CEYLON PETROLEUM STORAGE TERMINALS LIMITED

DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF INTERNAL FLOATING ROOFS FOR TANK NO.17, 22 AND 23, AT OIL INSTALLATION, KOLONNAWA

BIDDING DOCUMENT

TENDER REF NO: KPR/21/2018

The Chairman
Department Procurement Committee
C/o Manager Procurement
Ceylon Petroleum Storage Terminals Limited
Procurement Function
01st Floor, New Building
Kolonnawa, Wellampitiya
Sri Lanka

TEL : +94-11-5750764
FAX : +94-11-2572155
E-Mail : procure@cpstl.lk

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INVITATION FOR BID (IFB)

CEYLON PETROLEUM STORAGE TERMINALS LIMITED

BID FOR THE DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF INTERNAL FLOATING ROOFS FOR TANK NO. 17, 22 AND 23 AT OIL INSTALLATION, KOLONNAWA, SRI LANKA

The Chairman, Department Procurement Committee on behalf of the Ceylon Petroleum Storage Terminals Limited (CPSTL), Kolonnawa, Wellampitiya, Sri Lanka hereby invites sealed bids from the internationally reputed Manufacturers or their authorized export agents abroad or authorized agents (Manufacturer's or Export agent's)in Sri Lanka, for the Design, Manufacture, Supply, Installation, Testing and Commissioning of Internal Floating Roofs for Tank No. 17, 22 and 23 at Oil Installation, Kolonnawa, Sri Lanka.

Bidding will be conducted through National Competitive Bidding procedure.

Interested parties may obtain necessary information through the Information/Tenders page at CPSTL website: www.cpstl.lk and the original bidding documents could be obtained from the undersigned on submission of a written request, during working days from **0900 hrs. to 1400 hrs. Sri Lanka local time (GMT + 05:30) up to, Wednesday, 30th May 2018,** upon payment of a non refundable bidding document fee of Ten thousand Sri Lanka Rupees (LKR 10,000.00) for each. Bidders are requested to inspect the bidding document prior to purchase and once it is purchased, bidding document fee is not refundable for any reason whatsoever.

Duly filled bidding documents should be submitted through the post under registered cover or sealed cover to reach the Chairman, Department Procurement Committee, C/o Manager (Procurement), Ceylon Petroleum Storage Terminals Limited, Procurement Function, 01st Floor, New Building, Oil Installation, Kolonnawa, Wellampitiya, Sri Lanka or could be deposited in the tender box kept at the above address, on or before **1400 hrs. Sri Lanka local time (GMT + 05:30) Thursday, 31st May 2018.**

Bids will be closed at 1400 hrs. Sri Lanka local time (GMT + 05:30) on Thursday, 31st May 2018 and will be opened immediately thereafter at the office of Manager (Procurement), in the presence of the authorized representatives of the bidders who chose to attend.

Clarifications (if any) shall be sought from the Manager Procurement, CPSTL over the **Tel. No: +94-11-2572156/ +94-11-5750764, Fax: +94-11-2572155, Email: procure@cpstl.lk.**

The Chairman
Department Procurement Committee
C/o Manager Procurement
Ceylon Petroleum Storage Terminals Limited
Procurement Function
1st Floor, New Building
Oil Installation, Kolonnawa
Wellampitiya
Sri Lanka.

1. INSTRUCTIONS TO BIDDERS (ITB)

1.1 Introduction

The Chairman, Department Procurement Committee (DPC), on behalf of the Ceylon Petroleum Storage Terminals Limited (CPSTL), Oil Installation, Kolonnawa, Sri Lanka, hereby invites Bids from internationally reputed manufacturers of Internal Floating Roofs or their authorized agents, for the Design, Manufacture, Supply, Installation, Testing,Commissioning and Inspection carried out by an internationally reputed third party independent inspection company acceptable to CPSTL, witnessed by two CPSTL engineers and Supply in seaworthy packing, installation and commissioning of Internal Floating Roofs For Tank No.17, 22 and 23 at Oil Installation, Kolonnawa complying with terms and conditions given in this Bidding Document.

1.2 Basis of Bid

1.2.1 Bids are to be forwarded on the basis of FOB indicating estimated sea freight and insurance separately for the Design, Manufacture and Supply, Installation, Testing and Commissioning of Internal Floating Roofs and accessories for Tank No.17, 22 and 23 with the cost for third party inspection witnessed by two CPSTL Engineers. The tanks will be released one at a time considering the operational requirement of CPSTL and time taken for necessary Tank modifications to install Internal Floating Roofs.

1.2.2 Additional services provided by the Bidder not covered in this Invitation to Bid shall be stated separately. If no exceptions are stated, CPSTL would assume that Bidder conforms to most stringent conditions of the Bidding Document.

1.2.3 Bids are to be forwarded for the Design, Manufacture and Supply, Installation, Testing and Commissioning of Internal Floating Roof for Tank No.17, 22 and 23 at Oil Installation, Kolonnawa, Sri Lanka as per the Conditions stipulated in the Bidding Document.

1.2.4 If a Bidder wishes to submit alternative Bids from different principles such alternative Bids should be submitted with separate Bid Security/eis.

1.3 Issue of Bidding Documents

Bidding Documents will be issued up to 1400 hrs. Sri Lanka Local Time (GMT + 05:30) on **Wednesday, 30th May 2018.** Interested Bidder shall purchase Bidding document on payment of a non-refundable fee of LKR10,000/=including taxes from Procurement Manager, Ceylon Petroleum Storage Terminals Limited, Procurement Function, 1st Floor, New Building, Oil Installation, Kolonnawa..

Note: Any bidder intends to download the Bidding Document through the website www.cpstl.lk, shall pay the document fee of LKR10,000/= including taxes to CPSTL before submission of their bid.

1.3.1 Bidding Document will consist of the following*:*

1. Invitation for Bids (IFB)
2. Instructions to Bidders (ITB)
3. Conditions of Contract (COC)
4. Scope of Supply
5. Scope of Work and Specification
6. Schedule of Prices
7. Form of Bid
8. Format for Bid Security Guarantee
9. Form of Agreement
10. Format for Performance Guarantee
11. Format for Manufacture's Authorization
12. Compliance / Deviation Sheet
13. Physical Measurement Report
14. Drawings

1.3.2 The bidders are not permitted to do any alterations in the bid document in any form whatsoever after submission of the Bid. Any such alterations in the bid document by the bidder, may be liable for disqualification

1.4 Business Registration and Public Contract Registration

1.19.1 Authorized Agent (Manufacturer's or Export agent's) in Sri Lanka, shall register with the Registrar of Companies and shall produce a copy of the valid Certificate (legally attested copy) of Registration issued by the Registrar of Companies of Sri Lanka together with the offer.

1.19.2 Any person who act as an agent or sub-agent, representative or nominee for or on behalf of any bidder/principal supplier, shall register himself/herself and such public contract as per Public Contracts Act, No 3 of 1987 & the Certificate of Registration (FORM PCA 03) issued by the Registrar of Public Contracts of Sri Lanka shall be submitted along with the bid.

1.19.3 Where any person is an agent, sub-agent, representative or nominee for or on behalf of a bidder/principal supplier, he/she shall first produce a certificate of his appointment as agent, sub-agent, representative or nominee to the Registrar before he registers himself under the public contract. [Contact details of the Registrar: Department of Registrar of Companies, "Samagam Medura", No. 400, D R Wijewardena Mawatha, Colombo 10 / Tel.: +94-11-2689208 / +94-11-2689209 / E-mail: registrar@drc.gov.lk. (Contact details may vary from actual & CPSTL does not take any responsibility in this regard)]

1.5 Documents to accompany the Bid

All Bids shall contain adequate technical and other information in respect of the items/ equipment offered.Failure to furnish the following documents and details, before the closing of Bid, may result in the Bid being rejected. All documents shall be furnished in English language.

Section-1

1.5.1 Name of Manufacturer, Country of manufacture and Country of Origin.
1.5.2 Certificate from manufacturer that the floating roofs including all accessories, offered are currently in manufacture.
1.5.3 Confirmation from Bidder that, all spare parts for the internal floating roofs offered, will be available for import for a minimum period of 10 years from the date of submission of the bid.
1.5.4 Schedule of Prices (Schedule - A), duly completed and signed.
1.5.5 Form of Bid (Annex –A) duly completed and signed.
1.5.6 Bid Security Guarantee (as per Annex - B).
Important: Failure to submit the Bid Security with the required amount and validity period at the time of opening and in the format provided will result in the bid being rejected.
1.5.7 Time Schedule for Design, Manufacture, Supply, Installation, Testing and Commissioning from the date of contract award.
1.5.8 Name and Address of the Agent along with Letter of Authorization issued by the Manufacturer and valid copy of Certificate of Registration issued by the Registrar of Companies.
1.5.9 Compliance with the Payment Terms.
1.5.10 Manufacturer's Warranty for all equipment supplied. Every Bidder should specify the conditions of warranty offered on time basis as per Clause 2.4.
1.5.11 Duly completed compliance/deviation sheet as per Annex - F.
1.5.12 Valid certificate "FORM PCA 03" issued by Registrar of Public Contract in terms of the Public Contract Act No. 3 of 1987, in case the bidder is the agent, sub agent, representative or nominee of the manufacturer, as per ITB clause 1.4.

Section-2

1.5.13 Detail Technical Specification, Data Sheets, Dimensional Drawings, Catalogues of the Internal Floating Roofs.
1.5.14 Variations and deviations from Technical Specification if any shall be indicated separately.
1.5.15 Drawings showing the general arrangement of the Internal Floating Roofs.

1.5.16 Proposed Third Party Inspection Company and the location of inspection shall be stated for the consideration and consent of CPSTL.

1.5.17 Method Statement for fabrication and erection of Internal Floating Roofs.

1.5.18 List of recommended spare parts with itemized prices for five years operation.

1.5.19 Manufacturer's Total Quality Management (TQM)system for Internal Floating Roofs.

1.5.20 Every bidder shall be required to meet the specification/condition hereof. Where this cannot be met all such deviations and reasons thereof shall be listed and explained Internal Floating Roofs compliance with API STANDARD 650 & API STANDARD 653.

Section-3

1.5.21 Past Performance – Bidders shall forward past supply records of the brand and models of Internal Floating Roofs offered (customer reference list) along with those supplied within Sri Lanka (if any), for the last 10 years together with supply details.

1.5.22 Company profile of the Manufacturer.

1.6 Sealing and marking of Bids

Bids shall be submitted in duplicates as per the conditions specified in this Bidding document. The original and the duplicate of the Bid should be placed in separate envelopes marked **"ORIGINAL"** and "**DUPLICATE".** Both envelopes shall be closed in one securely sealed cover, which shall be marked **"BID FOR THE DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF INTERNAL FLOATING ROOFS FOR TANK NO. 17, 22 AND 23 AT OIL INSTALLATION, KOLONNAWA– KPR/21/2018 – CLOSING DATE: 31st May 2018"** on the top left hand corner and the statement, "DO NOT OPEN BEFORE1400 hrs. on……" (to be completed with the time and date specified in the Bidding Document) and shall be addressed to;

The Chairman,
Department Procurement Committee,
C/o Manager Procurement
Ceylon Petroleum Storage Terminals Limited,
Procurement Function,
1st Floor, New Building,
Oil Installation. Kolonnawa
Sri Lanka
Tel. +94-11-2572155/+94-11-5750764 Fax: +94-11-2572155

If the outer envelope is not sealed and marked as required above, the CPSTL will assume no responsibility for the Bid being misplaced or premature opening. If the outer envelope discloses the Bidder's identity, the CPSTL will not guarantee anonymity of the bid submission but this disclosure will not constitute grounds for Bid rejection.

1.7 Period of Validity of Bids.

All offers shall be valid till **30.08.2018.** Bidders shall however, clearly indicate the maximum period that their offer would be valid.

In exceptional circumstances, CPSTL may request that the bidders extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing. A bidder may refuse the request. A bidder agreeing to the request will not be required or permitted to otherwise modify the bid, but will be required to extend the validity of the bid and bid security for the period of the extension, and in compliance with ITB Clause 1.15 in all respects. If a bidder does not agree for an unconditional extension of the validity of his bid, his bid shall be rejected without forfeiting the bid security or executing the bid-securing declaration as appropriate.

All the prices indicated in the schedule of prices, Schedule "A" shall be firm & shall not be subject to any price variation within the period of validity stated above.

On acceptance of the bid, prior to expiry of the period of validity of the bid, the validity period shall be extended for purposes of opening letter of credit and/or other required documentation if necessary

1.8 Format and Signing of Bids

The Bidder shall prepare an Original and a Duplicate of the Bid specified above, clearly marking as, appropriate. In the event of any discrepancy between the Original and Duplicate, the Original shall govern.The Original and the Duplicate of the Bid shall be typed, or written in indelible ink, and shall be signed by the Bidder, or person(s) duly authorized to bind the Bidder to the Contract. **All pages of the Bid except for un-amended printed literature shall be initialled by the persons(s) signing the Bid.** Any inter lineation, erasures or over-writing shall be valid only if they are initialled by the person(s) signing the Bid.

1.9 Clarification of Bidding Document

A prospective Bidder requiring any clarification of the Bidding Document shall notify CPSTL in writing by hand or post or Fax at the CPSTL's mailing address indicated in ITB Clause 1.6 Similarly, **if a Bidder feels that any important provision is unacceptable; such objection shall be raised at this stage.** CPSTL will respond in writing to any request for clarification or modification of the Bidding document that is received not later than ten (10) days prior to the deadline of submission of Bids prescribed by the CPSTL. Copies of the CPSTL's response will be sent to prospective Bidders within seven (07) days prior to the closing of the Bid who have collected Bidding Documents.

1.10 Deadline for Submission of Bids

The Chairman, Department Procurement Committee, CPSTL must receive Bids at the address specified under ITB Clause 1.6 not later than the time and date stipulated. The Chairman, Department Procurement Committee, CPSTL may at his discretion, extend this deadline for submission of Bids, by amending the Bidding Documents, in which case all right and obligations of CPSTL and the Bidders shall thereafter be subjected to the deadline as extended.

1.11 Late Bids

Any Bid received by the Chairman, Department Procurement Committee CPSTL, after the deadline for submission of Bids, will be rejected and returned unopened to the Bidder.

1.12 Modification, Substitution & Withdrawal of Bids

The Bidder may modify or withdraw Bid after submission, provided that written notice of the modification or withdrawal is received by the CPSTL, prior to the deadline prescribed for Bid submission.The Bidder's modifications shall be prepared, sealed, marked and dispatched as follows; The Bidders shall provide an Original and a Duplicate as specified in the ITB clause1.6 of any modifications to his Bid, clearly identified as such in two envelopes, duly marked **"BID FOR THE DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF INTERNAL FLOATING ROOFS FOR TANK NO. 17, 22 AND 23 AT OIL INSTALLATION, KOLONNAWA– KPR/21/2018 – CLOSING DATE: 31st May 2018"**. The envelopes shall be sealed in an outer envelope, duly marked **"BID MODIFICATIONS"**.A Bidder wishing to withdraw his Bid shall notify the CPSTL in writing prior to the deadline prescribed for the submission of Bids. A withdrawal notice may also be sent by Fax, but must be followed by the original, by post or by hand not later than the deadline for submission of Bids bearing the bid name and the words **"BID WITHDRAWAL NOTICE"**. Bid withdrawal notices received after the deadline for submission of Bids will be ignored, and the submitted Bids will deem to be valid.The notice of modification and withdrawal shall be addressed to

The Chairman,
Department Procurement Committee,
C/o Manager Procurement
Ceylon Petroleum Storage Terminals Limited
Procurement Function,
1st Floor, New Building,
Oil Installation, Kolonnawa
Sri Lanka

1.13 Closing of Bids

Bids, sealed and addressed as aforesaid, shall be sent under Registered Cover to reach

The Chairman,
Department Procurement Committee,
C/o Manager Procurement
Ceylon Petroleum Storage Terminals Limited,
Procurement Function,
1st Floor, New Building,
Oil Installation, Kolonnawa
Sri Lanka.

Not later than 1400 hrs. Sri Lanka local time (GMT + 05:30) on 31.05.2018. If the Bidders or their representatives choose not to send their Bids under Registered Cover, they could deposit such Bids in the Tender Box provided for this purpose at the office of the Procurement Manager, Procurement Function, 1st Floor, New Building, Ceylon Petroleum Storage Terminals Limited, Oil Installation, Kolonnawa.Sri Lanka.

1.14 Opening of Bids by CPSTL

Bids will be opened immediately after the closing date and time fixed for receipt of Bidders, at the office of Manager Procurement, Ceylon Petroleum Storage Terminals Limited, Procurement Function, 1st Floor, New Building, Oil Installation, Kolonnawa, Sri Lanka or such other place as arranged if the Manager Procurement's Office is not available.

The Chairman, Department Procurement Committee, CPSTL or his nominated representative will open the Bids in the presence of the Bidders and/or their representatives, who choose to attend at the time on the date and at the opening place specified in the "Invitation for Bid". Bidders and/or their representatives shall sign a register as proof of their attendance.The Bid Prices, discounts, and Bidder's names, the presence or absence of the requisite Bid Security Guarantee and other such details, which the CPSTL at its discretion, may consider to be appropriate, will be announced, at the opening. Late Bids will not be entertained and will be returned unopened to the Bidder.Bids (and modifications sent pursuant to ITB Sub Clause 1.12) that are not opened will not be considered for evaluation, regardless of the circumstances.

1.15 Bid Security Guarantee

Each Bid shall be accompanied by a Bid Security, undertaking that the offer will be held for the specified period, and that the offer will not be withdrawn during that period. Such security shall be in the form of a Bank Draft or a Bank Guarantee issued / confirmed by an approved commercial Bank with the authority of a License issued by the Monetary Board (Central Bank of Sri Lanka) and payable to the CPSTL on demand in a sum of LKR 450,000/=(Sri Lanka Rupees Four Hundred and Fifty Thousand only).

The Bid Security shall be valid till **28.09.2018.** A format of Bid Security Guarantee is attached in Annex –B.Failure to submit the Bid Security Guarantee at the time, or before the closing of Bid, and in accordance with above said requirements, and in the format provided, will result in the Bid being rejected.Bid Security Guarantee from unsuccessful Bidders will be returned to them after the award is made to the successful Bidder. The Bid Security of the successful Bidder will be returned only after receipt of the Performance Guarantee.

1.16 Letter of Authorization

1.16.1. Offers from agents signing the bids on behalf of Principals abroad, will not be considered unless they hold the Letter of Authorization from the Principals empowering the agents to offer on their

behalf, to enter into a valid agreement on behalf of the Principals to fulfil all the terms and conditions of the contract, in the event of the tender being awarded.

1.16.2. The agent signing the Bid Document on behalf of the Principal shall state the Principal's name, address, telephone and fax numbers & e-mail if any.

1.16.3. Nomination of Agents after the Bid has been submitted will not be valid.

1.16.4. In the event that the Principal is not the Manufacturer, the Principal shall furnish documentary proof of his arrangements with the Manufacturer as per the format Annex - E.

1.16.5. Principal means the Manufacture with whom CPSTL enters into an agreement as per the Bid. In case of an order, L/C is opened & purchase order is placed with the principal.

1.17 Schedule of Prices

Rates quoted should be computed on the basis of CIF Colombo, showing Free on Board (FOB) value and freight charges separately. Bidders are also required to duly sign and return the Schedule of Prices marked "SCHEDULE - A" (indicating their offers in detail).

Prospective Bidders are requested to submit their offers in single currency (USD, Sterling pound or Euro). All Agent's Commissions, (if any), shall be disclosed in Sri Lanka Rupees in the appropriate column of the Schedule of Prices. Prices not submitted on the prescribed form and in the manner required are liable for rejection of the Bid.

1.18 Preliminary Examination of Bids

The CPSTL Department Procurement Committee will examine the Bids to determine whether they are complete, any computational errors have been made, whether the documents have been properly signed, and the Bids are generally in order. The CPSTL may, at its discretion call clarifications from Bidders.

The request for clarification and the response shall be in writing within two weeks from the clarifications and no change in the price or substance of the Bid shall be sought, offered or permitted.

1.19 Corrections of Errors

Bids determined to be substantially responsive will be checked for any arithmetical error and errors will be corrected in the following manner.

1.19.1 Where the discrepancy is between the amount in figure and the amount in words, the amount in words will prevail.

1.19.2 Where the discrepancy is between unit rate and the line total, resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Chairman, Department Procurement Committee, CPSTL there is an obvious gross misplacement of the decimal point in the rate, in which case the line item total as quoted will govern, and the unit rate will be corrected.

1.19.3 The amount stated in the Form of Bid will be adjusted in accordance with the above procedure with the concurrence of the Bidder shall be considered as binding upon the Bidder.

1.19.4 Where the adjusted price is lower than the bid price the adjusted figure will be taken as the bid price. If the adjusted price is higher than the bid price, the bid figure will be the bid price. The rates will be adjusted with the concurrence of the bidder to reach at the final bid price. If the bidder does not agree for such adjustment, his bid shall be rejected without affecting the Bid Security Guarantee.

1.20 Conversion to Single Currency

To facilitate evaluation and comparison of Bids, all prices quoted in foreign currency will be converted to Sri Lankan Rupees at the Selling Exchange Rate of the Treasury Division of Central Bank of Sri Lanka, prevailing on the date of opening of Bids.

1.21 Evaluation of Bids

1.21.1 The CPSTL will carry out a detailed evaluation of the Bids, to determine the lowest evaluated substantially responsive bid, out of the bids received.

1.21.2 The evaluation process will comprise:

(i) Bid Examination

To determine the eligibility of bidders, legal validity of Bid and substantial responsiveness of Bids received.

(ii) Detailed Bid Evaluation

To determine the lowest evaluated Bid, from among the substantially responsive Bids received.

- Technical Requirements
  Specifications of this Bidding document including the information/details requested under Clause 1.5 of ITB will be checked with the Bid.
- Financial Evaluation of Bids
  For comparison of Bids, Total Delivered Cost will be considered based on FOB, Freight, insurance, local agency commission (if any), third party inspection cost etc given by the bidder.

Bidders shall Fax/Email and confirm in writing any query raised by CPSTL, on the proposals at the stage of evaluation of bids.

1.22 Department Procurement Committee's right to accept or reject any or all Bids

1.22.1 The Department Procurement Committee will not be bound to make the award to the Bidder submitting the lowest offer.

1.22.2 The Department Procurement Committee reserves the right to reject any or all Bids or any part thereof, without assigning any reasons. The Department Procurement Committee may accept any or all items of an offer and reserves the right to increase or decrease the number of units, at prices indicated in the Schedule of Prices.

1.22.3 The notice of acceptance of Bid will be sent by Fax or e mail, followed by post to the successful Bidder, to the address given by him in the Bid Document, soon after the decision of the Department Procurement Committee.

1.23 Award Criteria

The DPC reserves the right to award the contract and place the order on either of FOB basis and to arrange freight through Ceylon Shipping Corporation Limited (CSCL) or their nominated freight forwarder and to arrange marine insurance through any local insurance company or CFR basis and to arrange marine insurance through any local insurance company or CIF basis.

The notice of acceptance of Bid will be sent by Fax, followed by post to the successful Bidder, to the address given in the accepted offer, soon after the decision of the Department Procurement Committee is made.Subject to ITB Clause 1.21 the Department Procurement Committee will award the contract to the successful Bidder, whose Bid has been determined to be substantially responsive

and lowest evaluated Bid provided that the Bidder is determined to be qualified to perform the contract satisfactorily.

The successful Bidder's will be informed by the Procurement Manager of CPSTL to supply Internal Floating Roof conforming to Technical Specifications, and strictly on the agreed delivery dates which shall be within **120 (hundred and twenty)days from date of LC** as per Clause 2.5 of COC.The successful Bidder will be called upon to enter into an Agreement with CPSTL. As specimen Form of Agreement is attached as Annex -C.

1.24 Notice of Acceptance

Acceptance of bid will be communicated by fax **/** E**-**mail and confirmed in writing by registered post to the successful bidder to the address given by him, soon after the receipt of Department Procurement Committee decision**.** Any change of address of the bidder shall be promptly notified to the Procurement Manager, Ceylon Petroleum Storage Terminals Limited, Procurement Function, 01st Floor, New Building, Oil Installation, Kolonnawa, Sri Lanka**.**

2. CONDITIONS OF CONTRACT (COC)

2.1 Performance Guarantee

2.1.1 The successful Bidder, on being notified by CPSTL of the acceptance of his Bid, shall furnish at his own expense a Performance Guarantee, within fourteen (14) days of such notification through/confirmed by a an approved commercial Bank with the authority of a License issued by the Monetary Board (Central Bank of Sri Lanka), in a sum equivalent to 10%of the Total value of the accepted Bid. The Performance Guarantee shall be in accordance and in the format given in Annex – D.

2.1.2 If the successful bidder fails to furnish the Performance Guarantee as aforesaid, his name shall be placed in the list of defaulting Contractors. CPSTL shall therefore, been titled in its absolute discretion to make suitable arrangements required for the performance of such bid, as the case may be, at the risk and expense of the successful Bidder.The successful Bidder, in the event of his failure to furnish the Performance Guarantee as required, shall be liable for any losses, costs, expenses and damages, which the CPSTL may sustain in consequence of such failure and the Bid Security shall be forfeited.

2.1.3 The Letter of Credit will be opened only after the receipt of the Performance Guarantee. The Performance Guarantee shall be in favour of the CPSTL, and shall be valid for a period not less than Ninety One (91) days from the date of anticipated handing over date of whole work after successful supply, installation, Testing and commissioning. To expedite opening of Letter of Credit, the Supplier/Principal shall on his own account instruct his Bank to Fax CPSTL, the date, the amount and validity period of the Performance Guarantee.

2.2 Mode of Payment

2.2.1 Payments shall be made by an irrevocable Letter of Credit, 90% of LC value at sight and balance 10% after the delivery, installation, testing, commissioning, handover and acceptance by CPSTL

L/C opening charges shall be borne by the applicant and all other charges outside the applicant's country shall be borne by the beneficiary. Any bank charges incurred in amending L/C terms at the request of the supplier shall be borne by the beneficiary.

Payment for installation, testing and commissioning shall be made after successful commissioning of each Internal Floating Roof.

2.2.2 Agents' Commission

In the "Schedule of Prices" the Bidder shall indicate the local Agent's Commission (if any), in Sri Lankan Rupees.Agency Commission shall be paid on receipt of a Certificate from the CPSTL that the items have been received as per the terms and conditions of the contract.

2.3 Inspection & Testing

The successful bidder shall carryout material/component and workmanship inspection by a third party inspection company approved by CPSTL, witnessed by two CPSTL engineers at the fabrication shop of the manufacturer.Inspection certificates shall be issued by the third party Inspection Company before shipment/dispatch. The supplier shall allow two CPSTL Engineers to witness the test and perform inspection. The Supplier shall provide sufficient notice for the CPSTL officials to arrange for the witness of the Inspection. CPSTL shall have full authority to reject any material or workmanship of any equipment or component which does not in the opinion of the CPSTL Engineers or Certifying Authority comply with the relevant standards and other specifications.

2.4 Warranty

2.4.1 Supplier shall give a manufacturers' warranty for all the items supplied by him for a period of 12 months or above from the date of commissioning.

2.4.2 The following procedure will be used to apply the preference for extended warranty. Substantially responsive bids will be classified in to the following groups.

Group	A	B	C
Warranty Period	12 Months	24 Months	36 Months or above
Preference percentage	Nil	2.5 %	5 %

For the purpose of evaluation and comparison of bids only, an amount equal to the respective preference percentage of the evaluated bid prices of the respective bids will be deducted from the relevant evaluated bid prices of bids classified in groups B and C.

2.4.3 Any defect found during this warranty period should be attended to by the supplier at his own cost (labour & spare parts) and any defective parts should be replaced with new parts free of charge

2.5 Shipment

2.5.1 After the consignment is shipped, the supplier shall send 02 copies of each of the following shipping documents to the Procurement Manager, CPSTL.

(i) Clean on Board Freight prepaid/Collect Bill of Lading showing destination as Colombo and indicating actual amount of freight paid. If freight is not indicated on the Bill of Lading, freight receipt issued by the Shipping Company, indicating the freight shall be annexed.

(ii) Commercial Invoices showing cost and freight separately.

(iii) The Certificate of Manufacturer, stating that the items shipped were manufactured by them and indicating Country of Origin.

(iv) Packing list.

(v) Final approval document for shipment issued by CPSTL.

2.5.2 The suppliers shall submit a certificate to CPSTL from 3rd party independent inspector/ Inspection Company approved by CPSTL for inspection, testing, quality, quantity confirming that the items supplied conform with specifications and supplier has submitted the packing requirements to CPSTL. This certificate shall be scrutinized by CPSTL and "final approval document for shipment" will be issued.

2.5.3 All test reports, Manufacturers data sheets/books, detail drawings in three sets (original & two duplicates), maintenance manual & illustrated spare parts manuals shall be sent along with the shipment.The Internal Floating Roof shall be delivered to CPSTL within One Hundred and twenty (120) days from the date of establishment of Letter of Credit.

2.6 Delays in Delivery

Where the Supplier does not supply of the Internal Floating Roof in due time to arrive in Colombo, in accordance with the stipulated and agreed dates of delivery, as given in the bidding document, the supplier shall when required by the Ceylon Petroleum Storage Terminals Limited be bound to supply such quantities of internal floating roofs as may be necessary immediately by the Ceylon Petroleum Storage Terminals Limited by making suitable arrangements, in order that the said internal floating roof swill reach Colombo in due time.

If the Supplier fails to arrange for the Supply and Installation of Internal Floating Roofs for Tank No.17, 22 and 23 at Oil Installation, Kolonnawa the manner aforesaid, the Ceylon Petroleum Storage Terminals Limited will have the right to make suitable alternate arrangements for the required supplies and to claim from the supplier, the additional expenses thereby incurred by the Ceylon Petroleum Storage Terminals Limited.

2.7 Defaults by Successful Bidder

If the successful Bidder, defaults in the supply or otherwise commits a breach of any of the provisions in the Contract with CPSTL for the Design, Manufacture, Supply, Installation, Testing and Commissioning of Internal Floating Roof for Tank No.17, 22 and 23 at Oil Installation, Kolonnawa according to the Technical Specifications, he shall be liable to pay to CPSTL, all loses, damages and expenses incurred by CPSTL, in consequence of such default or breach.Bidders shall declare that they had read the Bid Conditions, and that they make the offer in compliance with, and subject to all the conditions thereof, and agree to perform the services in accordance with the said conditions in the manner therein set out, and in terms of this Bid. A form of Bid, as Annex– 'A' is attached.

2.8 Liquidated Damages

Should the supplier fail to supply Internal Floating Roofs, within the period specified or should he fail to replace any rejected Internal Floating Roof or part thereof with a like quantity of approved quality within the period allowed, the Supplier shall be liable to pay as a pre-estimate of liquidated damages, the sum of$1/1000^{th}$ of the FOB value of the Internal Floating Roofs per day for delay in executing the order, until the order is completed subject to a maximum of 10% of total FOB value of the order. The Supplier in these circumstances shall also render himself liable to be placed in the list of defaulting suppliers and be precluded from having any concern in the Ceylon Petroleum Storage Terminals Limited Bids.

2.9 Patent Infringement

Supplier shall defend any and all infringement suits in which the CPSTL is made a defendant, alleging patent infringement on equipment purchased from Supplier. Supplier shall pay all costs and expenses incident to any such litigation. It being further agreed and understood, that CPSTL shall have the right to be represented therein by counsel, of their own selection and paid by them. Supplier shall pay all damages profits and/or costs, which may be subjected under the patent rights.

2.10 Credit or Aid Lines

If the, Internal Floating Roofs supplied under any Credit or Aid Line available to Sri Lanka, such arrangement shall be indicated in the Bid.

2.11 Force Majeure

Except as regards as act of God, War, Strike, Invasion, Civil war, Rebellion, Revolution, Insurrection, Earthquake or Plagues, the Bidder shall undertake all risks and liabilities of whatsoever kind arising out of incidentals connected with the sale.

2.12 Dispute

Any dispute of whatever nature arising from, out of or in connection with this agreement, on the interpretation thereof, or the rights, duties, obligations or liabilities of any party, or the operation, breach, termination, abandonment, foreclosure or invalidity thereof, shall be settled in accordance with the provisions of law governing like disputes and triable by court of law of The Democratic Socialist Republic of Sri Lanka.

2.13 Completion of Work and Completion Certificate

As soon as the work is completed in all respects, the contractor shall give written notice of such completion to the CPSTL Engineer and within thirty (30) days of receipt of such written notice the CPSTL Engineer shall inspect the work and shall furnish the contractor with a certificate of completion indicating:

a) Defects, if any, to be rectified by the contractor
b) Items, if any, for which payment shall be made in reduced rates
c) The date of completion

2.14 Use of Materials and Return of Surplus Materials

All surplus (serviceable) or unserviceable materials that may be left over after the completion of the contract or at its termination for any reason whatsoever, the Contractor shall deliver the said product to the CPSTL without any demur. The price to be paid to the Contractor, if not already paid either in full or in part, however, shall not exceed the amount mentioned in the Schedule of Rates.

It is made clear that the CPSTL shall not be liable to take surplus stock and keep possession and pay for the surplus and unserviceable stocks. CPSTL may direct the Contractor to take back such material brought by the Contractor and becoming surplus and which the CPSTL may decide to keep and not to pay for the same.

2.15 Damage to Property

2.15.1 Contractor shall be responsible for making good to the satisfaction of the CPSTL any loss of and any damage to all structures and properties belonging to the CPSTL or being executed or procured by the CPSTL or of other agencies within the premises of the work of the CPSTL, if such loss or damage is due to fault and/or the negligence or wilful acts or omission of the Contractor, his employees, agents, representatives or sub-contractors.

2.15.2 The Contractors shall indemnify and keep the CPSTL harmless of all claims for damage to CPSTL's property arising under or by reason of this contract.

2.15.3 Damage cause to the tank coating during installation of IFR shall be rectified by the contractor as per the standard method of recommended by paint manufacture and relevant API standards.

2.16 First Aid and Industrial Injuries

Contractor shall maintain first aid facility for his employees and those of his sub-contractors.

2.17 Special Safety Conditions

2.17.1 The work/workers should conform to the Fire & Safety rules and regulations of CPSTL and they shall wear safety belts when working at high elevations.

2.17.2 The Bid price shall include for construction of a store room and maintain as required for the duration of contract and allow for clearing away on completion of the work.

2.17.3 The Bidder shall bear in mind that this contract would have to be executed in a Petroleum Installation.

2.17.4 The Bidder is advised to familiarize himself of the security procedures in force within the installation Before work of any nature is commenced in any area it is necessary to obtain permits relevant to type of work and safety certificate for equipment. All precautions stipulated in these documents must be obeyed 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.

2.17.5 The Kolonnawa Installation premises is considered as a high security zone and all contractor's personnel shall abide by the security regulations prevailing and those which might be enforced as and when necessary due to changes circumstances.

2.17.6 All contractor's personnel and their vehicles will be required to obtain gate passes before enter in to the Kolonnawa Installation.

3. SCOPE OF SUPPLY

3.1 Scope of Supply by CPSTL

3.1.1 Construction Utilities

3.1.1.1 Electricity and drinking water that would be supplied to the contractor to undertake this work would be charged from the contractor as per meter/estimate .The prospective contractor is required to indicate his requirements of power from the CPSTL in his offer for evaluation purposes.

3.1.1.2 The electrical power supply available to the contractor is 1000 Watts, 400V AC, 4 wire (TPN), 50Hz and shall be subjected to following 06 conditions.

3.1.1.3 The Electrical Section of CPSTL will terminate feeding cable to a suitable circuit isolating and interrupting devices such as a circuit breaker or a switch fuse at convenient location, within 100 ft. from the tank shell. This switch gears shall remain the property of CPSTL and contractor shall have no access to it.

3.1.1.4 It is the responsibility of the contractor to properly connect his main power distribution board to the downstream side of the CPSTL switch gear, in consultation /supervision of Electrical Engineer of CPSTL.

3.1.1.5 Contractor's power distribution board should consist of adequate over current and earth leakage protective device for safety of men and machinery.

3.1.1.6 It is the responsibility of the contractor to maintain his switch gear and cable network in good condition, so as to provide, complete safety to men and machinery.

3.1.1.7 Power supply will be energized after inspection by the Electrical Engineer of CPSTL, provided all requirements in clause (2)and (3)are satisfied.

3.1.1.8 The whole electrical installation of the contractor shall conform to IEE wiring regulations (16th Edition) published by the Institution of Electrical Engineers (I.E.E), London.

3.2 Scope of Supply by Contractor

3.2.1 Design, Manufacture, Supply, Installation, Testing and Commissioning of Internal Floating Roofs complete with all accessories of European/ Japan/USA makes as per the specification and API standard for Tank No. 17, 22 and 23 at Oil Installation, Kolonnawa.

Tank No	Diameter (m)	Capacity (m^3)	Product	Density (kg/m^3) at 15°C	Filling Rate/ (m^3/h)	Emptying Rate (m^3/h)
17	19.51	4936	Petrol	725~785	1250	1000
22	18.29	2790	Petrol	725~785	1250	1000
23	18.29	3293	Petrol	725~785	1250	1000

3.2.2 Supply of commissioning spare parts.

3.2.2.1 Minimum one-year warranty from the date of commissioning for the equipment supplied.

3.2.2.2 Third party inspection of material test certificates, shop fabrication and testing of each internal floating roof by a reputed third party inspection company approved by CPSTL, witnessed by two CPSTL engineers at the manufacturer's shops and submission of third party inspection report to CPSTL.

3.2.2.3 Supply of tools, equipment and any other required materials for the inspection and testing.

3.2.2.4 Supply of as built detailed drawings, all test certificates, and duly furnished manufacturing data sheets along with the internal floating roofs.

3.2.2.5 Supply of installation, operation, workshop and spare parts manuals in English Language.

3.2.2.6 Internal Floating Roofs components suitably protected for transportation and suitable for abnormal weather conditions .

3.2.2.7 Supply of Internal Floating Roof erection procedure.

3.2.2.8 Supply of procedure for observing any seal damage during operations.

3.2.2.9 Supply of food, accommodation, internal transportation, any other local expenses for two CPSTL Engineers witnessing the testing and inspection at the manufacture‘s testing facility. Chargers for return air tickets and visa for CPSTL Engineers will be borne by CPSTL.

3.2.2.10 Training of CPSTL maintenance crew for preventive maintenance, trouble shooting and repairing at the work shop of CPSTL, Sri Lanka.

4. SCOPE OF WORK AND SPECIFICATIONS

4.1 Scope of Work by CPSTL

4.1.1 Necessary modification for the tanks to install internal floating roof in fixed roof tanks shall be attended by other party.

4.1.2 Only one modified Tanks will be released for the installation of IFR at an instance.

4.1.3 Next tank will be released for IFR installation approximately within 3 months from the completion, testing and commissioning of the previous tank.

4.2 Contractors' Scope of Work and Specifications

Scope of Work and Specifications for Design, Manufacture, Supply, Installation, Testing and Commissioning of Aluminium internal floating roofs (Metallic Roofs on floats) are as follows.

4.2.1 Scope of Work

4.2.1.1 Design, Manufacture, Supply, Installation, Testing and Commissioning of Aluminium internal floating roofs on floats have their deck above the liquid supported by closed pontoon compartments for buoyancy as per API STANDARD 650 Appendix H Section H.2.2 e inside the Fixed Roof Tank (Refer Table No. 01 for details) to minimize breathing losses and thereby reduce the overall Hydrocarbon loss from the tank.

4.2.1.2 The Bidder shall also carry out the jobs that are not specifically mentioned in this specification here but required for successful completion of the job in all respects as per the standards, drawings and codes. Loading, handling and transportation of all materials from supply point/store at work site/Contractor's store as per the requirement of the job.

4.2.1.3 It is desired that the provision of Aluminium Internal Floating Roof shall have minimum impact on safe filling capacity of the Tank.

4.2.1.4 Supplier shall study the drawings attached. A certificate for suitability of proposed Internal Floating Roofs shall be submitted to CPSTL.

4.2.2 Codes and standards

- API Standard 650, Welded tanks for oil storage, 12th Edition, March 2013.
- API Standard 653, Tank Inspection, Repair, Alteration and Reconstruction, 5thEdition, November2014

The applicable fabrication, erection, welding, inspection and testing requirements of Annex H of API standard 650 shall be met.

4.2.3 Specification

4.2.3.1 Material

The Manufacturer shall submit a complete material specification in his proposal. The choice of materials shall be governed by compatibility with the specified liquid. Material produced to specifications other than those listed in API STANDARD 650 Annex. H (alternative materials) may be used. Material shall be certified to meet all the requirements of a material specification listed in API STANDARD 650 Annex H, and approved by the CPSTL or shall comply with requirements as specified by the CPSTL.

The material of floating roof is Aluminium. Aluminum shall conform to the requirements of API STANDARD 650 Annex AL. Aluminum skin shall be 0.50 mm (0.020 in.) minimum nominal thickness. Extruded Aluminum floats shall be 1.2 mm (0.050 in.) minimum nominal thickness. Peripheral rim section shall be 3.0 mm minimum thickness.

4.2.3.2 General Requirements

a. An internal floating roof and its accessories shall be designed and constructed to allow the roof to operate throughout its normal travel without manual attention and without damage to any part of the fixed roof, the internal floating roof, internal floating roof seals (except for normal wear), the tank, or their appurtenances

b. The internal floating roof shall be designed and built to float and rest in a uniform horizontal plane (no drainage slope required).

c. All seams in the internal floating roof that are exposed to product vapor or liquid shall be vapor-tight in accordance with API STANDARD 650 H.4.3.1.

d. A vapor-tight rim (or skirt), extending at least 150 mm (6 in.) above the liquid at the design flotation level, shall be provided around both the internal floating roof periphery and around all internal floating roof penetrations (columns, ladders, stilling wells, man ways, open deck drains and other roof openings)except for drains designed to avoid product backflow onto the roof.

e. a vapor-tight rim (or skirt), extending at least 100 mm (4 in.)into the liquid at the design flotation level, around both the internal floating roof periphery and around all internal floating roof penetrations (columns, ladders, stilling wells, manways, open deck drains and other roof openings), with the exception of penetrations for pressure-vacuum (bleeder)vents (per H.5.2.1).

f. All conductive parts of the internal floating roof shall be electrically interconnected and bonded to the outer tank structure. This shall be accomplished by electric bonding shunts in the seal area (a minimum of four, uniformly distributed)or flexible multi-strand cables from the external tank roof to the internal floating roof (a minimum of two, uniformly distributed). All movable cover accessories (hatches, manholes, pressure relief devices, and other openings)on the internal floating roof shall be electrically bonded to the internal floating roof to prevent static electricity sparking when they are opened.

g. Each closed flotation compartment shall be capable of being field-inspected for the presence of combustible gas. Inspection openings shall be located above the liquid level and closed compartments shall be capable of being resealed in the field after periodic inspection (to prevent liquid or vapor entry).

h. All closed flotation compartments shall be seal welded to prevent liquid or vapor entry.

i. Deck Drains shall be provided to return any spillage or condensate to the product. Such drains shall close automatically or extended at least 100 mm into the product to minimize the vapor loss.

4.2.3.3 Buoyancy Requirements

a. All internal floating roof design calculations shall be based on the lower of the product specific gravity or0.7 (to allow for operation in a range of hydrocarbon service),
b. All internal floating roofs shall include buoyancy required to support at least twice its dead weight (including the weight of the flotation compartments, seal and all other floating roof and attached components), plus additional buoyancy to offset the calculated friction exerted by peripheral and penetration seals during filling.
c. The internal floating roof shall be designed to meet the requirements of API STANDARD 650 H.4.2.1.3 and to safely support at least two men walking anywhere on the roof while it is floating or resting on its supports without damaging the floating roof and without allowing product on the roof. One applied load of 2.2 kN(500 lbf)over 0.1 m2 (1 ft2)applied anywhere on the roof addresses two men walking.

4.2.3.4 Internal Floating Roof Support Design Loads

Internal floating roof supports and deck structural attachments (such as reinforcing pads and pontoon end gussets) shall be designed to support the load combinations listed in API STANDARD 650 H.4.2.2.2 without exceeding allowable stresses. Consideration shall also be made for non-uniform support settlement or other non-uniform load distribution.

4.2.3.5 Other Design Requirements

Aluminum load carrying members, assemblies and connections shall comply with the design requirements of the latest edition of the *Aluminum Design Manual*.

4.2.3.6 Joint Design

a. All seams in the floating roof exposed directly to product vapour or liquid shall be welded, bolted, screwed, riveted, clamped, or sealed and checked for vapour-tightness per API Standard 650 H.6.2.
b. Welded joints between aluminium members shall conform to API Standard 650, AL.5.1
c. Single-welded butt joints without backing are acceptable for flotation units where one side is inaccessible.
d. The thickness of fillet welds on material less than 4.8 mm (3/16 in.)thick shall not be less than that of the thinner member of the joint.
e. Only austenitic type stainless steel hardware shall be used to join aluminium components to each other or to carbon steel.
f. Manufacturer shall specify if aluminum hardware may be used to join aluminum components. Aluminum shall be isolated from carbon steel by an austenitic stainless steel spacer, an elastomeric pad, or equivalent protection. The use of plated fasteners shall be permitted only when connecting steel components.
g. Use of any joint sealing compound, insulating material, polymer, elastomer, or adhesive shall be preapproved by the CPSTL. The joining procedure along with test results demonstrating the properties required by this paragraph shall be described completely.
h. Any joint sealing compound, insulating material, elastomeric or adhesive shall be compatible with the product stored; specified service conditions; and with materials joined.
i. Resulting joints shall be equivalent in serviceability (with the basic floating roof components), of a size and strength that will accept the roof design loads without failure or leakage, and shall have an expected life equal to the service life of the roof. Any non-metallic component shall be selected and fabricated to preclude absorption (under design conditions specified and permitted by this standard)of hydrocarbons, hydro-test water and specified product to be stored.

4.2.3.7 Peripheral Seals

a. In addition to the required floating roof primary peripheral seal, secondary peripheral seals shall be provided.
b. A peripheral seal (rim seal) that spans the annular space between the internal floating roof deck and the shell shall be provided. Peripheral seals shall be one mounted above the other, the lower is the primary peripheral seal and the upper is the secondary peripheral seal.
c. Primary and Secondary seal material shall be able to use with gasoline(Fluoropolymers or Nitril)
d. All peripheral seals and their attachment to the floating roof shall be designed to accommodate ±100 mm (±4 in.) of local deviation between the floating roof and the shell.

Type of peripheral seal

a. Peripheral seals (Primary and Secondary) shall be Vapor-mounted rim seal in a form of flexible-wiper seals.

   Vapor-mounted rim seal means Peripheral seal positioned such that it does not normally contact the surface of the stored liquid. Flexible-wiper seal means a rim seal utilizing a blade or tip of a flexible material (such as extruded rubber or synthetic rubber) with or without a reinforcing cloth or mesh.

b. The specific requirements for all floating roof peripheral seals are listed below.

   1) All fasteners and washers for installation of seal joints, including fabric seal joints, shall be austenitic stainless steel. (See restrictions on contact between galvanizing and stainless steel in API STANDARD 650S.2.1.3.)
   2) The seals shall be designed for a temperature range extending from design metal temperature less 8 °C (15 °F)to the maximum operating temperature.
   3) Lengths of seal sections shall be as long as practical. No holes or openings shall be permitted in the completed seal. The seal material may be fabricated in sections resulting in seams, but any such seam shall be joined or otherwise held tightly together along the entire seam. For peripheral seals that use a fabric material to affect the seal, the requirement in the preceding sentence applies only to the fabric and not to any support devises. An adequate but minimum number of expansion joints shall be provided.
   4) Provisions shall be made to prevent damage to the seal due to any overflow openings in the shell.
   5) Rough spots on the shell that could damage the seal assembly shall be ground smooth. See API STANDARD 650H.6.1.
   6) All metallic components shall be electrically bonded. See API STANDARD 650H.4.1.6 or C.3.1.6 for electrical bonding requirements.

4.2.3.8 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.).

4.2.3.9 Roof Supports

a. The floating roof shall be provided with adjustable supports..
b. 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.
c. The low roof position shall be the lowest permitted by the internal components of the tank including shell nozzles with internal projections.
d. The high roof position shall provide a 2-m (78-in.) minimum clearance throughout the bottom, between the roof and the tank bottom.
e. Supports shall be fabricated from pipe, Supports fabricated from pipe shall be notched or otherwise constructed at the bottom to provide complete liquid drainage.
f. Aluminum supports shall be isolated from carbon steel by an austenitic stainless steel spacer, an elastomeric bearing pad, or equivalent protection.

4.2.3.10 Openings and Appurtenances

4.2.3.10.1 Ladder

A ladder shall be provided to access from tank bottom to Internal floating roof deck when Internal floating roof is resting on its supports. The ladder shall be attached to Internal floating roof and it shall not be attached to tank bottom.

4.2.3.10.2 Vents

Internal Floating Roof Pressure-Relieving Vents

a. 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.
b. Internal floating roofs shall be equipped with pressure-vacuum-activated vents. Pressure vacuum activated vents shall be designed to open and achieve required flow rates within the design capacities of the floating roof and floating roof support system as described in API STANDARD 650H.5.2.1.1.

Tank Circulation Vents

Tank circulation vents will be fabricated and installed by other party conforming to API Standard 650. Relevant drawings and details of the modification are attached in the Bidding Document for reference.

4.2.3.11 Liquid-Level Indication, Overfill Protection and Overflow Slots

The internal floating roof Manufacturer shall provide information defining the internal floating roof and seal dimensional profile for the CPSTLs' determination of the maximum normal operating and overfill protection liquid levels (considering tank fixed-roof support, overflow slots or any other top of shell obstructions). The floating roof Manufacturer shall provide the

design flotation level (liquid surface elevation)of the internal floating roof at which the pressure/vacuum relief vents will begin to open (to facilitate the CPSTLs' determination of minimum operating levels).

4.2.3.12 Anti-Rotation and Centering 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 API STANDARD 650H.4.1.1.

4.2.3.13 Manholes and Inspection Hatches

4.2.3.13.1 Shell Manholes

Two tank shell manholes above the internal floating roof resting position will be fabricated and installed by other party conforming to API STANDARD 650. Relevant drawings and details of the modification are attached in the Bidding Document for reference.

4.2.3.13.2 Internal floating roof deck manholes

Two internal floating roof deck manholes shall be provided for easy access to and ventilation of the tank when the floating roof is on its supports and the tank is empty. The manholes shall have nominal opening of 600 mm and shall be provided with a bolted or secured and gasketed manhole cover.The manhole neck dimensions shall meet the requirements of API STANDARD 650H.4.1.4 and H.4.1.5.

4.2.3.14 Inlet Diffuser

Tank Inlet Diffusers will be fabricated and installed by CPSTL conforming to API STANDARD 650. Relevant drawings and details of the modification are attached in the Bidding Document for reference.

4.2.3.15 Gauging and Sampling Devices

Internal floating roof shall have provision to accommodate Stilling well for radar gauge extending up to the fixed roof and Provision in the internal floating roof for taking manual product level measurements using Dip Tape and Plumb.All such devices on the floating roof shall be installed within the plumbness tolerance of H.4.5of API Standard 650.

Stilling well will be fabricated and installed by other party conforming to API standard650. CPSTL will provide relevant drawings and details of the modification for reference

4.2.3.16 Foam Dams

Internal floating roof shall have installed Integral Foam Dam to concentrate firefighting foam in the tank seal area in the case of a fire. Integral foam dam shall have bolted directly to the rim angle and the base of a secondary tank seal of the floating roof. Foam Dam shall require less foam, corrosion resistant, will last the life of tank and should comply with API STANDARD 650 Appendix-H, H.5.9.

4.2.3.17 Fabrication, Erection, Welding, Inspection, and Testing

a. The applicable fabrication, erection, welding, inspection, and testing requirements of API STANDARD 650 Standard shall be met. A Tank physical measurement report and tank mechanical drawings will be provided to the bidder along with this document.

b. 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.

c. 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

d. Deck seams and other joints that are required to be or vapor-tight per API STANDARD 650 H.4.1.3 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 this standard for testing cone-roof and/or tank-bottom seams, or by any other method mutually agreed upon by the Purchaser and the roof Manufacturer.

e. The floating roof Manufacturer shall supply all floating roof closures required for testing per API STANDARD 650 H.4.1.3, H.4.1.7, H.4.3.1, and H.6.2. 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 erector 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. CPSTL representatives may select the specific compartments to test and the test location, based on his visual inspections for indications of damage or potential. 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 to 55 kPa(3 lbf/in.2 to 8 lbf/in.2) gauge using a soap solution or commercial leak detection solution.

h. Upon assembly and prior to a flotation test, the erector shall inspect to verify that the peripheral seal produces an acceptable fit against the tank shell.

4.2.3.18 Initial Flotation

A flotation test and initial fill inspection shall be conducted by the CPSTL which shall be witnessed by the supplier. CPSTL shall make water connections and supply all tank closures required for testing and remove all water connections and temporary closures (including gaskets, fasteners, test blanks, etc.) after completion of the test.

Flotation test may be done using water or product at the option of the CPSTL. During this test, the internal floating roof and all accessible compartments shall be jointly checked by supplier and CPSTL to confirm that they are free from leaks. The appearance of a damp spot on the upper side of the part in contact with the liquid shall be considered evidence of leakage.

During initial fill the internal floating roof shall be checked to confirm that it travels freely to its full height. The peripheral seal shall be checked for proper operation throughout the entire travel of the internal floating roof.

4.2.3.19 Commissioning of Internal Floating Roof

After initial floatation test the evaporation losses of the tank shall be monitored jointly for 14 days to confirm the satisfactory operation of Internal Floating Roof.

SCHEDULE OF PRICES

DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF INTERNAL FLOATING ROOFS FOR TANK NO.17, 22 AND 23 AT OIL INSTALLATION, KOLONNAWA.

(Currency to be specified)

(Currency)

1. **Tank No. 17**

1.1	Unit Price (F.O.B)	: ……
1.2	Freight Charges	: ……..
1.3	Total CFR Price	: ……
1.4	Insurance	: ……
1.5	CIF Price	: ……
1.6	Installation and Commissioning Price	: ……..

2. Tank No. 22

2.1	Unit Price (F.O.B)	: ……
2.2	Freight Charges	:……..
2.3	Total CFR Price	: ……
2.4	Insurance	: ……
2.5	CIF Price	: ……
2.6	Installation and Commissioning Price	:……..

3. Tank No. 23

3.1	Unit Price (F.O.B)	: ……
3.2	Freight Charges	:……..
3.3	Total CFR Price	: ……
3.4.	Insurance	: ……
3.5	CIF Price	: ……
3.4	Installation and Commissioning Price	:……..

4. Third Party Inspection fee for 3 nos. of Internal Floating Roofs : ……

5. Accommodation and local expenses for two CPSTL Engineers : ……

6.1. Local Agency commission (Rs.) (excl. Taxes) : .....

6.2. Local Agency commission (Rs.) (incl. Taxes) : .....

7. Grand Total :…….

Grand Total in Words :……
……

Offer Validity :……

Delivery Period :……

Payment Terms :……

Name of Manufacture :……

Country of Manufacture :……

Name & the address of the
Supplier/Principal Beneficiary
(if, differs from the manufacturer) ……

Name of Third Party Inspection
Company :……...

Warranty :……..

Name of the Bidder :……..

Address :……
……..
……..…

Signature of the Bidder :……

ANNEX – A

FORM OF BID

To*:* The Chairman
Department Procurement Committee,
Ceylon Petroleum Storage Terminals Limited,
Procurement Function
1st Floor, New Building,
Oil Installation,
Kolonnawa,
Sri Lanka

From *:* ……
……
……..

Sir,

A-1 Having familiarized ourselves with the formal request for Instruction to Bidders and Conditions of contract for Design, Manufacture, Supply, Installation, Testing and commissioning of Internal Floating Roofs, we offer to complete the whole of said services in conformity with the said document.

A-2 Unless and until a formal Agreement is prepared and executed this Bid together with your written acceptance thereof shall constitute a binding contract with us.

A-3 We understand you are not bound to accept the lowest or any Bid you may receive.

A-4 The Bid we are offering is complete and fulfils the requirements discussed in the Bidding document.

A-5 We agree to abide by this Bid till 30.08.2018. Conditions and prices quoted shall remain binding upon us and maybe accepted at any time before the expiration of the period.

A-6 We agree to be bound by the Bid, Bid Conditions and Performance Guarantee.

A-7 We affirm that the said items will be delivered within ……..(….)months after we receive notice acceptance of our Bid from the CPSTL.

A-8 We offer the lump sum fixed price of (specify currency)……../amount in figures/ ……../amount in words/ for Supply, of……., as detailed out in this Bidding Document and details of the lump sum price is as given in the schedule of prices. We agree that it is open to the Department Procurement Committee to reject this offer or to accept.

Dated this …… day of ……20..

Signature ……in the capacity of …… duly authorized to sign tenders for and on behalf of *:*

Name ……

Address ……

…… ……

Company Stamp

Witnesses*:*

1. Signature	*:* ……	2. Signature	*:*……
Name	*:* ……..……..……..……..	Name	*:* …….
Address	*:* …….	Address	*:*……..…
	……..		…….

ANNEX –B

FORMAT FOR BID SECURITY

[This Bank 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.
Date **: ……..** [insert (by issuing agency)date]

BID SECURITY NO. : ……[insert (by issuing agency)number]
We have been informed that ……..……[insert (by issuing agency)name of the Bidder; if a joint venture, list complete legal names of partners] (hereinafter called "the Bidder") has submitted to you its bid dated ……[insert (by issuing agency)date] (hereinafter called 'the Bid')for execution/supply [select appropriately)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 Security.

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')of the IFB; or
(c) having been notified of the acceptance of its Bid by the Employer/ Purchaser 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 Guarantee, 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 Guarantee issued to you by the Bidder; or (b)if the Bidder is not the successful bidder, upon the earlier of (i)our receipt of a copy of your notification to the Bidder that the Bidder was unsuccessful, 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)

……..……
[Common Seal of the Bank]

ANNEX –C

FORM OF AGREEMENT

This Agreement made this _____ day of _____ 20.., by and between Ceylon Petroleum Storage Terminals Limited (CPSTL) having its registered Office at Oil Installation, Kolonnawa, in the Government of the Democratic Socialist Republic of Sri Lanka (hereinafter called and referred to as the "CPSTL" which terms of expression as herein used shall where this context so requires and admits mean & include the CPSTL & its Successors& assigns)of the one part and _____ of _____ a Company duly incorporated & having its registered Office at _____(hereinafter called the "Contractor" which terms of expression as herein used shall where this context so requires and admits mean & include the _____ & its successors & assigns)of the other part .

Whereas the CPSTL is desirous that the goods known as the Internal Floating Roofs should be supplied by the Supplier, and has accepted a Bid by the Supplier for the supply of such Goods and the remedying of any defects therein.

The CPSTL and the Supplier agree, as follows: -

1. In the agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract and Contractor 's scope of work hereinafter referred to.

2. The following documents shall be deemed to form and be read and construed as a part of this Agreement.
   - **Letter of Acceptance dated _____.**
   - **The Bid dated _____.**
   - **The Conditions of Contract**
   - **Technical Specifications**
   - **The Completed Schedules and**
   - **The Supplier 's Proposal**

3. In consideration of the payments to be made by the CPSTL to the Contractor as hereinafter mentioned, the Agent hereby covenants with the CPSTL to supply and remedy any defects therein, fit for purpose in conformity in all respect according to the provisions of the Agreement.

4. The CPSTL hereby covenants to pay the Contractor in consideration of the Supply and the remedying of defects therein, the agreed 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 Agreement.

   In Witness whereof the parties have hereunto caused this Agreement to be executed the day, month &year afore written.

Authorized Signature of the Chairman of CPSTL		**Authorized Signature of the Supplier**	
In the presence of		In the presence of	
Name		**Name**	
Signature		**Signature**	
Address		**Address**	

ANNEX –D

FORMAT OF PERFORMANCE GUARANTEE

……..……. /issuing Agency's Name and Address/of issuing branch or office/

Beneficiary:……
/Name and Address of Employer/ ……..
……
Bid Reference No. : ……
Date : ……..

PERFORMANCE GUARANTEE NO *: ……*

We have been informed that ……..……/name of Contractor/ Supplier/ (hereinafter called "the Contractor")has entered into Contract No. ……../reference number of the contract/ dated ……..…… with you, for the …… ……..……..…….. /insert "construction"/ "Supply"/ of ……..……..……..……..../name of contract and brief description of Works/ (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(specify currency) ……/amount in figures/ …….. …… /amount in words/, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s)under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the ……..day of……..……..20……..…../insert date, 90 days beyond the scheduled contract completion date/ and any demand for payment under it must be received by us at this office on or before that date.

……
/Signature(s)/

ANNEX –E

FORMAT OF MANUFACTURER'S AUTHORIZATION

*[*The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer*.]*

Date *:* ……
Bid No. *:* ……

To*:* Chairman – Department Procurement Committee
Ceylon Petroleum Storage Terminals Limited.
Procurement Function, 1st floor, New Building,
Oil Installation, Kolonnawa, Sri Lanka

WHEREAS
We ……*[*insert complete name of Manufacturer*]*,who are official manufacturers of……
…… *[*insert type of goods manufactured*]*, having factories at
……
…… *[*insert full address of Manufacturer's factories*]*, do hereby authorize ……
…… *[*insert complete name of Bidder*]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us …… *[*Insert name and or brief description of the Goods*]*, and to subsequently negotiate and sign the Contract.

We hereby confirm goods offered are in good condition & conforming to the specifications as mentioned in **Clause 4**.

……
Signature of authorized representative of the Manufacturer

Company Address*:*
……
……

……
Company Stamp

Title*:* ……
Duly authorized to sign this Authorization on behalf of*: [*insert complete name of Bidder*]*

Date *:* ……

ANNEX – F

COMPLIANCE / DEVIATIONS SHEET

Please mark "✓ "if complied with the tender requirement or mark "X "if there is any deviation and indicate the deviation in the cage provided.

	Specification /Condition	Complied	Deviations if any
1.	Bid-Security per Annex - B		
2.	Offer Validity – **till 30.08.2018**		
3.	Schedule of Prices (Schedule - A)Duly Filled Stamped, Signed & Forwarded		
4.	Agreed with Payment Terms & Other Requirements		
6.	Agreed with Shipment & Delivery conditions per Clause No. 2.6& 2.5		
7.	Letter of Authorization per Clause No. 1.16		
8.	Form of Manufacturer's Authorization per Annex - E		
9.	Specifications & Other Conditions as Clause Nos 4		
10.	Agreed with Delivery Period per Clause No 2.5 (c)		
11.	Agreed with Penalty on Delayed Delivery per Clause No. 2.6		
12.	Agreed with Freight arrangement through Ceylon Shipping Corporation or any other freight forwarder		
13.	Literature /Catalogues & Other Technical Data Given		
14.	Name of the Manufacturer given		
15.	Country of Origin, Port of Shipment & the HS Code Given		
16.	Agreed with the Requirement for Pre-Shipment inspection as per clause No. 2.3 including Approval of CPSTL for 3rd Party Inspection Certificate according to EN 10204 type 3.2 & include this requirement in L/C as a condition		
17.	Selected 3rd Party Inspection Company Given		
18.	Name & Address of Local Agent (if any)& Agency Commission Given		
19.	If Relevant, VAT Registration No. Given		
20.	Deviations from Specifications, terms & conditions, if any, indicated		
21.	Documentary proof for recent supplies made to customers in similar magnitude Given		
22.	Compliance with Performance Guarantee per Clause No. 2.1		
23.	Signature Authorization letter		
24.	Other Deviation, if any		
25.	FOB, ,3rd Party Inspection Charges, Freight, Taxes (separately)Given		

…….. ……

Company Stamp Signature of the Bidder

PHYSICAL MEASUREMENT REPORT

RADII MEASUREMENT REPORT

Job No : LK/CMB/00/OGC/201500130
Client : Ceylon Petroleum Storage Terminals Limited
Tank : 17 CPSTL
Location : CPSTL Kolonnawa
Date : 26.08.2015

Bottom Most 600 mm

01 T1	01	9732
	02	9742
	03	9743
	04	9744
	05	9740
	06	9741
	07	9744
	08	9744
	09	9752
	10	9745
	11	9737
	12	9738
	13	9740
	14	9754
	15	9762
	16	9757

Balance of 1 st shell course

01 B2	01	9736
	02	9746
	03	9747
	04	9748
	05	9744
	06	9745
	07	9748
	08	9748
	09	9756
	10	9749
	11	9741
	12	9742
	13	9744
	14	9758
	15	9750
	16	9745

01 M2	01	9740
	02	9750
	03	9751
	04	9752
	05	9748
	06	9749
	07	9752
	08	9752
	09	9760
	10	9753
	11	9745
	12	9746
	13	9748
	14	9762
	15	9754
	16	9749

01 T2	01	9744
	02	9754
	03	9755
	04	9756
	05	9752
	06	9753
	07	9756
	08	9756
	09	9764
	10	9757
	11	9749
	12	9750
	13	9752
	14	9766
	15	9758
	16	9753

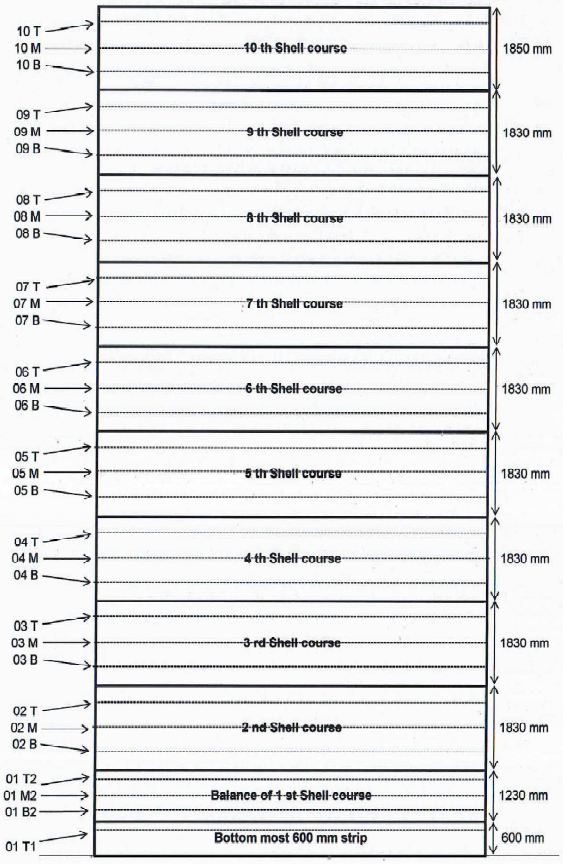
02 B	01	9756
	02	9764
	03	9760
	04	9765
	05	9762
	06	9763
	07	9762
	08	9764
	09	9776
	10	9756
	11	9760
	12	9761
	13	9762
	14	9778
	15	9769
	16	9763

02 M	01	9764
	02	9763
	03	9760
	04	9769
	05	9760
	06	9762
	07	9762
	08	9765
	09	9776
	10	9753
	11	9758
	12	9760
	13	9763
	14	9780
	15	9767
	16	9761

02 T	01	9768
	02	9762
	03	9760
	04	9772
	05	9757
	06	9758
	07	9762
	08	9763
	09	9772
	10	9750
	11	9754
	12	9757
	13	9760
	14	9776
	15	9759
	16	9756

UNITS mm

T TOP
M MIDDLE
B BOTTOM



SGS Lanka (Pvt) Ltd
BUSINESS MANAGER
OGC SERVICES

SGS

RADII MEASUREMENTS OF TANK NO. 17 CPSTL KOLONNAWA

03 B	01	9771
	02	9763
	03	9766
	04	9772
	05	9762
	06	9756
	07	9760
	08	9766
	09	9766
	10	9756
	11	9752
	12	9757
	13	9762
	14	9776
	15	9763
	16	9764

03 M	01	9772
	02	9764
	03	9770
	04	9772
	05	9763
	06	9760
	07	9759
	08	9768
	09	9765
	10	9756
	11	9752
	12	9764
	13	9764
	14	9778
	15	9765
	16	9768

03 T	01	9771
	02	9768
	03	9770
	04	9772
	05	9762
	06	9764
	07	9758
	08	9768
	09	9764
	10	9755
	11	9752
	12	9768
	13	9764
	14	9779
	15	9766
	16	9764

04 B	01	9785
	02	9780
	03	9771
	04	9782
	05	9771
	06	9755
	07	9763
	08	9765
	09	9767
	10	9753
	11	9745
	12	9767
	13	9757
	14	9785
	15	9759
	16	9767

04 M	01	9788
	02	9780
	03	9775
	04	9765
	05	9772
	06	9751
	07	9762
	08	9761
	09	9768
	10	9753
	11	9743
	12	9768
	13	9752
	14	9786
	15	9757
	16	9767

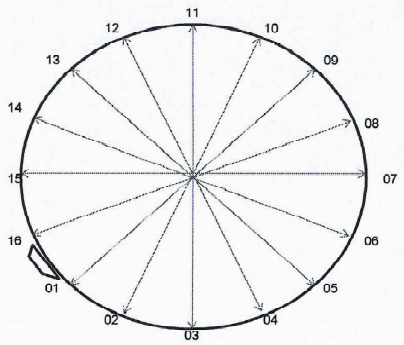
04 T	01	9791
	02	9782
	03	9778
	04	9787
	05	9771
	06	9748
	07	9762
	08	9755
	09	9768
	10	9751
	11	9744
	12	9768
	13	9749
	14	9785
	15	9756
	16	9768

05 B	01	9795
	02	9787
	03	9781
	04	9792
	05	9762
	06	9756
	07	9760
	08	9750
	09	9768
	10	9740
	11	9749
	12	9767
	13	9752
	14	9790
	15	9764
	16	9766

05 M	01	9793
	02	9784
	03	9780
	04	9794
	05	9762
	06	9757
	07	9758
	08	9750
	09	9768
	10	9737
	11	9751
	12	9768
	13	9754
	14	9790
	15	9766
	16	9767

05 T	01	9792
	02	9784
	03	9779
	04	9796
	05	9764
	06	9758
	07	9756
	08	9750
	09	9769
	10	9738
	11	9753
	12	9770
	13	9753
	14	9791
	15	9765
	16	9769

Plan view of Radii positions



SGS Lanka (Pvt) Ltd

BUSINESS MANAGER
OGC SERVICES

SGS

RADII MEASUREMENTS OF TANK NO. 17 CPSTL KOLONNAWA

06 B	01	9782
	02	9777
	03	9812
	04	9787
	05	9776
	06	9760
	07	9752
	08	9753
	09	9762
	10	9747
	11	9758
	12	9774
	13	9754
	14	9784
	15	9766
	16	9775

06 M	01	9780
	02	9775
	03	9783
	04	9787
	05	9775
	06	9761
	07	9750
	08	9755
	09	9760
	10	9745
	11	9757
	12	9771
	13	9751
	14	9782
	15	9763
	16	9774

06 T	01	9779
	02	9773
	03	9785
	04	9787
	05	9775
	06	9765
	07	9749
	08	9756
	09	9759
	10	9746
	11	9759
	12	9766
	13	9748
	14	9779
	15	9761
	16	9772

07 B	01	9786
	02	9777
	03	9785
	04	9795
	05	9773
	06	9750
	07	9751
	08	9746
	09	9763
	10	9738
	11	9748
	12	9772
	13	9746
	14	9793
	15	9755
	16	9769

07 M	01	9767
	02	9776
	03	9785
	04	9795
	05	9773
	06	9749
	07	9747
	08	9749
	09	9760
	10	9742
	11	9745
	12	9767
	13	9757
	14	9788
	15	9752
	16	9767

07 T	01	9769
	02	9775
	03	9785
	04	9796
	05	9770
	06	9745
	07	9745
	08	9747
	09	9759
	10	9742
	11	9743
	12	9765
	13	9769
	14	9787
	15	9749
	16	9767

08 B	01	9787
	02	9767
	03	9780
	04	9795
	05	9753
	06	9748
	07	9740
	08	9737
	09	9755
	10	9740
	11	9755
	12	9770
	13	9797
	14	9793
	15	9757
	16	9759

08 M	01	9783
	02	9765
	03	9777
	04	9792
	05	9752
	06	9747
	07	9739
	08	9738
	09	9751
	10	9739
	11	9755
	12	9771
	13	9795
	14	9791
	15	9755
	16	9757

08 T	01	9783
	02	9760
	03	9777
	04	9790
	05	9747
	06	9745
	07	9738
	08	9727
	09	9747
	10	9731
	11	9755
	12	9774
	13	9794
	14	9788
	15	9752
	16	9760

SGS Lanka (Pvt) Ltd

BUSINESS MANAGER
OGC SERVICES

SGS

RADII MEASUREMENTS OF TANK NO. 17 CPSTL KOLONNAWA

09 B	01	9764
	02	9753
	03	9763
	04	9767
	05	9757
	06	9743
	07	9737
	08	9719
	09	9737
	10	9736
	11	9761
	12	9772
	13	9782
	14	9773
	15	9747
	16	9759

09 M	01	9768
	02	9755
	03	9787
	04	9772
	05	9757
	06	9747
	07	9735
	08	9720
	09	9734
	10	9735
	11	9761
	12	9765
	13	9778
	14	9775
	15	9744
	16	9756

09 T	01	9772
	02	9757
	03	9793
	04	9768
	05	9758
	06	9755
	07	9733
	08	9715
	09	9737
	10	9729
	11	9760
	12	9758
	13	9775
	14	9770
	15	9741
	16	9752

10 B	01	9775
	02	9760
	03	9795
	04	9767
	05	9757
	06	9755
	07	9734
	08	9717
	09	9757
	10	9728
	11	9755
	12	9755
	13	9765
	14	9761
	15	9731
	16	9751

10 M	01	9776
	02	9762
	03	9795
	04	9766
	05	9757
	06	9755
	07	9735
	08	9718
	09	9760
	10	9729
	11	9755
	12	9753
	13	9764
	14	9762
	15	9731
	16	9751

10 T	01	9776
	02	9763
	03	9795
	04	9765
	05	9757
	06	9755
	07	9735
	08	9718
	09	9762
	10	9730
	11	9755
	12	9750
	13	9763
	14	9762
	15	9731
	16	9750

Note :
Radii Measurements were taken as per API MPMS chapter 2 section 2B.

SGS Lanka (Pvt) Ltd

BUSINESS MANAGER
OGC SERVICES

Tank No 22

Radial Measurements /---cont

22	Station No		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SHELL COURSE NUMBER	9	U																
		M																
		L																
	8	U																
		M																
		L																
	7	U																
		M																
		L																
	6	U	9,136	9,134	9,134	9,156	9,154	9,120	9,176	9,126	9,105	9,142	9,158	9,139	9,127	9,129	9,141	9,152
		M	9,137	9,129	9,135	9,150	9,149	9,116	9,168	9,127	9,101	9,142	9,156	9,133	9,121	9,130	9,141	9,152
		L	9,136	9,133	9,140	9,148	9,151	9,114	9,165	9,130	9,107	9,137	9,160	9,135	9,121	9,126	9,140	9,153
	5	U	9,115	9,142	9,135	9,149	9,152	9,117	9,163	9,134	9,130	9,138	9,169	9,129	9,124	9,117	9,131	9,145
		M	9,120	9,143	9,146	9,148	9,152	9,122	9,166	9,136	9,128	9,138	9,170	9,133	9,126	9,118	9,132	9,146
		L	9,123	9,143	9,150	9,143	9,156	9,121	9,162	9,126	9,127	9,131	9,169	9,136	9,127	9,121	9,133	9,145
	4	U	9,132	9,146	9,164	9,140	9,157	9,111	9,161	9,127	9,129	9,135	9,168	9,139	9,132	9,131	9,140	9,148
		M	9,138	9,140	9,165	9,133	9,156	9,114	9,161	9,134	9,126	9,134	9,166	9,138	9,129	9,135	9,139	9,143
		L	9,142	9,135	9,165	9,127	9,154	9,114	9,162	9,127	9,129	9,140	9,168	9,142	9,130	9,136	9,142	9,147
	3	U	9,150	9,139	9,163	9,132	9,155	9,117	9,156	9,136	9,123	9,142	9,159	9,134	9,129	9,133	9,136	9,139
		M	9,148	9,139	9,154	9,136	9,153	9,119	9,153	9,140	9,117	9,139	9,153	9,130	9,133	9,133	9,136	9,138
		L	9,152	9,148	9,153	9,137	9,149	9,158	9,147	9,141	9,121	9,137	9,151	9,126	9,129	9,134	9,133	9,132
	2	U	9,148	9,144	9,142	9,134	9,150	9,115	9,147	9,142	9,131	9,138	9,157	9,126	9,135	9,136	9,133	9,130
		M	9,151	9,139	9,145	9,134	9,145	9,114	9,145	9,141	9,133	9,134	9,162	9,125	9,135	9,138	9,137	9,135
		L	9,150	9,136	9,141	9,136	9,135	9,111	9,141	9,138	9,133	9,134	9,151	9,130	9,140	9,139	9,136	9,132
	1	U	9,126	9,132	9,136	9,139	9,140	9,117	9,144	9,135	9,129	9,138	9,136	9,137	9,138	9,136	9,134	9,132
		M	9,134	9,134	9,136	9,138	9,142	9,129	9,137	9,136	9,134	9,137	9,136	9,136	9,140	9,136	9,135	9,134
		L	9,137	9,137	9,138	9,136	9,139	9,134	9,136	9,139	9,135	9,139	9,139	9,137	9,138	9,137	9,137	9,137

Table No 9: Radial Distances of Tank number 22

Tank No 22

Radial Measurements cont ---/

22	Station No		17	18	19	20												
SHELL COURSE NUMBER	9	U																
		M																
		L																
	8	U																
		M																
		L																
	7	U																
		M																
		L																
	6	U	9,159	9,157	9,175	9,217												
		M	9,153	9,156	9,172	9,216												
		L	9,153	9,153	9,162	9,211												
	5	U	9,138	9,152	9,167	9,204												
		M	9,145	9,154	9,161	9,200												
		L	9,143	9,153	9,149	9,190												
	4	U	9,129	9,159	9,151	9,193												
		M	9,118	9,163	9,149	9,190												
		L	9,117	9,172	9,148	9,188												
	3	U	9,137	9,158	9,152	9,183												
		M	9,138	9,157	9,154	9,174												
		L	9,138	9,155	9,153	9,177												
	2	U	9,140	9,155	9,157	9,182												
		M	9,143	9,152	9,151	9,176												
		L	9,145	9,148	9,150	9,177												
	1	U	9,145	9,149	9,149	9,153												
		M	9,143	9,147	9,146	9,148												
		L	9,142	9,142	9,143	9,147												

Table No 9: Radial Distances of Tank number 22 ...cont

Tank No 23

Radial Measurements /---cont

23	Station No		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SHELL COURSE NUMBER	9	U																
		M																
		L																
	8	U																
		M																
		L																
	7	U	9,031	9,013	8,983	8,985	8,961	8,987	9,018	9,066	9,123	9,192	9,293	9,309	9,280	9,274	9,274	9,256
		M	9,038	9,017	8,988	9,000	8,967	8,994	9,023	9,071	9,120	9,193	9,288	9,294	9,279	9,272	9,272	9,251
		L	9,042	9,019	8,999	9,010	8,978	9,008	9,024	9,076	9,127	9,180	9,285	9,281	9,278	9,266	9,266	9,240
	6	U	9,055	9,027	9,004	9,016	8,986	9,018	9,023	9,082	9,132	9,180	9,274	9,267	9,276	9,260	9,260	9,236
		M	9,062	9,034	9,008	9,025	8,999	9,025	9,027	9,084	9,133	9,184	9,260	9,261	9,274	9,252	9,252	9,231
		L	9,074	9,041	9,010	9,032	9,001	9,034	9,024	9,084	9,140	9,182	9,249	9,243	9,270	9,243	9,243	9,228
	5	U	9,080	9,054	9,014	9,036	9,011	9,041	9,035	9,087	9,153	9,184	9,244	9,236	9,267	9,232	9,232	9,221
		M	9,082	9,059	9,025	9,043	9,016	9,049	9,044	9,089	9,158	9,189	9,230	9,229	9,261	9,215	9,215	9,214
		L	9,090	9,064	9,043	9,048	9,021	9,049	9,050	9,087	9,159	9,183	9,215	9,214	9,253	9,204	9,204	9,198
	4	U	9,100	9,069	9,060	9,052	9,037	9,060	9,054	9,084	9,159	9,187	9,212	9,204	9,241	9,198	9,198	9,196
		M	9,103	9,076	9,073	9,053	9,046	9,060	9,061	9,087	9,154	9,188	9,207	9,191	9,231	9,194	9,194	9,186
		L	9,107	9,082	9,094	9,052	9,057	9,069	9,063	9,084	9,152	9,189	9,207	9,183	9,217	9,190	9,190	9,182
	3	U	9,120	9,089	9,095	9,064	9,066	9,083	9,079	9,092	9,148	9,188	9,207	9,182	9,209	9,179	9,179	9,183
		M	9,123	9,093	9,099	9,077	9,075	9,087	9,084	9,094	9,144	9,183	9,204	9,173	9,194	9,169	9,169	9,180
		L	9,127	9,096	9,104	9,089	9,082	9,095	9,094	9,102	9,148	9,179	9,201	9,161	9,176	9,160	9,160	9,175
	2	U	9,131	9,103	9,109	9,102	9,098	9,102	9,105	9,108	9,147	9,171	9,189	9,159	9,166	9,150	9,150	9,171
		M	9,136	9,111	9,118	9,110	9,111	9,106	9,111	9,111	9,145	9,165	9,182	9,157	9,159	9,148	9,148	9,163
		L	9,139	9,131	9,121	9,115	9,118	9,106	9,112	9,111	9,144	9,160	9,170	9,156	9,123	9,150	9,150	9,156
	1	U	9,126	9,133	9,125	9,125	9,129	9,114	9,116	9,117	9,141	9,149	9,158	9,146	9,146	9,150	9,150	9,144
		M	9,135	9,135	9,133	9,128	9,132	9,121	9,126	9,123	9,140	9,150	9,154	9,144	9,142	9,148	9,148	9,143
		L	9,137	9,136	9,135	9,133	9,135	9,128	9,133	9,131	9,140	9,147	9,142	9,140	9,140	9,144	9,144	9,139

Table No 11: Radial Distances of Tank number 23

Tank No 23

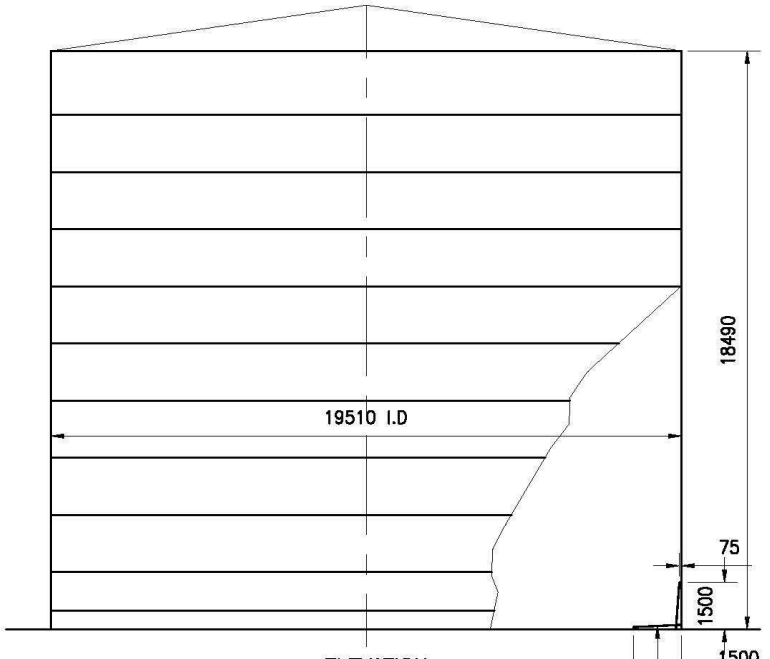
Radial Measurements cont ---/

23	Station No		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
SHELL COURSE NUMBER	9	U																
		M																
		L																
	8	U																
		M																
		L																
	7	U	9,256	9,170	9,114	9,123												
		M	9,251	9,166	9,116	9,125												
		L	9,240	9,163	9,120	9,129												
	6	U	9,236	9,160	9,124	9,132												
		M	9,231	9,158	9,122	9,139												
		L	9,228	9,152	9,119	9,140												
	5	U	9,221	9,157	9,125	9,148												
		M	9,214	9,162	9,125	9,152												
		L	9,198	9,158	9,126	9,157												
	4	U	9,196	9,148	9,122	9,160												
		M	9,186	9,145	9,125	9,165												
		L	9,182	9,153	9,125	9,165												
	3	U	9,183	9,152	9,124	9,172												
		M	9,180	9,148	9,128	9,175												
		L	9,175	9,149	9,132	9,177												
	2	U	9,171	9,151	9,134	9,180												
		M	9,163	9,148	9,136	9,181												
		L	9,156	9,146	9,135	9,183												
	1	U	9,144	9,143	9,133	9,118												
		M	9,143	9,142	9,135	9,122												
		L	9,139	9,140	9,137	9,128												

Table No11 : Radial Distances of Tank number 23

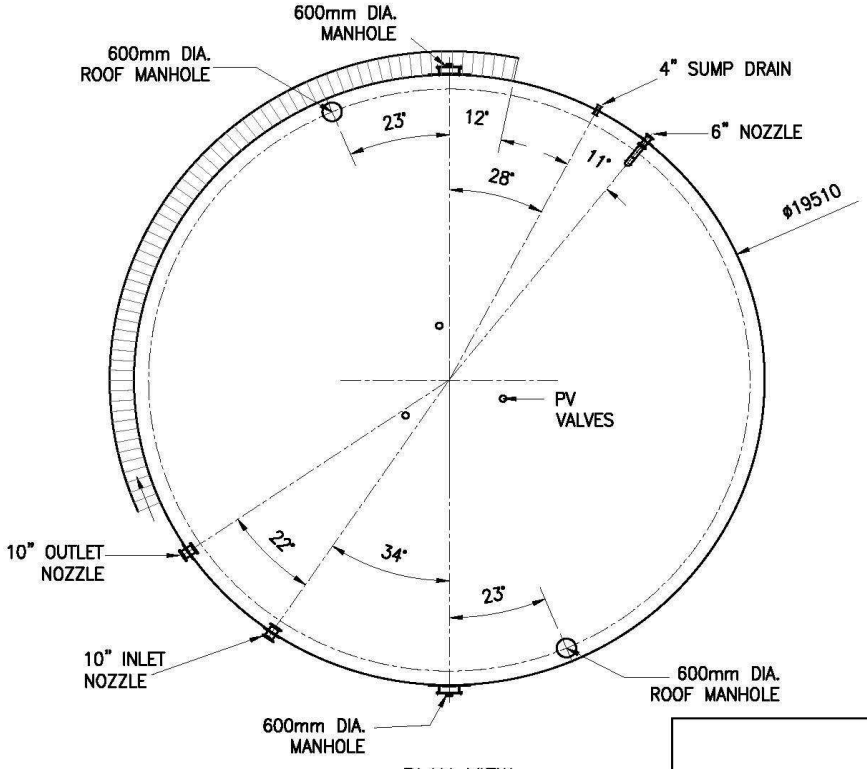
DRAWINGS

- Drawing of Tank No 17
- Drawing of Tank No 22
- Drawing of Tank No 23



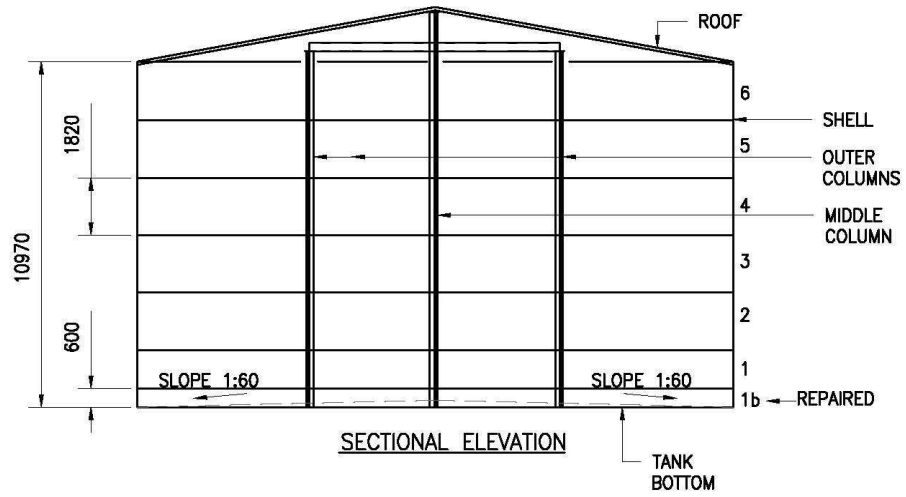
ELEVATION

INSIDE TANK
REINFORCEMENT
36 NOS.

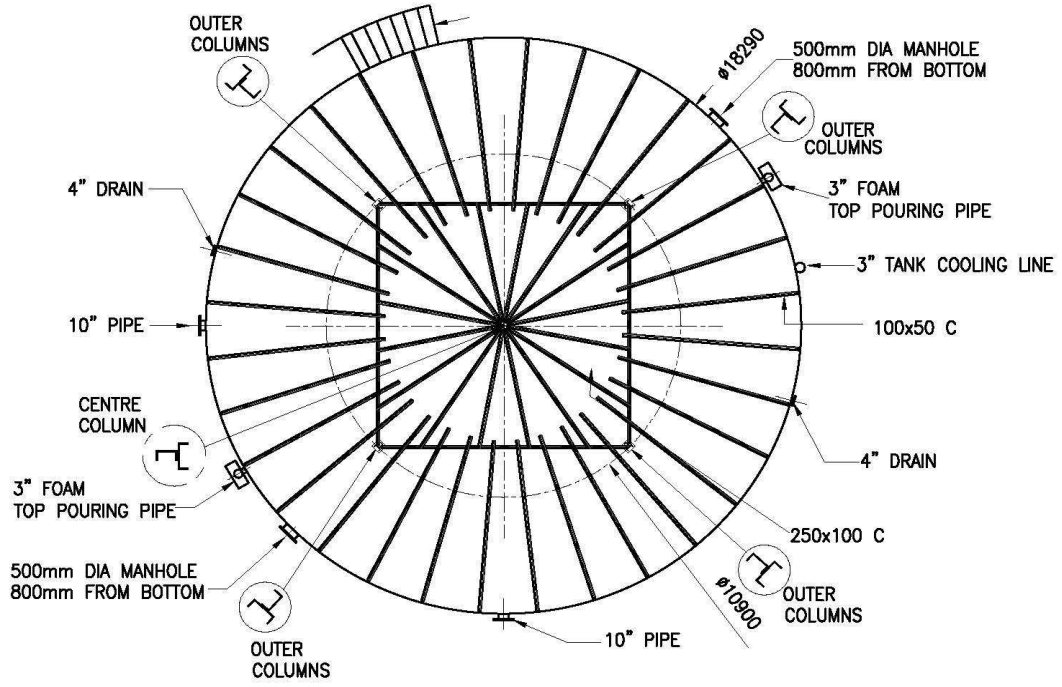


PLAN VIEW

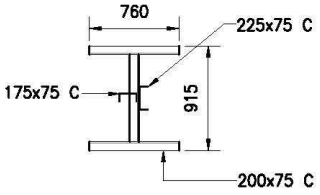
TANK NO 17



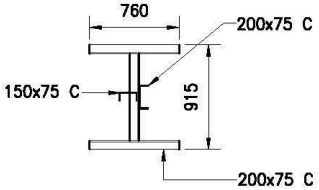
SECTIONAL ELEVATION



ROOF PLAN

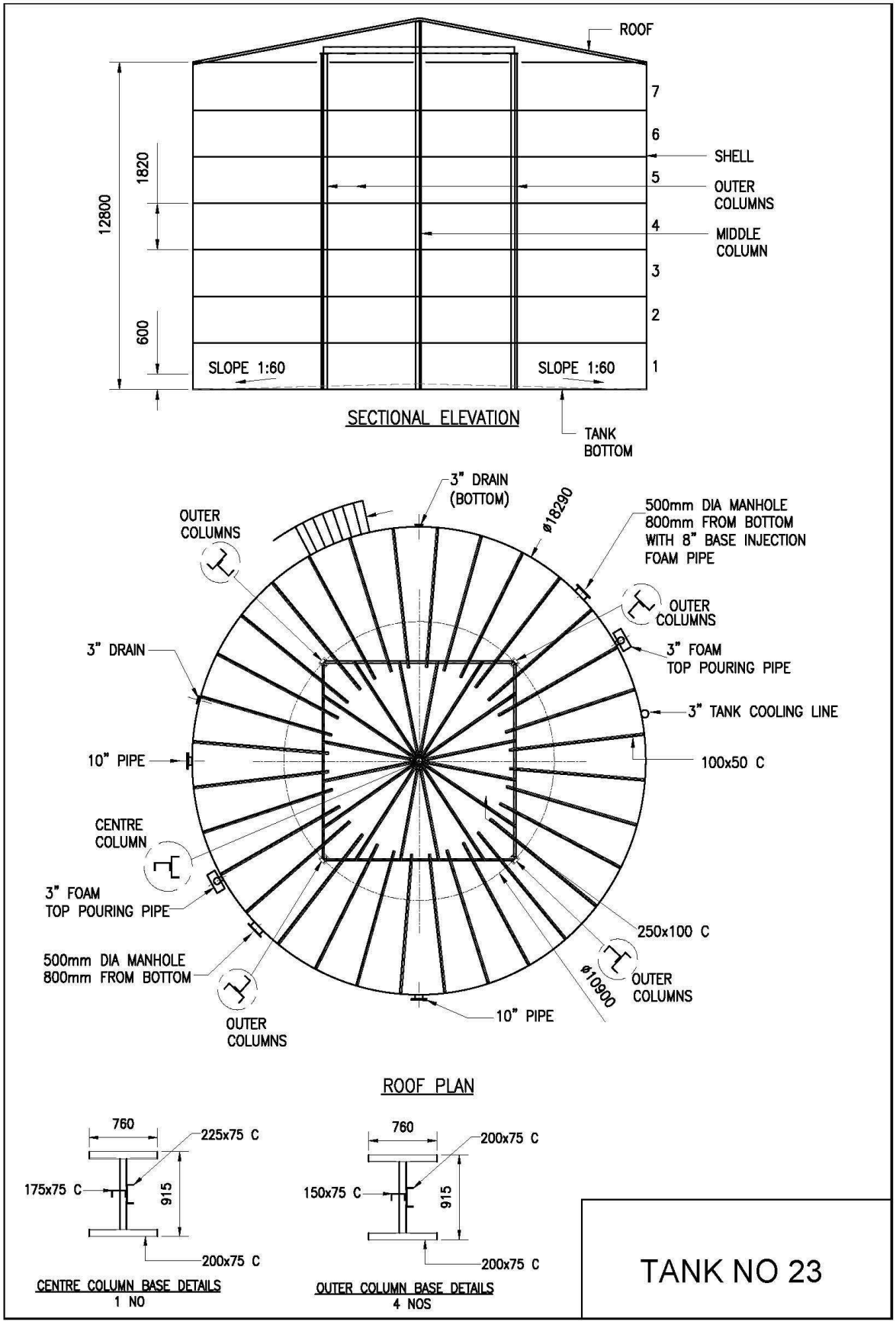


CENTRE COLUMN BASE DETAILS
1 NO



OUTER COLUMN BASE DETAILS
4 NOS

TANK NO 22


ROOF
7
6
SHELL
5
OUTER COLUMNS
4
MIDDLE COLUMN
3
2
1
12800
1820
600
SLOPE 1:60
SLOPE 1:60
TANK BOTTOM
SECTIONAL ELEVATION
3" DRAIN (BOTTOM)
ø18290
500mm DIA MANHOLE 800mm FROM BOTTOM WITH 8" BASE INJECTION FOAM PIPE
OUTER COLUMNS
OUTER COLUMNS
3" DRAIN
3" FOAM TOP POURING PIPE
3" TANK COOLING LINE
10" PIPE
100x50 C
CENTRE COLUMN
3" FOAM TOP POURING PIPE
250x100 C
500mm DIA MANHOLE 800mm FROM BOTTOM
ø10900
OUTER COLUMNS
OUTER COLUMNS
10" PIPE
ROOF PLAN
760
225x75 C
175x75 C
915
200x75 C
CENTRE COLUMN BASE DETAILS
1 NO
760
200x75 C
150x75 C
915
200x75 C
OUTER COLUMN BASE DETAILS
4 NOS
TANK NO 23