DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF PETROLEUM RESOURCES DEVELOPMENT

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

BIDDING DOCUMENT

FOR

PROCUREMENT, CONSTRUCTION AND COMMISSIONING OF 3 NOS. 15,000 m^3, 2 NOS. 7,000 m^3 AND 1 NO. 5,000 m^3 STORAGE TANKS AT KOLONNAWA INSTALLATION

CONTRACT NO: KPR/25/2018

Employer:

Ceylon Petroleum Storage Terminals Limited,
Oil Installation,
Kolonnawa,
Wellampitiya,
Sri Lanka.

Issued to: ……..

Issued by: ……..…….

Date: ……

CONTENTS

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

Invitation for Bids (IFB)

MINISTRY OF PETROLEUM RESOURCES DEVELOPMENT

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

PROCUREMENT, CONSTRUCTION AND COMMISSIONING OF 3 NOS. 15,000 m^3, 2 NOS. 7,000 m^3 AND 1 NO. 5,000 m^3 STORAGE TANKS AT KOLONNAWA INSTALLATION

CONTRACT NO : KPR/25/2018

1. The Chairman, Cabinet Appointed Procurement Committee 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 "**Procurement, construction and commissioning of 3 Nos. 15,000 m^3, 2 Nos. 7,000 m^3 and 1 No. 5,000 m^3 storage tanks at Kolonnawa Installation"** as described below and estimated to cost LKR 2225 million.

2. Above work consist of piling works, RCC raft foundations, soil improvements, steel storage tanks construction and associated works including procurement and supply of materials. **The Construction period is 40 months**.

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.
   (a) For domestic Bidders, **ICTAD (CIDA) registration is required as follows;**

Specialty	**Grade**	
Heavy Steel Fabrication	EM1	Bidder
Geotechnical Piling Board Cast Insitu	GP-B2 or above	Bidder, Joint Venture Partner or Sub Contractor

   (b) For foreign bidders, **No ICTAD (CIDA) registration is required.**

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 **LKR 1,000 million or equal amount in foreign currency.**

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 **LKR 167 million or equivalent amount in foreign currency.**

5.3 Bidder should have experience as a contractor in the construction of a nature and complexity similar to the Works (10,000 m^3 or higher capacity steel, vertical, above ground storage tank as per API Standard 650). Experience of the bidder or the joint venture partner in the construction of 600mm or higher diameter piling work in to the bedrock. At least one project in each speciality for domestic bidder/joint venture partner and two projects in each specialty for foreign bidder/joint venture partner during last ten years.

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 **22.05.2018** until **02.07.2018** from 0900 hrs. to 1430 hrs. on any working day upon cash payment of a non refundable fee of LKR 125,000.00 or remittance of USD 800 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, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.
Account No	**:**	**004-1-001-9-0208672**
Swift	:	PSBKLKLX
Bank Branch	:	People's Bank, Corporate Banking Division, No. 91, All Ceylon Hindu Congress (ACHC) Building, Sir Chittampalam A. Gardiner Mawatha. Colombo 02, Sri Lanka.

8. Bids shall be delivered in duplicate to the address given below on or before **1430 hrs.** Local time (+ 5.30 GMT) **03.07.2018.** Late bids will be rejected. Bids will be opened soon after closing in the presence of the bidders' representatives who choose to attend.

9. Bids shall be valid up to **24.12.2018**.

10. All bids shall be accompanied by a Bid Security of LKR 22,250,000.00 (Sri Lanka Rupees Twenty Two Million Two Hundred and Fifty Thousand only) or USD 141,800.00 (US Dollars One Hundred Forty One Thousand Eight Hundred Only). Bid Security shall be valid up to **20.01.2019**.

11. A pre-bid meeting will be held at 0930 hrs on **12.06.2018** at the office of DGM (Engineering and Support Services), Oil Installation, Kolonnawa.

The address referred to above is

The Chairman, 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
Telephone :+94 11 2572156, +94 11 5750764
Facimile :+94112572155
E-mail : procure@cpstl.lk

SECTION 1

INSTRUCTIONS TO BIDDERS

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. ICTAD Publication No. ICTAD/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 Employer's Name and Address:

Ceylon Petroleum Storage Terminals Limited,
Oil Installation,
Kolonnawa,
Wellampitiya,
Sri Lanka.

1.1 Scope of Works

"Procurement, construction and commissioning of 3 Nos. 15,000 m^3, 2 Nos. 7,000 m^3 and 1 No. 5,000 m^3 storage tanks at Kolonnawa Installation."

The scope of work of the contractor is defined in general and shall include the following, but not limited to the same. The bidder shall also carry out all the related work that are not listed in this document, but required for completion of the entire work as specified in this Bidding Document.

(i) The Contractor shall check the design sufficiency of proposed foundations and all 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 reports on design review of tank foundations from one of Engineering Faculties of State Universities or Central Engineering Consultancy Bureau and steel tank design from an entity who has experience in steel tank designing as per API Standard 650. (Design of pile foundation for nearby 15,000m^3 tank, which has been done by Uni-Consultancy Services, University of Moratuwa, Katubadda, Moratuwa, Sri Lanka is attached for reference). 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.

(ii) 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.

(iii) The Contractor shall submit soft copies and 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.

(iv) 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.

(v) The contractor shall submit project time schedule, manpower schedule, equipment schedule and cash flow schedule (including S-curves using MS Project).

(vi) The Contractor shall carryout the procurement of all material, equipment, machinery, tools, consumables, etc., necessary for construction of foundations, storage tanks and tank farm including piping, valves, fittings and all accessories. Loading, handling and transportation of all materials from supply point / store at work site / Contractor's store as per the requirement of the project.

(vii) 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.

(viii) Construction of the tanks foundations including earth work, piling work, concrete work, sand filling beneath the bottom plate and sand bitumen laying or suitable protection.

(ix) The Contractor shall carryout construction of 6 nos. steel tanks, roof structures, roof supports, top angles, wind girders, settlement angles, spiral stair ways with hand rails, nozzles, manholes, floating suction system, leak detection system and earthing systems including fabrication, erection, testing as per API Standard 650 Twelfth Edition, March 2013 and cathodic protection systems as per API RP 651.

(x) The Contractor shall procure, supply and install Internal Floating Roofs (IFR) and vent system for 2 Tanks (Tank No. B and C) as per API Standard 650 – Twelfth Edition, March 2013.

(xi) Grit/ Sand blasting and painting of 6 nos. steel tanks and all accessories as required.

(xii) 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.

(xiii) Third party inspection of pipes and fittings 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.

(xiv) 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.

(xv) Third party inspection of valves shall be carried out by a reputed third party inspector approved by CPSTL, Submission of inspection report to CPSTL and obtain approval before shipment.

(xvi) Third party inspection 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.

(xvii) 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 (xii), (xiii), and (xiv).

(xviii) The Contractor shall carry out required testing and inspection to determine the integrity and strength of foundations and steel tanks as required.

(xix) 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.

(xx) The contractor shall submit Manufacturer's Warranty from the date of commissioning, in the name of CPSTL as follows;

- 2 years warranty for valves, top pourer units, and level gauge
- 10 years warranty for IFRs

(xxi) The Contractor shall box up the tanks and hand over to CPSTL.

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

(xxiii) Fabrication, installation and painting of spiral stair ways with hand rails.

1.2 Time for Completion

The Time for Completion for the whole of works shall be **40 months.**

2.1 Source of funds

The source of funds is Ceylon Petroleum Storage Terminals Limited.

4.1 The following information shall be provided in Section 9 - Schedules:

- ICTAD (CIDA) registration (for domestic bidders only)
- Registration number
- Grade
- Specialty
- Expiry date
- VAT registration number (if applicable)
- Attach construction program
- Attach legal status (Sole proprietor, Partnership, Company etc.)
- Attach authentication for signatory
- 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
- Attach Work plan and methods;
- Details of the suppliers and manufactures

4.1 (a) Qualification Information

Bidder is the party having experience in construction of 10,000 m^3 or higher capacity steel, vertical, above ground storage tank as per API Standard 650. In the case of joint venture, party having above experience is considered as the bidder, and the other party/ies are considered as joint venture partner/s.

4.1 (c) Not applicable

4.2 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".

4.2(a) ICTAD (CIDA) registration required

(i) For domestic Bidders:- **ICTAD (CIDA) registration is required as follows;**

Specialty	Grade	
Heavy Steel Fabrication	EM1	Bidder
Geotechnical Piling Board Cast Insitu	GP-B2 or above	Bidder, Joint Venture Partner or Sub Contractor

Piling work can be subcontracted to a contractor who has above registration. Details of the subcontract should be furnished with the bid.

(ii) For foreign bidders:- **No ICTAD (CIDA) registration is required**, but more experience is required compared to domestic bidder as per Clause 4.2 (c) for compensating above registration.

4.2(b) Average annual volume of construction work performed in last 5 years

Average annual volume of construction work performed in last five years shall be at least **LKR 1,000 million or equivalent amount in foreign currency.** Details shall be entered in Schedule 2 of Section 9 "Schedules". Documentary evidence such as copies of audited financial statement/accounts for the last five (05) years (2012/2013, 2013/2014, 2014/2015, 2015/2016 and 2016/2017) shall be submitted with the offer.

4.2 (c) Experience

Bidder should have experience as a contractor in the construction of a nature and complexity similar to the Works (10,000 m^3 or higher capacity steel, vertical, above ground storage tank as per API Standard 650). Experience of the bidder or the joint venture partner in the construction of 600mm or higher diameter piling work in to the bedrock. At least one project in each specialty for domestic bidder/joint venture partner and two projects in each specialty for foreign bidder/joint venture partner during last ten years. (to comply with this requirement, works cited should be at least 70 percent complete).

Details shall be entered in Schedule 4 of Section 9 "Schedules". Documentary proof (Copy of PO, performance certificate, completion certificate, agreement etc.) for successful completion of the work relating to experience and the availability of engineers and other staff involved in work relating to experience, shall be submitted with the offer.

The bidders shall have very clear documentary evidence as proof of having above experience.

4.2(d) Essential equipment

Proposals for the timely acquisition (own, lease, hire, etc.) of the following minimum required essential equipment shall be entered in Schedule 5 of Section 9 "Schedules". Piling machine, Concrete Mixers, Poker Vibrator, Plate Compactors, Scaffoldings, Excavator/JCB, surveying Equipment, 25 ton Crane, 5 nos welding generators, grit blasting equipment etc.

4.2(e) Qualification and Experience of the Contract Managers/Technical staff

Following 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.

(i) Managerial:

a. A Project Manager, a Chartered Engineer with minimum 10 years experience.

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.

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.

(ii) Technical:

a. An engineer who is conversant with API Standard 650 and other relevant standards and codes.

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 during tank erection.

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 during pile foundation construction.

This is the minimum requirement and the successful bidder shall assign all other necessary staff to enable compliance with all other contractual stipulations.

4.2(f) Liquid assets and /or credit facilities required

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 **LKR 167 million or equivalent amount in foreign currency.**

5.1 Joint venture partner

Joint venture partner is the party, which fulfils the required experience in piling work, financial status and/or equipment. If a foreign bidder entering in to a joint venture with local party for piling work, the joint venture partner should have required ICTAD (CIDA) registration (Speciality - Geotechnical Piling Board Cast Insitu, Grade : GP-B2 or above)

8. Site Visit

Prior to submitting a bid, bidders shall familiarize themselves and shall be deemed to have done so. The bidders shall inform Engineering Manager, Engineering Function, Oil Installation, CPSTL, Kolonnawa (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.

The bidders are advised to limit the number of persons, for the visit, due to the security reasons, at the Kolonnawa Installation. 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.

10.1 Clarification of Bidding Documents

Employer's address for clarification in bidding document is as below.

The Chairman, 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

Telephone :+94 11 2572156, +94 11 5750764
Facimile :+94112572155
E-mail : procure@cpstl.lk

13 Documents comprising the Bid

The Bid submitted by the bidder shall comprise the following:

(A) Enclosed in the envelope marked as "ORIGINAL" ;

(a) Duly filled and signed Form of Bid (in the format indicated in section 7);
(b) Bid Security (in the format indicated in section 11);
(c) Power of attorney / Power vesting letter for the signatory to the Bid;
(d) Section 2 - Bidding Data
(e) Section 4 - Contract Data
(f) Section 6 - Specifications;
(g) Section 8 - Priced Bill of Quantities;
(h) Section 9 - Duly filled Schedules;
(i) Section 10 - Drawing; and
(j) Detailed "Construction Procedure" for related procurement, construction, testing, commissioning and documentation. Catalogues, literature, write-ups to be annexed to supplement the procedure 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 and other equipment shall be clearly mentioned.

(B) Enclosed in the envelope marked as "COPY"

(a) Duly filled and signed Form of Bid (in the format indicated in section 7);
(b) Section 8 - Priced Bill of Quantities;
(c) Section 9 - Duly filled Schedules;
(d) Detailed "Construction Procedure" for related design, procurement, construction, testing, commissioning and documentation. Catalogues, literature, write-ups to be annexed to supplement the procedure 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 and other equipment shall be clearly mentioned.

14.3 VAT component shall not be included in the rates. The amount written in the Form of Bid shall be without VAT.

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.

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.**:**

14.4 Adjustments for change in cost

The Contract **is not subjected** to price adjustment.

15.1 Currency of Bid

The Bid shall be quoted in Sri Lankan Rupees (LKR) and/or Foreign Currency.
The Bidders shall be allowed to quote only in two Currencies.
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 middle exchange rate published by Central Bank of Sri Lanka, on the date 28 Days prior to date of closing of Bids.

Price Schedule No.	Item No.	Currency

16.1 Period of Bid validity:

The Bid shall be valid up to **24.12.2018**

17.1 The amount of Bid Security

The Amount of Bid Security LKR 22,250,000.00 (Sri Lanka Rupees Twenty Two Million Two Hundred and Fifty Thousand only) or USD 141,800.00 (US Dollars One Hundred Forty One Thousand Eight Hundred Only).

17.2 Validity of Bid Security

The Bid Security shall be valid up to **20.01.2019** as per attached specified format.

Securities and Guarantees shall be irrevocable and unconditionally en-cashable upon the first written request from the Procuring Entity.
The bid securities issued by the following agencies are acceptable;

- a commercial bank operating in Sri Lanka approved by Central Bank of Sri Lanka,
- a bank based in another country but the guarantee “confirmed” by a bank in Sri Lanka approved by Central Bank of Sri Lanka

19.1 Pre-Bid meeting

A pre –bid meeting will be held at 0930 hrs. Local time on **12.06.2018** at the office of DGM (Engineering and Support Services), Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa. Subsequently, a site visit will be arranged.
All costs incurred in attending to this pre bid meeting and site visit will have to be borne by the Bidder.

21.2 (a) Employer's Address for Bid submission

Employer's address for the purpose of bid submission is the Office of the

The Chairman, 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

21.2 (b) Identification number of Contract

Identification Numbers of the Contract: KPR/25/2018

22.1 Deadline for submission of Bids

Deadline for submission of Bids: **03.07.2018**

25.1. Bid opening

Venue: **Office of Manager Procurement,**
Ceylon Petroleum Storage Terminals Limited,
Procurement Function, New Building,
Oil Installation, Kolonnawa,
Wellampitiya,
Sri Lanka.

Time: 1430 hrs. Local time (+ 5.30 GMT)
Date: **03.07.2018**

31.1 Preference for Domestic Bidders

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:

(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** –

(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.

(d) The application of the margin of preference for a **joint venture of domestic firms :**

(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.

Domestic Bidders shall submit the documentary proof for above requirements under Schedule -1 "General Information" in order to consider for domestic preference.

The following procedure will be used to apply the margin of preference:
Responsive bids will be classified into the following groups:

(i) Group A : Bids offered by domestic bidders ; and
(ii) Group B : all other Bids

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.

32 Award of Contract

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.

Address: The Chairman
Procurement Appeal Board
Presidential Secretariat
Colombo.

Cash Deposit: Rupees 100,000/=

35.1 Amount of Performance Security

Performance Security acceptable to the Employer given in the Form for Performance Security given in the bidding document shall be a Guarantee obtained from;

- a commercial bank operating in Sri Lanka approved by Central Bank of Sri Lanka,
- a bank based in another country but the guarantee "confirmed" by a bank in Sri Lanka approved by Central Bank of Sri Lanka,

The amount of Performance Security is **5 %** of the Initial Contract Prices.
The Performance Security shall be valid until 28 days beyond the expected completion date of Defects Liability Period.

37. Adjudicator

The Adjudicator proposed by Employer is **Institute for Construction Training and Development ICTAD / (CIDA).**

Fees and types of reimbursable expenses to be paid to the Adjudicator shall be on a case to case basis and shall be shared by the Contractor and the Employer.50% by the Employer and 50% by the Contractor.

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, ICTAD Publication No. ICTAD/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.

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.

CONTRACT DATA

Conditions of Contract Clause Number/s		
1.1.2.2 & 1.3	**Employer's Name and 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:	Deputy General Manager (Engineering & Support Services)
	Address:	Ceylon Petroleum Storage Terminals Limited, Engineering Function, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka.
1.1.3.3	Time for Completion of the Works	Time for completion of the whole works shall be **Forty (40) Months.**
1.1.3.7	Defects Notification Period	Defects Notification Period is **Twenty Four (24) Months**
2.1	Right of access to the Site:	14 days after Letter of Acceptance
4.2.1	Amount of Performance Security	The amount of Performance Security is 5**%** of the Initial Contract Price. The Performance Security shall be valid until 28 days beyond the expected completion date of Defects Liability Period. The acceptable form is Unconditional Guarantee
	Special Safety Conditions	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 observed 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 Oil Installation, Kolonnawa 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 Oil Installation, Kolonnawa. Those who possess valid police clearance are eligible to obtain gate passes. Safety clearances to be obtained before enter to the tank farm.

vi. 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:

   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.
	Working Hours	i. Normal working hours of CPSTL from Monday to Friday is from 0730 hrs. to 1645 hrs. ii. In the work programme Saturday also can be considered as a working day and from Monday to Friday up to 1800 hrs also can be considered as a working hours by the contractor. But to work on Saturday and up to 18. 00 hrs the contractor is required to obtain prior permission since the offices are normally closed on Saturdays. iii. However, working on Statutory holidays, Sundays and after 1800 hrs. on working days will not be permitted. Provided always that provision of above (iii) shall not be applicable in the cause of any work which it is customary to carry out, outside normal working hours by rotary or double shifts.
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	Adjustments for Changes in Cost	Not applicable
14.2	Total Advance Payment	20 % of the Initial Contract Price excluding Provisional Sums & Contingencies. The advance payment securities issued by the following agencies are acceptable ; ▪ a commercial bank operating in Sri Lanka approved by Central Bank of Sri Lanka, ▪ a bank based in another country but the guarantee "confirmed" by a bank in Sri Lanka approved by Central Bank of Sri Lanka,
14.2	Number and timing of instalment for Advance Payment	**Stage 1-** Two equal instalments. The first ten percent (10%) of advance payment will be paid within 14 days from receipt of both Performance

		and Advance Payment Guarantee as required under clause 4.2 and 14.2 respectively. **Stage II-** Balance ten percent (10%) will be paid after successfully mobilization at the site after receipt of mobilization Advance Payment Guarantee.
14.3(c)	Percentage of Retention	**10%** of certified value of works (Applicable for all interim payments except final interim payment)
14.3(c)	Limit of Retention	**5%** of the Initial Contract Price (Applicable only for Final interim payment)
14.4	Plant & Material Intended for the works	Interim Payment Certificates shall include, under sub-paragraph (e) of Sub-Clause 14.3 *(Application for Interim Payment Certificate)*, an amount equivalent to 80% of the invoiced value of Plant and Materials which have been delivered to the Site for incorporation in the Permanent Works.
14.5	Minimum amount of interim payment certificates	**LKR 30 million**
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 for Insurance (including Employer's Property)	Insurance cover to the amount of LKR 100 Million 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.

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 and 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:……*[Name and Address of Employer]*

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 letter than the ……..day 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:……...*[Name and Address of Employer]*

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

Specifications

6.1 Site conditions

6.1.1 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.

6.1.2 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.

6.2 Design Basis

CPSTL has started construction of 15000 m^3 tank at Kolonnawa Installation. The foundation for this tank which is near to proposed Tanks No. B and C, was designed by Uni Consultancy Services, University of Moratuwa. The foundation design of 15000 m^3 tank is annexed in this document for reference.

Soil investigation at the proposed location of the Tank No. B, C, D, G and H has been conducted Central Engineering Consultancy Bureau (CECB). Copies of borehole logs are attached for reference.

The Bidders are required to arrive at their prices for foundations of proposed tanks (Tank No. B and C) based on above design and borehole logs. The foundation details of Tank No. D, G, H and J are given under technical specification.

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

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

6.3 General specifications

6.3.1 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.

6.3.2 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.

6.3.3 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.

6.3.4 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.

6.3.5 **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 transhipment of materials and equipment through countries shall be the Contractor's responsibility. Any cost(s) associated with transhipment 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.

6.3.6 **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.

6.3.6.1 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.

6.3.6.2 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.

6.3.7 **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.

6.3.8 **Codes and Standards**

The Bidder shall ensure that the engineering, design, construction, testing, etc. of, 6 nos. 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

Document Title	Document Number
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
Tank Inspection, Repair, Alteration and Reconstruction Welded Steel Tanks For Oil Storage	API 653
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 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)	SCA/4/I
Specifications for Building Works (Vol. II) Second Revision, Oct 2001	SCA/4/II
Specification for Electrical and Mechanical Works associated with Building and Civil Engineering, Sri Lanka, Second Edition, August 2000	SCA/8

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

6.4 Technical specifications

6.4.1 Construction of Foundations

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

6.4.1.1 Foundation for Tank No. B (15,000m^3, Gasoline) and Tank No. C (15,000m^3, Gasoline)

6.4.1.1.1 Site Clearing

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

6.4.1.1.2 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

6.4.1.1.3 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.

6.4.1.1.4 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.

6.4.1.1.5 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.

6.4.1.2 Foundation for Tank No. D (15,000 m^3, Jet A1)

6.4.1.2.1 Site Clearing

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

6.4.1.2.2 Ground Improvement

The tank shall be placed on the ground after top 1.5m (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/m^2.

6.4.1.2.3 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.

6.4.1.2.4 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.

6.4.1.2.5 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.

6.4.1.3 Foundation for Tank No. G (7,000m^3, Gas Oil) and Tank No. H (7,000m^3, Kerosene)

6.4.1.3.1 Site Clearing

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

6.4.1.3.2 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/m^2.

6.4.1.3.3 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.

6.4.1.3.4 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.

6.4.1.3.5 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.

6.4.1.4 Foundation for Tank No. J (5,000m^3, Diesel)

6.4.1.4.1 Site Clearing

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

6.4.1.4.2 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 160kN/m^2.

6.4.1.4.3 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.

6.4.1.4.4 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.

6.4.1.4.5 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.

6.4.2 **Construction of Tanks**

6.4.2.1 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	24.92	24.92	24.92
Tank height/m	17.82	17.82	17.82	17.82	17.82	15.82
Max. Operating Temperature/^{0}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. 1607-3	As per drg. no. 1607-4	As per drg. no. 1607-5	As per drg. no. 1607-6	As per drg. no. 1607-7	As per drg. no. 1607-8
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/^{0}C	60	60	60	60	60	60
Vapour Pressure/ Psia	10	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 Design	Cone roof	Cone roof	Dome	Cone roof	Cone roof	Cone roof
Roof load						

Live Load	244ibf/ft^2 (11.7KN/m^2)	244ibf/ft^2 (11.7KN/m^2)	244ibf/ft^2 (11.7KN/m^2)	244ibf/ft^2 (11.7KN/m^2)	244ibf/ft^2 (11.7KN/m^2)	244ibf/ft^2 (11.7KN/m^2)
Dead load	7.7ibf/ft2 (0.37 KN/m2)	7.7ibf/ft2 (0.37 KN/m2)	7.7ibf/ft2 (0.37 KN/m2)	7.7ibf/ft2 (0.37 KN/m2)	7.7ibf/ft2 (0.37 KN/m2)	7.7ibf/ft2 (0.37 KN/m2)
Filling Rate/ m3/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

6.4.2.2 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).

6.4.2.3 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).

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

Accessory	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
12” inlet nozzle	1	1	1	1	1	1
12” outlet nozzle	1	1	1	1	1	1
6” standby outlet	1	1	1	1	1	1
4” dia Drawoff nozzle	2	2	1	1	1	1
30” dia shell manhole	1	1	1	-	-	-
24” dia shell manhole	2	2	2	2	2	2
24” roof manhole	3	3	3	2	2	2
12” DBB Valve	2	2	2	2	2	2
12” Gate Valve	2	2	2	2	2	2
6” Gate Valve	3	3	3	1	1	1
4” Gate Valve	-	-	-	1	1	1
3” Gate Valve	2	2	2	2	2	2
8” dia vertical pipe for radar gauge and 6” dia vertical pipe for dipping, including ladder between these	1	1	-	-	-	-

pipes.						
8” dia vertical pipe for radar gauge	-	-	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	1	1	1	1	1	1
4” dia Drawoff nozzle and piping	2	2	1	1	1	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	-	-	-
IFR	1	1	-	-	-	-
12” dia floating suction system	-	-	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 & other hand rails as required	1 set	1 set	1 set	1 set	1 set	1 set
Roof type	Cone	Cone	Dome	Cone	Cone	Cone

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

6.4.2.6 The Contractor shall procure, supply and installation of internal floating roofs and vent systems for Tank No B and C. These tanks shall include fire detection systems in the tanks including required instrumentation/electrical cables and alarming siren approximately 100m away the tanks. Provision should be kept to extend the cabling up to fire control room in future.

6.4.2.7 The Contractor shall procure, supply and installation of a foam top pourer system for each tank. The piping system shall be hot dip galvanised.

6.4.2.8 The Contractor shall procure, supply and installation of a water drencher system for roof and shell of each tank. The piping system shall be hot dip galvanised.

6.4.2.9 The Contractor shall supply and construction of pressure relief system for inlet and outlet pipes.

6.4.2.10 The Contractor shall procure, supply and installation of floating suction system for tank No. D.

6.4.2.11 The Contractor shall procure, supply and installation of leak detection systems at both drawoff sumps of each tank.

6.4.2.12 The Contractor shall procure, supply and installation of cathodic protection system for the tank bottom of each tank as per API RP 651.

6.4.2.13 The Contractor shall procure, supply and installation of drain water flushing system for the Tank No. D similar to the existing drain water flushing system of Tank No. 6 & 7.

6.4.2.14 The Contractor shall procure, supply and installation of Side mounted sour service Mechanical Level Gauge with grease sealed pulley system compatible with internal floating roof movements. Easy to read indicator and sign board. Provision to be kept for High/ Low level alarms. Level gauge material shall be corrosion free aluminium.

6.4.2.15 The Contractor shall procure, supply and installation of Side mounted sour service Mechanical Level Gauge with grease sealed pulley system compatible with internal floating roof movements. Easy to read indicator and sign board. Provision to be kept for High/ Low level alarms. Level gauge material shall be corrosion free aluminium.

6.4.2.16 The Contractor shall procure, supply, fabricate and installation of Spiral staircases consisting of 2 stringers, intermediate landings with supporting arrangement, hot dip galvanised gratings and handrail. The Bidder shall submit the details for the review of CPSTL.

6.4.2.17 The Contractor shall procure, supply and installation of Foam Top Pourer System as per the NFPA-11 requirements.

6.4.2.18 The Contractor shall procure, supply and installation of Water drencher System as per the NFPA-30 requirements.

6.4.2.19 The Contractor shall procure, supply and installation of Earthing system as per API Standard 650 Twelfth Edition, March 2013.

6.4.2.20 The Contractor shall procure, supply and installation of Fire detection system at Internal Floating Roof for Tank No. B and C. The Bidder shall submit the details for the review of CPSTL.

6.4.2.21 The Contractor shall procure, supply and installation of 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.

6.4.2.22 The Contractor shall procure, supply and installation of Leak detection system 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.

6.4.3 **Painting of Tank**

6.4.3.1 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 for Tanks No. B, C, G, H and J.

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

i. Painting of Underside of Bottom Plates

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

Description	Thickness	Coat
SIGMA COVER 280 (PDS 7417) or SIGMA COVER 522 (PDS 7420) or equivalent	50 microns DFT	Primer
SIGMA COVER 300Brown (PDS 7422) or equivalent	150 microns DFT	Intermediate
SIGMA COVER 300Black (PDS 7422) or equivalent	150 microns DFT	Finish
Required overall paint thickness	350 microns DFT	
Sigma solvent – Thinner 91-92 or equivalent or as specified in manufactures data sheet.		

ii. Painting of underside of roof plates and roof structure

The entire roof structure 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 as follows, after grit blast cleaning specified under clause vii). Application of paint and obtaining of approval for painting shall be carried out as described in clause viii).

Description	Thickness	Coat
SIGMACOVER 280 (PDS 7417) or equivalent	50 microns DFT	Primer
SIGMAGUARD 720 (EHB) GREEN OR LIGHT GREY (PDS 7433) or equivalent	150 microns DFT	Intermediate
SIGMAGUARD 720 (EHB) GREEN OR LIGHT GREY (PDS 7433) or equivalent	150 microns DFT	Finish
Required overall paint thickness	350 microns DFT	
Sigma solvent – Thinner 91-92 or equivalent or as specified in manufactures data sheet.		

iii. Painting of Tank interior

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 follows after grit blast cleaning specified under clause vii). Application of paint and obtaining of approval for painting shall be carried out as described in clause viii).

Description	Thickness	Coat
SIGMACOVER 280 Yellow Green (PDS 7417) or equivalent	50 microns DFT	Primer
SIGMA GUARD 720 (EHB) GREEN OR LIGHT GREY (PDS 7433) or equivalent	150 microns DFT	Intermediate
SIGMA GUARD 720 (EHB) GREEN OR LIGHT GREY (PDS 7433) or equivalent	150 microns DFT	Finish
Required overall paint thickness	350 microns DFT	
Sigma solvent – Thinner 91-92 or equivalent or as specified in manufactures data sheet.		

iv. Painting of Tank Exterior

The shell exterior surface and roof external surfaces with all attachments shall be painted as follows after grit blast cleaning specified under clause vii). Application of paint and obtaining of approval for painting shall be carried out as described in clause viii).

Description	Thickness	Coat
SIGMA COVER 280 – Yellow Green (PDS -7417) or equivalent	60 microns DFT	Primer
SIGMACOVER 456 Grey 5163 Light (PDS 7466) or equivalent	75 microns DFT	Intermediate
SIGMADUR White 7000 (PDS 6824) or equivalent	75 microns DFT	Finish
Required overall paint thickness	210 microns DFT	
Sigma solvent – Thinner 91-92 or equivalent or as specified in manufactures data sheet.		

Note:

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.

v. Painting of Stairway, hand rails and all attachments

The Stairway and its supportive structure, hand rail and crown hand rail with all attachments including stanchions shall be painted according to their standard colour codes as follows after grit blast cleaning specified under clause vii). Application of paint and obtaining of approval for painting shall be carried out as described in clause viii).

vi. Piping systems

Description	Thickness	Coat
SIGMA COVER 280 – Yellow Green (PDS - 7417) or equivalent	60 microns DFT	Primer
SIGMA COVER 456 GREY (PDS 7466) or equivalent	100 microns DFT	Intermediate
SIGMADUR 188Yellow(PDS 6824)/ SIGMADUR White 7000 (PDS 6824) or equivalent	50 microns DFT	Finish
Required overall paint thickness	210 microns DFT	
Sigma solvent – Thinner 21-06 or equivalent or as specified in manufactures data sheet.		

of foam top pourer system and water drencher system, rim air vents and tank internal piping system of drawoff sump shall be painted as follows after hot dip galvanizing specified under clause ix). Application of paint and obtaining of approval for painting shall be carried out as described in clause viii).

Description	Thickness	Coat
SIGMA COVER 280 – Yellow Green (PDS - 7417) or equivalent	60 microns DFT	Primer
SIGMA COVER 456 GREY (PDS 7466) or equivalent	100 microns DFT	Intermediate
SIGMADUR 188 Yellow (PDS 6824) or equivalent	50 microns DFT	Finish
Required overall paint thickness	210 microns DFT	
Sigma solvent – Thinner 21-06 or equivalent or as specified in manufactures data sheet.		

vii. 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.

viii. 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 350 microns DFT for under sides of roof and roof structure, 370 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.

ix. 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.

6.4.4 **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.

i. 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.

ii. 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.

iii. 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.).

iv. 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.

v. Openings and Appurtenances

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

vi. 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.

vii. 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.

a. 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 m^2/m (0.2 ft^2/ft) of tank diameter.

b. 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).

c. A centre circulation vent with a minimum net open area of 30,000 mm2 (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).

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

To be provided

ix. 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.

x. 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.

xi. 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.

xii. 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.

a. 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.

b. 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.

c. 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.

d. The floating roof manufacturer shall supply all floating roof closures required for testing per H.4.1.3, H.4.1.7, H.4.3.1and H.6.2 of Appendix H of API standard 650 Twelfth Edition, March 2013.

e. Rivets, self-tapping screws, and removable sections are not acceptable for test plugs.

f. 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.

g. 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.

h. 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.

xiii. Initial Flotation

Floatation test shall be conducted as per the API standard 650

6.4.5 **Testing**

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

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

6.4.5.3 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.

6.4.5.4 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.

6.4.5.5 Hydro test

The Contractor shall carry out tank hydro test for each tank. Testing procedure to be agreed by the Contractor and CPSTL. Fresh water shall be supplied by the CPSTL.

6.4.5.6 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.

i. MPMS Ch. 2.2B – Calibration of Upright Cylindrical Tanks using the Optical Reference Line Method (ORLM)

ii. MPMS Ch. 2.2C – Calibration of Upright Cylindrical Tanks using the Optical Triangulation Method (OTM)

iii. 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.

6.4.5.7 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.

6.4.6 **Materials shall be as per following Specifications**

6.4.6.1 List of recommended manufactures – Mechanical works

No.	Item	Country of Origin/Country of manufacture
1.	Plates 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, Japan 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.

6.4.6.2 Carbon Steel Plates

i. 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 at Ceylon Petroleum Storage Terminals Limited (CPSTL) Kolonnawa.

iv. Tolerance in size, if any, should be mentioned with relevant standards for the purpose of evaluation.

6.4.6.3 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.

6.4.6.4 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.

6.4.6.5 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.

6.4.6.6 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.

6.4.6.7 Gasket Materials

i. Maximum Working Pressure - 225 psi

ii. Nominal Working Temperature - 45^{o} 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.

6.4.6.8 Cast Steel Gate Valves (Class 150)

i. Operational Conditions
   a. Maximum Working Pressure - 150 psi
   b. Nominal Working Temperature - 45o 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 york 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.

6.4.6.9 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.

e. For sizes equal or higher than 2 ”design as per general requirements of Standard API 6D, API 600 & ASME B16.34.

f. 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 .”

g. Face to face dimensions should conform to API 6D and ASMEB 16.10

h. Valve inspection and testing as per API 598.

i. 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	Fluoroelastomer
Seat	13Cr	Packing	PTFE

6.5 Technical documents and information

6.5.1 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.

6.5.2 Documentation to be submitted prior to Site Construction

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

6.5.3 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

6.5.4 **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. Galvanization
   d. Painting

xi. Commissioning protocols

SECTION -07

FORM OF BID

FORM OF BID

Name of Contract**:** **Procurement, construction and commissioning of 3 Nos. 15,000 m^3, 2 Nos. 7,000 m^3 and 1 No. 5,000 m^3 storage tanks at Kolonnawa Installation.**

To: **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 .....) 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, ….… [*insert Date*]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 3and 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

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 62 to 71. 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, stand 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 : PROCUREMENT, CONSTRUCTION AND COMMISSIONING OF 3 NOS. 15,000 m^3, 2 NOS. 7,000 m^3 AND 1 NO. 5,000 m^3 STORAGE TANKS AT KOLONNAWA INSTALLATION.

BOQ No: E/11/2018

Note: Items which has both the LKR Component and a Foreign Currency Component, shall be rated separately in the provided columns. For the items which has only a single currency component shall be rated in respective columns. Sub totals of LKR Component and a Foreign Currency Component (Specify the Foreign currency in the space given in BOQ & Summary) should be carried forward to the summary and the Foreign Currency subtotal to be converted in to LKR in the summary (Foreign Currency shall be converted to LKR using middle exchange rate published by Central Bank of Sri Lanka, on the date 28 Days prior to date of closing of Bids). Then both components shall be added and the total to be carried to Form of Bid.

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……..
	Contractors are strictly advised to visit the site & follow the given details, sketch drawings, specifications before commencing the works. Any discrepancy should be forwarded to the Engineer before commencement of such works.						
A	**PRELIMINARIES**						
A1	Allow lump sum for cleaning sites before starting construction works, including removal of all rubbish and debris.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……....
A2	Allow lump sum for construction & maintenance of temporary site office (approx. 40m^2) with providing necessary furniture, fittings & other facilities for the contractor's personal and stores for tools & cement at four locations. Rate shall include for providing temporary sanitary facilities at the sites for the contractor's staff & workers and dismantling and removal on completion of the Works.	Item	Allow				
A3	Allow lump sum for mobilization and demobilization.	Item	Allow				
A4	Allow lump sum for Erection of temporary fire barriers and fire blankets between new tanks and other existing tanks and other facilities in order to protect the surrounding piping and tanks in service.	Item	Allow				
A5	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	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……....
	Total amount carried to summary						
B	**CONSTRUCTION OF FOUNDATION**						
	The Contractor is requested to visit the site and to acquaint himself regarding the work spaces, conditions of adjoining properties, access, actual extent of the work to be done, existing services, methods of disconnecting and termination of services, method of transportation of material, equipment to be used etc. prior to pricing of this section.	Note					
	<u>Piling works for Tank No. B & C</u>						
	All piles to be socketed in fresh rock for a depth of 2.0m.	Note					
	The contractor shall dispose bored materials within CPSTL Kolonnawa premises as per the Engineers instructions.	Note					
	The boring works shall be carried out on an approved method with approved tools and equipment acceptable to the Engineer with prior approval.	Note					
	The contractor's rates shall include for all precautions to minimize the noise, dust and vibrations etc. to the approval of the Engineer.	Note					

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……...
	The contractor shall submit all relevant information stated in this document and the information based for his pricing of this section.	Note					
	Contractor's rate for piles shall include the tests for boreholes and testing after piling for maintained loading with various reactions. (For each tank, at least 4 piles should be subjected to static load testing and randomly selected 15 piles should be subjected to dynamic testing).	Note					
	All pile sockets should be cleaned of any debris before concreting.	Note					
	Cement should be Sulphur resistant cement.	Note					
	Soil Improvements for Tank No. D, G, H & J						
	The contractor shall dispose excavated material away from the site within the CPSTL Kolonnawa premises as directed by the Engineer.	Note					
	The excavation shall be carried out on an approved method with approved tools and equipment acceptable to the Engineer with prior approval.	Note					

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……....
	The contractor's rates shall include for all precautions to minimize the noise, dust and vibrations etc. to the approval of the Engineer.	Note					
	The contractor shall submit all relevant information stated in this document and the information based for his pricing of this section.	Note					
	The contractor's rates shall include for dewatering and earth work support using proper shoring method (Sheet piles preferred) to protect adjacent tanks, pipe lines, structures etc.	Note					
	Refer detail drawing No. 1607-2 & 1607-9						
B1	Supply all materials and construction of pile foundation for Tank No. B including earthworks, piling, raft slab, sand layer filling, sand tar mixer layer, perimeter drain, apron, all required testing etc.	Item	Allow				
B2	Supply all materials and construction of pile foundation for Tank No. C including earthworks, piling, raft slab, sand layer filling, sand tar mixer layer, perimeter drain, apron, all required testing etc.	Item	Allow				
B3	Supply all materials and construction of foundation for Tank No. D including earthworks, ground improvements, RCC ring beam, sand layer filling, sand tar mixer layer, perimeter drain, apron, all required testing etc.	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……....
B4	Supply all materials and construction of foundation for Tank No. G including earthworks, ground improvements, RCC ring beam, sand layer filling, sand tar mixer layer, perimeter drain, apron, all required testing etc.	Item	Allow				
B5	Supply all materials and construction of foundation for Tank No. H including earthworks, ground improvements, RCC ring beam, sand layer filling, sand tar mixer layer, perimeter drain, apron, all required testing etc.	Item	Allow				
B6	Supply all materials and construction of foundation for Tank No. J including earthworks, ground improvements, RCC ring beam, sand layer filling, sand tar mixer layer, perimeter drain, apron, all required testing etc.	Item	Allow				
	Total amount carried to summary						
C	**CONSTRUCTION OF STEEL TANKS**						
	The contractor shall obtain approval from CPSTL for all materials and equipment prior to commence any work.	Note					
	The tanks shall be constructs according to the API STD 650 Twelfth Edition, March 2013	Note					

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……...
	The contractor's rates shall include for :						
	Supplying of all materials and costs of preparation, fabrication, erection, laying in position, forming, welding & painting etc.	Note					
	Transportation of all the materials to the final location at the CPSTL premises, Kolonnawa.	Note					
	Third party inspection where applicable.	Note					
	Inspection and testing shall be according to the API 650.	Note					
	Refer detail drawing No. 1607-3, 1607-4, 1607-5, 1607-6, 1607-7 & 1607-8						
C1	Procurement, Construction, Testing, Calibration and Commissioning of Tank No. B	Item	Allow				
C2	Procurement, Construction, Testing, Calibration and Commissioning of Tank No. C	Item	Allow				
C3	Procurement, Construction, Testing, Calibration and Commissioning of Tank No. D	Item	Allow				
C4	Procurement, Construction, Testing, Calibration and Commissioning of Tank No. G	Item	Allow				

ITEM	DESCRIPTION	UNIT	QTY	LKR COMPONENT		FOREIGN CURRENCY COMPONENT	
				RATE LKR	AMOUNT LKR	RATE …….....	AMOUNT ……....
C5	Procurement, Construction, Testing, Calibration and commissioning of Tank No. H	Item	Allow				
C6	Procurement, Construction, Testing, Calibration and Commissioning of Tank No. J	Item	Allow				
	Total amount carried to summary						
D	**INTERNAL FLOATING ROOF**						
D1	Procure, Installation, Testing and Commissioning of Internal Floating Roof (IFR) for Tank No. B	Item	Allow				
D1	Procure, Installation, Testing and Commissioning of Internal Floating Roof (IFR) for Tank No. C	Item	Allow				
	Total amount carried to summary						

SUMMARY OF BOQ					
ITEM	**DESCRIPTION**			**LKR AMOUNT**	**FOREIGN CURRENCY AMOUNT (…….)**
A	PRELIMINARIES		= LKR		
B	FOUNDATION		= LKR		
C	CONSTRUCTION OF TANK		= LKR		
D	INTERNAL FLOATING ROOF		= LKR		
	Sub Total I	(a)	= LKR		
	Less discount if any	(b)	= LKR		
	Sub Total II	(c)	= LKR		
	Sub Total III (only LKR Amount)	(d)	= LKR		
	Convert Foreign Currency subtotal of (c) to LKR	(e)	= LKR		
	Sub Total IV	(f) = (d)+ (e)	= LKR		
	NBT (2%)	(g) = 2% (f)	= LKR		
	Total sum carried to form of bid	(h) = (f)+ (g)	= LKR		
	VAT (15%)	(j) = 15% (h)	= LKR		
	TOTAL AMOUNT WITH VAT	(h)+ (j)	= LKR		

Total amount in words (LKR):-……...……..

……..……..…

VAT Amount :- ……..…….

VAT registration no :-……..……...……..….

Name of Bidder :-……..……...

Address :-……..…….……...……...

……..……...……..…

…… ……..….

Date Signature & Common Seal
of the Bidder

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

SECTION – 9

SCHEDULES

SCHEDULES

Schedule 1 – General 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.

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
2012 / 2013		Attach audited reports and label as attachment to clause 4.2
2013 / 2014		
2014 / 2015		
2015 / 2016		
2016 / 2017		
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	…..	…..	40	

Full Time:----------

Part Time: . . . . . .

Schedule 8 - Work Program																		
	(1st, 2nd,etc. months from the start date.)																	
Construction Activity	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	…..	…..	40th

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	

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	

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 hatchs				
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				

SECTION – 10

DRAWINGS AND ANNEXURE

LIST OF DRAWINGS

NO.	DRAWING TITLE	DRG. NO.
01	Location Plan for proposed tanks	1607-1
02	Foundation Detail for Tank D, G, H & J	1607-2
03	General Layout 15,000m^3 Storage Tank (Tank B)	1607-3
04	General Layout 15,000m^3 Storage Tank (Tank C)	1607-4
05	General Layout 15,000m^3 Storage Tank (Tank D)	1607-5
06	General Layout 7,000m^3 Storage Tank (Tank G)	1607-6
07	General Layout 7,000m^3 Storage Tank (Tank H)	1607-7
08	General Layout 5,000m^3 Storage Tank (Tank J)	1607-8
09	Detail C	1607-9
10	Quick Flush Drain System	1634-1

LIST OF ANNEXURE

ANNEX. NO.	DESCRIPTION
01	Bore Hole logs at the locations of Tank No, B, C, D, G & H
02	Drawings of pile foundation for nearby 15,000m^3 tank

SECTION – 11

STANDARD FORMS (BID)

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: 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 _____*(insert date)*

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

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 **28 days beyond** the 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		