shall be adjustable to two positions with the tank in service to establish the low (operating) and high (maintenance) levels of the roof supports. The design of the supports shall prevent damage to the fixed roof and floating roof when the tank is in an overflow condition.

The low roof position shall be the lowest permitted by the internal components of the tank including shell nozzles with internal projections.

The high roof position shall provide a 2-m (78-in.) minimum clearance throughout the bottom, between the roof and the tank bottom.

Supports shall be fabricated from pipes and notched or otherwise constructed at the bottom to provide complete liquid drainage.

Steel pads or other means shall be used to distribute the loads on the bottom of the tank and provide a wear surface. Pads shall be continuously welded to the tank bottom.

Aluminium supports shall be isolated from carbon steel by an austenitic stainless steel spacer, an electrometric bearing pad, or equivalent protection.

e. Openings and Appurtenances

Ladder - Ladder landing pad shall be provided on the floating roof.

f. Internal Floating Roof Pressure-Vacuum (Bleeder) Vents

Vents suitable to prevent overstressing of the roof deck or seal membrane shall be provided on the floating roof. These vents shall be adequate to evacuate air and gases from underneath the roof such that the internal floating roof is not lifted from resting on its supports during filling operations, until floating on the stored liquid. The vents shall also be adequate to release any vacuum generated underneath the roof after it settles on its supports during emptying operations.

g. Tank Circulation Vents

Peripheral circulation vents shall be located on the tank roof and meet the requirements of H.5.3.3, so that they are above the seal of the internal floating roof when the tank is full. The maximum spacing between vents shall be 10 m (32 ft), based on an arc measured at the tank shell, but there shall not be fewer than four equally spaced vents.

- i. The venting shall be distributed such that the sum of the open areas of the vents located within any 10 m (32 ft) interval is at least 0.2 m^2 (2.0 ft^2). The total net open area of these vents shall be greater than or equal to $0.06 \text{ m}^2/\text{m}$ ($0.2 \text{ ft}^2/\text{ft}$) of tank diameter.
- ii. These vents shall be covered with a corrosion-resistant coarse-mesh screen (13 mm [$1/2$ in.] openings) and shall be provided with weather shields (the closed area of the screen must be deducted to determine the net open vent area).
- iii. A centre circulation vent with a minimum net open area of $30,000 \text{ mm}^2$ (50 in.^2) shall be provided at the centre of the fixed roof or at the highest elevation possible on the fixed roof. It shall have a weather cover and shall be provided

with a corrosion-resistant coarse-mesh screen (the closed area of the screen must be deducted to determine the net open vent area).

h. Liquid-Level Indication, Overfill Protection, And Overflow Slots

To be provided

i. Anti-Rotation and Centring Devices

The internal floating roof shall be centred and restrained from rotating. A guide pole with rollers, two or more seal centring cables or other suitable device(s) shall be provided as required for this purpose. The internal floating roof shall not depend solely on the peripheral seals or vertical penetration wells to maintain the centred position or to resist rotation. Any device used for either purpose shall not interfere with the ability of the internal floating roof to travel within the full operating elevations in accordance with H.4.1.1 of API Standard 650 Twelfth Edition, March 2013.

j. Manholes and Inspection Hatches

2 Nos, Floating-Roof Manholes shall be provided as per H.5.5.2 of Appendix H of API Standard 650 Twelfth Edition, March 2013.

k. Gauging and Sampling Devices

The fixed roof and the internal floating roof shall be provided with and/or accommodate gauging and sampling devices. Sampling devices on the deck of the floating roof shall be installed beneath the fixed-roof hatch (as specified for this purpose).

The gauge pole pipes shall be extended up to the fixed roof. All such devices on the floating roof shall be installed within the plumbness tolerance of H.4.5. See C.3.14 for additional requirements applicable to gauge wells and poles. Along the 6" dia. gauge pole pipe, slots to be provided as required.

l. Fabrication, Erection, Welding, Inspection, and Testing

Fabrication, Erection, Welding, Inspection, and Testing shall be as per Clause No. H.6 of API Standard 650 Twelfth Edition, March 2013.

- i. Upon the start of internal floating roof installation, or concurrent with assembly within a tank under construction, the tank (interior shell and vertical components) shall be inspected by the floating roof erector. The purpose of this inspection shall be to confirm plumbness of all interior components, along with roundness and the condition of the shell (for the presence of damage, projections, or obstructions) to verify that the floating roof and seals will operate properly.
- ii. Any defects, projections, obstructions or tank tolerance limits (exceeding those defined in 7.5 of Appendix H of API 650), which would inhibit proper internal floating roof and seal operation, that are identified by the internal floating roof erector shall be reported to the CPSTL.
- iii. Deck seams and other joints that are required to be or vapour-tight as per H.4.1.3 of API 650 shall be tested for leaks by the shop or field joint assembler. Joint testing shall be performed by means of penetrating oil or another method consistent with those described in API standard 650 for testing cone-roof and/or tank-bottom seams.
- iv. The floating roof manufacturer shall supply all floating roof closures required for testing per H.4.1.3, H.4.1.7, H.4.3.1 and H.6.2 of Appendix H of API standard 650 Twelfth Edition, March 2013.

- v. Rivets, self-tapping screws, and removable sections are not acceptable for test plugs.
- vi. Any flotation compartment that is completely shop-fabricated or assembled in such a manner as to permit leak testing at the fabricating shop shall be leak tested at the shop as well as retested in the field by the floating roof supplier/principal for all accessible seams. In the field assembly yard or in the erected position, the erector shall spot leak test 10% of the flotation compartments, whether shop- or field-fabricated.
- vii. The CPSTL may select the specific compartments to test and the test location, based on his visual inspections for indications of damage or potential leaks. Any leaking compartments shall be repaired and re-tested by the roof manufacturer. If the testing finds any leaks in compartments tested, except for those damaged by shipping, then 100% of the roof compartments shall be leak tested. Unless prohibited by safety concerns, leak testing shall be at an internal pressure of 20 kPa – 55 kPa (3 lbf/in.2 – 8 lbf/in.2) gauge using a soap solution or commercial leak detection solution.
- viii. Upon assembly and prior to a flotation test, the supplier/principal shall inspect to verify that the peripheral seal produces an acceptable fit against the tank shell.

m. Initial Flotation

Flotation test shall be conducted as per the API standard 650. Prior to floatation test, IFR shall be placed at the operation height. If required, fresh water will be supplied by CPSTL and cost of pumps running will be charged from the Contractor.

6.6.6 Testing

6.6.6.1 The Contractor shall carry out required testing and inspection to determine the integrity and strength of piles and tank foundation as required.

6.6.6.2 The Contractor shall carry out field density and Dynamic Cone Penetration (DCP) test in order to ensure the compaction of ABC layer.

6.6.6.3 The Contractor shall carry out required testing and inspection of the tanks as per the API Standard 650 Twelfth Edition, March 2013 and all the other mechanical, electrical and instrumentation accessories. Required testing and inspection shall be supervised and certified by the Engineer/his nominee and Inspection Unit of CPSTL as appropriate.

6.6.6.4 The Contractor shall carry out floatation test of the internal floating roofs for Tank No. B and C using water that will be supplied by the CPSTL and the test shall be witnessed by the supplier/principal.

6.6.6.5 Hydro test

The Contractor shall carry out tank hydro test for each tank. Testing procedure to be agreed by the Contractor and CPSTL. Required water shall be supplied using CPSTL fire pumps and fire water system. Contractor shall supply required booster pumps and arrange temporary connections from existing outlets of the fire ring. Tanks shall be cleaned using fresh water which will be supplied by CPSTL. Cost of pumps running will be charged from the Contractor.

6.6.7 Calibration

After successful completion of hydro testing, the tank calibration is to be attended. The calibration and tabulations shall conform to API 2550, ASTM 1220. The tank calibration is to be carried out using one of the following methods by a third party company acceptable to CPSTL.

- MPMS Ch. 2.2B – Calibration of Upright Cylindrical Tanks using the Optical Reference Line Method (ORLM)
- MPMS Ch. 2.2C – Calibration of Upright Cylindrical Tanks using the Optical Triangulation Method (OTM)
- MPMS Ch. 2.2D - Calibration of Upright Cylindrical Tanks using the Internal Electro Optical Distance Ranging Method (EODRM)
- MPMS (Manual of Petroleum Measurement Standards)

The name and address of the 3rd party company should be given in the bid for evaluation purposes.

Calibration of the tanks and submission of calibration charts and soft copies in the form of spread sheets for each tank. Weight of the Internal Floating Roof shall not be included in calibration chart and shall be mentioned separately.

The Contractor shall submit three sets of certified calibration tables to the Engineer on or before successful completion of the work.

6.6.8 The Contractor shall fabricate and install the name plates as per the API Standard 650 Twelfth Edition, March 2013 (Section-10) requirements. Size (200mm x 200mm) Etching of letters shall be approximately 0.5 mm deep. Letters shall be erect round Gothic style. Nameplate material shall be 2mm thick stainless steel Grade 316. Fixing Saddle 5mm thick, ASTM A 283 Gr. C. Round head bolt and nuts stainless steel Grade 316.

6.6.9 Materials shall be as per following Specifications

6.6.9.1 List of recommended manufactures – Mechanical works

No.	Item	Country of Origin/Country of manufacture
1.	Plates, structural steel Pipes, fittings, flanges, nut & bolts, gaskets	European, UK, Japan, South Africa or USA
2.	Valves Level gauge Dip hatch Cathodic protection system Internal Floating Roof Top Foam pourers Water sprinkle nozzles Fire detection system Hydrocarbon detection system	European, UK, Japan, South Africa or USA

Note:

The reference made here to certain manufacturers' products and items identified by registered trademarks, this has been done for the sole purpose of defining and establishing standards of quality and performance and not with the intention of restricting the procurement of materials or fittings to a particular manufacturer.

6.6.9.2 Carbon Steel Plates

- Material shall conform to ASTM A 573 Gr. 70 for shell plates and ASTM A 283 Gr. C for all other plates.

- ii. Identification:-Heat/Batch number and material description shall be marked on the plates
- iii. Valid mill test certificate with the heat/batch numbers should be submitted with the plates. The heat /batch numbers marked on plates should tally with that of the certificate for final acceptance by CPSTL.
- iv. Tolerance in size, if any, should be mentioned with relevant standards for the purpose of evaluation.

6.6.9.3 Carbon Steel Line Pipes

- i. Length 5.8m, seamless and Bevel Ends (BE)
- ii. Material shall conform to API Standard 5L-Gr B or ASTM A 106 B
- iii. Dimensions shall conform to ANSI B 36.10 SCH 40
- iv. Identification:-Heat/Batch number, SCH number, API or ASTM number, seamless and material description shall be marked on the pipes.
- v. Both ends of pipe should have protective sleeves.
- vi. Mill Certificate should be supplied with Heat/Batch numbers or any other reference number marked on pipes as well as in the certificates to check once the items are delivered to CPSTL Kolonnawa with reference to the items against the Mill Certificate.

6.6.9.4 Carbon Steel fittings (Elbows, Reducers)

- i. Bevel ends (BE)
- ii. Material shall conform to ASTM A 234 Gr. WPB.
- iii. Dimensions shall conform to ANSI B 16.9, SCH40
- iv. Identification:-SCH number, ASTM number and material description shall be marked on the elbows and reducers.
- v. Mill Certificate should be supplied with Identification number or any other reference number marked on elbow as well as in the certificates to check once the items are delivered to Ceylon Petroleum Storage Terminals Limited Kolonnawa with reference to the items against the Mill Certificate.

6.6.9.5 Carbon Steel Flanges

- i. Class 150, Slip on, Raised Face (RF)
- ii. Material shall conform to ASTM A 105 Normalised.
- iii. Dimensions shall conform to ANSI B 16.5.
- iv. Identification:-ASTM number, ANSI Number, Class and material description shall be marked on the flange.
- v. Flange should be marked with the ASTM specification grade identification symbol and ASTM specification number.
- vi. Mill Certificate should be supplied with identification numbers or any other reference number marked on flanges as well as in the Certificate to check once the items are delivered to CPSTL Kolonnawa with reference to the items against the Mill Certificate.

6.6.9.6 Nuts and Bolts

- i. Material of bolts be conformed to ASTM A 193 Gr.B 07 or BS 1506-621 Gr.A and materials of nuts shall conformed to ASTM A 194 Gr. 2H or BS 1506-162.

- ii. Threads should be in accordance with ANSI B 1.1 or BS 1580 Class 2A for bolts and class 2B for nuts.
- iii. Identification marks shall be available on items to conform above standards.

6.6.9.7 Gasket Materials

- i. Maximum Working Pressure - 225 psi
- ii. Nominal Working Temperature - 45o C
- iii. Thickness - 3 mm
- iv. To use as packing for flanges of pipe lines and tank manholes for petroleum refined products such as Gasoline, Gas oil, Fuel Oil and Aviation Turbine.
- v. Gaskets should conform to BS 7531 or equivalent.
- vi. Each sheet of jointing shall be indelibly marked with the number of British Standard and manufacturer's identification mark.

6.6.9.8 Cast Steel Gate Valves (Class 150)

- i. Operational Conditions
 - a. Maximum Working Pressure - 150 psi
 - b. Nominal Working Temperature - 45 °C
- ii. Use for petroleum refined products such as Gas Oil, Gasoline, Kerosene, Fuel Oil and Aviation Turbine.
- iii. The valves should be of outside screw and yolk type with rising stem non rising hand wheel, bolted bonnet and with solid or flexible wedge type plain gate and should conform to followings.
 - a. Designed as per API 6D & API 600.
 - b. End flanges shall be raised face type and flange dimensions should conform to ANSI B 16.5.
 - c. Face to face dimensions should conform to ANSI B 16.10.
 - d. Valve inspection and testing as per API 598.
- iv. Materials of valve
 - a. Materials of component of the valve should conform to API 600.
 - Body and bonnet - ASTM A 216 Gr. WCB
 - Seat and Wedge facing - 13% Chromium Steel
 - Stud - ASTM A 193 Gr. B7
 - Stud Nut - ASTM A 194 Gr. 2H
 - b. Trim material should be specified and should conform to API 600 normal trim material (supplier should forward manufacturer's certificate conforming the same).
 - c. The materials of all parts of the valve to be specified according to ASTM standard.
- v. Other Conditions
 - a. Method of packing should be indicated in the quotation or Pro-forma Invoice.
 - b. Valves should be shipped with gate closed and flange closed with suitable material or end caps.
 - c. Exterior surface (un machined) should be painted with suitable paint to prevent corrosion and machined or threaded surface should be coated with easy removable rust preventive coating.
 - d. The method of testing should conform to API 598 and valid test certificate should be supplied with the items and the supplier should

- mention in the quotation or Pro-forma Invoice whether this can be supplied.
- e. Period of guarantee and the conditions of guarantee should be mention in the quotation.
 - f. The supplier should forward the copy of certificate of Authority to use official monogram of API and the originals of internationally published catalogues/literature relevant to the valve.
 - g. The supplier should forward all details mentioned above for evaluation purposes. The offers of those who fail to submit requested details will not be
 - h. Considered for evaluation.

6.6.9.9 Double Block & Bleed Valves

Description : Double Block & Bleed Valves for use of refined petroleum product such as Diesel, Petrol, Kerosene, Fuel oil.

- i. Operational condition :
 - a. Pressure Class –150 LB
 - b. Pressure Rating : 285 psig @ -20 to 100 °F
 - c. Raising Stem Gear Operated)Valve Sizes 12 ”to 18(”
 - d. Raising Stem Manually Operated Hand Wheel)Valve Sizes below 12”

The valves should be of carbon steel, swing disc, removable seat bolted cover type should conform to following features.

- a. For sizes equal or higher than 2 ”design as per general requirements of Standard API 6D, API 600 & ASME B16.34.
 - b. End connection should be raised face flange and flange dimensions should conform to ASME B 16.5) Serrated (for sizes equal or higher than 2 .”
 - c. Face to face dimensions should conform to API 6D and ASME B 16.10
 - d. Valve inspection and testing as per API 598.
 - e. Bore size should be Reduce bore assistant .
- ii. Material

Materials of component of the valve should conform to general requirements of API 600 and,

- a. Stud - ASTM A 193 Gr .B7
- b. Stud Nut - ASTM A 194 Gr .2H
- c. Materials of other components shall be as follows

Bonnet	WCB	Slip	BS 2789 400/18
Plug	WCB	Main Seal	Fluor elastomer
Seat	13Cr	Packing	PTFE

6.6.10 Technical documents and information

6.6.10.1 Documentation to be submitted after Award of Contract

The following describes the minimum scope of information, documents, drawings, etc. to be

submitted by the Contractor to the Employer after award of contract during the site construction. The Employer reserves the right to request from the Contractor such additional information, drawings, documents, etc. as may be reasonably required for proper understanding and definition of the project.

The Contractor shall provide softcopies and two (2) hard copies of all drawings, documentation and as-built drawings/documentation to be submitted by him.

Monthly progress reports shall be provided by no later than ten (10) days after the last day of each month.

Any revision of the project implementation schedule shall not be delivered later than fourteen (14) days after such revision.

6.6.10.2 Documentation to be submitted prior to Site Construction

All documents and permits required for site construction shall be submitted prior to site construction.

6.6.10.3 Documentation to be submitted during Site Construction

The following documents shall be submitted during site construction:

- i. It is to be noted that for all major works not only in the site, but also for those works, which are located within CPSTL areas or related to facilities of such entities a method statement for the proposed works is to be included in the permit to work application along with the approved design review documentation at and specifics of the construction works and any associated risk evaluation for the relevant owner.
- ii. CPSTL will coordinate all temporary building permits or the no-objection certificates, as applicable, issued by the various departments or other relevant Governmental Authority to the Contractor in accordance with applicable Law, and all related permits, consents and approvals related to the construction of Project.
- iii. The Contractor shall submit to the Engineer drawings, diagrams, graphs, curves, calculations, schedules for information, review or approval as described in the Contract. The quality of all documents submitted shall conform to acceptable international practice.
- iv. The Contractor shall provide the calibration certificates of all calibrated equipment to the CPSTL.
- v. Monthly progress brief reports - by no later than one (1) week after the last day of each month including S-curves showing the work progress. The minimum information shall be:
 - a. Engineering activities
 - b. Component and material purchase and receipt status
 - c. Construction activities
 - d. HSE
 - e. Trainings executed
 - f. Incidents
 - g. Accidents
 - h. Personal on site
 - i. Number of staff
 - j. Number of local staff
 - k. 4-week look ahead schedule
 - l. Recommendations for improvement
 - m. Project graphs

- n. Layout drawings which shall show the work status
- o. S-curves which shall show on a monthly base the status of the works (planned and actual as well as cumulated) for the project

6.6.10.4 Final Documentation

The Contractor shall deliver to the CPSTL the final documentation, both in digital and hard copies (2x). The final documentation shall comprise at least the following:

- i. The above mentioned documents
- ii. All As-built drawings
- iii. Site safety procedures
- iv. HSE procedure and plan
- v. Key list and site access contacts
- vi. Components data sheets
- vii. Installation and O&M manuals from component manufacturers
- viii. Studies and tests (tests , geological / geotechnical analysis, static calculation wherever applicable)
- ix. Mechanical completion documents including but not limited to:
 - a. Data sheets and manuals of all components and equipment
 - b. Calibration protocols
- x. Warranties of component suppliers
 - a. IFR
 - b. Valves
 - c. Detection systems
 - d. Galvanization
 - e. Painting
- xi. Commissioning protocols
- xii. Any other documents

SECTION - 07

FORM OF BID

DUPLICATE

Form of Bid

Name of Contract: **Balance Work of Proposed 6 Nos. Storage Tanks at Kolonnawa Installation – Stage 2**

To: **Chairman / Managing Director
Ceylon Petroleum Storage Terminals Limited,
Oil Installation,
Kolonnawa, Wellampitiya.**

Gentlemen:

1. Having examined the Standard Bidding Document - Procurement of Works – Major Contracts [ICTAD/SBD/02 - Second Edition, January 2007], Specifications, Drawings and Bills of Quantities and Addenda for the execution of the above-named Works, we the undersigned, offer to execute and complete such Works and remedy any defect therein in conformity with the aforesaid Conditions of Contract, Specifications, Drawings, Bills of Quantities and addenda Nos.....for the sum of Sri Lankan Rupees
.....
(LKR) and United States Dollar
.....
(USD) or such other sums as may be ascertained in accordance with the said Conditions.
2. We acknowledge that the Contract Data forms part of our Bid.
3. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer’s notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Contract Data.
4. We agree to abide by this Bid until the date specified in ITB Clause 16, **04th April 2025** and it shall remain binding upon us and may be accepted at any time before that date.
5. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding Contract between us.
6. We understand that you are not bound to accept the lowest or any bid you may receive.
7. We certify/confirm that we comply with the requirements as per ITB Clause 3 and 4 of the bidding documents.

Dated this day of.....20.....

Signature in the capacity of

duly authorized to sign bids for and on behalf of [in block capitals or typed]

Name :

Designation:

Address:

Witness:

SECTION- 8

BILL OF QUANTITIES

DUPLICATE

PREAMBLE TO THE BILL OF QUANTITIES

It is the Bidder's responsibility to see that the prices include for complying with all the requirements of the other documents whether specifically referred to in Bill of Quantities.

The Bidder is advised to visit the site of the proposed work and it is the responsibility of the Bidder to ascertain the conditions governing access to the site, the extent of working space storage area etc.

1. This Bill of Quantities contains pages numbered from 68 to 135. Bidders are requested to see that no page is missing, no duplicate and that all TRADES are carried to SUMMARY at the end of the Bill of Quantities.
2. The Conditions of Contract, the Specifications and the Drawings are to be read in conjunction with the Bill of Quantities.
3. The cost of complying with all conditions, obligations and liabilities described in the Conditions of Contract, Specifications and the Bill of Quantities including all overhead charges and profit in carrying out the work as shown on the Drawings shall be deemed to be spread over and included in the prices of sums stated by the Bidder in the Bill of Quantities unless separately measured.
4. If the Bidder fails to price any items in the Bill of Quantities, then the cost of the work under such items shall be held to be spread over and included in the prices given against other items of work.
5. The quantities set out in the Bill of Quantities are provisional and cover the approximate scope of the work anticipated to be performed by the Contractor. The actual quantities used for final measurement purposes will be determined by the Engineer by measurement of the work completed by the Contractor.
6. Where trade names, brands and or Catalogue Numbers are referred to, sole preference to any material or equipment is not intended. Any other material or equipment may be used, provided that the characteristics of type, quality, appearance, finish, method of construction and / or performance is superior to the specified.
7. Whenever the method of measurement is not clear from the documents available, the principles as given in the Sri Lanka Standard 573: 1999 UDC 69(08374) shall be applicable.
8. Selected Bidder shall comply with the arrangement of work and be ready to work part by part as required by the Authorities of the Employer if applicable.
9. The unit and lump sum prices of the Bill of Quantities (referred to as the Contract Rates) shall, except in so far as is otherwise provided for under the Contract, be deemed to cover all obligations set out in the Contract, and all matters or things necessary for the proper completion and maintenance of the Works, and shall be fixed and binding upon the Contractor.
10. Unit prices when applied to the quantity of work performed under the Contract shall, and other sums specifically determined under the provisions of the Contract, constitute full remuneration to the Contractor under the Contract.
11. Each item shall be priced by the Bidder in Sri Lanka Rupees or Foreign Currency.

12. Rates for items in this Bill of Quantities shall be inclusive for hauling, transporting, loading, unloading, spreading, heaping, supporting, scaffolding, welding, and for laps, unless otherwise specifically stated.
13. Unless otherwise specifically stated in Bill of Quantities or herein, the following shall be deemed to be included with all items:-
- i. Labour and all costs in connection therewith.
 - ii. Materials, goods and all costs in connection therewith.
 - iii. Tools, plants, equipment, machinery and all costs in connection therewith.
 - iv. Waste of materials.
 - v. Protecting and clearing.
 - vi. Square cutting.
 - vii. Establishment charges, overhead charges and profit.
 - viii. All setting out works.
 - ix. For providing of method statements, calculations, proposals by Contractor, shop drawings and as built drawings.
 - x. The rate for each item shall also include for all the following.
 - a. Complying with regulations of the Municipal Council and/or any other relevant authority under which particular item of work is to be executed unless otherwise included in the preliminaries.
 - b. Plant and equipment unless and otherwise included in preliminaries.
 - c. In addition to above, the rate for item of work in substructure shall include for the works at depth extending below ground water table where applicable including excavation under water, removal and disposal of mud, sand and preparation of place to a condition suitable for proper execution of the work.
14. If Bidders are anticipating to give any discount, it shall be marked separately in the space allocated in the summary of Bill of Quantities. Provisional Sums shall not be considered when calculating discount.
15. All materials, equipment supplied shall be new, unused without any defects.
16. All materials used in the Works shall be of the best quality of their respective kinds as specified and shall be obtained from sources and suppliers approved by the Engineer and shall comply strictly with the tests prescribed or, Where tests are not laid down in this Specification, with the requirements of the latest issue of the relevant British Standards or other Standards approved by the Engineer.
17. Metric units are used throughout the Bill of Quantities for measurement purposes unless otherwise indicated. Abbreviations used in the Contract are as follows:-
- | | | |
|----------------|---|-------------------|
| L.S. | - | Lump Sum |
| P.S. | - | Provisional Sum |
| m | - | Metre |
| m ² | - | Square metre |
| m ³ | - | Cubic metre |
| kg | - | kilograms |
| nr | - | Numbers |
| LKR | - | Sri Lankan Rupees |
| USD | - | US Dollars |

Bill of Quantities

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

JOB : BALANCE WORK OF PROPOSED 6 NOS. STORAGE TANKS AT KOLONNAWA INSTALLATION – STAGE 2

BOQ No: E/18/2023

BILL 01: CONSTRUCTION OF TANK B (CAPACITY - 15,000 m³)

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	PRELIMINARIES						
	Contractor shall remove all existing temporary structures and hand over all usable materials to the Engineer before construct his own temporary facilities, structures etc.						
B1	Allow lump sum for cleaning site before starting construction works, including removal of existing structures, temporary buildings, all rubbish, debris etc.	Item	Allow				
B2	Removing and stacking temporary facilities, concrete blocks, steel sheets, steel sections, reinforcement steel, casings, machineries, equipment and other remaining goods at site before starting construction works.	Item	Allow				
B3	Allow lump sum for mobilization and demobilization for civil works .	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B4	Allow lump sum for mobilization and demobilization for mechanical works .	Item	Allow				
B5	Allow lump sum for construction of temporary access roads as required.	Item	Allow				
B6	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for civil construction in order to protect the surrounding piping and tanks in service.	Item	Allow				
B7	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for mechanical works of in order to protect the surrounding piping and tanks in service.	Item	Allow				
B8	Supply, erection, maintenance and subsequent removal of all required scaffoldings with relevant attachments, safety precautions, nets etc. for permanent works.	Item	Allow				
B9	Allow lump sum for cleaning site on completion of works, including removal of all rubbish and debris and leaving the site, clean internally and externally.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	SUB TOTAL CARRIED TO SUMMARY						
	CONSTRUCTION OF TANK FOUNDATION						
	<u>Earth Works</u>						
B10	100mm thick layer of sand tar mixture (river sand and 80 - 100 hot bitumen mixture) over compacted sand filling.	m ²	1080				
B11	Levelling site after completion of tank construction	Item	Allow				
	<u>Concrete</u>						
B12	Construction of tank apron with Grade C20 concrete including forming joints.	m ³	4				
	<u>Reinforcement</u>						
B13	Reinforcement for apron slab, high yield steel horizontal bars.	kg	200				
	<u>Mechanical Works</u>						
B14	Supply and installation of Cathodic protection system with all accessories, connections, supplies etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	<u>RCC Dyke walls</u>						
B15	Excavation for RCC Dyke walls to a depth not exceeding 2.5m.	m ³	400				
B16	Supplying, furnishing, placing & compacting graded aggregate base (ABC) material as specified. (Compacted volume)	m ³	125				
B17	Approved quality earth supply, spread and compacted to 150mm thick layers to the required density.	m ³	215				
B18	C15 Screed concrete	m ³	12				
B19	Concreting dyke walls with Grade C25 concrete including forming joints.	m ³	120				
B20	Formwork in dyke walls	m ²	850				
B21	Reinforcement in dyke walls	kg	17700				
	<u>Tank farm earth work, drains and earth bund walls</u>						
B22	General excavation in tank farm area. Rate shall include for making levels, compacting, surface preparation and staking of excavated material within CPSTL premises.	m ³	2000				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B23	Filling available earth to form bund walls including transport, placing, compacting, making slopes etc.	m ³	450				
B24	Excavation for structures to a depth not exceeding 1.5m.	m ³	25				
B25	C15 Screed concrete	m ³	3				
B26	Concreting structures with Grade C25 concrete.	m ³	18				
B27	Formwork in structures	m ²	290				
B28	Reinforcement in structures	kg	1950				
SUB TOTAL CARRIED TO SUMMARY							
CONSTRUCTION OF STEEL TANK							
	<u>Supply of Materials</u> Rate shall include for shipping, transport up to site, levys, taxes, custom duties and other charges, warehouse charges, loading, unloading and all other costs attributable to supply of materials to the site.	Note					

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B29	Supply of all necessary carbon steel plates and other required materials for tank bottom, annular plates, shell plates, wind girder, settlement angles, roof plates, reinforcing plates, nozzle neck plates, covers, nut & bolts, manholes, supports, sump, vents, hatches, accessories, attachments etc.	Item	Allow				
B30	Supply of all necessary structural steel members and other required materials for tank roof structure, supports, top angle, wind girder, settlement angles, hand rails, spiral stairway, pipe pedestals, platforms, stairs, nut & bolts etc.	Item	Allow				
B31	Supply of all necessary carbon steel line pipes, bends, reducers, blinds, nozzles, flanges, manifolds, stiffening rings, gaskets, sprinklers, nuts & bolts, accessories and other required materials for cargo pipe segments, delivery pipe segments, fire water lines, water drencher system, foam top pourer system etc.	Item	Allow				
B32	Supply of all painting materials for painting of tank bottom, shell, roof, roof structure, manholes, supports, line pipes, accessories, all attachments, pipes, hand rails, and spiral stairway etc.	Item	Allow				
B33	Supply of all gate valves, DBB valves, butterfly valves, expansion joints, flexible bellows etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B34	Supply of all materials for gauge pole and roof access ladder.	Item	Allow				
B35	Supply of all materials for roof centre air vent and rim vent system.	Item	Allow				
B36	Supply of mechanical gauging unit.	Item	Allow				
	<u>Fabrication, erection, painting and installation</u>						
	Rate shall include for carrying out all required testing, supply of materials other than considered under separate supply items of this BOQ, consumables, machinery, labour, utilities, temporary arrangements, safety measures/precautions, hoisting, workshop charges, placing and all other costs attributable to the work.	Note					
B37	Fabricating, laying, forming and welding of bottom plates and annular plates.	Item	Allow				
B38	Fabricating, rolling, erection and welding of shell plates, compression ring, settlement angles and wind girder.	Item	Allow				
B39	Construction of roof structure, roof supports and top angle.	Item	Allow				
B40	Fabrication and installation of roof plates.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B41	Fabrication, formation, preparation and welding of draw off sumps (48" dia.), draw off nozzles (4" dia.) and related piping.	Item	Allow				
B42	Fabrication, preparation, installation and welding of shell manholes (30" dia. and 24" dia.) with reinforcement plate including necessary machinery work.	Item	Allow				
B43	Fabrication, preparation, installation and welding of 16" dia. and 12" dia. inlet and outlet nozzles with reinforcement plates.	Item	Allow				
B44	Fabrication, preparation, installation and welding of 6" dia. Standby outlet with reinforcement plates.	Item	Allow				
B45	Supplying, fabrication, preparation, installation and welding of pressure relief system for inlet and outlet nozzles.	Item	Allow				
B46	Fabrication, preparation, installation and welding of roof manholes (24" dia.) with reinforcement plates.	Item	Allow				
B47	Fabrication, preparation, installation and welding of floating roof access manholes on roof (30" dia.) with 8" & 6" gauging nozzles (02nr) and access ladder.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B48	Fabrication, preparation, installation and welding of roof centre air vent.	Item	Allow				
B49	Fabrication, preparation, installation of rim vent system.	Item	Allow				
B50	Fabrication, preparation, installation and welding of foam top pourer system including piping, nozzles, valves, accessories etc.	Item	Allow				
B51	Fabrication and installation of water drencher system for roof and shell including piping, nozzles, valves, accessories etc.	Item	Allow				
B52	Supplying, fabrication, installation and welding of earthing system including necessary machinery work, connections, cabling, connections, conductor and base plate etc.	Item	Allow				
B53	Supplying, fabrication, installation and welding of 8" dia. vertical pipe for radar gauge and 6" dia. vertical pipe for dipping, including ladder between pipes.	Item	Allow				
B54	Fabrication, installation and welding of 6" dia. Dip hatch.	Item	Allow				
B55	Fabrication, installation and welding of roof, crown & other hand rails as required with standard accessories.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B56	Fabrication, installation and welding of spiral stairway consisting of 2 stringers, intermediate landings, supporting arrangements and all other standard accessories. Rate shall include for hot dipped galvanised gratings etc.	Item	Allow				
B57	Provisions for installation of continues level measurements and RTDS multipoint temperature measurements.	Item	Allow				
B58	Supply and installation of a leak detection system under the tank including required instrumentation/ electrical cables, drain outs and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
B59	Supply and installation of a fire detection system in the tank including required instrumentation/electrical cables and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
B60	Procuring, supplying, installing, testing and commissioning of Internal Floating Roof (IFR), including ladders, vent system and fire detection system etc.	Item	Allow				
B61	Supply, fabrication and installation of name plate.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B62	Carrying out tank hydro test as required and as per API 650.	Item	Allow				
B63	Grit/ Sand blast cleaning and painting of underside of bottom plates.	Item	Allow				
B64	Grit/ Sand blast cleaning and painting of roof structure, top angle, underside of roof plates, 1m below the top angle in the top most shell course.	Item	Allow				
B65	Grit/ Sand blast cleaning and painting of entire bottom of the tank interior and up to 1 meter height from the bottom in the bottom most shell course.	Item	Allow				
B66	Grit/ Sand blast cleaning and painting of the shell exterior surface and roof external surfaces with all attachments.	Item	Allow				
B67	Grit/ Sand blast cleaning and painting of stairway and its supportive structure, hand rail and roof, crown & other hand rails as required with all attachments.	Item	Allow				
B68	Grit/ Sand blast cleaning and galvanizing of the water drencher piping system including finish painting.	Item	Allow				
B69	Grit/ Sand blast cleaning and galvanizing of the foam piping system including finish painting.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
B70	Grit/ Sand blast cleaning and galvanizing of the draw off piping system including finish painting.	Item	Allow				
B71	Installation of mechanical gauging unit.	Item	Allow				
B72	Installation of 16" dia. and 12" dia. DBB Valves	Item	Allow				
B73	Installation of 16" and 12" dia. Gate Valves and flexible bellows.	Item	Allow				
B74	Installation of 6" dia. 4" dia. and 3" dia. Gate Valves.	Item	Allow				
B75	Carrying out IFR floating test.	Item	Allow				
B76	Calibration of the tank including supply of 3 calibration tables.	Item	Allow				
B77	Construction of product piping system including all fittings, pipe supports/ pedestals, platforms, steel stairs, pits etc. and connect to the existing system as directed by the Engineer.	Item	Allow				
SUB TOTAL CARRIED TO SUMMARY							

BILL 02: CONSTRUCTION OF TANK C (CAPACITY - 15,000 m³)

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	PRELIMINARIES						
	Contractor shall remove all existing temporary structures and hand over all usable materials to the Engineer before construct his own temporary facilities, structures etc.						
C1	Allow lump sum for cleaning site before starting construction works, including removal of existing structures, temporary buildings, all rubbish, debris etc.	Item	Allow				
C2	Removing and stacking temporary facilities, concrete blocks, steel sheets, steel sections, reinforcement steel, casings, machineries, equipment and other remaining goods at site before starting construction works.	Item	Allow				
C3	Allow lump sum for mobilization and demobilization for civil works .	Item	Allow				
C4	Allow lump sum for mobilization and demobilization for mechanical works .	Item	Allow				
C5	Allow lump sum for construction of temporary access roads as required.	Item	Allow				
C6	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for civil construction in order to protect the surrounding piping and tanks in service.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C7	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for mechanical works of in order to protect the surrounding piping and tanks in service.	Item	Allow				
C8	Supply, erection, maintenance and subsequent removal of all required scaffoldings with relevant attachments, safety precautions, nets etc. for permanent works.	Item	Allow				
C9	Allow lump sum for cleaning site on completion of works, including removal of all rubbish and debris and leaving the site, clean internally and externally.	Item	Allow				
	SUB TOTAL CARRIED TO SUMMARY						
	CONSTRUCTION OF TANK FOUNDATION						
C10	<u>Demolishing Works</u> Breaking, removing and cleaning of existing pile build-ups and disposal of surplus within CPSTL premises as directed by the Engineer. (if required). Steel and usable material shall be handed over to CPSTL.	Item	Allow				
C11	<u>Earth Works</u> Excavation filled ABC material, to a maximum depth of 1 - 3m. Rate shall include for transport and stock pile excavated ABC material within CPSTL premises as directed by the Engineer.	m ³	350				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C12	Imported earth filling at tank area compact with layers, fill up to pile cut off level, average 300mm depth to level the site.	m ³	415				
C13	River sand filling to top of raft foundation, compact with 100mm layers, fill up to 500 - 600mm average depth.	m ³	540				
C14	100mm thick layer of sand tar mixture (river sand and 80 - 100 hot bitumen mixture) over compacted sand filling.	m ²	1080				
C15	Levelling site after completion of tank construction	Item	Allow				
	<u>Concrete</u>						
C16	Preparing heads for piles to receive the raft foundation on top.	nr	87				
C17	100mm thick Screed concrete under raft foundation with Grade C15 concrete.	m ³	110				
C18	Concreting for raft foundation with Grade C30 concrete.	m ³	667				
C19	Concreting for 450mm thick periphery wall on raft foundation with Grade C30 concrete.	m ³	30				
C20	Concreting for drain base and drain wall with Grade C30 concrete.	m ³	27				
C21	Construction of tank apron with Grade C20 concrete including forming joints.	m ³	4				
C22	Concreting on drain bottom to make slope with Grade C15 chip concrete.	m ³	4				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	<u>Formwork</u>						
C23	Curved formwork for sides of raft foundation	m ²	72				
C24	Curved formwork for sides of periphery wall	m ²	130				
C25	Curved formwork for sides of drain wall	m ²	122				
	<u>Reinforcement</u>						
C26	Reinforcement for raft foundation, high yield steel horizontal bars.	kg	144000				
C27	Reinforcement for periphery wall, drain base and drain wall, high yield steel horizontal and vertical bars.	kg	7200				
C28	Reinforcement for apron slab, high yield steel horizontal bars.	kg	200				
	<u>Mechanical Works</u>						
C29	Supply and installation of Cathodic protection system with all accessories, connections, supplies etc.	Item	Allow				
	<u>Miscellaneous</u>						
C30	Supply and installation of drain out pipe with all accessories, connections etc.	Item	Allow				
	<u>Tank farm earth work, drains and earth bund walls</u>						
C31	General excavation in tank farm area. Rate shall include for making levels, compacting, surface preparation and staking of excavated material within CPSTL premises.	m ³	700				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C32	Filling available earth to form bund walls including transport, placing, compacting, making slopes etc.	m ³	380				
C33	Excavation for structures to a depth not exceeding 1.5m.	m ³	20				
C34	C15 Screed concrete	m ³	2				
C35	Concreting structures with Grade C25 concrete.	m ³	14				
C36	Formwork in structures	m ²	220				
C37	Reinforcement in structures	kg	1450				
	SUB TOTAL CARRIED TO SUMMARY						
	CONSTRUCTION OF STEEL TANK						
	<u>Supply of Materials</u> Rate shall include for shipping, transport up to site, Leavis, taxes, custom duties and other charges, warehouse charges, loading, unloading and all other costs attributable to supply of materials to the site.	Note					
C38	Supply of all necessary carbon steel plates and other required materials for tank bottom, annular plates, shell plates, wind girder, settlement angles, roof plates, reinforcing plates, nozzle neck plates, covers, nut & bolts, manholes, supports, sump, vents, hatches, accessories, attachments etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C39	Supply of all necessary structural steel members and other required materials for tank roof structure, supports, top angle, wind girder, settlement angles, hand rails, spiral stairway, pipe pedestals, platforms, stairs, nut & bolts etc.	Item	Allow				
C40	Supply of all necessary carbon steel line pipes, bends, reducers, blinds, nozzles, flanges, manifolds, stiffening rings, gaskets, sprinklers, nuts & bolts, accessories and other required materials for cargo pipe segments, delivery pipe segments, fire water lines, water drencher system, foam top pourer system etc.	Item	Allow				
C41	Supply of all painting materials for painting of tank bottom, shell, roof, roof structure, manholes, supports, line pipes, accessories, all attachments, pipes, hand rails, and spiral stairway etc.	Item	Allow				
C42	Supply of all gate valves, DBB valves, butterfly valves, expansion joints, flexible bellows etc.	Item	Allow				
C43	Supply of all materials for gauge pole and roof access ladder.	Item	Allow				
C44	Supply of all materials for roof centre air vent and rim vent system.	Item	Allow				
C45	Supply of mechanical gauging unit.	Item	Allow				
<u>Fabrication, erection, painting and installation</u>							

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	Rate shall include for carrying out all required testing, supply of materials other than considered under separate supply items of this BOQ, consumables, machinery, labour, utilities, temporary arrangements, safety measures/ precautions, hoisting, workshop charges, placing and all other costs attributable to the work.	Note					
C46	Fabricating, laying, forming and welding of bottom plates and annular plates.	Item	Allow				
C47	Fabricating, rolling, erection and welding of shell plates, compression ring, settlement angles and wind girder.	Item	Allow				
C48	Construction of roof structure, roof supports and top angle.	Item	Allow				
C49	Fabrication and installation of roof plates.	Item	Allow				
C50	Fabrication, formation, preparation and welding of draw off sumps (48" dia.), draw off nozzles (4" dia.) and related piping.	Item	Allow				
C51	Fabrication, preparation, installation and welding of shell manholes (30" dia. and 24" dia.) with reinforcement plate including necessary machinery work.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C52	Fabrication, preparation, installation and welding of 16" dia. and 12" dia. inlet and outlet nozzles with reinforcement plates.	Item	Allow				
C53	Fabrication, preparation, installation and welding of 6" dia. Standby outlet with reinforcement plates.	Item	Allow				
C54	Supplying, fabrication, preparation, installation and welding of pressure relief system for inlet and outlet nozzles.	Item	Allow				
C55	Fabrication, preparation, installation and welding of roof manholes (24" dia.) with reinforcement plates.	Item	Allow				
C56	Fabrication, preparation, installation and welding of floating roof access manholes on roof (30" dia.) with 8" & 6" gauging nozzles (02nr) and access ladder.	Item	Allow				
C57	Fabrication, preparation, installation and welding of roof centre air vent.	Item	Allow				
C58	Fabrication, preparation, installation of rim vent system.	Item	Allow				
C59	Fabrication, preparation, installation and welding of foam top pourer system including piping, nozzles, valves, accessories etc.	Item	Allow				
C60	Fabrication and installation of water drencher system for roof and shell including piping, nozzles, valves, accessories etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C61	Supplying, fabrication, installation and welding of earthing system including necessary machinery work, connections, cabling, connections, conductor and base plate etc.	Item	Allow				
C62	Supplying, fabrication, installation and welding of 8" dia. vertical pipe for radar gauge and 6" dia. vertical pipe for dipping, including ladder between pipes.	Item	Allow				
C63	Fabrication, installation and welding of 6" dia. Dip hatch.	Item	Allow				
C64	Fabrication, installation and welding of roof, crown & other hand rails as required with standard accessories.	Item	Allow				
C65	Fabrication, installation and welding of spiral stairway consisting of 2 stringers, intermediate landings, supporting arrangements and all other standard accessories. Rate shall include for hot dipped galvanised gratings etc.	Item	Allow				
C66	Provisions for installation of continues level measurements and RTDS multipoint temperature measurements.	Item	Allow				
C67	Supply and installation of a leak detection system under the tank including required instrumentation/ electrical cables, drain outs and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C68	Supply and installation of a fire detection system in the tank including required instrumentation/electrical cables and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
C69	Procuring, supplying, installing, testing and commissioning of Internal Floating Roof (IFR), including ladders, vent system and fire detection system etc.	Item	Allow				
C70	Supply, fabrication and installation of name plate.	Item	Allow				
C71	Carrying out tank hydro test as required and as per API 650.	Item	Allow				
C72	Grit/ Sand blast cleaning and painting of underside of bottom plates.	Item	Allow				
C73	Grit/ Sand blast cleaning and painting of roof structure, top angle, underside of roof plates, 1m below the top angle in the top most shell course.	Item	Allow				
C74	Grit/ Sand blast cleaning and painting of entire bottom of the tank interior and up to 1 meter height from the bottom in the bottom most shell course.	Item	Allow				
C75	Grit/ Sand blast cleaning and painting of the shell exterior surface and roof external surfaces with all attachments.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
C76	Grit/ Sand blast cleaning and painting of stairway and its supportive structure, hand rail and roof, crown & other hand rails as required with all attachments.	Item	Allow				
C77	Grit/ Sand blast cleaning and galvanizing of the water drencher piping system including finish painting.	Item	Allow				
C78	Grit/ Sand blast cleaning and galvanizing of the foam piping system including finish painting.	Item	Allow				
C79	Grit/ Sand blast cleaning and galvanizing of the draw off piping system including finish painting.	Item	Allow				
C80	Installation of mechanical gauging unit.	Item	Allow				
C81	Installation of 16" dia. and 12" dia. DBB Valves	Item	Allow				
C82	Installation of 16" and 12" dia. Gate Valves and flexible bellows.	Item	Allow				
C83	Installation of 6" dia. 4" dia. and 3" dia. Gate Valves.	Item	Allow				
C84	Carrying out IFR floating test.	Item	Allow				
C85	Calibration of the tank including supply of 3 calibration tables.	Item	Allow				
C86	Construction of product piping system including all fittings, pipe supports/ pedestals, platforms, steel stairs,	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	pits etc. and connect to the existing system as directed by the Engineer.						
	SUB TOTAL CARRIED TO SUMMARY						

BILL 03: CONSTRUCTION OF TANK D (CAPACITY - 15,000 m³)

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	PRELIMINARIES Contractor shall remove all existing temporary structures and hand over all usable materials to the Engineer before construct his own temporary facilities, structures etc.						
D1	Allow lump sum for cleaning site before starting construction works, including removal of existing structures, temporary buildings, all rubbish, debris etc.	Item	Allow				
D2	Removing and stacking temporary facilities, concrete blocks, steel sheets, steel sections, reinforcement steel, casings, machineries, equipment and other remaining goods at site before starting construction works.	Item	Allow				
D3	Allow lump sum for mobilization and demobilization for civil works .	Item	Allow				
D4	Allow lump sum for mobilization and demobilization for mechanical works .	Item	Allow				
D5	Allow lump sum for construction of temporary access roads as required.	Item	Allow				
D6	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for civil construction in order to protect the surrounding piping and tanks in service.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D7	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for mechanical works of in order to protect the surrounding piping and tanks in service.	Item	Allow				
D8	Supply, erection, maintenance and subsequent removal of all required scaffoldings with relevant attachments, safety precautions, nets etc. for permanent works.	Item	Allow				
D9	Allow lump sum for cleaning site on completion of works, including removal of all rubbish and debris and leaving the site, clean internally and externally.	Item	Allow				
SUB TOTAL CARRIED TO SUMMARY							
CONSTRUCTION OF TANK FOUNDATION							
<u>Earth Works</u>							
D10	River sand filling to top of raft foundation, compact with 100mm layers, fill up to 300 - 400mm average depth.	m ³	380				
D11	100mm thick layer of sand tar mixture (river sand and 80 - 100 hot bitumen mixture) over compacted sand filling.	m ²	1080				
D12	Levelling site after completion of tank construction	Item	Allow				
<u>Concrete</u>							
D13	Construction of tank apron with Grade C20 concrete including forming joints.	m ³	4				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D14	Concreting on drain bottom to make slope with Grade C15 chip concrete.	m ³	4				
	<u>Formwork</u>						
D15	Curved formwork for sides of ring beam foundation	m ²	2				
	<u>Mechanical Works</u>						
D16	Supply and installation of Cathodic protection system with all accessories, connections, supplies etc.	Item	Allow				
	<u>Miscellaneous</u>						
D17	Repair of concrete cracks on ring beam foundation as directed by the Engineer.	m ²	11				
D18	Supply and installation of drain out pipe with all accessories, connections etc.	Item	Allow				
	<u>Tank farm earth work, drains and earth bund walls</u>						
D19	General excavation in tank farm area. Rate shall include for making levels, compacting, surface preparation and staking of excavated material within CPSTL premises.	m ³	705				
D20	Filling available earth to form bund walls including transport, placing, compacting, making slopes etc.	m ³	380				
D21	Excavation for structures to a depth not exceeding 1.5m.	m ³	20				
D22	C15 Screed concrete	m ³	2				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D23	Concreting structures with Grade C25 concrete.	m ³	14				
D24	Formwork in structures	m ²	220				
D25	Reinforcement in structures	kg	1450				
	SUB TOTAL CARRIED TO SUMMARY						
	CONSTRUCTION OF STEEL TANK						
	<u>Supply of Materials</u> Rate shall include for shipping, transport up to site, Leavis, taxes, custom duties and other charges, warehouse charges, loading, unloading and all other costs attributable to supply of materials to the site.	Note					
D26	Supply of all necessary carbon steel plates and other required materials for tank bottom, annular plates, shell plates, wind girder, settlement angles, compression ring, roof plates, reinforcing plates, nozzle neck plates, covers, nut & bolts, manholes, supports, sump, vents, hatches, accessories, attachments etc.	Item	Allow				
D27	Supply of all necessary structural steel members and other required materials for tank roof structure, supports, top angle, wind girder, settlement angles, compression ring, hand rails, spiral stairway, , pipe pedestals, flatforms, stairs, nut & bolts etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D28	Supply of all necessary carbon steel line pipes, bends, reducers, blinds, nozzles, flanges, manifolds, stiffening rings, gaskets, sprinklers, nuts & bolts, accessories and other required materials for cargo pipe segments, delivery pipe segments, fire water lines, water drencher system, foam top pourer system etc.	Item	Allow				
D29	Supply of all painting materials for painting of tank bottom, shell, roof, roof structure, manholes, supports, line pipes, accessories, all attachments, pipes, hand rails, and spiral stairway etc.	Item	Allow				
D30	Supply of all gate valves, DBB valves, butterfly valves, expansion joints, flexible bellows etc.	Item	Allow				
D31	Supply of all materials for 12" dia. floating suction system.	Item	Allow				
D32	Supply of all materials for Drain water flushing system.	Item	Allow				
D33	Supply of all materials for gauge pole.	Item	Allow				
D34	Supply of all materials for roof air vent with flame arresters and roof vents near roof perimeter.	Item	Allow				
D35	Supply of flow diffusers.	Item	Allow				
D36	Supply of mechanical gauging unit.	Item	Allow				
	<u>Fabrication, erection, painting and installation</u>						

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	Rate shall include for carrying out all required testing, supply of materials other than considered under separate supply items of this BOQ, consumables, machinery, labour, utilities, temporary arrangements, safety measures/ precautions, hoisting, workshop charges, placing and all other costs attributable to the work.	Note					
D37	Fabricating, laying, forming and welding of bottom plates and annular plates.	Item	Allow				
D38	Fabricating, rolling, erection and welding of shell plates, compression ring, settlement angles and wind girder.	Item	Allow				
D39	Construction of roof structure, roof supports and top angle.	Item	Allow				
D40	Fabrication and installation of roof plates.	Item	Allow				
D41	Fabrication, formation, preparation and welding of draw off sump (48" dia.), draw off nozzles (4" dia.) and related piping.	Item	Allow				
D42	Fabrication, preparation, installation and welding of shell manholes (30" dia. and 24" dia.) with reinforcement plate including necessary machinery work.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D43	Fabrication, preparation, installation and welding of 16" dia. inlet and 12" dia. outlet nozzles with reinforcement plates.	Item	Allow				
D44	Fabrication, preparation, installation and welding of 6" dia. Standby outlet with reinforcement plates.	Item	Allow				
D45	Installation of flow diffusers.	Item	Allow				
D46	Supplying, fabrication, preparation, installation and welding of pressure relief system for inlet and outlet nozzles.	Item	Allow				
D47	Fabrication, preparation, installation and welding of roof manholes (24" dia.) with reinforcement plates.	Item	Allow				
D48	Fabrication, preparation, installation and welding of roof air vent with flame arresters.	Item	Allow				
D49	Fabrication, preparation, installation and welding of roof vents near roof perimeter	Item	Allow				
D50	Fabrication, preparation, installation and welding of foam top pourer system including piping, nozzles, valves, accessories etc.	Item	Allow				
D51	Fabrication and installation of water drencher system for roof and shell including piping, nozzles, valves, accessories etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D52	Supplying, fabrication, installation and welding of earthing system including necessary machinery work, connections, cabling, connections, conductor and base plate etc.	Item	Allow				
D53	Supplying, fabrication, installation and welding of 8" dia. vertical pipe for radar gauge.	Item	Allow				
D54	Fabrication, installation and welding of 6" dia. Dip hatch.	Item	Allow				
D55	Fabrication, installation and welding of roof, crown & other hand rails as required with standard accessories.	Item	Allow				
D56	Fabrication, installation and welding of spiral stairway consisting of 2 stringers, intermediate landings, supporting arrangements and all other standard accessories. Rate shall include for hot dipped galvanised gratings etc.	Item	Allow				
D57	Provisions for installation of continues level measurements and RTDS multipoint temperature measurements.	Item	Allow				
D58	Supply and installation of a leak detection system under the tank including required instrumentation/ electrical cables, drain outs and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
D59	Supply and installation of a fire detection system in the tank including required instrumentation/electrical cables and alarming siren approximately 100m away the tank.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	Provision should be kept to extend the cabling up to fire control room in future.						
D60	Fabrication and installation of 12” dia. floating suction system.	Item	Allow				
D61	Fabrication and installation of Drain water flushing system.	Item	Allow				
D62	Supply, fabrication and installation of name plate.	Item	Allow				
D63	Carrying out tank hydro test as required and as per API 650.	Item	Allow				
D64	Grit/ Sand blast cleaning and painting of underside of bottom plates.	Item	Allow				
D65	Grit/ Sand blast cleaning and painting of roof structure, top angle, underside of roof plates, 1m below the top angle in the top most shell course.	Item	Allow				
D66	Grit/ Sand blast cleaning and painting of entire tank interior.	Item	Allow				
D67	Grit/ Sand blast cleaning and painting of the shell exterior surface and roof external surfaces with all attachments.	Item	Allow				
D68	Grit/ Sand blast cleaning and painting of stairway and its supportive structure, hand rail and roof, crown & other hand rails as required with all attachments.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
D69	Grit/ Sand blast cleaning and galvanizing of the water drencher piping system including finish painting.	Item	Allow				
D70	Grit/ Sand blast cleaning and galvanizing of the foam piping system including finish painting.	Item	Allow				
D71	Grit/ Sand blast cleaning and galvanizing of the draw off piping system including finish painting.	Item	Allow				
D72	Installation of mechanical gauging unit.	Item	Allow				
D73	Installation of 16" dia. and 12" dia. DBB Valves	Item	Allow				
D74	Installation of 16" and 12" dia. Gate Valves and flexible bellows.	Item	Allow				
D75	Installation of 6" dia. 4" dia. and 3" dia. Gate Valves.	Item	Allow				
D76	Calibration of the tank including supply of 3 calibration tables.	Item	Allow				
D77	Construction of product piping system including all fittings, pipe supports/ pedestals, platforms, steel stairs, pits etc. and connect to the existing system as directed by the Engineer.	Item	Allow				
	SUB TOTAL CARRIED TO SUMMARY						

BILL 04: CONSTRUCTION OF TANK G (CAPACITY - 7,000 m³)

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	PRELIMINARIES						
	Contractor shall remove all existing temporary structures and hand over all usable materials to the Engineer before construct his own temporary facilities, structures etc.						
G1	Allow lump sum for cleaning site before starting construction works, including removal of existing structures, temporary buildings, all rubbish, debris etc.	Item	Allow				
G2	Removing and stacking temporary facilities, concrete blocks, steel sheets, steel sections, reinforcement steel, casings/ formworks, machineries, equipment and other remaining goods at site before starting construction works.	Item	Allow				
G3	Allow lump sum for mobilization and demobilization for civil works .	Item	Allow				
G4	Allow lump sum for mobilization and demobilization for mechanical works .	Item	Allow				
G5	Allow lump sum for construction of temporary access roads as required.	Item	Allow				
G6	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for civil construction in order to protect the surrounding piping and tanks in service.	Item	Allow				
G7	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	protect surrounding piping, other tanks and filling gantries in service for mechanical works of in order to protect the surrounding piping and tanks in service.						
G8	Supply, erection, maintenance and subsequent removal of all required scaffoldings with relevant attachments, safety precautions, nets etc. for permanent works.	Item	Allow				
G9	Allow lump sum for cleaning site on completion of works, including removal of all rubbish and debris and leaving the site, clean internally and externally.	Item	Allow				
	SUB TOTAL CARRIED TO SUMMARY						
	CONSTRUCTION OF TANK FOUNDATION						
	<u>Earth Works</u>						
G10	100mm thick layer of sand tar mixture (river sand and 80 - 100 hot bitumen mixture) over compacted sand filling.	m ²	540				
G11	Levelling site after completion of tank construction	Item	Allow				
	<u>Concrete</u>						
G12	Construction of tank apron with Grade C20 concrete including forming joints.	m ³	3				
	<u>Reinforcement</u>						
G13	Reinforcement for ring beam base and wall, high yield steel horizontal bars.	kg	6800				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
G14	Reinforcement for apron slab, high yield steel horizontal bars.	kg	150				
	<u>Mechanical Works</u>						
G15	Supply and installation of Cathodic protection system with all accessories, connections, supplies etc.	Item	Allow				
	<u>RCC Dyke walls</u>						
G16	Excavation for RCC Dyke walls to a depth not exceeding 2.5m.	m ³	195				
G17	Supplying, furnishing, placing & compacting graded aggregate base (ABC) material as specified. (Compacted volume)	m ³	60				
G18	Approved quality earth supply, spread and compacted to 150mm thick layers to the required density.	m ³	100				
G19	C15 Screed concrete	m ³	6				
G20	Concreting dyke walls with Grade C25 concrete including forming joints.	m ³	55				
G21	Formwork in dyke walls	m ²	470				
G22	Reinforcement in dyke walls	kg	8200				
	<u>Tank farm earth work, drains and earth bund walls</u>						

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
G23	General excavation in tank farm area. Rate shall include for making levels, compacting, surface preparation and staking of excavated material within CPSTL premises.	m ³	450				
G24	Filling available earth to form bund walls including transport, placing, compacting, making slopes etc.	m ³	95				
G25	Excavation for structures to a depth not exceeding 1.5m.	m ³	28				
G26	C15 Screed concrete	m ³	3				
G27	Concreting structures with Grade C25 concrete.	m ³	20				
G28	Formwork in structures	m ²	320				
G29	Reinforcement in structures	kg	2150				
	SUB TOTAL CARRIED TO SUMMARY						
	CONSTRUCTION OF STEEL TANK						
	<u>Supply of Materials</u> Rate shall include for shipping, transport up to site, levys, taxes, custom duties and other charges, warehouse charges, loading, unloading and all other costs attributable to supply of materials to the site.	Note					
G30	Supply of all necessary carbon steel plates and other required materials for tank bottom, annular plates, shell plates, wind girder, settlement angles, compression ring,	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	roof plates, reinforcing plates, nozzle neck plates, covers, nut & bolts, manholes, supports, sump, vents, hatches, accessories, attachments etc.						
G31	Supply of all necessary structural steel members and other required materials for tank roof structure, supports, top angle, wind girder, settlement angles, compression ring, hand rails, spiral stairway, pipe pedestals, platforms, stairs, nut & bolts etc.	Item	Allow				
G32	Supply of all necessary carbon steel line pipes, bends, reducers, blinds, nozzles, flanges, manifolds, stiffening rings, gaskets, sprinklers, nuts & bolts, accessories and other required materials for cargo pipe segments, delivery pipe segments, fire water lines, water drencher system, foam top pourer system etc.	Item	Allow				
G33	Supply of all painting materials for painting of tank bottom, shell, roof, roof structure, manholes, supports, line pipes, accessories, all attachments, pipes, hand rails, and spiral stairway etc.	Item	Allow				
G34	Supply of all gate valves, DBB valves, butterfly valves, expansion joints, flexible bellows etc.	Item	Allow				
G35	Supply of all materials for gauge pole.	Item	Allow				
G36	Supply of all materials for roof centre air vent and roof vents near roof perimeter.	Item	Allow				
G37	Supply of mechanical gauging unit.	Item	Allow				
	<u>Fabrication, erection, painting and installation</u>						

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	Rate shall include for carrying out all required testing, supply of materials other than considered under separate supply items of this BOQ, consumables, machinery, labour, utilities, temporary arrangements, safety measures/ precautions, hoisting, workshop charges, placing and all other costs attributable to the work.	Note					
G38	Fabricating, laying, forming and welding of bottom plates and annular plates.	Item	Allow				
G39	Fabricating, rolling, erection and welding of shell plates, compression ring, settlement angles and wind girder.	Item	Allow				
G40	Construction of roof structure, roof supports and top angle.	Item	Allow				
G41	Fabrication and installation of roof plates.	Item	Allow				
G42	Fabrication, formation, preparation and welding of draw off sump (48" dia.), draw off nozzles (4" dia.) and related piping.	Item	Allow				
G43	Fabrication, preparation, installation and welding of shell manholes (30" dia. and 24" dia.) with reinforcement plate including necessary machinery work.	Item	Allow				
G44	Fabrication, preparation, installation and welding of 12" dia. inlet and outlet nozzles with reinforcement plates.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
G45	Fabrication, preparation, installation and welding of 6" dia. Standby outlet with reinforcement plates.	Item	Allow				
G46	Supplying, fabrication, preparation, installation and welding of pressure relief system for inlet and outlet nozzles.	Item	Allow				
G47	Fabrication, preparation, installation and welding of roof manholes (24" dia.) with reinforcement plates.	Item	Allow				
G48	Fabrication, preparation, installation and welding of roof centre air vent.	Item	Allow				
G49	Fabrication, preparation, installation and welding of roof vents near roof perimeter	Item	Allow				
G50	Fabrication, preparation, installation and welding of foam top pourer system including piping, nozzles, valves, accessories etc.	Item	Allow				
G51	Fabrication and installation of water drencher system for roof and shell including piping, nozzles, valves, accessories etc.	Item	Allow				
G52	Supplying, fabrication, installation and welding of earthing system including necessary machinery work, connections, cabling, connections, conductor and base plate etc.	Item	Allow				
G53	Supplying, fabrication, installation and welding of 8" dia. vertical pipe for radar gauge.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
G54	Fabrication, installation and welding of 6' dia. Dip hatch.	Item	Allow				
G55	Fabrication, installation and welding of roof, crown & other hand rails as required with standard accessories.	Item	Allow				
G56	Fabrication, installation and welding of spiral stairway consisting of 2 stringers, intermediate landings, supporting arrangements and all other standard accessories. Rate shall include for hot dipped galvanised gratings etc.	Item	Allow				
G57	Provisions for installation of continues level measurements and RTDS multipoint temperature measurements.	Item	Allow				
G58	Supply and installation of a leak detection system under the tank including required instrumentation/ electrical cables, drain outs and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
G59	Supply and installation of a fire detection system in the tank including required instrumentation/electrical cables and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
G60	Supply, fabrication and installation of name plate.	Item	Allow				
G61	Carrying out tank hydro test as required and as per API 650.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
G62	Grit/ Sand blast cleaning and painting of underside of bottom plates.	Item	Allow				
G63	Grit/ Sand blast cleaning and painting of roof structure, top angle, underside of roof plates, 1m below the top angle in the top most shell course.	Item	Allow				
G64	Grit/ Sand blast cleaning and painting of entire bottom of the tank interior and up to 1 meter height from the bottom in the bottom most shell course.	Item	Allow				
G65	Grit/ Sand blast cleaning and painting of the shell exterior surface and roof external surfaces with all attachments.	Item	Allow				
G66	Grit/ Sand blast cleaning and painting of stairway and its supportive structure, hand rail and roof, crown & other hand rails as required with all attachments.	Item	Allow				
G67	Grit/ Sand blast cleaning and galvanizing of the water drencher piping system including finish painting.	Item	Allow				
G68	Grit/ Sand blast cleaning and galvanizing of the foam piping system including finish painting.	Item	Allow				
G69	Grit/ Sand blast cleaning and galvanizing of the draw off piping system including finish painting.	Item	Allow				
G70	Installation of mechanical gauging unit.	Item	Allow				
G71	Installation of 12" dia. DBB Valves	Item	Allow				
G72	Installation of 12" dia. and 10" dia. Gate Valves and flexible bellows.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
G73	Installation of 6" dia. 4" dia. and 3" dia. Gate Valves.	Item	Allow				
G74	Calibration of the tank including supply of 3 calibration tables.	Item	Allow				
G75	Construction of product piping system including all fittings, pipe supports/ pedestals, platforms, steel stairs, pits etc. and connect to the existing system as directed by the Engineer.	Item	Allow				
SUB TOTAL CARRIED TO SUMMARY							

BILL 05: CONSTRUCTION OF TANK H (CAPACITY - 7,000 m³)

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	PRELIMINARIES						
	Contractor shall remove all existing temporary structures and hand over all usable materials to the Engineer before construct his own temporary facilities, structures etc.						
H1	Allow lump sum for cleaning site before starting construction works, including removal of existing structures, temporary buildings, all rubbish, debris etc.	Item	Allow				
H2	Removing and stacking temporary facilities, concrete blocks, steel sheets, steel sections, reinforcement steel, casings/ formworks, machineries, equipment and other remaining goods at site before starting construction works.	Item	Allow				
H3	Allow lump sum for mobilization and demobilization for civil works .	Item	Allow				
H4	Allow lump sum for mobilization and demobilization for mechanical works .	Item	Allow				
H5	Allow lump sum for construction of temporary access roads as required.	Item	Allow				
H6	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for civil construction in order to protect the surrounding piping and tanks in service.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H7	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for mechanical works of in order to protect the surrounding piping and tanks in service.	Item	Allow				
H8	Supply, erection, maintenance and subsequent removal of all required scaffoldings with relevant attachments, safety precautions, nets etc. for permanent works.	Item	Allow				
H9	Allow lump sum for cleaning site on completion of works, including removal of all rubbish and debris and leaving the site, clean internally and externally.	Item	Allow				
SUB TOTAL CARRIED TO SUMMARY							
CONSTRUCTION OF TANK FOUNDATION							
<u>Earth Works</u>							
H10	100mm thick layer of sand tar mixture (river sand and 80 - 100 hot bitumen mixture) over compacted sand filling.	m ²	540				
H11	Levelling site after completion of tank construction	Item	Allow				
<u>Concrete</u>							
H12	Construction of tank apron with Grade C20 concrete including forming joints.	m ³	3				
<u>Mechanical Works</u>							
H13	Supply and installation of Cathodic protection system with all accessories, connections, supplies etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	<u>RCC Dyke walls</u>						
H14	Excavation for RCC Dyke walls to a depth not exceeding 2.5m.	m ³	195				
H15	Supplying, furnishing, placing & compacting graded aggregate base (ABC) material as specified. (Compacted volume)	m ³	60				
H16	Approved quality earth supply, spread and compacted to 150mm thick layers to the required density.	m ³	100				
H17	C15 Screed concrete	m ³	6				
H18	Concreting dyke walls with Grade C25 concrete including forming joints.	m ³	55				
H19	Formwork in dyke walls	m ²	470				
H20	Reinforcement in dyke walls	kg	8200				
	<u>Tank farm earth work, drains and earth bund walls</u>						
H21	General excavation in tank farm area. Rate shall include for making levels, compacting, surface preparation and staking of excavated material within CPSTL premises.	m ³	450				
H22	Filling available earth to form bund walls including transport, placing, compacting, making slopes etc.	m ³	95				
H23	Excavation for structures to a depth not exceeding 1.5m.	m ³	28				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H24	C15 Screed concrete	m ³	3				
H25	Concreting structures with Grade C25 concrete.	m ³	20				
H26	Formwork in structures	m ²	320				
H27	Reinforcement in structures	kg	2150				
SUB TOTAL CARRIED TO SUMMARY							
CONSTRUCTION OF STEEL TANK							
<u>Supply of Materials</u>							
Rate shall include for shipping, transport up to site, levys, taxes, custom duties and other charges, warehouse charges, loading, unloading and all other costs attributable to supply of materials to the site.		Note					
H28	Supply of all necessary carbon steel plates and other required materials for tank bottom, annular plates, shell plates, wind girder, settlement angles, compression ring, roof plates, reinforcing plates, nozzle neck plates, covers, nut & bolts, manholes, supports, sump, vents, hatches, accessories, attachments etc.	Item	Allow				
H29	Supply of all necessary structural steel members and other required materials for tank roof structure, supports, top angle, wind girder, settlement angles, compression ring, hand rails, spiral stairway, pipe pedestals, platforms, stairs, nut & bolts etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H30	Supply of all necessary carbon steel line pipes, bends, reducers, blinds, nozzles, flanges, manifolds, stiffening rings, gaskets, sprinklers, nuts & bolts, accessories and other required materials for cargo pipe segments, delivery pipe segments, fire water lines, water drencher system, foam top pourer system etc.	Item	Allow				
H31	Supply of all painting materials for painting of tank bottom, shell, roof, roof structure, manholes, supports, line pipes, accessories, all attachments, pipes, hand rails, and spiral stairway etc.	Item	Allow				
H32	Supply of all gate valves, DBB valves, butterfly valves, expansion joints, flexible bellows etc.	Item	Allow				
H33	Supply of all materials for gauge pole.	Item	Allow				
H34	Supply of all materials for roof centre air vent and roof vents near roof perimeter.	Item	Allow				
H35	Supply of mechanical gauging unit.	Item	Allow				
	<p><u>Fabrication, erection, painting and installation</u></p> <p>Rate shall include for carrying out all required testing, supply of materials other than considered under separate supply items of this BOQ, consumables, machinery, labour, utilities, temporary arrangements, safety measures/precautions, hoisting, workshop charges, placing and all other costs attributable to the work.</p>	Note					

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H36	Fabricating, laying, forming and welding of bottom plates and annular plates.	Item	Allow				
H37	Fabricating, rolling, erection and welding of shell plates, compression ring, settlement angles and wind girder.	Item	Allow				
H38	Construction of roof structure, roof supports and top angle.	Item	Allow				
H39	Fabrication and installation of roof plates.	Item	Allow				
H40	Fabrication, formation, preparation and welding of draw off sump (48" dia.), draw off nozzles (4" dia.) and related piping.	Item	Allow				
H41	Fabrication, preparation, installation and welding of shell manholes (30" dia. and 24" dia.) with reinforcement plate including necessary machinery work.	Item	Allow				
H42	Fabrication, preparation, installation and welding of 12" dia. inlet and outlet nozzles with reinforcement plates.	Item	Allow				
H43	Fabrication, preparation, installation and welding of 6" dia. Standby outlet with reinforcement plates.	Item	Allow				
H44	Supplying, fabrication, preparation, installation and welding of pressure relief system for inlet and outlet nozzles.	Item	Allow				
H45	Fabrication, preparation, installation and welding of roof manholes (24" dia.) with reinforcement plates.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H46	Fabrication, preparation, installation and welding of roof centre air vent.	Item	Allow				
H47	Fabrication, preparation, installation and welding of roof vents near roof perimeter	Item	Allow				
H48	Fabrication, preparation, installation and welding of foam top pourer system including piping, nozzles, valves, accessories etc.	Item	Allow				
H49	Fabrication and installation of water drencher system for roof and shell including piping, nozzles, valves, accessories etc.	Item	Allow				
H50	Supplying, fabrication, installation and welding of earthing system including necessary machinery work, connections, cabling, connections, conductor and base plate etc.	Item	Allow				
H51	Supplying, fabrication, installation and welding of 8” dia. vertical pipe for radar gauge.	Item	Allow				
H52	Fabrication, installation and welding of 6” dia. Dip hatch.	Item	Allow				
H53	Fabrication, installation and welding of roof, crown & other hand rails as required with standard accessories.	Item	Allow				
H54	Fabrication, installation and welding of spiral stairway consisting of 2 stringers, intermediate landings, supporting arrangements and all other standard accessories. Rate shall include for hot dipped galvanised gratings etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H55	Provisions for installation of continues level measurements and RTDS multipoint temperature measurements.	Item	Allow				
H56	Supply and installation of a leak detection system under the tank including required instrumentation/ electrical cables, drain outs and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
H57	Supply and installation of a fire detection system in the tank including required instrumentation/electrical cables and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
H58	Supply, fabrication and installation of name plate.	Item	Allow				
H59	Carrying out tank hydro test as required and as per API 650.	Item	Allow				
H60	Grit/ Sand blast cleaning and painting of underside of bottom plates.	Item	Allow				
H61	Grit/ Sand blast cleaning and painting of roof structure, top angle, underside of roof plates, 1m below the top angle in the top most shell course.	Item	Allow				
H62	Grit/ Sand blast cleaning and painting of entire bottom of the tank interior and up to 1 meter height from the bottom in the bottom most shell course.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
H63	Grit/ Sand blast cleaning and painting of the shell exterior surface and roof external surfaces with all attachments.	Item	Allow				
H64	Grit/ Sand blast cleaning and painting of stairway and its supportive structure, hand rail and roof, crown & other hand rails as required with all attachments.	Item	Allow				
H65	Grit/ Sand blast cleaning and galvanizing of the water drencher piping system including finish painting.	Item	Allow				
H66	Grit/ Sand blast cleaning and galvanizing of the foam piping system including finish painting.	Item	Allow				
H67	Grit/ Sand blast cleaning and galvanizing of the draw off piping system including finish painting.	Item	Allow				
H68	Installation of mechanical gauging unit.	Item	Allow				
H69	Installation of 12" dia. DBB Valves	Item	Allow				
H70	Installation of 12" dia. and 10" dia. Gate Valves and flexible bellows.	Item	Allow				
H71	Installation of 6" dia. 4" dia. and 3" dia. Gate Valves.	Item	Allow				
H72	Calibration of the tank including supply of 3 calibration tables.	Item	Allow				
H73	Construction of product piping system including all fittings, pipe supports/ pedestals, platforms, steel stairs,	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	pits etc. and connect to the existing system as directed by the Engineer.						
	SUB TOTAL CARRIED TO SUMMARY						

BILL 06: CONSTRUCTION OF TANK J (CAPACITY - 5,000 m³)

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
	PRELIMINARIES Contractor shall remove all existing temporary structures and hand over all usable materials to the Engineer before construct his own temporary facilities, structures etc.						
J1	Allow lump sum for cleaning site before starting construction works, including removal of existing structures, temporary buildings, all rubbish, debris etc.	Item	Allow				
J2	Allow lump sum for mobilization and demobilization for civil works .	Item	Allow				
J3	Allow lump sum for mobilization and demobilization for mechanical works .	Item	Allow				
J4	Allow lump sum for construction of temporary access roads as required.	Item	Allow				
J5	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for civil construction in order to protect the surrounding piping and tanks in service.	Item	Allow				
J6	Allow lump sum for erection of temporary fire barriers and fire blankets as required for a petroleum terminal to protect surrounding piping, other tanks and filling gantries in service for mechanical works of in order to protect the surrounding piping and tanks in service.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J7	Supply, erection, maintenance and subsequent removal of all required scaffoldings with relevant attachments, safety precautions, nets etc. for permanent works.	Item	Allow				
J8	Allow lump sum for cleaning site on completion of works, including removal of all rubbish and debris and leaving the site, clean internally and externally.	Item	Allow				
SUB TOTAL CARRIED TO SUMMARY							
CONSTRUCTION OF TANK FOUNDATION							
<u>Earth Works</u>							
J9	Imported earth filling to level the site around tank area.	m ³	500				
J10	Excavation for raft foundation material other than topsoil, rock or artificial hard material, to a maximum depth of 2.5 - 3.5m. Rate shall include for dewatering (if required), preparation of bottom of excavation, compacting before caring out filling and disposal of excavated material within CPSTL premises.	m ³	400				
J11	Supplying, furnishing, placing and compacting graded aggregate base (ABC) material to a minimum thickness of 300mm below ring beam base level as per the specifications and directed by the Engineer.	m ³	170				
J12	River sand filling to top of raft foundation, compact with 100mm layers, fill up to 300 - 400mm average depth.	m ³	170				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J13	100mm thick layer of sand tar mixture (river sand and 80 - 100 hot bitumen mixture) over compacted sand filling.	m ²	555				
J14	Levelling site after completion of tank construction	Item	Allow				
	<u>Piling Work</u>						
J15	Bored cast-in-situ reinforced concrete piles (43 nr), with Grade C30 concrete, 750mm dia. depth bored to maximum depth of 29m including pile boring, pile socketing, casing, reinforcement and all other related works and precautions.	m	1247				
J16	Backfilling empty bores with stated material and compacted in stages where required.	Item	Allow				
J17	Preparing heads for piles to receive the raft foundation on top.	nr	43				
	<u>Concrete</u>						
J18	100mm thick Screed concrete under foundation with Grade C15 concrete.	m ³	57				
J19	Concreting for raft foundation with Grade C30 concrete.	m ³	361				
J20	Concreting for 450mm thick periphery wall on raft foundation with Grade C30 concrete.	m ³	21				
J21	Concreting for drain base and drain wall with Grade C30 concrete.	m ³	11				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J22	Construction of tank apron with Grade C20 concrete including forming joints.	m ³	3				
J23	Concreting on drain bottom to make slope with Grade C15 chip concrete.	m ³	3				
<u>Formwork</u>							
J24	Curved formwork for sides of raft foundation	m ²	55				
J25	Curved formwork for sides of periphery wall	m ²	74				
J26	Curved formwork for sides of drain wall	m ²	61				
<u>Reinforcement</u>							
J27	Reinforcement for raft foundation, high yield steel horizontal bars.	kg	76400				
J28	Reinforcement for periphery wall, drain base and drain wall, high yield steel horizontal and vertical bars.	kg	5200				
J29	Reinforcement for apron slab, high yield steel horizontal bars.	kg	180				
<u>Mechanical Works</u>							
J30	Supply and installation of Cathodic protection system with all accessories, connections, supplies etc.	Item	Allow				
<u>Miscellaneous</u>							
J31	Supply and installation of drain out pipe with all accessories, connections etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
<u>Tank farm earth work, drains and earth bund walls</u>							
J32	General excavation in tank farm area. Rate shall include for making levels, compacting, surface preparation and staking of excavated material within CPSTL premises.	m ³	300				
J33	Filling available earth to form bund walls including transport, placing, compacting, making slopes etc.	m ³	200				
J34	Excavation for structures to a depth not exceeding 1.5m.	m ³	26				
J35	C15 Screed concrete	m ³	3				
J36	Concreting structures with Grade C25 concrete.	m ³	20				
J37	Formwork in structures	m ²	310				
J38	Reinforcement in structures	kg	2050				
SUB TOTAL CARRIED TO SUMMARY							
CONSTRUCTION OF STEEL TANK							
	<u>Supply of Materials</u> Rate shall include for shipping, transport up to site, levys, taxes, custom duties and other charges, warehouse charges, loading, unloading and all other costs attributable to supply of materials to the site.	Note					

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J39	Supply of all necessary carbon steel plates and other required materials for tank bottom, annular plates, shell plates, wind girder, settlement angles, compression ring, roof plates, reinforcing plates, nozzle neck plates, covers, nut & bolts, manholes, supports, sump, vents, hatches, accessories, attachments etc.	Item	Allow				
J40	Supply of all necessary structural steel members and other required materials for tank roof structure, supports, top angle, wind girder, settlement angles, compression ring, hand rails, spiral stairway, pipe pedestals, platforms, stairs, nut & bolts etc.	Item	Allow				
J41	Supply of all necessary carbon steel line pipes, bends, reducers, blinds, nozzles, flanges, manifolds, stiffening rings, gaskets, sprinklers, nuts & bolts, accessories and other required materials for cargo pipe segments, delivery pipe segments, fire water lines, water drencher system, foam top pourer system etc.	Item	Allow				
J42	Supply of all painting materials for painting of tank bottom, shell, roof, roof structure, manholes, supports, line pipes, accessories, all attachments, pipes, hand rails, and spiral stairway etc.	Item	Allow				
J43	Supply of all gate valves, DBB valves, butterfly valves, expansion joints, flexible bellows etc.	Item	Allow				
J44	Supply of all materials for gauge pole.	Item	Allow				
J45	Supply of all materials for roof centre air vent and roof vents near roof perimeter.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J46	Supply of mechanical gauging unit. <u>Fabrication, erection, painting and installation</u> Rate shall include for carrying out all required testing, supply of materials other than considered under separate supply items of this BOQ, consumables, machinery, labour, utilities, temporary arrangements, safety measures/ precautions, hoisting, workshop charges, placing and all other costs attributable to the work.	Item	Allow				
		Note					
J47	Fabricating, laying, forming and welding of bottom plates and annular plates.	Item	Allow				
J48	Fabricating, rolling, erection and welding of shell plates, compression ring, settlement angles and wind girder.	Item	Allow				
J49	Construction of roof structure, roof supports and top angle.	Item	Allow				
J50	Fabrication and installation of roof plates.	Item	Allow				
J51	Fabrication, formation, preparation and welding of draw off sump (48" dia.), draw off nozzles (4" dia.) and related piping.	Item	Allow				
J52	Fabrication, preparation, installation and welding of shell manholes (30" dia. and 24" dia.) with reinforcement plate including necessary machinery work.	Item	Allow				
J53	Fabrication, preparation, installation and welding of 12" dia. inlet and outlet nozzles with reinforcement plates.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J54	Fabrication, preparation, installation and welding of 6" dia. Standby outlet with reinforcement plates.	Item	Allow				
J55	Supplying, fabrication, preparation, installation and welding of pressure relief system for inlet and outlet nozzles.	Item	Allow				
J56	Fabrication, preparation, installation and welding of roof manholes (24" dia.) with reinforcement plates.	Item	Allow				
J57	Fabrication, preparation, installation and welding of roof centre air vent.	Item	Allow				
J58	Fabrication, preparation, installation and welding of roof vents near roof perimeter	Item	Allow				
J59	Fabrication, preparation, installation and welding of foam top pourer system including piping, nozzles, valves, accessories etc.	Item	Allow				
J60	Fabrication and installation of water drencher system for roof and shell including piping, nozzles, valves, accessories etc.	Item	Allow				
J61	Supplying, fabrication, installation and welding of earthing system including necessary machinery work, connections, cabling, connections, conductor and base plate etc.	Item	Allow				
J62	Supplying, fabrication, installation and welding of 8" dia. vertical pipe for radar gauge.	Item	Allow				
J63	Fabrication, installation and welding of 6" dia. Dip hatch.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J64	Fabrication, installation and welding of roof, crown & other hand rails as required with standard accessories.	Item	Allow				
J65	Fabrication, installation and welding of spiral stairway consisting of 2 stringers, intermediate landings, supporting arrangements and all other standard accessories. Rate shall include for hot dipped galvanised gratings etc.	Item	Allow				
J66	Provisions for installation of continues level measurements and RTDS multipoint temperature measurements.	Item	Allow				
J67	Supply and installation of a leak detection system under the tank including required instrumentation/ electrical cables, drain outs and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
J68	Supply and installation of a fire detection system in the tank including required instrumentation/electrical cables and alarming siren approximately 100m away the tank. Provision should be kept to extend the cabling up to fire control room in future.	Item	Allow				
J69	Supply, fabrication and installation of name plate.	Item	Allow				
J70	Carrying out tank hydro test as required and as per API 650.	Item	Allow				
J71	Grit/ Sand blast cleaning and painting of underside of bottom plates.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J72	Grit/ Sand blast cleaning and painting of roof structure, top angle, underside of roof plates, 1m below the top angle in the top most shell course.	Item	Allow				
J73	Grit/ Sand blast cleaning and painting of entire bottom of the tank interior and up to 1 meter height from the bottom in the bottom most shell course.	Item	Allow				
J74	Grit/ Sand blast cleaning and painting of the shell exterior surface and roof external surfaces with all attachments.	Item	Allow				
J75	Grit/ Sand blast cleaning and painting of stairway and its supportive structure, hand rail and roof, crown & other hand rails as required with all attachments.	Item	Allow				
J76	Grit/ Sand blast cleaning and galvanizing of the water drencher piping system including finish painting.	Item	Allow				
J77	Grit/ Sand blast cleaning and galvanizing of the foam piping system including finish painting.	Item	Allow				
J78	Grit/ Sand blast cleaning and galvanizing of the draw off piping system including finish painting.	Item	Allow				
J79	Installation of mechanical gauging unit.	Item	Allow				
J80	Installation of 12" dia. DBB Valves	Item	Allow				
J81	Installation of 12" dia. Gate Valves and flexible bellows.	Item	Allow				
J82	Installation of 6" dia. 4" dia. and 3" dia. Gate Valves.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	RATE		AMOUNT	
				USD	LKR	USD	LKR
J83	Calibration of the tank including supply of 3 calibration tables.	Item	Allow				
J84	Construction of product piping system including all fittings, pipe supports/ pedestals, platforms, steel stairs, pits etc. and connect to the existing system as directed by the Engineer.	Item	Allow				
SUB TOTAL CARRIED TO SUMMARY							

DUPLICATE

SUMMARY

ITEM	DESCRIPTION	AMOUNT USD	AMOUNT LKR
BILL 01	CONSTRUCTION OF TANK B (CAPACITY - 15,000 m3)		
	PRELIMINARIES		
	CONSTRUCTION OF TANK FOUNDATION		
	CONSTRUCTION OF STEEL TANK		
BILL 02	CONSTRUCTION OF TANK C (CAPACITY - 15,000 m3)		
	PRELIMINARIES		
	CONSTRUCTION OF TANK FOUNDATION		
	CONSTRUCTION OF STEEL TANK		
BILL 03	CONSTRUCTION OF TANK D (CAPACITY - 15,000 m3)		
	PRELIMINARIES		
	CONSTRUCTION OF TANK FOUNDATION		
	CONSTRUCTION OF STEEL TANK		
BILL 04	CONSTRUCTION OF TANK G (CAPACITY - 7,000 m3)		
	PRELIMINARIES		
	CONSTRUCTION OF TANK FOUNDATION		
	CONSTRUCTION OF STEEL TANK		
BILL 05	CONSTRUCTION OF TANK H (CAPACITY - 7,000 m3)		
	PRELIMINARIES		
	CONSTRUCTION OF TANK FOUNDATION		

ITEM	DESCRIPTION	AMOUNT USD	AMOUNT LKR
	CONSTRUCTION OF STEEL TANK		
BILL 06	CONSTRUCTION OF TANK J (CAPACITY - 5,000 m3)		
	PRELIMINARIES		
	CONSTRUCTION OF TANK FOUNDATION		
	CONSTRUCTION OF STEEL TANK		
	Sub Total I		
	Less discount if any for Package 1 (if the bidder quote only for Package 1)		
	Less discount if any for Package 2 (if the bidder quote only for Package 2)		
	Less discount if any for two packages (if the bidder quote for both packages)		
	Sub Total II		
	SSCL (.....%) only if applicable		
	Total sum carried to form of bid		
	VAT (18%) only if applicable		
	TOTAL AMOUNT WITH VAT		

Total amount in words (LKR):-.....
and (USD).....

VAT Amount :-

VAT registration no :-.....

Name of Bidder :-.....

Address :-.....
.....

.....
Date

.....
Signature & Common Seal
of the Bidder

Witness :.....
Name :.....
Address :.....
N.I.C. No:.....

Witness :.....
Name :.....
Address :.....
N.I.C. No:.....

SECTION – 9

SCHEDULES

DUPLICATE

Schedules

Schedule 1 – General Information			
<p>(i) If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application.</p> <p>(ii) For joint ventures, each joint venture partner shall furnish information separately.</p>			
ITB Clause reference	Description	Information (to be filled by the bidder)	Remarks
	ICTAD Registration		Provide certified copies and label as attachment to clause 3.1
	Registration Number		
	Grade		
	Specialty		
	Expiry Date		
	NCASL Membership		Provide certified copies and label as attachment to clause 3.2
	Number		
	Expiry Date		
	Legal Status		Provide certified copies of Registration
	Written Power of attorney of the signatory to the Bid	Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to clause 4.1(a)	
	If a Joint Venture, names and addresses of Joint Venture Partner	1. 2. 3.	Provide a draft copy of the Joint Venture Agreement or alternatively the memorandum of understanding
	If a Joint Venture, Name of Lead Partner		
	For joint ventures, each joint venture partner shall furnish Legal Status separately		
	(Lead Partner)		Provide certified copies and label as attachment to clause 4.1(a)
	Legal Status		
	Place of registration		
	Principal place of business		
	Written Power of attorney of the signatory to the Bid	Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to clause 4.1(a)	

Schedule 1– General Information continued

	If a Joint Venture, names and addresses of Joint Venture Partner	1. 2. 3.	Provide a draft copy of the Joint Venture Agreement or alternatively the memorandum of understanding
	If a Joint Venture, Name of Lead Partner		
For joint ventures, each joint venture partner shall furnish Legal Status separately			
	(Partner 2)		Provide certified copies and label as attachment to clause 4.1(a)
	Legal Status		
	Place of registration		
	Principal place of business		
	Written Power of attorney of the signatory to the Bid	Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to clause 4.1(a)	
	VAT Registration Number		
	Name (Partner 3)		Provide certified copies and label as attachment to clause 4.1(a)
	Legal Status		
	Place of registration		
	Principal place of business		
	Written Power of attorney of the signatory to the Bid	Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to clause 4.1(a)	
	VAT Registration Number		

Schedule 2 – Annual Turn-over Information

- (i) If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application.
- (ii) For joint ventures, each joint venture partner shall furnish information separately.

Year	Turn-over	Remarks
2018 / 2019		Attach Audited Financial Reports and label as attachment to clause 4.2
2019 / 2020		
2020 / 2021		
2021 / 2022		
2022 / 2023		
Average		

Schedule 3 – Adequacy of Working Capital

If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application.

Source of credit line	Amount	Remarks
		Provide documentary evidence and label as attachment to clause 4.2

Schedule 4 – Construction Experience in last ten years

- (i) If pre-qualification is done the bidders are required to include information Subsequent to that submitted with the pre-qualification application.
- (ii) For joint ventures, each joint venture partner shall furnish information separately.

Year	Employer	Description of Works	Amount	Contractor's Responsibility (%)

- Provide documentary evidence and label as attachment to Clause 4.2

Schedule 5 – Major Items of Construction Equipment Proposed	
Type	Capacity

Schedule 6 – Construction Management Staff (Contract Managers/Technical Staff)			
A. Key Personnel / Professionals			
	Name	Position	Task
Managerial	1.		
	2.		
	3.		
Technical	1.		
	2.		
	3.		
B. Support Staff			
	Name	Position	Task
	1.		
	2.		
	3.		
	4.		
	5.		

Schedule 7 - Time Schedule for Key Staff

Name	Position	Activities	Months (in the form of a Bar Chart)																	Number of Months					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		24				

Full Time:-----

Part Time:

Schedule 8 - Work Program																		
	(1st, 2nd, etc. months from the start date.)																	
Construction Activity	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th	10 th	11 th	12 th	13 th	14 th	15 th	24 th

SCHEDULE FOR DAY WORKS**SCHEDULE A- LABOUR**

Any labour engaged on Day work shall be paid at the rates given below. Contractor's profit and overheads should not be included in the rates.

No.	Category	Gross Daily Wages LKR
1	Skilled labour	
2	Semi-skilled labour	
3	Unskilled labour	
4	Welder	

SCHEDULE B-MATERIAL

The Bidder shall give in this schedule the basic price of the following material

No.	Category	Unit	Gross Rate LKR
1	Sulphur resistant cement	50 kg bag	
2	Sand	m ³	
3	Course Aggregate	m ³	
4	Reinforcement steel	kg	
5	ABC	m ³	

SCHEDULE C – PLANT

Any Plant engaged on Day works shall be paid at the rates given below. The rates are for wet hire. These rates shall include for all inputs for running of the plant, transport to site, operators, attendants, insurance and other overheads associated with such plant.

No.	Description of Plant	Hourly Rate LKR
1	Farm Tractor with Trailer	
2	Backhoe Loader	
3	Excavator (1 m ³)	
4	Lorry/Tipper (5 t) with driver	
5	DC Welding Plant	
6	25 Ton Crain	
7	50 Ton Crain	
8	Grit/Sand blasting equipment	

Schedule 9–Details of Suppliers & Manufactures					
No	Item	Manufacture	Supplier	Country of Origin	Country of manufacturer
1.	Plates				
2.	Pipes				
3.	Fittings				
4.	Flanges				
5.	Nut & bolts				
6.	Gaskets				
7.	Valves				
8.	Level gauges				
9.	Dip hatches				
10.	Cathodic protection system				
11.	Internal Floating Roofs				
12.	Top Foam pourers				
13.	Water sprinkle nozzles				
14.	Leak detection system				
15.	Fire detection system				
16.	Any Other				

Schedule 10 - Details of Coating System			
Brand Name	Paint Manufacture
Local Authorized Agent / Distributor:		

Coating Systems				
	Coat	Product Name / Code Number /Data Sheet Number	Dry Film Thickness (µm)	Comply with CPSTL requirement or not
Bottom Underside Coating System				
1	Primer			
2	Coating System			
2.1	1st Coat			
2.2	2nd Coat			
2.3	3rd Coat (if available)			
		Total Thickness of Coating System		
3	Solvents			
Tank Interior Coating System				
1	Primer			
2	Coating System			
2.1	1st Coat			
2.2	2nd Coat			
2.3	3rd Coat (if available)			
		Total Thickness of Coating System		
3	Solvents			
Tank Exterior Coating System				
1	Primer			
2	Coating System			
2.1	1st Coat			
2.2	2nd Coat			
2.3	3rd Coat (if available)			
		Total Thickness of Coating System		
3	Solvents			

.....
Date

.....
Signature & Common Seal
of the Bidder

SECTION – 10

Drawings and Annexures

DUPPLICATE

LIST OF DRAWINGS

NO.	DRAWING TITLE	DRG. NO.
1.	Location Plan for proposed tanks	1891-1
2.	General Layout 15,000m ³ Storage Tank (Tank B)	1891-2
3.	General Layout 15,000m ³ Storage Tank (Tank C)	1891-3
4.	General Layout 15,000m ³ Storage Tank (Tank D)	1891-4
5.	General Layout 7,000m ³ Storage Tank (Tank G)	1891-5
6.	General Layout 7,000m ³ Storage Tank (Tank H)	1891-6
7.	General Layout 5,000m ³ Storage Tank (Tank J)	1891-7
8.	Piping & Dike wall General Details (Tank B & C)	1891-10
9.	Piping & Dike wall General Details (Tank G & H)	1891-11
10.	Piping & Dike Wall General Details (Tank J & D)	1891-12
11.	Quick Flush Drain System for Tank D	1891-13
12.	Piping & Dike wall General Details	1891-14
13.	Typical Details for cooling water and foam feeding pipes near tank B & C	1891-15

LIST OF ANNEXURES

ANNEX NO.	DESCRIPTION
01	Bore Hole logs at the location near by Tank No. J
02	Foundation Drawings of same capacity tank (Tank I) of Tank No. J (Ring Bam, Pile Cap and Pile layout and R/F detail) DRG Nos. – CPSTL-CECB-ST-CI-FD-PD-005 And CPSTL-CECB-ST-CI-FD-PD-006

SECTION – 11

Standard Forms (Bid)

DUPLICATE

FORM OF BID SECURITY

[This Guarantee form shall be filled in accordance with the instructions indicated in brackets] _____ [insert issuing agency's name, and address of issuing branch or office]

Beneficiary: Chairman / Managing Director, Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.

Date: _____ [insert (by issuing agency) date]

BID GUARANTEE No.: _____ [insert (by issuing agency) number]

We have been informed that _____ [insert (by issuing agency) name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated _____ [insert (by issuing agency) date] (hereinafter called "the Bid") for the _____ of [insert name of Contract] under Invitation for Bids No. _____ [insert IFB number] ("the IFB").

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we _____ [insert name of issuing agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of _____ [insert amount in figures] _____ [insert amount in words] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of the successful bidder furnishing the performance security, otherwise it will remain in force up to **02.05.2025**.

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

[Signature(s) of authorized representative(s)]

CHECK LIST FOR BIDDERS

DUPLICATE

CHECK LIST FOR BIDDERS

Bidders are advised to fill the following table.

ITEM	ITB Clause	YES (tick)	REFERENCE
Form of Bid			
Addressed to the Employer ?	20		
Completed?	20		
Signed?	20		
Bid Security			
Address to the Employer ?	17		
Format as required?	17		
Issuing Agency as specified?	17		
Amount as requested?	17		
Validity of Bid?	17		
Qualification Information			
All relevant information completed?	4		
Signed?	4		
Addendum			
Contents of the addendum (if any) taken in to account?	11		
Bid package			
All the documents given in ITB Clause 13 enclosed in the original and copy?	13		
ITB Clause 21 followed before sealing the Bid package?	21		