

NATIONAL ENGINEERING SERVICES PAKISTAN (Pvt.) LTD.
ARCHITECTURE & PLANNING DIVISION
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MARCH - 2015

INVITATION FOR BIDS
INSTRUCTIONS TO BIDDERS & BIDDING DATA
FORM OF BID & SCHEDULES TO BID
CONDITIONS OF CONTRACT & CONTRACT DATA
STANDARD FORMS
SPECIFICATIONS
DRAWINGS

BIDDING AND CONTRACT DOCUMENTS

LIFT WORKS

SUPPLY, INSTALLATION, TESTING &
COMMISSIONING OF LIFTS (L-1 & L-2) FOR
ADMIN BLOCK

**JINNAH SINDH MEDICAL
UNIVERSITY, KARACHI**



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**INVITATION
FOR
BIDS**

INVITATIONS FOR BIDS

JINNAH SINDH MEDICAL UNIVERSITY KARACHI

1. The Procuring agency **Advisor P&D / Procurement, Jinnah Sindh Medical University**, Rafiqui H.J. Shaheed Road, Karachi, desires to invite for supply and installation of brand new lifts of Schindler (Western Europe), Kone (Western Europe), Thyseen (Western Europe) and Mitsubishi (Japan) makes.
2. The Procuring agency invites sealed Bids from firms who are eligible to handle the work mentioned below and are registered with reputed organizations in Pakistan and **PEC** in category **C-6** (minimum) with specialization code **ME03**. The firm also be authorized representative of the manufacturers.

Title of Works	Bidding Document Cost (Rs.)	Earnest Money/Bid security	Tender Purchasing Date On / after	Tender Opening Date	Time of Completion of Works
Supply, Installation, Testing & Commissioning of One (01) no. Lift of 1000 kg. For Admin Block.	5000/-	2% of Bid Amount	March 02, 2015	March 20, 2015	Six (06) Calendar Months
Supply, Installation, Testing & Commissioning of One (01) no. Lift of 630 kg. For Admin Block.	5000/-	2% of Bid Amount	March 02, 2015	March 20, 2015	Six (06) Calendar Months

3. Bid will be "Post Qualified" on the basis of Information provided with the Bid. Bidder(s) who fails to qualify in this respect shall not be considered.
4. A complete set of Bidding Documents and Post Qualification Documents may be purchased on submission of a written application to the office given below and upon payment of a non-refundable Bidding document cost in shape of a pay order/ bank draft in favour of **National Engineering Services Pakistan (Pvt) Limited** 4th Floor, NICL Building, Abbasi Shaheed Road, Karachi, Tel:021-99225430~4.
5. Single Stage Two Envelope procedure will be adopted. One envelope containing information regarding Post Qualification of the Bidders shall be clearly marked "TECHNICAL QUALIFICATION INFORMATION". The second envelope containing the Priced Bidding & Contract Documents shall be clearly marked "FINANCIAL BID DOCUMENTS".
6. "FINANCIAL BID DOCUMENTS" shall be accompanied by Earnest Money/Bid security in the form of Bank Guarantee, Bank draft/pay order drawn in favour of "Jinnah Sindh Medical University, Karachi". "Technical Qualification

Information Document" shall be accompanied by the proof (copy) of Earnest Money/ Bid security.

7. Partial & incomplete bids will not be considered. Technical Qualification Information and Financial Bid Documents (both envelopes) are to be submitted at the under mentioned address on **March 20, 2015 at 11:00 am**. The envelope containing Technical Qualification Information shall be opened on the same date at **11:30 am** in the presence of those bidders who wish to attend. Bids received after the prescribed time and date shall be rejected.
8. The Financial Bid Documents of the Bidders who fail to Post Qualify shall be returned to them unopened. The Decision of **Advisor P&D / Procurement, Jinnah Sindh Medical University, Karachi** in this connection shall be final & binding on the bidders. The **Jinnah Sindh Medical University, Karachi** shall not entertain any claim on the basis of cost incurred by the Bidders for preparation of the Bid.
9. The envelope of the "Financial Bid Document" of post qualified bidders will be opened in the presence of their representative at a time to be determined.
10. This advertisement is also available on the website of **Jinnah Sindh Medical University <http://www.jsmu.edu.pk>** and Sindh Public Procurement Regulatory Authority (SPPRA) on www.pprasindh.gov.pk

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**INSTRUCTIONS
TO BIDDERS
&
BIDDING DATA**

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INSTRUCTIONS TO BIDDERS

(Note: These Instructions to Bidders (IB) along with Bidding Data will not be part of Contract and will cease to have effect once the Contract is signed).

A. GENERAL

IB.1 Scope of Bid & Source of Funds

1.1 Scope of Bid

The Procuring agency as defined in the Bidding Data (hereinafter called "the Procuring agency") wishes to receive Bids for the Works summarized in the Bidding Data (hereinafter referred to as "the Works").

Bidders must quote for the complete scope of work. Any Bid covering partial scope of work will be rejected as non-responsive.

1.2 Source of Funds

The Procuring agency has arranged funds from its own sources.

IB.2 Eligible Bidders

2.1 Bidding is open to all firms and persons meeting the following requirements:

- a) duly licensed by the Pakistan Engineering Council (PEC) in the category C6 (minimum) with the specialization Code ME03.

Provided that the works costing Rs. 2.5 million or less shall not require any registration with PEC

- b) duly pre-qualified with the Procuring Agency. (*Where required*)

In the event that Pre-qualification of potential bidders has been undertaken, only bids from pre-qualified bidders will be considered for award of Contract.

- c) If pre-qualification has not undertaken, the procuring agency may ask information and not limited to the following:-
 - (i) company profile;
 - (ii) works of nature and size for each performed in last 3/5 years;
 - (iii) construction equipment;
 - (iv) qualification and experience of technical personnel and key site management.

- (v) Financial statement of last three (3) years;
- (vi) Information regarding litigation and abandoned works if any.

IB.3 Cost of Bidding

- 3.1 The bidder shall bear all costs associated with the preparation and submission of its bid and the Procuring Agency will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.(SPP Rules 24 & 25).

B. BIDDING DOCUMENTS

IB.4 Contents of Bidding Documents

- 4.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addendum issued in accordance with Sub-Clause IB.6.1.

1. Instructions to Bidders & Bidding Data
2. Form of Bid & Schedules to Bid
Schedules to Bid comprise the following:
 - (i) Schedule A: Schedule of Prices
 - (ii) Schedule B: Specific Works Data
 - (iii) Schedule C: Works to be Performed by Subcontractors
 - (iv) Schedule D: Proposed Programme of Works
 - (v) Schedule E: Method of Performing Works
 - (vi) Schedule F: Integrity Pact (Works costing Rs 10 Million and above.)
3. Conditions of Contract & Contract Data
4. Standard Forms:
 - (i) Form of Bid Security
 - (ii) Form of Performance Security
 - (iii) Form of Contract Agreement
 - (iv) Form of Bank Guarantee for Advance Payment
5. Specifications
6. Drawings, if any

IB.5 Clarification of Bidding Documents

- 5.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Engineer / Procuring Agency at the Engineer's/Procuring Agency's address indicated in the Bidding Data.

5.2 An interested bidder, who has obtained bidding documents, may request for clarification of contents of bidding documents in writing and procuring agency shall respond to such queries in writing within three calendar days, provided they are received at least five calendar days prior to the date of opening of bid (SPP Rule 23-1).

IB.6 Amendment of Bidding Documents (SPP Rules 22(2) & 22).

6.1 At any time prior to the deadline for submission of Bids, the Procuring Agency may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.

6.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 6.1 hereof, and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Procuring Agency..

6.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their Bids, the Procuring Agency may at its discretion extend the deadline for submission of Bids.

C. PREPARATION OF BIDS

IB.7 Language of Bid

7.1 The bid prepared by the bidder and all correspondence and documents relating to the Bid, exchanged by the bidder and the Procuring Agency shall be written in the English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

IB.8 Documents Comprising the Bid

8.1 The bid prepared by the bidder shall comprise the following components:

- (a) Offer/Covering Letter
- (b) Form of Bid duly filled, signed and sealed, in accordance with Sub-Clause IB.14.3.
- (c) Schedules (A to F) to Bid duly filled and initialed, in accordance with the instructions contained therein & in accordance with Sub-Clause IB.14.3.
- (d) Bid Security furnished in accordance with Clause IB.13.

- (e) Power of Attorney in accordance with Sub-Clause IB 14.5.
- (f) Documentary evidence in accordance with Clause IB.2c & IB.11
- (g) Documentary evidence in accordance with Clause IB.12.

IB.9 Sufficiency of Bid

- 9.1 Each bidder shall satisfy himself before Bidding as to the correctness and sufficiency of his Bid and of the premium on the rates of CSR/ rates and prices quoted/entered in the Schedule of Prices, which rates and prices shall except in so far as it is otherwise expressly provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper completion of the Works.
- 9.2 The bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the bid and entering into a Contract for execution of the Works.

IB.10 Bid Prices, Currency of Bid and Payment

- 10.1 The bidder shall fill up the Schedule of Prices (Schedule A to Bid) indicating the percentage above or below the composite schedule of rates / unit rates and prices of the Works to be performed under the Contract. Prices in the Schedule of Prices/Bill of Quantities shall be quoted entirely in Pak Rupees keeping in view the instructions contained in the Preamble to Schedule of Prices.
- 10.2 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the bidder shall remain fixed during the bidder's performance of the Contract and not subject to variation on any account.
- 10.3 The unit rates and prices in the Schedule of Prices or percentage above or below on the composite schedule of rates shall be quoted by the bidder in the currency as stipulated in Bidding Data.
- 10.4 Item for which no rate or price is entered by the bidder will not be paid for by the Procuring Agency when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.

IB.11 Documents Establishing Bidder's Eligibility and Qualifications

- 10.1 Pursuant to Clause IB.8, the bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and its qualifications to perform the Contract if its bid is accepted.

- 11.2 Bidder/Manufacturer must possess and provide evidence of its capability and the experience as stipulated in Bidding Data and the Qualification Criteria stipulated in the Bidding Documents.

IB.12 Documents Establishing Works' Conformity to Bidding Documents

- 12.1 The documentary evidence of the Works' conformity to the Bidding Documents may be in the form of literature, drawings and data and the bidder shall furnish documentation as set out in Bidding Data
- 12.2 The bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, if any, designated by the Procuring Agency in the Technical Provisions are intended to be descriptive only and not restrictive.

IB.13 Bid Security

- 13.1 Each bidder shall furnish, as part of his bid, at the option of the bidder, a Bid Security as percentage of Bid Price/Estimated Cost or in the amount stipulated in Bidding Data in Pak. Rupees in the form of Deposit at call / Payee's Order or a Bank Guarantee issued by a Scheduled Bank in Pakistan in favor of the Procuring Agency valid for a period up to twenty eight (28) days beyond the bid validity date. *(Bid Security should not below 1% and not exceeding 5% of bid price/estimated cost SPP Rule 37).*
- 13.2 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Procuring Agency as non-responsive.
- 13.3 The bid securities of unsuccessful bidders will be returned upon award of contract to the successful bidder or on the expiry of validity of Bid Security whichever is earlier.
- 13.4 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security, pursuant to Clause IB.21 and signed the Contract Agreement, pursuant to Sub-Clauses IB.20.2 & 20.3. *(SPP Rule 37)*
- 13.5 The Bid Security may be forfeited:
- (a) if a bidder withdraws his bid during the period of bid validity; or
 - (b) if a bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) hereof; or
 - (c) in the case of a successful bidder, if he fails to:
 - (i) furnish the required Performance Security in accordance with Clause IB.21, or

- (ii) sign the Contract Agreement, in accordance with Sub-Clauses IB.20.2 & 20.3.

IB.14 Validity of Bids, Format, Signing and Submission of Bid

14.1 Single stage – two envelope procedure will be adopted and each bidder shall submit his bid as under:

- (i) The bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and technical proposal;
- (ii) The envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHANICAL PROPOSAL” in bold and legible letters to avoid confusion;
- (iii) Initially, only the envelope marked “TECHNICAL PROPOSAL” shall be opened;
- (iv) The envelope shall be marked as “FINANCIAL PROPOSAL” shall be retained in the custody of the Procuring Agency without being opened;
- (v) The Procuring Agency shall evaluate the technical proposal in accordance to the Post Qualification Criteria and reject any proposal witch dose not conform to the specified requirements;
- (vi) During the technical evaluation no amendments in the technical proposal shall be permitted;
- (vii) After the evaluation and approval of the technical proposal the Procuring Agency, shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted bids only. The financial proposal of bids found technically non- responsive shall be returned un-opened to the respective bidders; and
- (viii) The bid found to be the lowest evaluated bid shall be accepted.

14.2 Both envelopes shall:

- (a) be addressed to the Procuring Agency at the address provided in the Bidding data;
- (b) bear the name and identification number of the contract as defined in the Bidding Data; and
- (c) provide a warning not to open before the time and date for bid opening, as specified in the Bidding Data.

- 14.3 Bids shall remain valid for the period stipulated in the Bidding Data after the date of bid opening.
- 14.4 All Schedules to Bid are to be properly completed and signed.
- 14.5 No alteration is to be made in the Form of Bid except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the bid may be rejected.
- 14.6 Each bidder shall prepare Original and number of copies specified in the Bidding Data of the documents comprising the bid as described in Clause IB.8 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 14.7 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign (in the case of copies, Photostats are also acceptable). This shall be indicated by submitting a written Power of Attorney authorising the signatory of the bidder to act for and on behalf of the bidder. All pages of the bid shall be initialed and official seal be affixed by the person or persons signing the bid.
- 14.8 The Bid shall be delivered in person or sent by registered mail at the address to Procuring Agency as given in Bidding Data.

D. SUBMISSION OF BID

IB.15 Deadline for Submission, Modification & Withdrawal of Bids

- 15.1 Bids must be received by the Procuring Agency at the address/provided in Bidding Data not later than the time and date stipulated therein.
- 15.2 The inner and outer envelopes shall
 - (a) be addressed to the Procuring Agency at the address provided by in the Bidding Data;
 - (b) bear the name and identification number of the Contract as defined in the Bidding and Contract Data; and
 - (c) provide a warning not to open before the specified time and date for bid opening as defined in the Bidding Data.
 - (d) in addition to the identification required in 15.2 the inner envelopes shall indicate the name and addresses of the Bidder to enable the Bid to be returned unopened in case it is declare late.
 - (e) if the outer envelope is not sealed and marked as above, the Procuring Agency will assumed no responsibility for the misplacement or premature opening of the Bid.

- 15.3 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.
- 15.4 Any bid received by the Procuring Agency after the deadline for submission prescribed in Bidding Data will be returned unopened to such bidder.
- 15.5 Any bidder may modify or withdraw his bid after bid submission provided that the notification or written notice of withdrawal is received by the Procuring Agency prior to the deadline for submission of bids.
- 15.6 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security pursuant to Sub-Clause IB.13.5(a).

E. BID OPENING AND EVALUATION

IB.16 Bid Opening, Clarification and Evaluation (SPP Rules 41, 42 & 43)

- 16.1 The Procuring Agency will open the bids, in the presence of bidders' representatives who choose to attend, at the time, date and in the place specified in the Bidding Data. .
- 16.2 The bidder's name, Bid Prices, any discounts, the presence or absence of Bid Security, and such other details as the Procuring Agency at its discretion may consider appropriate, will be announced Procuring Agency at the Bid opening. The Procuring Agency will record the minutes of the Bid opening. Representatives of the Bidders who chose to attend shall sign the attendance sheet.

Any Bid price or discount which is not read out and recorded at Bid opening will not be taken into account in the Evaluation of bid.
- 16.3 To assist in the examination, evaluation and comparison of Bids the Engineer/Procuring Agency may, at its discretion, ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted (SPP Rule 43).
- 16.4 (a) Prior to detailed evaluation, pursuant to IB.16.7 to 16.9, the Engineer/Procuring Agency will determine the substantial responsiveness of each bid to the Bidding Documents. For purpose of these instructions, a substantially responsive bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviation. It will include determining the requirements listed in Bidding Data.

(b) Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the words and figure the amount in words shall prevail. If there is a discrepancy between the total Bid price entered in Form of Bid and total shown in Schedule of Prices – Summary, in the amount stated in the Form of Bid will be corrected by the Procuring Agency in accordance with the Corrected Schedule of Prices.

If the Bidder does not accept the corrected amount of Bid, his Bid will be rejected and his Bid security forfeited.

- 16.5 A Bid determine as substantially non-responsive will be rejected and will not subsequently be made responsive by the Bidder by correction of the non-conformity.
- 16.6 Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation (**major deviation**) may be waived by Procuring Agency, provide such waiver does not prejudice or affect the relative ranking of any other Bidders.

(A).Major (material deviations include:-

- (i) has been not properly signed;
- (ii) is not accompanied by the bid security of required amount and manner;
- (iii) stipulating price adjustment when fixed price bids were called for;
- (iv) failing to respond to specifications;
- (v) failing to comply with mile stones / Critical dates provided in bidding Documents;
- (vi) sub-contracting contrary to the Conditions of Contract specified in bidding Documents;
- (vii) refusing to bear important responsibility and liabilities allocated in the bidding Documents, such as performance guarantees and insurance coverage;
- (viii) taking exception to critical provisions such as applicable law, taxes and duties and dispute resolution procedures;
- (ix) a material deviation or reservation is one:
 - (a) Which affect in any substantial way the scope, quality for performance of the work
 - (b) Adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

(B) Minor Deviations

Bids that offer deviations acceptable to Procuring Agency and which can be assigned a monetary value may be considered substantially responsive at least as to the issue of fairness. This value would however be added as an adjustment for evaluation purposes only during the detailed evaluation process.

- 16.7 The Engineer/Procuring Agency will evaluate and compare only the bids previously determined to be substantially responsive pursuant to IB.164 to 16.6 as per requirements given hereunder. Bids will be evaluated for complete scope of works. The prices will be compared on the basis of the Evaluated Bid Price pursuant to IB.16.8 herein below.

Technical Evaluation: It will be examined in detail whether the works offered by the bidder complies with the Technical Provisions of the Bidding Documents. For this purpose, the bidder's data submitted with the bid in Schedule B Bid will be compared with Technical features /criteria of the works detailed in the Technical Provisions. Other technical information submitted with bid regarding the Scope of Work will also be reviewed.

16.8 Evaluated Bid Price

In evaluating the bids, the Engineer/Procuring Agency will determine for each bid in addition to the Bid Price, the following factors (adjustment) in the manner and to the extent indicated below to determine the Evaluated Bid Price:

- (i) making any correction for arithmetic errors pursuant to IB.16.4 hereof.
- (ii) Discount, if any, offered by the Bidders as also read out and recorded at the time of bid opening.
- (iii) Excluding **provisional sums** and the provisions for **contingencies** in the Bill of Quantities **if any**, but including **Day work**, where priced Competitively

IB.17 Process to be Confidential

- 17.1 Subject to Sub-Clause IB.16.3 heretofore, no bidder shall contact Engineer/Procuring Agency on any matter relating to its Bid from the time of the Bid opening to the time the bid evaluation result is announced by the Procuring Agency. The evaluation result shall be announced at least seven (07) days prior to award of Contract (SPP Rule 45). The announcement to all bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated.
- 17.2 Any effort by a bidder to influence Engineer/Procuring Agency in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas, any bidder feeling aggrieved may lodge a written complaint to Complaint Redressal committee as per terms and conditions mentioned in SPP Rules 31 & 32. However, mere fact of lodging a complaint shall not warrant suspension of procurement process.
- 17.3 Bidders may be excluded if involved in "Corrupt and Fraudulent Practices" means either one or any combination of the practices given below SPP Rule 2 (q);
 - (1) "**Coercive Practice**" means any impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence the actions of a party to achieve a wrongful gain or to cause a wrongful loss to another party;
 - (2) "**Collusive Practice**" means any arrangement between two or more parties to the procurement process or contract execution, designed to achieve with or without the knowledge of the procuring agency to establish prices at artificial, noncompetitive levels

for any wrongful gain;

(3) **“Corrupt Practice”** means the offering, receiving or soliciting, directly or indirectly, of anything of value to influence the acts of another party for wrongful gain;

(4) **“Fraudulent Practice”** means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(5) **“Obstruction Practice”** means harming or threatening to harm, directly or indirectly, person or their property to influence their participation in a procurement process, or effect the execution of a contract or deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements before investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or acts intended to materially impede the exercise of inspection and audit rights provided for under the Rules.

F. AWARD OF CONTRACT

IB.18. Post Qualification

18.1 The Procuring Agency, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefore in writing. They shall form part of the records of that bid evaluation report.

18.2 The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidders' qualifications submitted under Clause IB.11, as well as such other information required in the Bidding Documents.

IB.19 Award Criteria & Procuring Agency's Right

19.1 Subject to Sub-Clause IB.19.2, the Procuring Agency will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be qualified to satisfactory perform the Contract in accordance with the provisions of Clause IB.18.

19.2 Notwithstanding Sub-Clause IB.19.1, the Procuring Agency reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to

award of Contract, without thereby incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the Procuring Agency's action except that the grounds for its rejection of all bids shall upon request be communicated, to any bidder who submitted a bid, without justification of the grounds. Notice of the rejection of all the bids shall be given promptly to all the bidders (SPP Rule 25).

IB.20 Notification of Award & Signing of Contract Agreement

- 20.1 Prior to expiration of the period of bid validity prescribed by the Procuring Agency, the Procuring Agency will notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted (SPP Rule 49).
- 20.2 Within seven (7) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Procuring Agency will send the successful bidder the Form of Contract Agreement provided in the Bidding Documents, incorporating all agreements between the parties.
- 20.3 The formal Agreement between the Procuring Agency and the successful bidder duly stamped at rate of ___ % of bid price (updated from time to time) stated in Letter of Acceptance shall be executed within seven (7) days of the receipt of Form of Contract Agreement by the successful bidder from the Procuring Agency.

IB.21 Performance Security

- 21.1 The successful bidder shall furnish to the Procuring Agency a Performance Security in the form and the amount stipulated in the Conditions of Contract within a period of fourteen (14) days after the receipt of Letter of Acceptance (SPP 39).
- 21.2 Failure of the successful bidder to comply with the requirements of Sub-Clauses IB.20.2 & 20.3 or 21.1 or Clause IB.22 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.
- 21.3 Publication of Award of Contract: within seven days of the award of contract, the procuring shall publish on the website of the authority and on its own website, if such a website exists, the results of the bidding process, identifying the bid through procurement identifying Number if any and the following information:
 - (1) Evaluation Report;
 - (2) Form of Contract and Letter of Award;
 - (3) Bill of Quantities or Schedule of requirements (SPP Rule 50).

IB.22 Integrity Pact

- 22.1 The Bidder shall sign and stamp the Form of Integrity Pact provided at Schedule-F to Bid in the Bidding Document for all Sindh Government procurement contracts exceeding Rupees ten (10) million. Failure to provide such Integrity Pact shall make the bid non-responsive (SPP Rule 89).

BIDDING DATA

Instructions to Bidders

Clause Reference

1.1 **Name of Procuring Agency**

Advisor P&D / Procurement, Jinnah Sindh Medical University, Rafiqui H.J. Shaheed Road, Karachi.

Brief Description of Works

Supply, Installation, Testing and Commissioning of Lifts

5.1 (a) **Procuring Agency's address:**
Advisor P&D / Procurement,
Jinnah Sindh Medical University,
Rafiqui H.J. Shaheed Road,
Karachi
Phone No. 021-99204776,
355223811-15 Extension 301, 307,
Fax: 0092-021-99201372

(b) **Engineer's address:**
Project Manager
National Engineering Services Pakistan (Pvt) Limited, A&P Division
4th Floor, NICL Building, Abbasi Shaheed Road, Karachi.
Tel: 021-99225430~33
Fax: 021 – 99225424

10.3 Bid shall be quoted entirely in Pak. Rupees. The payment shall be made in Pak. Rupees.

10.2 The bidder has the financial, technical and constructional capability necessary to perform the Contract as follows:

Please refer Post Qualification Documents.

- 12.1 (a) A detailed description of the Works, essential technical and performance characteristics.
- (b) Complete set of technical information, description data, literature and drawings as required in accordance with Schedule B to Bid, Specific Works Data. This will include but not be limited to a sufficient number of drawings, photographs, catalogues, illustrations and such other information as is necessary to illustrate clearly the significant characteristics such as general construction dimensions and other relevant information about the works to be performed.

13.1 Amount of Bid Security

The Bid Security shall be **2%** of the **Bid Price** in the form of Deposit at Call/ Payee's Order or a Bank Guarantee issued by a schedule Bank in Pakistan or from a foreign bank duly counter guaranteed by a Schedule Bank of Pakistan in favour of "**Jinnah Sindh Medical University, Karachi**" valid for a period up to twenty eight (28) days beyond the Bid validity date.

14.1 Period of Bid Validity

The period of the bid validity shall be 90 days after the deadline for Submission of Bid.

14.6 Number of Copies of the Bid to be submitted

One original plus one copy

14.8 Procuring Agency's Address for the Purpose of Bid Submission.

Advisor P&D / Procurement,
Jinnah Sindh Medical University
Rafiqi H.J. Shaheed Road,
Karachi

15.1 Deadline for Submission of Bids

As notified by the Procuring Agency in Notice Inviting Tenders

16.1 Venue, Time, and Date of Bid Opening

Venue: As notified by the Procuring Agency in Notice Inviting Tenders

Time: As notified by the Procuring Agency in Notice Inviting Tenders

Date: As notified by the Procuring Agency in Notice Inviting Tenders

16.4 Responsiveness of Bids

- (i) Bid is valid till required period,
- (ii) Bid Prices are firm during currency of contract,
- (iii) Completion period offered is within specified limits,

- (iv) Bidder is eligible to Bid and possesses the requisite experience, capability and qualification.
- (v) Bid does not deviate from basic technical requirements and
- (vi) Bids are generally in order, etc.

(a) **Fixed Price Contract:** No escalation will be provided during currency of the contract.

FORM OF BID AND SCHEDULES TO BID

FORM OF BID

(LETTER OF OFFER)

Bid Reference No. _____

Supply, Installation, Testing and Commissioning of Lifts.

To:

Advisor P&D / Procurement,
Jinnah Sindh Medical University
Rafiqi H.J. Shaheed Road,
Karachi

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract, Contract Data, Specifications, Drawings, if any, Schedule of Prices and Addenda Nos. _____ for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address _____ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price of Rs _____ (Rupees _____) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Bid.
3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of _____ drawn in your favour or made payable to you and valid for a period of twenty eight (28) days beyond the period of validity of Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.
5. We agree to abide by this Bid for the period of 90 days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

7. We undertake, if our Bid is accepted, to execute the Performance Security referred to in Conditions of Contract for the due performance of the Contract.
8. We understand that you are not bound to accept the lowest or any bid you may receive.
9. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Dated this _____ day of _____, 2015

Signature _____

in the capacity of _____ duly authorized to sign bid for and on behalf of

(Name of Bidder in Block Capitals)

(Seal)

Address

Witness:

(Signature) _____

Name: _____

Address: _____

SCHEDULES TO BID INCLUDE THE FOLLOWING:

- Schedule A to Bid: Schedule of Prices
- Schedule B to Bid: Specific Works Data
- Schedule C to Bid: Works to be Performed by Subcontractors
- Schedule D to Bid: Proposed Programme of Works
- Schedule E to Bid: Method of Performing Works
- Schedule F to Bid: Integrity Pact

SCHEDULE - A TO BID

SCHEDULE -- A TO BID

SCHEDULE OF PRICES

<u>Sr. No.</u>		<u>Page No.</u>
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2.	Schedule of Prices/Bill of Quantities	
	(a) Summary of Bid Prices	31
	(b) Detailed Schedule of Prices/Bill of Quantities	32

PREAMBLE TO SCHEDULE OF PRICES

1. General

- 1.1 The Schedule of Prices shall be read in conjunction with the Conditions of Contract, Contract Data together with the Specifications and Drawings, if any.
- 1.2 The Contract shall be for the whole of the Works as described in these Bidding Documents. Bids must be for the complete scope of works.

2. Description

- 2.1 The general directions and descriptions of works and materials are not necessarily repeated nor summarized in the Schedule of Prices. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Schedule of Prices.

3. Units & Abbreviations

- 3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the SI System of units shall be used throughout the Project.

4. Rates and Prices

- 4.1 Except as otherwise expressly provided under the Conditions of Contract, the rates and amounts entered in the Schedule of Prices shall be the rates at which the Contractor shall be paid and shall be the full inclusive value of the works set forth or implied in the Contract; except for the amounts reimbursable, if any to the Contractor under the Contract.
- 4.2 Unless otherwise stipulated in the Contract Data, the rates and prices entered by the bidder shall not be subject to adjustment during the performance of the Contract.
- 4.3 All duties, taxes and other levies payable by the Contractor shall be included in the rates and prices.
- 4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the Schedule of Prices, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works and no separate payment will be made for those items.

SCHEDULE - A TO BID

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Any item against which no rate or price is entered by the bidder will not be paid for by the Procuring Agency when executed and shall be deemed covered by the rates and prices for other items in the Schedule of Prices.

4.5 (a) The bidder shall be deemed to have obtained all information as to and all requirements related thereto which may affect the bid price.

(b) The Contractor shall be responsible to make complete arrangements for the transportation of the Plant to the Site.

4.6 The Contractor shall provide for all parts of the Works to be completed in every respect. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Works, are not specifically mentioned in the Specifications, such details shall be considered as included in the Contract Price.

5. Bid Prices

5.1 Break-up of Bid Prices

The various elements of Bid Prices shall be quoted as detailed by the Procuring Agency in the format of Schedule of Prices.

The bidder shall recognize such elements of the costs which he expects to incur the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

5.2 Total Bid Price

The total of bid prices in the Schedule of Prices shall be entered in the Summary of Bid Prices.

6. Provisional Sums and Day work

6.1 Provisional Sums included and so designated in the Schedule of Prices if any, shall be expended in whole or in part at the direction and discretion of the Engineer/Procuring Agency. The Contractor will only receive payment in respect of Provisional Sums, if he has been instructed by the Engineer/Procuring Agency to utilize such sums.

6.2 Day work rates in the contractor's bid are to be used for small additional amounts of work and only when the Engineer have given written instructions in advance for additional work to be paid for in that way.

SCHEDULE OF PRICES – SUMMARY OF BID PRICES

Jinnah Sindh Medical University, Karachi
LIFT WORKS

SUMMARY OF BID PRICES

CODE	DESCRIPTION	TOTAL AMOUNT (PAK.Rs.)
F	MECHANICAL WORKS Passenger Lift (L-1 & L-2)	
	TOTAL BID PRICE	

TOTAL BID PRICE IN WORDS

(Rupees _____)

SCHEDULE - A TO BID

SCHEDULE OF PRICES /BILL OF QUANTITIES

Jinnah Sindh Medical University, Karachi

LIFT WORKS

SCHEDULE OF PRICES

Item No. (1)	Description (2)	Unit (3)	Qty. (4)	Unit Rate (PKR) (5)	Total Amount (PKR) (6)
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F. MECHANICAL WORKS

REF. SEC. 9000 & 8530

Passenger Lift (L-1)

- 1M Supply, installation, testing, commissioning and No. 1
maintenance (during defect liability period) of
Passenger Lift (L-1), machine room type, 6 stops / 6
openings having capacity 1000 kg / 13 persons, 1.0
m/s, total travel 60'-0" (18.30 m) speed including
counterweights, supports, brackets, embedded
parts, access ladder, separator screen and other
accessories complete in all respect as per
specifications and drawings.

Passenger Lift (L-2)

- 2M Supply, installation, testing, commissioning and No. 1
maintenance (during defect liability period) of
Passenger Lift (L-2), machine room type, 6 stops / 6
openings having capacity 630 kg / 8 persons, 1.6
m/s, total travel 60'-0" (18.30 m) speed including
counterweights, supports, brackets, embedded
parts, access ladder, separator screen and other
accessories complete in all respect as per
specifications and drawings.

- 3M* Dismantling of existing lift (1 no.) of capacity 630 kg No. 1
and shifting of dismantled material without storing at
site.

- 4M* Purchase of existing lifts as available at site, of No. 1
capacity 630 kg, 5 stops / 5 openings, speed 1.0
m/sec.

Total Cost
(Cost carried over to Summary)

* Resultant of serial 3M (+ve Amount) & 4M (-ve Amount)
shall be added in the Total Cost and carried over to Summary

(In words Rupees)

SCHEDULE - B TO BID

SPECIFIC WORKS DATA

Supply, Installation, Testing and Commissioning of Lifts.

SCHEDULE – C TO BID

WORKS TO BE PERFORMED BY SUBCONTRACTORS

The bidder will do the work with his own forces except the work listed below which he intends to sub-contract.

Items of Works to be Sub-Contracted	Name and address of Sub-Contractors	Statement of similar works previously executed (attach evidence)
--	--	---

Note:

1. No change of Sub-Contractors shall be made by the bidder without prior approval of the Procuring Agency.
2. The truthfulness and accuracy of the statement as to the experience of Sub-Contractors is guaranteed by the bidder. The Procuring Agency's judgment shall be final as to the evaluation of the experience of Sub-Contractors submitted by the bidder.
3. Statement of similar works shall include description, location & value of works, year completed and name & address of the clients.

SCHEDULE - D TO BID

PROPOSED PROGRAMME OF WORKS

Bidder shall provide a programme in a bar-chart showing the sequence of work items by which he proposes to complete the Works of the entire Contract. The programme should indicate the sequence of work items and the period of time during which he proposes to complete the Works including the activities like designing, schedule of submittal of drawings, ordering and procurement of materials, manufacturing, delivering, construction of civil works, erection, testing and commissioning of Works to be supplied under the Contract.

Jinnah Sindh Medical University, Karachi

LIFT WORKS

SCHEDULE OF PRICES

(OPERATION & MAINTENANCE AFTER DEFECTS LIABILITY PERIOD)

Item No. (1)	Description (2)	Unit (3)	Qty. (4)	Unit Rate (PKR) (5)	Total Amount (PKR) (6)
-----------------	--------------------	-------------	-------------	---------------------------	------------------------------

1M	Lift Nos. (L1 & L-2) Operation & Maintenance of two lifts (L-1 & L-2) for three (3) years from the end of defect liability period of 365 days including supply of labour (full time), erection equipment, misc. tools & material necessary for complete maintenance alongwith arrangements of parts / equipment at Employer's cost required during maintenance and as per scope of work described in this document complete in all respect as per specifications.	Job	1		
----	---	-----	---	--	--

Total O&M Cost
(Cost not carried over to Summary)

(In words Rupees)

Note: The quoted prices for O&M Services will not be considered in Bid Evaluation. However, O&M quoted prices will be negotiated with the successful Bidder for Award of O&M services.

SCHEDULE – E TO BID

METHOD OF PERFORMING WORKS

The bidder is required to submit a narrative outlining the method of performing the Works. The narrative should indicate in detail and include but not be limited to:

- The sequence and methods in which he proposes to carry out the Works, including the number of shifts per day and hours per shift, he expects to work.
- A list of all major items of constructional and erectional plant, tools and vehicles proposed to be used in delivering/carrying out the Works at Site
- The procedure for installation of equipment and transportation of equipment and materials to the site.
- Organization chart indicating head office & field office personnel involved in management, supervision and engineering of the Works to be done under the Contract.

SCHEDULE – F TO BID

(INTEGRITY PACT)

**DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.
PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN
CONTRACTS WORTH RS. 10.00 MILLION OR MORE**

Contract No. _____ Dated _____
Contract Value: _____
Contract Title: _____

..... [name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan (GoP) or any administrative subdivision or agency thereof or any other entity owned or controlled by GoP through any corrupt business practice.

Without limiting the generality of the foregoing, [name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[name of Supplier] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Name of:
Signature:
[Seal]

Name of Seller/Supplier:
Signature:
[Seal]

CONDITIONS OF CONTRACT

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CONDITIONS OF CONTRACT

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CONDITIONS OF CONTRACT

1. GENERAL PROVISIONS

1.1 Definitions

In the Contract as defined below, the words and expressions defined shall have the following meanings assigned to them, except where the context requires otherwise:

The Contract

- 1.1.1 "Contract" means the Contract Agreement and the other documents listed in the Contract Data.
- 1.1.2 "Specifications" means the document as listed in the Contract Data, including Procuring Agency's requirements in respect of design to be carried out by the Contractor (if any), and any Variation to such document.
- 1.1.3 "Drawings" means the Procuring Agency's drawings of the Works as listed in the Contract Data, and any Variation to such drawings.

Persons

- 1.1.4 "Procuring Agency" means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Contractor) any assignee.
- 1.1.5 "Contractor" means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Procuring Agency) any assignee.
- 1.1.6 "Party" means either the Procuring Agency or the Contractor.

Dates, Times and Periods

- 1.1.7 "Commencement Date" means the date fourteen (14) days after the date the Contract comes into effect or any other date named in the Contract Data.
- 1.1.8 "Day" means a calendar day
- 1.1.9 "Time for Completion" means the time for completing the Works as stated in the Contract Data (or as extended under Sub-Clause 7.3), calculated from the Commencement Date.

Money and Payments

- 1.1.10 "Cost" means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site, including overheads and similar charges but does not include any allowance for profit.

Other Definitions

- 1.1.11 "Contractor's Equipment" means all machinery, apparatus and other things required for the execution of the Works but does not include Materials or Plant intended to form part of the Works.
- 1.1.12 "Country" means the Islamic Republic of Pakistan.
- 1.1.13 "Procuring Agency's Risks" means those matters listed in Sub-Clause 6.1.
- 1.1.14 "Force Majeure" means an event or circumstance which makes performance of a Party's obligations illegal or impracticable and which is beyond that Party's reasonable control.
- 1.1.15 "Materials" means things of all kinds (other than Plant) to be supplied and incorporated in the Works by the Contractor.
- 1.1.16 "Plant" means the machinery and apparatus intended to form or forming part of the Works.
- 1.1.17 "Site" means the places provided by the Procuring Agency where the Works are to be executed, and any other places specified in the Contract as forming part of the Site.
- 1.1.18 "Variation" means a change which is instructed by the Engineer/Procuring Agency under Sub-Clause 10.1.
- 1.1.19 "Works" means any or all the works whether Supply, Installation, Construction etc. and design (if any) to be performed by the Contractor including temporary works and any variation thereof.
- 1.1.20 "Engineer" means the person notified by the Procuring Agency to act as Engineer for the purpose of the Contract and named as such in Contract Data.

1.2 Interpretation

Words importing persons or parties shall include firms and organizations. Words importing singular or one gender shall include plural or the other gender where the context requires.

1.3 **Priority of Documents**

The documents forming the Contract are to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the priority of the documents shall be in accordance with the order as listed in the Contract Data.

1.4 **Law**

The law of the Contract is the relevant Law of Islamic Republic of Pakistan.

1.5 **Communications**

All Communications related to the Contract shall be in English language.

1.5 **Statutory Obligations**

The Contractor shall comply with the Laws of Islamic Republic of Pakistan and shall give all notices and pay all fees and other charges in respect of the Works.

2. **THE PROCURING AGENCY**

2.1 **Provision of Site**

The Procuring Agency shall provide the Site and right of access thereto at the times stated in the Contract Data.

Site Investigation Reports are those that were included in the bidding documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.

2.2 **Permits etc.**

The Procuring Agency shall, if requested by the Contractor, assist him in applying for permits, licences or approvals which are required for the Works.

2.3 **Engineer's/Procuring Agency's Instructions**

The Contractor shall comply with all instructions given by the Procuring Agency or the Engineer, if notified by the Procuring Agency, in respect of the Works including the suspension of all or part of the Works.

2.4 **Approvals**

No approval or consent or absence of comment by the Engineer/Procuring Agency shall affect the Contractor's obligations.

3. **ENGINEER'S/PROCURING AGENCY'S REPRESENTATIVES**

3.1 **Authorized Person**

The Procuring Agency shall appoint a duly authorized person to act for him and on his behalf for the purposes of this Contract. Such authorized person shall be duly identified in the Contract Data or otherwise notified in writing to the Contractor as soon as he is so appointed. In either case the Procuring Agency shall notify the Contractor, in writing, the precise scope of the authority of such authorized person at the time of his appointment.

3.2 **Engineer's/Procuring Agency's Representative**

The name and address of Engineer's/Procuring Agency's Representative is given in Contract Data. However the Contractor shall be notified by the Engineer/Procuring Agency, the delegated duties and authority before the Commencement of Works.

4. **THE CONTRACTOR**

4.1 **General Obligations**

The Contractor shall carry out the Works properly and in accordance with the Contract. The Contractor shall provide all supervision, labour, Materials, Plant and Contractor's Equipment which may be required.

4.2 **Contractor's Representative**

The Contractor shall appoint a representative at site on full time basis to supervise the execution of work and to receive instructions on behalf of the Contractor but only after obtaining the consent of the Procuring Agency for such appointment which consent shall not be unreasonable withheld by the Procuring Agency. Such authorized representative may be substituted / replaced by the Contractor at any time during the Contract Period but only after obtaining the consent of the Procuring Agency as aforesaid.

4.3 **Subcontracting**

The Contractor shall not subcontract the whole of the Works. The Contractor shall not subcontract any part of the Works without the consent of the Procuring Agency.

4.4 **Performance Security**

The Contractor shall furnish to the Procuring Agency within fourteen (14) days after receipt of Letter of Acceptance a Performance Security at the option of the bidder, in the form of Payee's Order/Bank Draft or Bank Guarantee from Schedule Bank for the amount and validity specified in Contract Data.

5. DESIGN BY CONTRACTOR

5.1 Contractor's Design

The Contractor shall carry out design to the extent specified, as referred to in the Contract Data. The Contractor shall promptly submit to the Engineer/Procuring Agency all designs prepared by him. Within fourteen (14) days of receipt the Engineer/Procuring Agency shall notify any comments or, if the design submitted is not in accordance with the Contract, shall reject it stating the reasons. The Contractor shall not construct any element of the Works designed by him within fourteen (14) days after the design has been submitted to the Engineer/Procuring Agency or which has been rejected. Design that has been rejected shall be promptly amended and resubmitted. The Contractor shall resubmit all designs commented on taking these comments into account as necessary.

5.2 Responsibility for Design

The Contractor shall remain responsible for his bided design and the design under this Clause, both of which shall be fit for the intended purposes defined in the Contract and he shall also remain responsible for any infringement of any patent or copyright in respect of the same. The Engineer/Procuring Agency shall be responsible for the Specifications and Drawings.

6. PROCURING AGENCY'S RISKS

6.1 The Procuring Agency's Risks

The Procuring Agency's Risks are:-

- a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country;
- b) rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country;
- c) riot, commotion or disorder by persons other than the Contractor's personnel and other employees including the personnel and employees of Sub-Contractors, affecting the Site and/or the Works;
- d) ionizing radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly, except to the extent to which the Contractor/Sub-Contractors may be responsible for the use of any radio-active material;

- e) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds;
- f) use or occupation by the Procuring Agency of any part of the Works, except as may be specified in the Contract;
- g) late handing over of sites, anomalies in drawings, late delivery of designs and drawings of any part of the Works by the Procuring Agency's personnel or by others for whom the Procuring Agency is responsible;
- h) a suspension under Sub-Clause 2.3 unless it is attributable to the Contractor's failure; and
- i) physical obstructions or physical conditions other than climatic conditions, encountered on the Site during the performance of the Works, for which the Contractor immediately notified to the Procuring Agency and accepted by the Procuring Agency.

7. TIME FOR COMPLETION

7.1 Execution of the Works

The Contractor shall commence the Works on the Commencement Date and shall proceed expeditiously and without delay and shall complete the Works, subject to Sub-Clause 7.3 below, within the Time for Completion.

7.2 Programme

Within the time stated in the Contract Data, the Contractor shall submit to the Engineer/Procuring Agency a programme for the Works in the form stated in the Contract Data.

7.3 Extension of Time

The Contractor shall, within such time as may be reasonable under the circumstances, notify the Procuring Agency/Engineer of any event(s) falling within the scope of Sub-Clause 6.1 or 10.3 of these Conditions of Contract and request the Procuring Agency/Engineer for a reasonable extension in the time for the completion of Works. Subject to the aforesaid, the Procuring Agency/Engineer shall determine such reasonable extension in the time for the completion of Works as may be justified in the light of the details/particulars supplied by the Contractor in connection with the such determination by the Procuring Agency/Engineer within such period as may be prescribed by the Procuring Agency/Engineer for the same; and the Procuring Agency shall extend the Time for Completion as determined.

7.4 **Late Completion**

If the Contractor fails to complete the Works within the Time for Completion, the Contractor's only liability to the Procuring Agency for such failure shall be to pay the amount as **liquidity damages** stated in the Contract Data for each day for which he fails to complete the Works.

8. **TAKING-OVER**

8.1 **Completion**

The Contractor may notify the Engineer/Procuring Agency when he considers that the Works are complete.

8.2 **Taking-Over Notice**

Within fourteen (14) days of the receipt of the said notice of completion from the Contractor the Procuring Agency/Engineer shall either takeover the completed Works and issue a Certificate of Completion to that effect or shall notify the Contractor his reasons for not taking-over the Works. While issuing the Certificate of Completion as aforesaid, the Procuring Agency/Engineer may identify any outstanding items of work which the Contractor shall undertake during the Maintenance Period.

9. **REMEDYING DEFECTS**

9.1 **Remedying Defects**

The Contractor shall for a period stated in the Contract Data from the date of issue of the Certificate of Completion carry out, at no cost to the Procuring Agency, repair and rectification work which is necessitated by the earlier execution of poor quality of work or use of below specifications material in the execution of Works and which is so identified by the Procuring Agency/Engineer in writing within the said period. Upon expiry of the said period, and subject to the Contractor's faithfully performing his aforesaid obligations, the Procuring Agency/Engineer shall issue a Maintenance Certificate whereupon all obligations of the Contractor under this Contract shall come to an end.

Failure to remedy any such defects or complete outstanding work within a reasonable time shall entitle the Procuring Agency to carry out all necessary works at the Contractor's cost. However, the cost of remedying defects not attributable to the Contractor shall be valued as a Variation.

9.2 **Uncovering and Testing**

The Engineer/Procuring Agency may give instruction as to the uncovering and/or testing of any work. Unless as a result of an uncovering and/or testing it is established that the Contractor's design, Materials, Plant or workmanship are not in accordance with the Contract, the Contractor shall be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 10.2.

10. VARIATIONS AND CLAIMS

10.1 Right to Vary

The Procuring Agency/Engineer may issue Variation Order(s) in writing. Where for any reason it has not been possible for the Procuring Agency/Engineer to issue such Variations Order(s), the Contractor may confirm any verbal orders given by the Procuring Agency/Engineer in writing and if the same are not refuted/denied by the Procuring Agency/Engineer within seven (7) days of the receipt of such confirmation the same shall be deemed to be a Variation Orders for the purposes of this Sub-Clause.

10.2 Valuation of Variations

Variations shall be valued as follows:

- a) at a lump sum price agreed between the Parties, or
- b) where appropriate, at rates in the Contract, or
- c) in the absence of appropriate rates, the rates in the Contract shall be used as the basis for valuation, or failing which
- d) at appropriate new rates, as may be agreed or which the Engineer/Procuring Agency considers appropriate, or

if the Engineer/Procuring Agency so instructs, at day work rates set out in the Contract Data for which the Contractor shall keep records of hours of labour and Contractor's Equipment, and of Materials, used.

10.3 Changes in the Quantities.

- a) If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Procuring Agency/Engineer shall adjust the rate to allow for the change will be valued as per sub clause 10.2.
- b) The Engineer Shall not adjust rates from changes in quantities if thereby the initial Contract Prices is exceeded by more than 15 percent, except with the prior approval of the Procuring Agency.
- c) If requested by the Engineer, the contractor shall provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

10.3 Early Warning

The Contractor shall notify the Engineer/Procuring Agency in writing as soon as he is aware of any circumstance which may delay or disrupt the Works, or which may give rise to a claim for additional payment.

To the extent of the Contractor's failure to notify, which results to the Engineer/Procuring Agency being unable to keep all relevant records or not taking steps to minimize any delay, disruption, or Cost, or the value of any Variation, the Contractor's entitlement to extension of the Time for Completion or additional payment shall be reduced/rejected.

10.4. Valuation of Claims

If the Contractor incurs Cost as a result of any of the Procuring Agency's Risks, the Contractor shall be entitled to the amount of such Cost. If as a result of any Procuring Agency's Risk, it is necessary to change the Works, this shall be dealt with as a Variation subject to Contractor's notification for intention of claim to the Engineer/Procuring Agency within fourteen (14) days of the occurrence of cause.

10.5 Variation and Claim Procedure

The Contractor shall submit to the Engineer/Procuring Agency an itemised make-up of the value of variations and claims within twenty eight (28) days of the instruction or of the event giving rise to the claim. The Engineer/Procuring Agency shall check and if possible agree the value. In the absence of agreement, the Procuring Agency shall determine the value.

11. CONTRACT PRICE AND PAYMENT

11.1 (a) Terms of Payments

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall , subject to Clause 11.3, be paid by the Procuring Agency to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Procuring Agency and Contractor, or, in the case of the Final Certificate referred to in Sub Clause 11.5, within 60 days after such Final Payment Certificate has been jointly verified by Procuring Agency and Contractor;

Provided that the Interim Payment shall be caused in thirty (30) days and Final Payment in 60 days in case of foreign funded project. In the event of the failure of the Procuring Agency to make payment within the times stated, the Procuring Agency shall pay to the Contractor compensation at the 28 days rate of KIBOR+2% per annum in local currency and LIBOR+1% for foreign currency, upon all sums unpaid from the date by which the same should have been paid.

(b) **Valuation of the Works**

The Works shall be valued as provided for in the Contract Data, subject to Clause 10.

11.2 **Monthly Statements**

The Contractor shall be entitled to be paid at monthly intervals:

- a) the value of the Works executed less to the cumulative amount paid previously; and
- b) value of secured advance on the materials and valuation of variations (if any).

The Contractor shall submit each month to the Engineer/Procuring Agency a statement showing the amounts to which he considers himself entitled.

11.3 **Interim Payments**

Within a period not exceeding seven (7) days from the date of submission of a statement for interim payment by the Contractor, the Engineer shall verify the same and within a period not exceeding thirty (30/60) days from the said date of submission by the Contractor, the Procuring Agency shall pay to the Contractor the sum subject to adjustment for deduction of the advance payments and retention money.

The Procuring Agency may by any Interim Payment Certificate make any correction or modification in any previous certificate which shall have been issued by him and shall have authority, if any work is not being carried out to his satisfaction, to omit or reduce the value of such work.

11.4 **Retention**

Retention money shall be paid by the Procuring Agency to the Contractor within fourteen (14) days after either the expiry of the period stated in the Contract Data, or the remedying of notified defects, or the completion of outstanding work, all as referred to in Sub-Clause 9.1, which ever is the later.

11.5 **Final Payment**

Within twenty one (21) days from the date of issuance of the Maintenance Certificate the Contractor shall submit a final account to the Engineer to verify and the Engineer shall verify the same within fourteen (14) days from the date of submission and forward the same to the Procuring Agency together with any documentation reasonably required to enable the Procuring Agency to ascertain the final contract value.

Within sixty (60) days from the date of receipt of the verified final account from the Engineer, the Procuring Agency shall pay to the Contractor any amount due to the Contractor. While making such payment the Procuring Agency may, for reasons to be given to the Contractor in writing, withhold any part or parts of the verified amount.

Upon submission of the Final Bill, the Contractor shall give to the Procuring Agency, with a copy to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract.

1.6 **Currency**

Payment shall be in the currency stated in the Contract Data.

12. **DEFAULT**

12.1 **Default by Contractor**

If the Contractor abandons the Works, refuses or fails to comply with a valid instruction of the Engineer/Procuring Agency or fails to proceed expeditiously and without delay, or is, despite a written complaint, in breach of the Contract, the Procuring Agency may give notice referring to this Sub-Clause and stating the default.

If the Contractor has not taken all practicable steps to remedy the default within fourteen (14) days after receipt of the Procuring Agency's notice, the Procuring Agency may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilize from the Site leaving behind any Contractor's Equipment which the Procuring Agency instructs, in the second notice, to be used for the completion of the Works at the risk and cost of the Contractor.

12.2 **Default by Procuring Agency**

If the Procuring Agency fails to pay in accordance with the Contract, or is, despite a written complaint, in breach of the Contract, the Contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within fourteen (14) days after the Procuring Agency's receipt of this notice, the Contractor may suspend the execution of all or parts of the Works.

If the default is not remedied within twenty eight (28) days after the Procuring Agency's receipt of the Contractor's notice, the Contractor may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilise from the Site.

12.3 **Insolvency**

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract immediately. The Contractor shall then demobilise from the Site leaving behind, in the case of the Contractor's insolvency, any Contractor's Equipment which the Procuring Agency instructs in the notice is to be used for the completion of the Works.

12.4 **Payment upon Termination**

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,

- b) any sums to which the Procuring Agency is entitled,
- c) if the Procuring Agency has terminated under Sub-Clause 12.1 or 12.3, the Procuring Agency shall be entitled to a sum equivalent to twenty percent (20%) of the value of parts of the Works not executed at the date of the termination, and
- d) if the Contractor has terminated under Sub-Clause 12.2 or 12.3, the Contractor shall be entitled to the cost of his demobilisation together with a sum equivalent to ten percent (10%) of the value of parts of the Works not executed at the date of termination.

The net balance due shall be paid or repaid within twenty eight (28) days of the notice of termination.

13. RISKS AND RESPONSIBILITIES

13.1 Contractor's Care of the Works

Subject to Sub-Clause 9.1, the Contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Procuring Agency's/Engineer's issuance of Certificate of Completion under Sub-Clause 8.2. Responsibility shall then pass to the Procuring Agency. If any loss or damage happens to the Works during the above period, the Contractor shall rectify such loss or damage so that the Works conform with the Contract.

Unless the loss or damage happens as a result of any of the Procuring Agency's Risks, the Contractor shall indemnify the Procuring Agency, or his agents against all claims loss, damage and expense arising out of the Works.

13.2 Force Majeure

If Force Majeure occurs, the Contractor shall notify the Engineer/Procuring Agency immediately. If necessary, the Contractor may suspend the execution of the Works and, to the extent agreed with the Procuring Agency demobilize the Contractor's Equipment.

If the event continues for a period of eighty four (84) days, either Party may then give notice of termination which shall take effect twenty eight (28) days after the giving of the notice.

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and Plant reasonably delivered to the Site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) the cost of his demobilization, and
- c) less any sums to which the Procuring Agency is entitled.

The net balance due shall be paid or repaid within thirty five (35) days of the notice of termination.

14. INSURANCE

14.1 Arrangements

The Contractor shall, prior to commencing the Works, effect insurances of the types, in the amounts and naming as insured the persons stipulated in the Contract Data except for items (a) to (e) and (i) of the Procuring Agency's Risks under Sub-Clause 6.1. The policies shall be issued by insurers and in terms approved by the Procuring Agency. The Contractor shall provide the Engineer/Procuring Agency with evidence that any required policy is in force and that the premiums have been paid.

14.2 Default

If the Contractor fails to effect or keep in force any of the insurances referred to in the previous Sub-Clause, or fails to provide satisfactory evidence, policies or receipts, the Procuring Agency may, without prejudice to any other right or remedy, effect insurance for the cover relevant to such as a default and pay the premiums due and recover the same plus a sum in percentage given in Contractor Data from any other amounts due to the Contractor.

15. RESOLUTION OF DISPUTES

15.1 Engineer's Decision

If a dispute of any kind whatsoever arises between the Procuring Agency and the Contractor in connection with the Works, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the twenty eight (28) days after the day on which he received such reference, the Engineer shall give notice of his decision to the Procuring Agency (Superintending Engineer) and the Contractor.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Work with all due diligence, and the Contractor and the Procuring Agency shall give effect forthwith to every such decision of the Engineer unless and until the same shall be revised, as hereinafter provided in an arbitral award.

15.2 Notice of Dissatisfaction

If a Party is dissatisfied with the decision of the Engineer or if no decision is given within the time set out in Sub-Clause 15.1 here above, the Party may give notice of dissatisfaction referring to this Sub-Clause within fourteen (14) days of receipt of the decision or the expiry of the time for the decision. If no notice of dissatisfaction is given within the specified time, the decision shall be final and binding on the Parties. If notice of dissatisfaction is given within the specified time, the decision shall be binding on the Parties who shall give effect to it without delay unless and until the decision of the Engineer is revised by an arbitrator.

If a contractor is dissatisfied with the decision of the Engineer of the department or decision is not given with in time then he can approach Superintending Engineer within 14 days, in case of dissatisfaction with decision of Superintending Engineer or not decided within 28 days, then arbitration process would be adopted as per clause 15.3.

15.3 Arbitration

A dispute which has been the subject of a notice of dissatisfaction shall be finally settled as per provisions of Arbitration Act 1940 (Act No. X of 1940) and Rules made there under and any statutory modifications thereto. Any hearing shall be held at the place specified in the Contract Data and in the language referred to in Sub-Clause 1.5.

16 INTEGRITY PACT

16.1 If the Contractor, or any of his Sub-Contractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Schedule-F to his Bid, then the Procuring Agency shall be entitled to:

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Sub-Contractors, agents or servants;
- (b) terminate the Contract; and
- (c) from the Contractor any loss or damage to the Procuring Agency as a result of such termination or of any other corrupt business practices of the Contractor or any of his Sub-Contractors, agents or servants.

On termination of the Contract under Sub-Para (b) of this Sub-Clause, the Contractor shall demobilize from the Site leaving behind Contractor's Equipment which the Procuring Agency instructs, in the termination notice, to be used for the completion of the Works at the risk and cost of the Contractor. Payment upon such termination shall be made under Sub-Clause 12.4, in accordance with Sub-Para (c) thereof, after having deducted the amounts due to the Procuring Agency under Sub-Para (a) and (c) of this Sub-Clause.

CONTRACT DATA

Sub-Clauses of Conditions of Contract

- 1.1.3 Procuring Agency's Drawings, if any
As per list attached in the drawings.
- 1.1.4 **The Procuring Agency** means
Advisor P&D / Procurement,
Jinnah Sindh Medical University
Rafiqui H.J. Shaheed Road,
Karachi
- 1.1.5 **The Contractor** means
Successful Bidder whose bid is accepted by Procuring Agency's.
- 1.1.7 **Commencement Date** means the date of issue of Engineer's Notice to Commence which shall be issued within fourteen (14) days of the signing of the Contract Agreement.
- 1.1.9 **Time for Completion** Six (06) Calendar Months
- 1.1.20 **Engineer**
National Engineering Services Pakistan (Pvt) Limited (NESPAK)
- 1.3 **Documents forming the Contract listed in the order of priority:**
- (a) The Contract Agreement
 - (b) Letter of Acceptance
 - (c) The completed Form of Bid
 - (d) Contract Data
 - (e) Conditions of Contract
 - (f) The completed Schedules to Bid including Schedule of Prices
 - (g) The Drawings
 - (h) The Specifications
 - (i) Any addendum
- 2.1 **Provision of Site:** On the Commencement Date
- 3.1 **Authorized person:** Advisor P&D, Jinnah Sindh Medical University, Karachi
- 3.2 **Name and address of Engineer's/Procuring Agency's representative:**
Project Manager, NESPAK, 4th Floor NICL Building, Abbasi Shaheed Road, Karachi

4.4 **Performance Security:**

Amount 10% of Contract Price

Validity: Completion Period plus entire defects liability period
(Form: As provided under Standard Forms of these Documents)

5.1 **Requirements for Contractor's design (if any):**

Not applicable

7.2 **Programme:**

Time for submission: Within fourteen (14) days of the Commencement Date.

Form of programme: (Bar Chart/CPM/PERT or other)

7.4 Amount payable due to failure to complete shall be 0.10% per day up to a maximum of (10%) of sum stated in the Letter of Acceptance

7.5 **Early Completion**

In case of earlier completion of the work, the Contractor is entitled to be paid bonus up-to limit and at a rate equivalent to 50% of the relevant limit and rate of liquidated damages stated in the contract data.

9.1 **Period for remedying defects**

Twelve (12) Calendar months after issuance of Taking over Certificate

10.2 (e) **Variation procedure:**

Day work rates

Mason :	@ Rs. 700 per day
Electrician:	@ Rs. 700 per day
Painter:	@ Rs. 700 per day
Skilled Labour:	@ Rs. 500 per day
Unskilled Labour:	@ Rs. 450 per day

Material: Payment invoices + 25% overhead and profit including all duties and taxes.

11.1 (a) **Terms of Payments**

Text of Sub Clause 11.1 (a) is Deleted and replaced as following.

Payment of Contract Price shall be made in the following manners:

Stage wise payment schedule shall be applicable:

- i) Fifteen percent (15%) of Contract Price shall be paid as advance payment against Bank Guarantee from Schedule bank in Pakistan after the receipt of acceptable Performance Security and approval of equipment and materials from the Engineer.
- ii) Forty percent (40%) of Contract Price shall be paid as advance payment against Bank Guarantee from Schedule bank in Pakistan on submission of a copy of negotiable shipping documents and Bill of lading.
- iii) Twenty percent (20%) of Contract Price shall be paid on delivery of equipment/material at site and issuance of inspection certificates and approval by the Engineer. The Bank Guarantee provided by the Contractor at (ii) above would be released.
- iv) Twenty percent (20%) of Contract Price shall be paid on completion of installation to the satisfaction of the Engineer.
- v) Five percent (5%) of Contract Price shall be paid on completion of testing and commissioning of the equipment and system and issuance of Certificate of Completion by the Engineer. The Bank Guarantee provided by the Contractor against payment at (i) above would also be released on issuance of Certificate of Completion by the Engineer.

The above payments are subject to Five percent (5%) retention money.

11.1 (b) **Valuation of the Works:**

Add new para as follows:

- i) Remeasurement with estimated/bid quantities in the Schedule of Prices

11.2 (b) **Percentage of value of Materials and Plant:**

Not Applicable

11.4 **Percentage of retention: Five (5%)**

- (a) Upon the issue of Certificate of Completion with respect to the whole of the Works, one half of the Retention Money, shall be certified by the Engineer for payment to the Contractor.

(b) Upon the expiration of the Period for Remedying defects for the Works the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor. Provided also that if at such time, there shall remain to be executed by the Contractor any work instructed, pursuant to Clause 9, in respect of the Works, the Engineer shall be entitled to withhold certification until completion of such work of so much of the balance of the Retention Money as shall, in the opinion of the Engineer, represent the cost of the work remaining to be executed.

11.6 **Currency of payment:** Pak. Rupees

14.1 **Insurances:**

Type of cover

The Works

Amount of cover

The sum stated in the Letter of Acceptance plus fifteen percent (15%)

Type of cover

Contractor's Equipment:

Amount of cover

Full replacement cost

Type of cover

Third Party-injury to persons and damage to property

Rs. 100,000/- per event, number of event unlimited

Workers:

Rs. 100,000/- per event, number of event unlimited

14.2 **Amount to be recovered**

Premium plus Ten percent (10%).

15.3 **Arbitration**

Place of Arbitration: Karachi

16 **Integrity Pact**

This Clause is deleted in its entirety.

Add following Sub-Clause

17 **Contract Agreement**

The successful Contractor shall enter into and execute an agreement (To be prepared at the Cost of Contractor) in the prescribed form duly typed on stamp paper with such modifications as may be considered necessary by the Procuring Agency within ten (10) days of the date of issue of letter / Notice of Award.

The cost of complying with requirements of this Sub-Clause shall be borne by the Contractor.

18 Customs and Import Duties

The payment of customs and import duties in respect of importation of any items of the Works shall be the responsibility of the Contractor.

19 Import Permits and Licenses

The Contractor shall obtain all import permits or licenses required for any items the Plant or Works in reasonable time having regard to the time for delivery of the Plant and completion of the Works.

STANDARD FORMS

FORM OF BID SECURITY
(Bank Guarantee)

Guarantee No. _____
Executed on _____

(Letter by the Guarantor to the Procuring Agency)

Name of Guarantor (Scheduled Bank in Pakistan) with
address: _____

Name of Principal (Bidder) with
address: _____

Sum of Security (express in words and
figures): _____

Bid Reference No. _____ Date of Bid _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal, we the Guarantor above-named are held and firmly bound unto the _____, (hereinafter called The "Procuring Agency") in the sum stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid numbered and dated as above for _____ (Particulars of Bid) to the said Procuring Agency; and

WHEREAS, the Procuring Agency has required as a condition for considering the said Bid that the Principal furnishes a Bid Security in the above said sum to the Procuring Agency, conditioned as under:

- (1) that the Bid Security shall remain valid for a period of twenty eight (28) days beyond the period of validity of the bid;
- (2) that in the event of;
 - (a) the Principal withdraws his Bid during the period of validity of Bid, or
 - (b) the Principal does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) of Instructions to Bidders, or
 - (c) failure of the successful bidder to
 - (i) furnish the required Performance Security, in accordance with Sub-Clause IB-21.1 of Instructions to Bidders, or
 - (ii) sign the proposed Contract Agreement, in accordance with Sub-Clauses IB-20.2 & 20.3 of Instructions to Bidders,

the entire sum be paid immediately to the said Procuring Agency for delayed completion and not as penalty for the successful bidder's failure to perform.

NOW THEREFORE, if the successful bidder shall, within the period specified therefore, on the prescribed form presented to him for signature enter into a formal Contract Agreement with the said Procuring Agency in accordance with his Bid as accepted and furnish within fourteen (14) days of receipt of Letter of Acceptance, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Procuring Agency for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Guarantor shall forthwith pay to the Procuring Agency the said sum stated above upon first written demand of the Procuring Agency without cavil or argument and without requiring the Procuring Agency to prove or to show grounds or reasons for such demand, notice of which shall be sent by the Procuring Agency by registered post duly addressed to the Guarantor at its address given above.

PROVIDED ALSO THAT the Procuring Agency shall be the sole and final judge for deciding whether the Principal has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Guarantor shall pay without objection the sum stated above upon first written demand from the Procuring Agency forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above bounded Guarantor has executed the instrument under its seal on the date indicated above, the name and seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

Guarantor (Bank)

Witness:

1. Signature _____

1. _____

2. Name _____

Corporate Secretary (Seal)

3. Title _____

2. _____

(Name, Title & Address)

Corporate Guarantor (Seal)

**FORM OF PERFORMANCE SECURITY
(Bank Guarantee)**

Guarantee No. _____
Executed on _____
Expiry Date _____

(Letter by the Guarantor to the Procuring Agency)

Name of Guarantor (Scheduled Bank in Pakistan) with
address: _____

Name of Principal (Contractor) with
address: _____

Penal Sum of Security (express in words and
figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the _____ (hereinafter called the Procuring Agency) in the penal sum of the amount stated above, for the payment of which sum well and truly to be made to the said Procuring Agency, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Procuring Agency's above said Letter of Acceptance for _____ (Name of Contract) for the _____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Procuring Agency, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of the said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 9, Remedying Defects, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall

be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Procuring Agency without delay upon the Procuring Agency's first written demand without cavil or arguments and without requiring the Procuring Agency to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Procuring Agency's written declaration that the Principal has refused or failed to perform the obligations under the Contract, for which payment will be effected by the Guarantor to Procuring Agency's designated Bank & Account Number.

PROVIDED ALSO THAT the Procuring Agency shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Procuring Agency forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above bounded Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

(Name, Title & Address)

Guarantor (Bank)

1. Signature _____

2. Name _____

3. Title _____

Corporate Guarantor (Seal)

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of _____ 2015 _____ between _____ (hereinafter called the "Procuring Agency") of the one part and _____ (hereinafter called the "Contractor") of the other part.

WHEREAS the Procuring Agency is desirous that certain Works, viz _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnesseth as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents after incorporating addenda, if any except those parts relating to Instructions to Bidders, shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Letter of Acceptance;
 - (b) The completed Form of Bid along with Schedules to Bid;
 - (c) Conditions of Contract & Contract Data;
 - (d) The priced Schedule of Prices;
 - (e) The Specifications; and
 - (f) The Drawings
3. In consideration of the payments to be made by the Procuring Agency to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Agency to execute and complete the Works and remedy defects therein in conformity and in all respects within the provisions of the Contract.
4. The Procuring Agency hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties hereto have caused this Contract Agreement to be executed on the day, month and year first before written in accordance with their respective laws.

Signature of the Contactor

Signature of the Procuring Agency

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

Witness:

(Name, Title and Address)

(Name, Title and Address)

MOBILIZATION ADVANCE GUARANTEE

Guarantee No. _____

Executed on _____

(Letter by the Guarantor to the Procuring Agency)

WHEREAS the _____ (hereinafter called the Procuring Agency) has entered into a Contract for

_____ (Particulars of Contract), with

_____ (hereinafter called the Contractor).

AND WHEREAS the Procuring Agency has agreed to advance to the Contractor, at the Contractor's request, an amount of Rs. _____ Rupees _____) which amount shall be advanced to the Contractor as per provisions of the Contract.

AND WHEREAS the Procuring Agency has asked the Contractor to furnish Guarantee to secure the advance payment for the performance of his obligations under the said Contract.

AND WHEREAS _____ (Scheduled Bank) (hereinafter called the Guarantor) at the request of the Contractor and in consideration of the Procuring Agency agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW THEREFORE the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above mentioned Contract and if he fails, and commits default in fulfillment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Procuring Agency for payment not exceeding the aforementioned amount.

Notice in writing of any default, of which the Procuring Agency shall be the sole and final judge, as aforesaid, on the part of the Contractor, shall be given by the Procuring Agency to the Guarantor, and on such first written demand payment shall be made by the Guarantor of all sums then due under this Guarantee without any reference to the Contractor and without any objection.

This Guarantee shall come into force as soon as the advance payment has been credited to the account of the Contractor.

This Guarantee shall expire not later than _____

by which date we must have received any claims by registered letter, telegram, telex or telefax.

It is understood that you will return this Guarantee to us on expiry or after settlement of the total amount to be claimed hereunder.

Guarantor (Scheduled Bank)

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

(Name, Title & Address)

1. Signature _____

2. Name _____

3. Title _____

Corporate Guarantor (Seal)

Specifications

TECHNICAL SPECIFICATIONS

SECTION - 8530
PASSENGER LIFTS

1.0 GENERAL

This section shall cover Lifts where indicated on the drawings and specified herein. Any conflicts between the requirements in this specification and the codes, drawings, standards and specifications referred to herein shall be brought immediately to the attention of the Engineer for resolution. The Bidder shall submit technical data sheets, outline drawing and printed technical literature to fully elaborate offered equipment. The Bidder is advised to visit the site to check the available lift shafts, pit depth and machine room etc. to ensure that offered equipment will suit to existing conditions.

2.0 SCOPE OF WORK

Following lift work is required for Jinnah Sindh University of Medical Sciences

- One (01) Nos. brand new Passenger Lift (L-1), having capacity 1000 kg / 13 persons capacity, serving ground plus five upper floors.
- One (01) Nos. brand new Passenger Lift (L-2), having capacity 630 kg / 8 persons, serving ground plus five upper floors.
- Complete dismantling of existing lift of capacity 630 kg serving ground plus four upper floors

The scope of work shall cover dismantling of existing one number passenger lift and design, supply, installation, testing & commissioning of brand new two passenger lifts equipment including hoisting machinery, sheaves and girders, controller, car, ropes, counterweights, supports, brackets and guides for car & counterweights, car & landing doors, door operator, switches & control, safety devices, signals, governor, safety gears, buffers, pit screens, well trimming girders, pit access ladder, trap door and such related accessories complete in all respects as specified herein.

The Contractor shall also furnish all labour, erection equipment, (i.e. winches, scaffolding etc.), erection tools, appurtenances, embedded parts and materials, etc. necessary to dismantling of existing lift and supply, install, test & commission the new lifts all in perfect operating condition in accordance with these Specifications and Drawings

Maintenance of Lifts During Defect Liability Period

The contractor shall also maintain all lifts during defect liability period and shall supply all necessary spares / other material and at least two operator and one mechanic. The above staff shall be deputed at each lift from 7:30 am to 5:00 pm and shall also be made available during overtime in case of emergency as and when required by the Employer.

One Sr. Engineer should also be available on call in case of major break down and will attend site within one hour and rectify the defect.

The contractor shall furnish all erection equipment, miscellaneous tools and material etc necessary for operation and maintenance works.

No separate payment will be made for the above mentioned works. The cost thereof shall be deemed to have been included in the quoted rates of the respective item of the schedule of prices.

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Operation & Maintenance (O&M) After Defect Liability Period

The contractor shall Operate & Maintain all the lifts after defect liability period for three (3) years and shall execute all such work for repair, rectification, parts replacement, general maintenance, complete over hauling and make good any defects occurring during three (3) years period.

The contractor shall furnish all erection equipment, miscellaneous tools and material etc necessary for operation and maintenance works.

The contractor shall also maintain all lifts and shall supply all necessary spares / other material and at least two operator and one mechanic. The above staff shall be deputed at each lift from 7:30 am to 5:00 pm and shall also be made available during overtime in case of emergency as and when required by the Employer.

One Sr. Engineer should also be available on call in case of major break down and will attend site within one hour and rectify the defect.

All the parts / equipment and miscellaneous controls required during above O&M works shall be arranged by the contractor, the cost of which shall be paid by the Employer as per quotation submitted by the lift contractor and as approved by competent authority.

No measurement shall be made for the above O&M works. The payment shall be made to the contractor on monthly basis at the end of each month subject to satisfactory performance of all lifts by the Employer during three (3) years period.

The Contractor shall submit design drawings / shop drawings within two weeks after award of work for approval of Engineer. The drawings must show final arrangement of equipment, dynamic & static loads imposed on the building, openings, location of embedded parts etc. wiring and control logic diagrams.

The Contractor shall be responsible to make good any damage done to the civil works for erection or other purposes without cost to the Employer.

The Contractor shall also provide and install, from designated electrical power supply point, all required cabling and accessories without cost to the Employer.

The Contractor shall maintain the works during defect liability period. In addition to routine periodic maintenance, the Contractor shall execute all such work of repair, rectification, parts replacement and making good defects occurring during this period.

The Contractor shall also quote the amount for purchasing the dismantled lift in his Bid which is given in BOQ.

The Contractor shall also provide training to the staff of Employer regarding operation and maintenance of the equipment.

Prior to substantial completion date, the Contractor shall submit 3 copies of Operating and Maintenance Manuals for each lift to the Employer/Engineer.

3.0 APPLICABLE CODES AND STANDARDS

The standards and codes applicable to only a portion of the works specified in this section are referred in the relevant clauses of this section. The works shall generally conform to standards & codes (latest additions) listed hereunder:

British Standards Specification (B.S.)

B.S. 5655	:	Safety rules for construction and installation of electric lifts
EN 81		Parts 1, 5, 6, 8, 9 & 10 with Appendices

International Standards (I.S.O)

ISO 4190-1 : Part-1 Lift installation (Class I, II, III & IV lifts).

American Welding Society (AWS)

AWS B 3.0 : Standard Qualification Procedure
D 1.1 : Structural Welding Code

National Electric Manufacturer's Association (NEMA)

NEMA-1CS6 : Enclosures for Industrial Controls and System

National Electric Code (NEC) by NFPA

NFPA.70 : National Electrical Code
ANSI-A 17.1 : American National Standard Institute
"Safety Codes for Elevators & Dumbwaiter"

Other authoritative codes and standards which ensure equal or higher quality than those referenced may also be acceptable subject to approval of the Engineer.

Any conflict between the requirements of this specification and those on the figures herein or in the codes, standards and specifications referred to herein shall be brought to the attention of the Engineer for resolution whose decision will be final and binding.

4.0 ORIGIN OF SUPPLY

Complete equipment, to be supplied under the contract shall be provided by any one of the following lift manufacturers and origin:

- KONE (Western Europe)
- MITSUBISHI (Japan)
- SCHINDLER (Western Europe)
- THYSSENE (Western Europe)
- HYUNDAI (Korea)
- SIGMA (Korea)

All major lift components shall be manufactured in the Lift Manufacturer's own manufacturing plants, such as complete hoisting unit including electric motor, controller, car, etc. However, components like pit screen, access ladder, trap door, separation beams & support brackets may be of local origin.

5.0 PACKING

The Contractor shall prepare all articles and materials for shipment in such a manner as to protect them from damage in transit or loss from repeated handlings and withstand extremes of climate during transport and storage at site. Packings shall be non-returnable.

6.0 HANDLING & STORAGE

The Contractor shall carry out port clearance, arrange inland transportation and deliver at site the lift machinery/equipment in their original packages and bundles bearing identification tags. A dry and protected area, close to work site, will be assigned to the Contractor for storage of his materials and tools. The Contractor shall store the equipment at his own cost and arrange guards to ensure safety of equipment.

7.0 PAINTING

7.1 General

All lift equipment including exposed steel work, ferrous metal parts of machine room equipment, gear & controllers, structures, cars, doors, guide rail fixings and other materials in the hoist way (except guide rails) shall be properly prepared, primed, undercoated and then painted in accordance with recognized international standards. The type and shade of paints particularly the finishes shall be subject to the approval of the Engineer.

7.2 Preparation of metal surfaces prior to painting:

Before application of primer, all surfaces shall be made clean and free from rust and grit by means of blast cleaning. Automatic blasting may be used with most of the common abrasives such as shot, chilled iron, cut wire, or proprietary grit abrasives. The surfaces shall be immediately painted after blast cleaning. In the event the surface become otherwise contaminated in the interval between cleaning and painting, re-cleaning shall be done before painting.

Surfaces of stainless steel, aluminium, bronze and machined surfaces adjacent to metal work being cleaned or painted shall be protected by effective masking or other suitable means, during the cleaning and painting operations.

7.3 Application of Paints:

All paints shall be in a thoroughly mixed condition at the time of application. All work shall be done in a workmanlike manner, leaving the finished surface free from drips, ridges, waves, laps and brush marks. All paints shall be applied under dry and dust free conditions. Unless approved by the Engineer paint shall not be applied when the temperature of the metal or the surrounding air is below 45 °F. Surfaces shall be free from moisture at the time of painting.

The first coat of paint shall be applied immediately after cleaning. When paint is applied by spraying, suitable measures shall be taken to prevent segregation of the paint in the container during painting operation. Effective means shall be adopted for removing all free oil and moisture from the air supply lines of the spraying equipment.

Each coat of the paint shall be allowed to dry or harden thoroughly before the succeeding coat is applied. Surfaces to be painted that will be inaccessible after assembly shall be completely painted prior to assembly operation.

8.0 MATERIALS & WORKMANSHIP

8.1 Materials

All materials shall be of the highest grade, free from defects and imperfections, of recent manufacture and unused, and of the classification and grades designated, conforming to the requirements of the latest issue of the appropriate specifications and standards. All materials, supplies, and articles not fabricated by the Manufacturer shall be the products of recognized reputable manufacturers.

8.2 Workmanship

All work shall be performed and completed in a thorough workmanlike manner and shall follow the best modern practice in the manufacture of high-grade machinery, notwithstanding any omissions from the Bid Documents. All work shall be performed by mechanics skilled in their various trades. All parts shall be made accurately to American Standard or other approved gage, where possible, so as to

facilitate replacement and repairs. All bolts, nuts, screws, rivets, threads, pipes, gages and gears shall conform to applicable American or other approved standards.

8.3 Structural Metal Work

The fabrication of the Structural Steel shall be performed strictly in accordance with these specifications and shall otherwise conform to the latest revision of the American Institute of Steel Construction "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings". Surface finish shall conform to ANSI Standard B 64.1 Surface Texture. The Manufacturer shall be responsible for all errors of fabrication and for the correct fitting of the elements of the equipment. Structural Steel shall be thoroughly straightened by methods that will not result in injury. Sharp kinks or bends in members to be straightened will be cause for rejection. Completed work shall be free from kinks, bends or winds. Shearing shall be accurately done, with neat finish. Corners shall be square and true unless otherwise shown on the Drawings. Re-entrant cuts shall be made in a workmanlike manner and, where they cannot be made by shearing, a re-entrant punch may be used. Re-entrant cuts shall be filleted unless otherwise approved by the Engineer. Bends, except for minor details, shall be made with approved dies or bending rolls. Where heating is required, precautions shall be taken to avoid overheating the metal, and it shall be allowed to cool in such a manner as not to destroy the original properties of the metal. Steel with welds will not be accepted except where welding is definitely specified, called for on the Drawings, or otherwise approved. Low-carbon structural steel may be cut by machine-guided or hand-guided torches instead of shears or by saws. Flame cutting of material other than low-carbon steel shall be subject to approval and where proposed shall be definitely indicated on detailed drawings submitted to the Engineer. Where a torch is mechanically guided, no chipping or grinding will be required except where necessary to re-move the slag and sharp edges. Flame gouging will be permitted in preparation of welding where a torch is hand-guided. All cuts shall be chipped, ground or machined to sound levels.

9.0 WORKS DESCRIPTION

9.1 General

New lifts shall be installed by the Contractor at locations and in the positions in the lift wells and machine room shown on the drawing. The respective lift wells and machine room dimensions are also shown on the drawings.

Structurally the lift wells have been designed to withstand the loads normally expected for lifts of such capacity. The Contractor is recommended to provide equipment loading on the lift well and pits of each lift sufficiency in advance to ensure conformance and stability of the structure for the installation and operation of the equipment.

Any changes in the above planned lifts shaft and pit floor structure or other design details due to particular equipment requirement shall be submitted by the Contractor to the Employer/Engineer for approval within 15 days from the date of Award of the Contract. All such approved amendments shall be made by the Contractor without any additional cost to the Employer. Similarly the lift contractor must coordinate the installation with the other trades.

The machine room of Lift is located above the lift wells with dimensions as given on the drawings. The machinery layout shall suit the machinery room orientation so as to allow easy access and sufficient space for maintenance work.

Sounds reducing materials to isolate motor set from beams and building structure, balance rotating parts to eliminate vibrations and flexible electrical conduits shall

be provided. The operation of lift car and doors shall be completely free from all abnormal jerks, vibration and sound. The maximum sound level within the car must be within comfortable limits for human beings (max 45 Dba).

9.2 Civil Construction

a) Lift Well

The lifts shall be installed in the completed lift wells of dimensions as given in the following drawing:

- Drawing No. 3687/50J/TD/M001 – Passenger Lift (L-1)
- Drawing No. 3687/50J/TD/M002 – Passenger Lift (L-2)

The wells will be constructed by the Employer's Civil Contractor in reasonable plumb. Necessary door opening, block out and other provisions will be made by the Employer's Civil Contractor as per lift manufacturer's recommendation for which details will be supplied by the Contractor within fifteen days after award of Contract.

The Contractor, however, shall be responsible to carry out minor correction for the purpose of installation of guides in perfect plumb and other equipment to ensure perfect installation and operation of the lifts without any cost to the Employer.

b) Pit

The pit for the lift shall be designed as per details provided by the Contractor. The size, loads and other necessary data shall be intimated by Contractor for incorporation in civil design within 15 days after award of contract.

c) Hook/I-beam for Equipment Installation

Hook/I-beam shall be available on ceiling of the lift well to facilitate installation and maintenance of equipment. The exact location of the hooks/I-beam and any additional requirement in the lift well shall be intimated in advance within 15 days by the Contractor for incorporation in the civil works.

9.3 New Lifts

The characteristic details of the new lifts to be supplied under this contract are listed under para 10.0. The construction and functional details are given hereunder:

9.3.1 Lift Car

a) Car Frame & Platform

The car frame, consisting of upper yoke with cross yoke side braces and bottom frame shall be made of welded or bolted steel channel sections, sufficiently rigid to withstand the operation of the safety-gear without permanent deformation of the car frame. The elevator car, platform, door operating mechanism, safety doors, maintenance station etc. shall be mounted on car frame.

The deflection of the members carrying the platform shall not exceed 1/1000 of their span under static conditions with the contract load evenly distributed over the platform.

Roller guides, mounted on car frame, shall have individual suspension to cushion jolts and minimize noise and vibration.

The platform shall be of fabricated frame of formed and structural steel shapes gusseted and rigidly welded, with provision for a floor covering as specified with the car body work. Rubber pads of sufficient size shall be provided between the car frame and the platform to provide sound and vibration isolation. The underside of the platform will be covered with sheet steel to provide adequate fire resistance.

An aluminium sill grooved to suit door spuds shall be fitted to the platform together with a toe-guard.

The car bodywork shall be carried on the platform with the top fixing to the car frame being suitably isolated.

All auxiliary equipment shall be mounted and supported from the car frame.

b) Car Body Work

The car bodywork shall be of steel construction with provision for interchangeability of décor finishes and ceiling designs. The roof shall be constructed to withstand the weight of two men without deformation.

The car top shall have provision for emergency communication. A 3-pin socket outlet shall be fitted on top of the Lift car, besides two outdoor protected type lights one each at the bottom and top of the car operated through an MCB.

c) Finish

The car enclosure shall be as per technical data sheet under para 11. Recessed kick plate 6" high of stainless steel shall be provided on the three walls of the lift car. The floor shall be provided with sheet steel sound – isolated platform with granite flooring unless otherwise specified in technical data sheet under para 11.

A6 mm thick full width safety glass mirror will be fitted between the ceiling and half height of the rear wall of the car.

Ceiling shall be of removable type with modular light fittings and emergency exit with safety switch.

Handrails on three walls shall be provided with satin finish standard stainless steel hollow section. Fixing brackets shall also be in stainless steel.

The design and finish of car interior together with suspended ceiling, light fittings, floor covering and other fittings shall be to the Engineer's approval. The Contractor shall offer various options of car finish with his bid.

d) Telephone

A telephone compartment shall be provided in each car in the front return panel above the car operating buttons. The compartment shall be provided with hinged door flush with the panel. The entire compartment and door shall be of stainless steel.

The Contractor shall also provide a telephone set in the compartment which shall be connected to the machine room. Alternatively, intercom system with speaker set shall be provided.

9.3.2 Doors

a) Landing Doors

Each landing shall be provided with two panel center opening doors unless otherwise specified in technical data sheet under para 11. The doors, frames and architraves (if applicable) shall be made of stainless steel in satin finish. The door panels shall have a fire resistance rating of at least one hour. The panels shall be interconnected by a maintenance - free self-tensioning synchronizing wire rope.

Each landing shall be equipped with a toe-guard apron at the hoist way entrance side. The toe-guard apron shall be of sheet steel not less than 16 gauge thick, and shall extend not less than 50mm beyond the entrance jamb at each side. Toe-guard apron shall be approximately 2 feet deep, adequately fastened and braced, the lower edge turned inward.

The frames shall be of 14 SWG (min.) and panels fascia, toe-guards, dust and hanger covers shall be of 16 SWG. All other features not covered above shall be similar to that specified under Car Doors.

Each landing entrance shall be equipped with an approved type factory tested interlock as required by the code. The interlock shall be designed to prevent moving of the car away from the landing until the doors are locked in the closed position as defined by code and shall prevent opening of the doors at any landing from the corridor side unless the car is at rest at that landing or is in the leveling zone and stopping at that landing.

Landing door unlocking device as specified by the ANSI A17.1 or B.S. 5655: part 1 Code shall be provided to permit authorized persons to gain access to hoist way when Lift car is away from the landing.

Each Landing door or door panel shall be furnished with sheave type two-point suspension hangers and tracks complete in all respects. The sheaves shall have polyurethane tires with ball bearings sealed and lubricated for life. Hangers shall be provided with an adjustable slide to take the up-thrust of the doors. Tracks shall be of cold drawn steel shapes with smooth surface and shaped to conform to the hanger sheaves. Tracks shall be removable for replacement.

b) Car Doors

The car doors shall be two panel center-opening type unless otherwise specified in technical data sheet under para 11. The door-gear shall be operated by VVVF AC drive. The door gear shall be built-in unit with the car door top track support, mounted on the car entrance column extensions.

A retractable car door coupling shall be provided to connect the car and landing doors to eliminate any backlash and ensure complete door synchronization.

The car doors, frame and front shall be of stainless steel (satin finish) with panel construction and other features such as fire rating, etc. similar to the Landing Doors.

The door panels shall be suspended from sheave hangers with polyurethane tires and sheaves running on a polished steel track, and guided at the bottom by non-metallic shoes sliding in an extruded aluminium threshold groove.

If the car is stationary at floor level with the doors closed, it shall be possible to open the car doors from inside the car by pushing the car door in the opening direction. To open the doors from the landings, the triangular key must be used.

c) Door Safety Devices

i) *Full Width Light Curtain*

The car doors shall be fitted with light barrier system extending from 25mm above floor level up to a height of 1600mm, operating between car and landing doors. The barrier system shall comprise of a transmitter and a receiver strip containing several pairs of transmitters & receivers generating a large number of invisible light rays. In case if any one of these rays is interrupted, the control unit immediately reverses the door motion. The light curtain shall recalibrate itself at regular interval to update its scanning cycle.

In addition to above, the car doors shall be provided with an additional safety such as Door closing force limiting device or photoelectric beam etc. to maintain operational safety in case of failure of the main light barrier system.

ii) *Door Open Timing Feature*

The door operation shall also have door open timing feature operation in conjunction with light rays to provide adjustable, reduced, hold open time once rays are broken and re-established. In the event rays are broken beyond an adjustable time, a buzzer shall sound and doors to close at reduced speed.

d) Door Operator

A variable frequency controlled variable speed door operating unit capable of opening and closing car and landing doors simultaneously shall be mounted on the car frame independent of the car bodywork. The mechanism shall be designed to achieve smooth acceleration and retardation of doors without the use of dashpots. All pivot and bearing points shall be of steel and nylon or bronze bushed pins, ball or roller bearings suitably lubricated shall be fitted.

The driving mechanism shall be designed such that:

The closing force applied to the doors shall meet the requirements of B.S. 5655: Part I.

The car doors can be opened by hand in the event of a mains failure.

The motion of the doors will be reversed if they meet an obstruction. An AC motor with VVVF drive to provide variable speed shall be provided to obtain the performance required by the control system.

Mechanical Control Station, carrying controls and equipment as specified in B.S. 5655 shall be fitted on the top of the operator.

9.3.3 Machine Room Equipment

a) General

i) *Arrangement*

The hoisting machines over hoist way shall be placed on steel beams, which shall be provided by the Contractor for placing over concrete foundations as per Engineer's approval. Anchor bolts, templates, inserts, signal boxes, and sleeves for installation shall be furnished by the Contractor.

ii) *Identification*

Each hoisting machine and corresponding controller shall be numbered with 100mm high numerals giving lift numbers.

iii) *Sound Control*

Sound reducing buffers of elastic material shall be provided under the base of the hoisting machines to isolate sound and vibrations from the building structure. The rotating parts shall be dynamically balanced to eliminate vibration. The conduit to controller frames, starter frame and machinery with flexible connection shall be suitable fastened.

b) Hoisting Machines

i) *Gearless Drive*

The hoisting machine shall be of the permanent magnet gearless drive with motor, brake and other integral parts mounted as one assembly on steel bed plates so that proper alignment of these parts is maintained under all conditions.

Means shall be provided on all lift machines to enable the lift cars to be raised or lowered in an emergency by manual operation. The direction of winding corresponding to the raising and lowering of the lift car shall be clearly indicated.

Manual operation shall be by a smooth-rimmed detachable, spokeless wheel fitted to the shaft.

ii) *Brakes*

The brake shall be spring actuated, electrically released and of adequate proportions for the duty involved and fitted with two self-aligning shoes actuated by compression springs.

The brake shall be instantly and automatically applied in the event of interruption of the power supply.

The brake shall be capable of bringing the car to rest smoothly, under maximum conditions of load and speed, and capable of sustaining static load of 150% of the contract load.

iii) *Motor*

The variable voltage variable frequency (VVVF), motor specially ~~designed to meet all lift duty requirements~~ shall have a duty cycle rating of a minimum of 180 starts per hour. The motor speed shall

have controls to allow smooth transition between acceleration and deceleration phase. The motor shall be capable of stable operation at all speeds up to the stated maximum and no abrupt speed change shall be permitted. It shall have a drip proof enclosure and may be force ventilated.

The drive motor shall be rated to provide sufficient power to accelerate the elevator to full speed in the shortest period while maintaining passenger comfort.

The power system shall incorporate solid state equipment controlling the speed of the lift motor. Smooth performance with step-less acceleration and deceleration are to be provided with a leveling accuracy of $\pm 0.25''$ and the final stop at floor level is to be achieved dynamically after which the machine brake shall be applied to hold the lift car stationary.

9.3.4 Hoist way Equipment

a) Suspension Ropes

Suspension ropes of high grade steel, specially designed for lift duty shall be provided in conformity with the requirements of BS EN 12385-5. The material of the rope shall conform to BS EN 10264-1. It shall be free from loose wires, distorted strands or other irregularities. All rope terminals shall comply with B.S. 461. Independent adjustment shall be provided for each rope.

The length of each rope shall be so adjusted that it loses traction with sheave when the counter-weight touches its buffers.

An automatic device shall be provided for equalizing the tensions of suspension ropes at least at one of their ends.

b) Guides, Fixings and Inserts

The guides shall consist of high quality 'T' section steel of adequate strength and dimensions suitable for travel, car weight, speed and lift capacity. Guiding surfaces shall be accurately machined. The joints shall be spigotted and joined by machined steel finish plates.

Guides shall be of sufficient length to prevent any of the car or counterweight shoes from running off the guides.

All guides are to be securely fixed to the walls of the lift well by steel brackets bolted to metal inserts or by other approved means. Ragbolts shall not be permitted. All metal inserts, fixings, guide rails, anchor bolts etc. shall be provided by the lift Contractor.

Guides shall be so jointed and fixed to their brackets that they do not deflect by more than 3mm under normal operation.

Guides and their fixing shall withstand the application of the safety-gear without permanent deformation when stopping a fully laden car or the counterweight.

c) Counterweight

A counterweight equal in weight to the car plus 40% to 50% of the specified load shall be provided to each lift. Structural Steel frame shall support requisite number of cast iron weights. It shall be fitted with guide

shoes and suspension arrangements and accessories suitable for specified lift capacity.

Car and counterweight are to be fitted with roller guide shoes unless otherwise specified in technical data sheet under para 11.

d) Safety Gear and Governor

A friction type progressive safety gear actuated by centrifugal over speed governor shall be securely bolted to the car frame under the car platform.

The governor wire rope operating the safety gear mechanism shall not be less than 8mm diameter.

The tension weight fitted with an electrical safety device shall be provided to cause the hoist motor to stop should the governor rope break or slacken.

The governor shall be fitted with a direct driven unit to relay to the control system both the speed and position of the lift in shaft.

The governor shall be equipped with two electrical switches, preset to operate progressively in case of over speeding to reduce the lift speed in the first stage and if the lift speed is not brought under control, operate to cut of power supply to the hoist machine and apply brakes.

If the car continues to travel downwards at excessive overspeed, the mechanical trip shall operate causing the governor jaws to grip the rope to bring the safety gear mechanism into operation causing the jaws to grip the guide rails equally through self-aligning friction shoes thus bringing the car to rest gradually and smoothly. The governor and safety gear shall be released by raising the car.

The governor and safety gear shall be adjusted to operate as specified by B.S. 5655.

e) Buffers

Oil buffers of spring-return type (unless otherwise stated in Technical Data sheets under Para 11) shall be supplied and installed in pit under car and counterweight for each Lift. The minimum total stroke of the buffer shall be based on the retardation of 32 feet/sec.² based on 115% contract speed. The maximum rate of retardation of the oil buffers based on 115% contract speed shall be 80.5 feet/sec.² excluding any transient decelerations having duration not exceeding 0.04 sec.

The buffers shall be mounted on continuous channels securely anchored to the pit floor and fastened to the guide rails. The channels, anchors and any additional supports required for buffers shall be provided by the Contractor.

The buffers shall be fitted with means of ascertaining the correct amount of oil in the buffers.

Each buffer shall be permanently and legibly marked to indicate the type and quantity of oil to be used within the buffer.

The buffers shall be self-setting type fitted with safety device to ensure its return to their normal position after operation.

f) Final Limit Switches

The lifts shall be equipped with an automatic device arranged to bring the car to a stop at the terminal landings independent of the regular operating devices in the car. Final limit switches should stop the car and prevent normal operation should it travel beyond the normal stopping device.

Separate control devices for normal stopping and final limit switches shall conform to the requirements of BS 5655: Part I.

9.3.5 Controller & Control System

a) Controller

The controller shall be floor mounted, upright type enclosed in enamel finish steel cabinet with either hinged doors at the front and removable panels at back or hinged door both at front and back.

The control system shall be microprocessor based and fitted with all safety devices to protect equipment and motors from damage in the event of overload or other malfunction. Protection against phase reversal shall be provided as per code.

The driving unit control module, comprising of power and command module, shall control drive performance parameters. The controller unit shall control acceleration & deceleration, speed and the jerk rates during change in acceleration or deceleration to provide stepless speed variation for maximum passenger comfort. The jerk rates shall be individually adjustable to user's satisfaction. Upon receiving signal to perform journey, the command module shall evolve optimum speed profile for each journey and trigger power module for AC/DC and DC/AC conversion for necessary drive current and voltage to obtain desired motor torque.

The controller shall control car motion on feedback from motor-mounted tachometer and operate the brakes of hoisting motor through the signals received from micro switches and load weighing devices.

The controller shall be arranged to cut off the power supply, apply the brake and bring the car to rest upon failure of operation of any of the electrical safety devices.

The controller shall meet the requirements as specified in BS 5655.

b) Control System

i) General

The design of control system shall be based on functionally arranged section modules featuring high degree of efficiency, economy of operation, adaptability to changing operating conditions, safety and reliability in operation through maintenance free electronic circuitry.

The control equipment shall be microprocessor based electronic solid state. The total system shall be designed to operate in normal machine room ambient and incorporate full protection against noise and electrical interference generated within the power section, controller and switchgear. The system design shall allow the control algorithm to be reprogrammed by software changes.

The Controller for each main bank lift shall be capable for individual lift control as well as group control. It shall be state-of-art microprocessor based controller capable of high- speed data transmission and analysis for optimization of traffic control.

All modules shall be tested at the manufacturer's works prior to installation. System component shall be subjected to environmental endurance, thermal shocks and salt spray in test chambers.

The control system for the passenger lifts shall be Group Supervisory type as per technical data sheet under para 11 with provision to operate any lift independently from the group.

ii) Group Supervisory Operational Mode

The operational mode of the Passenger Lift shall be group supervisory automatic control as specified in para 10.0 with special operation features, viz emergency operation and fireman switch.

The control system shall be provided with a parking feature, which returns the car to the main floor when there are no calls in the system.

The lift shall be provided with individual landing station and operated from interconnected landing buttons including two operating devices in the car. Single touch buttons shall be mounted at each terminal landing.

On touching car or landing buttons. (other than those for landing at which car is standing) shall start the car provided interlock circuits are established and causes car to start traveling in the direction of registered call. Car shall stop at the designated landings for which calls are registered with stops made in order in which landings are reached, irrespective of sequence in which calls are registered, provided call for a given landing is registered sufficiently in advance of arrival of car at that landing to permit stop to be made.

If there are no car calls and car starts up in response to outside landing calls, car shall proceed first to the highest down call and then reverses to collect other down calls. Up landing calls shall be collected similarly when car starts down in response to such calls. If car stops for a landing call and a car call is registered within a predetermined interval after stop for a landing corresponding to direction car was traveling, car shall proceed in the same direction regardless of other landing calls registered.

If DOWN landing buttons are touched while car is travelling up, car shall not stop at these landings, but calls remain registered. After highest car and landing calls have been answered and door interlock circuit is established, car shall reverse automatically and respond to down car and landing calls. When traveling down, car shall not respond to up landing calls, but calls shall remain registered and answered on next up trip. No double door operation shall be permitted.

iv) Load weighing

Means shall be provided for weighing passenger load. Control system shall be designed to provide dispatching in advance of

normal intervals and to provide landing call by-pass when the car is filled to approximately 80% of full capacity load.

Settings shall be individually adjustable. A buzzer shall be provided to indicate overload in lift

v) Door Operation

Doors shall open automatically when a car arrives at a terminal to permit egress of passengers. When another car is at the terminal and is loading for departure or upon expiration of a timed interval, the doors shall close until car is designated for loading. In the event a passenger has entered the elevator, the doors shall reopen upon registration of call on the car button or by pressing the door open button. If no other car is at the terminal, an arriving car shall have its doors open until the car is dispatched or expiration of a timed interval with no demand.

vi) Automatic leveling

An automatic 2-way leveling device shall be provided, designed to govern the leveling of the car to within 6mm above or below the landing sill. The leveling operation shall avoid over-travel, under-travel, of the car and maintain the leveling accuracy regardless of the load in the car, direction of travel, rope slippage or stretch in ropes.

vii) Independent Operation

Controls shall be provided for operation of the lift from car buttons only. A key operated switch shall be provided in each car.

viii) Emergency Features

- 1) Emergency operation: The Lift shall be equipped with control system to operate and recall the cars in fire or other emergency conditions and to allow the lift to run on emergency power supply.

The operation of lift on emergency service shall be as follows:

- The Lift shall be operable only by a person in the car.
- Lift shall not respond to Lift corridor calls.

The opening of power operated doors shall be controlled only by buttons or switches. If the switch or button is released prior to the doors reaching the fully open position, the doors shall automatically re-close. Open doors shall be closed by either the registration of a car call or by "door close" switch or button.

Lifts shall be removed from emergency service by moving the emergency service key-operated switch in the car to the 'off' position with the car at the main floor.

- 2) Emergency Lighting and Emergency alarm unit: An emergency light shall be included for each lift car. An ~~automatic~~ change over switch shall be provided in the controller so that upon normal supply failure Emergency

power supply shall be available for the light fixture, exhaust fan, and alarm unit.

The Contractor shall supply a suitable button in the car control station wired to a terminal box fixed in the lift shaft near the bottom floor served. A suitable alarm bell shall be provided and fixed including all necessary wiring connecting up to the terminal box.

The power for the emergency lighting, exhaust fan and alarm bell shall be from the same emergency supply consisting of rechargeable nickel cadmium battery unit with trickle charger and 10 years minimum life expectancy.

- 3) Emergency power transfer: In the event of normal power failure, adequate emergency power will be supplied through Employer furnished stand-by generator to run the Lift.
- 4) Automatic power evacuation device: In the event of normal power failure the lift shall be provided with an automatic evacuation device which will bring the lift car to stop at the next floor and open the doors.
- 5) Hand Winding System: Provision shall be made on each hoisting machine such that the lift car can be raised or lowered during emergency by manual operation.
- 6) Intercom: The Contractor shall install for each lift, an intercom facility with control room or at location designated by Employer for 24 hours communication.
- 7) Earthquake control: In the event of an earthquake, the lift facility shall be provided with a seismic detector which will bring all cars to stop at the next floor and open the doors.
- 8) Fireman Switch: A fireman switch shall be provided in the ground floor lift lobby. In the event of fire & upon manual actuation of the fireman switch, all the registered calls shall be cancelled and shall stop at the designated parking floor and open the doors.

The emergency alarm unit shall also sound once the fireman switch is actuated.

9.3.6 Signals & Fixtures

a) Integrated Hall Indicator

An integrated hall indicator consisting of digital car position indicator (revealing floor position of car) and illuminated or digitalized arrows indicating the arrival and departing direction, as determined by the control system shall be installed for each individual lift and at each landing. A two tone electronic gong shall also be provided for audible announcement of the arrival of the lift car.

b) Landing Call Station

Landing call station fitted with call buttons shall be installed at each landing. It shall be designed for mounting on the landing door frame or on adjacent side wall, subject to Engineers' approval.

The call buttons shall be of micro-movement type, constructed of stainless steel pressel suitable for long arduous duty. The translucent surround of the button shall illuminate to indicate acceptance of call signal. The pressel shall incorporate two light emitting diodes. The pressels shall be mounted flush with the faceplate. The faceplate shall be of stainless steel 2mm thick, fixed with tamper resistant screw.

The call buttons of each landing station shall be inter-linked such that with the pressing of call button of any lift, call buttons of lifts in the same direction shall light up and record the call.

c) Car Station

The car station shall be integral with the front return of the car and constructed from 1.6mm thick stainless steel, plate of natural satin finish.

The hinged full height front panel of the car station shall carry the controls and indicators. The panel shall be fitted with a secret release, which can only be opened from the back of the trough. When the hinged panel is opened an isolate/ normal switch shall be available.

The car-operating panel shall contain at least the following controls:

- Alarm button
- One floor button for each floor served
- Open door button/hold on button
- Key operated car independent service switch
- Key operated fan switch
- Digital car position indicator and direction arrows

All buttons shall be set flush with the panel surface for maximum resistance against abuse. When operated, a LED illuminated halo shall surround the buttons thereby informing that the call has been registered. The buttons shall be plastic pressel engraved with the appropriate floor marking.

COP shall be equipped with car call cancellation feature. This feature should allow cancellation of an incorrect registered car call by pressing the floor button twice.

The digital car position indicator and direction arrows shall be positioned above the buttons.

9.3.7 Power Supply & Electrical Installations

a) General

The power supply at load break switch will be available in the Lift machine room. All further wiring, controls and providing proper distribution boards, along with necessary material and accessories beyond the power supply points shall be supplied and installed by the Contractor. The electrical installation and appliances shall comply with B.S. 5655: Part I.

b) Wiring Installation

All wiring shall be carried out in accordance with the IEE regulation, NEC standard and B.S.S. wherever applicable.

All cables shall be PVC insulated, and if required PVC sheathed also, single or multi-core having tinned copper conductors. Cables for different voltage circuits which are run together must have the insulation rating, suitable for the highest voltage present. Wherever cables are subjected to high temperature such as termination to car light, it shall be protected by suitable heat resistant sleeve. At all terminations, cable ends shall have numbered ferrule to match with the mark on respective component and control drawings. All wiring shall be continuous between terminations.

Travelling cables between the lift well and lift car terminal boxes shall be suspended by looping over reels or by suitable clamps. The connections in the terminal boxes shall be marked for identification purposes.

Travelling flexible cables shall be fire resistant and shall comply with B.S. 6977:

c) Trunking and Conduits

All wiring from machine room to motor controls at each floor and to other circuits shall either be run in 16 SWG galvanized steel conduit or trunking, the selection and route of which shall depend on the number of cables and ease of installation and maintenance. If trunking is installed it shall have removable covers, and the trunking finished in dark grey enamel as per B.S. 381C. Fixing arrangements of conduit or trunking shall be vibration proof suitable for the existing conditions. All connections from trunking or conduits to motors or other equipment subjected to vibration shall be with flexible galvanized steel conduit. All trunking and conduit shall be continuous through out the length to ensure good earth continuity.

d) Earthing

Earthing of all equipment and metal work which can be subjected to dangerous voltage under normal operating and fault conditions shall be earthed in accordance with NEC Standard. One PVC insulated earth conductor of suitable size having yellow colour with green tracer shall be run along the trunking or conduit as main earth. All branch circuits in conduit or trunking and other metal work shall have branch earthing cable connected to main earth. All length of trunking shall also be bonded to main earth.

e) Testing

Testing of electrical installations shall be carried out to the satisfaction of the Engineer in accordance with standard practice and recognized international standards/codes.

9.3.8 **Local Materials**

a) Pit Access Ladder

Rugged steel ladders for easy access to the pits shall be provided by the lift Contractor in all pits.

b) Pit Screen

A suitable rigid steel screen shall be provided and fixed by the Lift Contractor at the bottom of the lift well where the counter-weight comes down on its buffers and between lifts. The screen shall have a minimum height of 7 ft. as per code requirements.

c) Separator Beams & Well Trimming Girders

Properly designed separator beams and trimming girders shall be supplied and installed at proper location in Lift well by the lift contractor to suit fixing requirement of offered lift. The separator beams and trimming girders installed in lift shall be of at least 200mm rolled I-beams of prime quality structural steel (ASTM A-36 or equivalent).

d) Trap Door

The Contractor shall provide and install the trap doors of rugged construction in the machine rooms at location shown on relevant drawing to enable access of the hoisting machinery into the machine rooms. The trap door shall be strong enough to temporarily withstand/support heavy machinery. It shall be installed flush with the finished floor when closed and be lockable only from inside the machine room.

The Contractor shall include the above items in his bid price for the lifts.

Properly designed separator beams and trimming girders shall be supplied and installed at proper location in Lift well by the lift contractor to suit fixing requirement of offered lift. The separator beams and trimming girders installed in lift shall be of at least 200mm rolled I-beams of prime quality structural steel (ASTM A-36 or equivalent).

d) Trap Door

The Contractor shall provide and install the trap doors of rugged construction in the machine rooms at location shown on relevant drawing to enable access of the hoisting machinery into the machine rooms. The trap door shall be strong enough to temporarily withstand/support heavy machinery. It shall be installed flush with the finished floor when closed and be lockable only from inside the machine room.

The Contractor shall include the above items in his bid price for the lifts.

10.0 TECHNICAL DATA**Passenger Lift (L-1)**

S. No	Description	Required
01	Capacity	1000 Kg/13 persons
02	Travel Height	18.30 m (60'-0")
03	No. of Stops/Openings	6 / 6 (G + 5 upper floors)
04	Lift Speed	1.0 m/sec
05	Internal Car Sizes	1600 x 1400 x 2300 mm (W x D x H)
06	Machine Type	Permanent magnet gearless, VVVF drive
07	Car & Counterweight Guide Shoes	Sliding guide shoes
08	Drive Location	In machine room
09	Control System	Simplex selective collective
10	Jambs	Narrow jambs
11	Pit Depth	1400 mm (4'-7")
12	Head Room	4200 mm (13'-10")
13	Buffers	Oil buffers of spring return type
14	Door Size	1100 x 2100 mm
15	Door Operation & Type	Power operated, 2 panels centre opening, with stainless steel construction, etching finish and fire rating of 1 hr.
16	Indicators	<ul style="list-style-type: none"> - Digital car position indicator on each landing with direction arrows. - Digital position indicator inside car with direction arrows. - Two tone electronic gong announcing arrival of car.
17	Landing Call Station	- Raised, micro-movement button with call acceptance illuminated indications
18	Car Station	<ul style="list-style-type: none"> - Integral with the front return of the car and constructed of stainless steel. - It shall include alarm buttons, floor call buttons, door open/hold button, key-operated attendant switch, fan switch.

19	Car Design	<ul style="list-style-type: none"> - Side and rear walls of stainless steel (hairline finish) construction. - Front return and car door of stainless steel (hairline finish) construction - Ceiling grid with modular light fittings - Fan/blower - Handrails on three sides - Full width and half height mirror at rear wall. - Granite flooring - Hand set free telephone/intercom system - Emergency exit in ceiling with safety switch. - Load measuring device with overload buzzer and inter-lock till overload is removed.
20	Door Safety Devices	<ul style="list-style-type: none"> - Full height Light curtain protection - Door opening timing feature
21	Special Features	<ul style="list-style-type: none"> - Attendant control - Emergency operation and fireman switch. - Emergency lighting & alarm unit. - Earthquake control system - Automatic power evacuation device - Automatic Parking - Voice guidance system - Car call cancellation feature - Manual Hand winding System - Full load by-pass - Suitability for 40°C ambient temperature - Phase reversal failure indication & interlock
22	Power Supply	<ul style="list-style-type: none"> - 3 Phase / 400V / 50 Hz. - 1Phase/230V/50 Hz. (for lighting)

b) Passenger Lift (L-2)

19	Car Design	<ul style="list-style-type: none"> - Side and rear walls of stainless steel (hairline finish) construction. - Front return and car door of stainless steel (hairline finish) construction - Ceiling grid with modular light fittings - Fan/blower - Handrails on three sides - Full width and half height mirror at rear wall. - Granite flooring - Hand set free telephone/intercom system - Emergency exit in ceiling with safety switch. - Load measuring device with overload buzzer and inter-lock till overload is removed.
20	Door Safety Devices	<ul style="list-style-type: none"> - Full height Light curtain protection - Door opening timing feature
21	Special Features	<ul style="list-style-type: none"> - Attendant control - Emergency operation and fireman switch. - Emergency lighting & alarm unit. - Earthquake control system - Automatic power evacuation device - Automatic Parking - Voice guidance system - Car call cancellation feature - Manual Hand winding System - Full load by-pass - Suitability for 40°C ambient temperature - Phase reversal failure indication & interlock
22	Power Supply	<ul style="list-style-type: none"> - 3 Phase / 400V / 50 Hz. - 1Phase/230V/50 Hz. (for lighting)

b) Passenger Lift (L-2)

S. No	Description	Required
01	Capacity	630 Kg / 8 persons
02	Travel Height	18.30 m (60'-0")
03	No. of Stops/Openings	6 / 6 (G + 5 upper floors)
04	Lift Speed	1.6 m/sec
05	Internal Car Sizes	1100 x 1400 x 2200mm (W x D x H)
06	Machine Type	Permanent magnet gearless, VVVF drive
07	Car & Counterweight Guide Shoes	Sliding guide shoes
08	Drive Location	In machine room
09	Control System	Simplex selective collective
10	Jambs	Narrow jambs
11	Pit Depth	1520 mm (5'-0")
12	Head Room	4200 mm (13'-10")
13	Buffers	Oil buffers of spring return type
14	Door Size	800 x 2100 (mm)
15	Door Operation & Type	Power operated, 2 panels side opening, with stainless steel construction, etching finish and fire rating of 1 hr.
16	Indicators	<ul style="list-style-type: none"> - Digital car position indicator on each landing with direction arrows. - Digital position indicator inside car with direction arrows. - Two tone electronic gong announcing arrival of car.
17	Landing Call Station	- Raised, micro-movement button with call acceptance illuminated indications
18	Car Station	<ul style="list-style-type: none"> - Integral with the front return of the car and constructed of stainless steel. - It shall include alarm buttons, floor call buttons, door open/hold button, key-operated attendant switch, fan switch.

19	Car Design	<ul style="list-style-type: none"> - Side and rear walls of stainless steel (hairline finish) construction. - Front return and car door of stainless steel (hairline finish) construction - Ceiling grid with modular light fittings - Fan/blower - Handrails on three sides - Full width and half height mirror at rear wall. - Granite flooring - Hand set free telephone/intercom system - Emergency exit in ceiling with safety switch. - Load measuring device with overload buzzer and inter-lock till overload is removed.
20	Door Safety Devices	<ul style="list-style-type: none"> - Full height Light curtain protection - Door opening timing feature
21	Special Features	<ul style="list-style-type: none"> - Attendant control - Emergency operation and fireman switch. - Emergency lighting & alarm unit. - Earthquake control system - Automatic power evacuation device - Automatic Parking - Voice guidance system - Car call cancellation feature - Manual Hand winding System - Full load by-pass - Suitability for 40°C ambient temperature - Phase reversal failure indication & interlock
22	Power Supply	<ul style="list-style-type: none"> - 3 Phase / 400V / 50 Hz. - 1Phase/230V/50 Hz. (for lighting)

NOTE:

- i) Bidder is advised to visit the site to check as built dimensions of lift shafts, overhead and pit and confirm in his Bid that offered lifts will suit to as built dimensions.
- ii) All leaflets properly signed/stamped in original to be submitted for the equipment including drive, controls, car design, doors & architrave, indicators landing and car station, safety devices etc. being offered.
- iii) Ceiling type, handrails type, buttons type and other finishes and fixtures will be selected by the Engineer.

Contractor as the finished installation shall also be painted in the approved standard after applying anticorrosive base.

12.0 TESTING AND INSPECTION REQUIREMENTS

The Contractor shall submit separate list of shop tests, to be conducted prior to shipment and field tests after installation prior to commissioning.

Testing after installation shall be carried out for each lift before it is put into normal service in accordance with B.S. 5655 Part 10 and appropriate certificate shall be completed. The tests shall include but be not limited to the following:

- Functioning of all system and devices
- Operational test of all safeties
- Protection against false signals
- Earth fault test on cable/controller & switch gears
- Insulation resistance test for cables

A thorough inspection of all equipment shall also be under taken at this stage and appropriate certificate shall be completed.

Lift shall be periodically re-examined during defect liability period and at the end of guarantee/defect liability period appropriate certificate shall be completed to assess operational performance.

All equipment and personnel required to complete testing and inspection shall be provided by the Contractor. All erection work and tests shall be performed by the Contractor's erectors who shall be suitably qualified and experienced persons to the satisfaction of the Engineer.

13.0 MEASUREMENT AND PAYMENT

A. General

Except otherwise specified herein or elsewhere in the Contract Document, no separate measurement and payment will be made for the under mentioned works related to the relevant item of the Schedule of Prices. The cost thereof shall be deemed to have been included in the quoted unit rates of the respective items of the Schedule of Prices.

- a) Designing of Lifts and submission of manufacturer's data, specification, diagram and drawings, installation, operation and maintenance manuals etc.
- b) Painting and finishes of equipment.
- c) Supply of accessories including supports, brackets, trimming girders, separator beams, pit access ladder, pit screen, trap door, installation equipment, miscellaneous tools, winches, scaffolding, etc., required for proper erection of Lifts as recommended by the manufacturer.
- d) Handling and proper storage of equipment prior to installation.
- e) Supply of tools and special tools.
- f) Pre-shipment inspection [where applicable] of complete equipment at its point of original manufacturer before its packing & dispatch to site.
- g) Provision of necessary guidance and supervision for the Civil works to the Civil Contractor, which will be carried out for lift installation.

- h) Rectification of any damage done to the Civil works for erection or other purposes.
- i) Testing and commissioning of lifts after installation including supply of requisite manpower and testing tools/instruments and completion of documentation.
- j) Training of Employer's personnel for operation and maintenance of equipment.
- k) Maintenance of the work during defect liability period including supply of necessary spares/other material and maintenance personnel needed to keep the Lifts in perfect operating condition.

B. Measurement

Measurement shall be made for the total number of completed units as given in Schedule of Prices acceptably supplied and installed by the Contractor.

C. Payment

Payment shall be made at the contract rate entered in the Schedule of Prices for the items accepted by the Engineer.

SECTION – 9000**SPECIAL PROVISIONS****01. SCOPE OF WORK**

The scope of work given in relevant sections of equipment shall include but not necessarily be limited to the following:

- Design, preparation of all relevant installation / erection drawings, obtaining government and/or Employer' required approvals and/or certificates, fabrication, installation, testing, commissioning, and maintenance thereafter for the stipulated period of equipment including training of Employer's staff.
- All wiring and controls including necessary material and accessories beyond the power supply point provided at the load break switch near the equipment.
- All other miscellaneous equipment and/or work required to render the equipment ready for continuous, safe and efficient operation.
- Cutting, patching and repairing of damaged civil works required during installation of equipment.
- Inspection of already constructed related civil works immediately after award of work and confirmation of it's suitability for the equipment.
- Maintenance and periodic servicing of equipment during defects liability period (i.e 365 days) including greasing, oiling, cleaning etc. of parts as recommended by the manufacturer.
- Provide all required installation, operation and maintenance manuals, spares lists, drawings and diagrams, inspection test certificates and submission of misc. requisite documentation.
- Providing training to Employer's Staff at site regarding operation and maintenance of the equipment.

02. CODES AND STANDARDS

All equipment & materials under this works shall be furnished in conformity with latest edition of applicable standards of ASME, BS, AWS, NFPA, ASTM, NEMA, IEE, etc. and applicable Government and Local Codes governing the same. In case of conflict, the stricter requirements shown/specified shall govern. All equipments shall be rated and tested as per relevant standard (latest edition).

Where possible, the same codes and standards shall be used throughout a particular facility. However, the final decision on with codes and standards shall be applied shall remain with the Engineer.

Abbreviation for codes and standards referred in the contract are as under:

- ASME American Society of Mechanical Engineers, USA
- BS/EN British Standards / European Norms
- AWS American Welding Society
- NFPA National Fire Protection Association
- ASTM American Society for Testing and Materials, USA
- NEMA National Electrical Manufacturer's Association
- IEE Institute of Electrical Engineers, London

03. **[NOT USED]**

04. **PRODUCT HANDLING AND STORAGE**

It will be the Contractor's entire responsibility to ensure that all necessary precautions are taken during transportation to avoid damage to any of the equipment.

The Contractor must arrange with the supplier of mechanical equipment, well in advance, that there is sufficient clear and load bearing passage at site to be used for shipping the equipment to the installation place. The Contractor shall also liaise with the equipment supplier with regard to adequate openings and lifting points.

Specific handling or storage requirements will be dealt with in the relevant parts of the specifications, where necessary.

05. **INSPECTION AND CONTROL**

5.1 **General**

The Contractor shall ensure that the manufacturer continuously conducts his own thorough inspections of all equipment during manufacturing and installation.

The Engineer shall have the power at any time to inspect, examine and test any part of the works, or any materials or plant intended to be used in the works, either on the site or at any factory or workshop where such parts, materials or plant are being constructed, manufactured or from which they are being obtained.

5.2 **[Not Used]**

5.3 Inspection at Site Works

All equipment/materials supplied by the Contractor shall be inspected by the Engineer after delivery of the same at site to assess any damage or short of quantities and any other requirements of the specifications. The Engineer will issue an inspection certificate if the supplied items of equipment and material are found to be satisfactory.

The Engineer shall inspect the works in progress as and when considered necessary by the Engineer and the Contractor shall provide full access and assistance to the Engineer for carrying out inspection to verify the conformity of works as shown on Drawings and as specified. Such inspection if made shall not relieve the Contractor from any obligations under the Contract.

5.4 Damages, During Transportation, Storage & Installation

The Contractor shall be responsible for any damage of the Equipment/material during transportation to site (if applicable), storage and installation until satisfactory handing over the works to the Employer. The Contractor shall replace any damaged equipment/materials at his own cost.

06. DRAWINGS AND SUBMITTALS

In general, the following submittals are required for the works covered under this section. However, the final decision with regard to what should be submitted, to what extent and at which time of the contract period shall remain entirely with the Engineer.

6.1 Technical Data Sheets

All Bidders are required to submit with their Bid submission the completed Data Sheets along with a comprehensive range of technical literature, drawings and brochures/catalogues to show that their equipment is of a standard make and complies with the laid down specifications.

All Bidders are required to adopt great care when filling in the characteristic data of their equipment. The data sheets will be used for evaluating the Bid and will subsequently form part of the contract documents. Failing to submit the completed data sheets and the technical literature may result in the rejection of the Bid.

6.2 Outline Drawings

The Contractor must submit with his Bid submission outline drawings showing the arrangement of the equipment and the relevant electrical installations offered by him.

The drawings must be prepared keeping the dimensions shown on the architectural and mechanical drawings in mind.

The Out-line drawings will constitute part of the Bid evaluation.

6.3 Design Drawings/Shop Drawings

The successful Bidder shall submit Design Drawings/Shop Drawings within two (2) weeks from acceptance of Bid to the Engineer for approval.

The drawings must show in reasonable detail installation and design features such as:

- i. Final arrangement of equipment keeping in view the dimensions provided in architectural drawings for civil construction of the Equipment.
- ii. Maximum dynamic and static loads imposed on building structures
- iii. Dimensions and locations of all services, openings in floors and walls, location of embedded parts and location of Employers furnished electrical connection.
- iv. The contractor shall review the civil construction drawings related to the equipment and identify any shortcomings/rectifications essentially required for equipment installation within above stipulated time period.
- v. Wiring and control logic diagrams.
- vi. All other relevant information required by the Engineer.

Approval given by the Engineer is to be understood as an approval to proceed with the works. The approval does not in any way release the Contractor from his contractual obligation to supply, install and maintain the equipment supplied by him as laid down in the specifications.

6.4 As-Installed Drawings

Such drawings, diagrams and schedules as will, in the opinion of the Engineer, provide an adequate record of the work "as installed" shall be submitted to the Engineer for approval before the issue/taking over certificate.

The drawings shall include particulars of all items of equipment, including wiring diagrams, etc. As-installed drawings shall be submitted to the Engineer at least 30 days before issue/taking over certificate.

The size of the drawings shall be minimum A1 size. Every item and dimensions in drawings must be legible.

6.5 Installation, Operating and Maintenance Manuals

Two sets of installation manual for the equipments shall be supplied by the Contractor prior to commencement of installation of equipment.

At least 30 days prior to the scheduled date of practical completion, the contractor shall supply a complete set of operating and maintenance manuals to the Engineer for approval. Once approved, the Contractor shall proceed to prepare and hand to the Engineer four sets of the approved operating and maintenance manuals.

The manuals shall be neatly bound and provided with a suitably captioned hard cover. The contents shall be generally arranged in the following manner unless otherwise specified/required.

- Index
- General description of the complete facility.
- Operating instruction of the complete facility.
- Emergency directions of the complete facility.
- Safety control adjustment and settings of all safety protection equipment.
- List of equipment giving manufacturer's and agents' name, and name plate data together with all data sheets published by the equipment manufacturer.
- Installation, operating and maintenance instructions for each item of equipment (including lubricating charts).
- List of spare parts for each item of equipment as recommended by the manufacturer.
- List of essential tools recommended by the manufacturer for operation and maintenance.
- As-installed drawings.

All above submission shall be signed and stamped by the Contractor prior to submission and all submission shall be in English. The approval by the Engineer of the above submission shall not be held to relieve the Contractor of any part of his responsibility to meet all of the requirements of this Contract.

07. OPERATION AND MAINTENANCE

7.1 Maintenance During Defects Liability Period

The Contractor shall include the maintenance and guarantees of the whole of the Contract Works as laid down in the General and Special Conditions. During this term, the Contractor shall remedy and/or replace all defective parts or items and correct any omissions certified by the Engineer.

ii) Normal Spare Parts

The Bidder shall provide with the Bid a recommended list of spares and components (other than the above consumables), which shall be required to maintain each equipment over a period of three (3) years of operational duties or otherwise as mentioned in the relevant equipment specifications. Each item to be separately listed.

09. **PAINTING & FINISHES**

All equipment, machinery, gears, controls, exposed and unexposed steel work shall be thoroughly cleaned, freed from oil, grease and other foreign substances detrimental to good finishing.

Apply approved primer, undercoats and finishing coats on a properly prepared surface in accordance with the paint manufacturer's recommendation and in accordance with recognized international standards.

The type and shade of paints, particularly of the finishing coat shall be subject to the Employer's/Engineer's approval.

Enamel shall also be applied according to the manufacturer's recommendation. Stainless steel finish shall be No.4 finish or equivalent, unless specified otherwise in the specification. If field touch-ups of abraded and damaged surfaces become necessary, the same type of paint used in the factory shall be employed.

10. **TESTING AND COMMISSIONING**

On the completion of the Work substantially in accordance with the Contract, the Contractor shall give the Engineer notice in writing thereof and before making the "Testing and Commissioning" shall give the Engineer and the local authority seven days notice in writing of the date on which he will make the said tests of the work in accordance with relevant codes and in the manner prescribed by the Specification.

Unless otherwise agreed, the Contractor shall commence such tests upon the date and shall carry out the same, in the presence of the Engineer or his authorized representative, whose name shall previously have been communicated in writing to the Contractor and the local authority.

If any portion of the works fails under the tests to fulfill the Contract conditions, the Contractor shall inform the Engineer thereof in writing, and tests of the faulty portions shall, if required by the Engineer be repeated within a reasonable time upon the same terms and conditions.

If the "Testing and Commissioning" is not successfully made by the Contractor within one week after the date fixed by the Contractor for the completion for operational use or for the testing of the works, the Engineer may in writing call upon the Contractor under seven days notice to make such tests, and on the expiry of such notice such tests shall forthwith be made by some other agency appointed by the Engineer at the expense of Contractor.

The Contractor shall supply all necessary utilities, labour, apparatus and instruments necessary for the prescribed tests. The accuracy of the Contractor's instruments shall be demonstrated if required.

The Contractor shall make for payment of all or any fees charged by the local authorities for the above.

Each section of the installation will be required to operate within the specified limits of its rating either continuously or intermittently as may be required without failure of any kind for a period of one year after the "Testing and Commissioning" of each section, the date of completion of the above being certified by the Engineer.

The installation will be under the charge of the Contractor during this period, at which time the Contractor shall instruct the Employer's personnel on the maintenance, servicing and trouble shooting of the various plants and system.

11. TEST CERTIFICATES AND REPORTS

The Contractor shall provide copies of all test certificates/reports including the following:

- (i) Test Certificates of critical materials
- (ii) Factory test reports
- (iii) Pre-shipment test report
- (iv) Report of testing & commissioning of equipment

12. TRAINING

On completion of all works, but prior to final taking over, the Contractor shall arrange for free training and instruction to be provided to the client's maintenance staff and operators. This training shall cover all aspects of the operation and maintenance of the plant/equipment and shall ensure that the trainee is provided with at least the necessary fundamentals required for the safe and efficient operation of the plant/equipment in question. The instructor(s) must be competent and experienced personnel, well acquainted with the task of lecturing. The schedule of offered training highlighting the details of syllabus indicating number of hours for training and field instruction subject to be taught and no. of Clients staff strength to be trained shall be enclosed with each Bid so as to allow for an evaluation by the Engineer.

13. GUARANTEE

The Contractor shall submit two copies of written guarantee that the material and workmanship of the equipment installed is according to recognized international standards and conform to all contractual requirements of this specification that he will make good without extra cost any defects not due to ordinary wear and tear or improper use, which may develop within one year from date of the installation being handed over to the Employer.

During the last month of the guarantee period, the Contractor shall demonstrate to the Engineer that all equipment and accessories are operating to the required specifications.

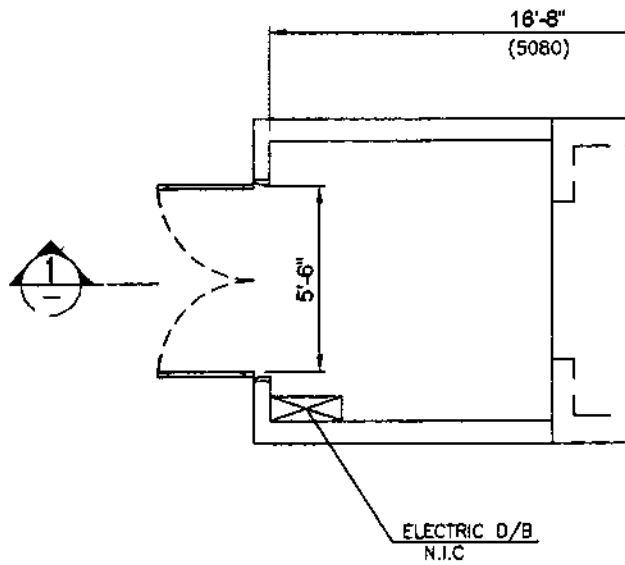
The guarantee period shall be one year after final commissioning.

In case if equipment remains out of order for more than 10 days or more, guarantee/maintenance period will be extended accordingly.

14. **MEASUREMENT AND PAYMENT**

No measurement and payment shall be made for the works involved within the scope of this section of specifications unless otherwise specifically stated in the schedule of prices or herein. The cost thereof shall be deemed to have been included in the quoted unit rate price of other items of the schedule of prices.

Drawings

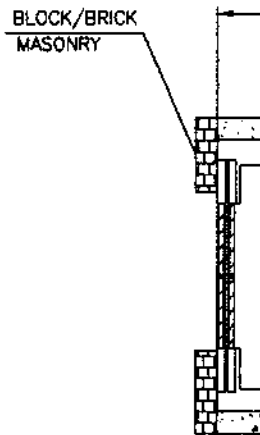


NOTES:--

- 1-ALL DIMENSIONS IN BRACKET ARE IN mm UNLESS OTHERWISE STATED.
- 2-LIFT EQUIPMENT INCLUDING BUFFERS, MACHINERY, ETC. SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE LIFTS SUPPLIER SHALL SUBMIT DIMENSIONAL LAYOUT OF THE LIFT EQUIPMENT, VENTILATION OPENING REQUIREMENT AND ELECTRICAL WORKS DESIGN LOADS FOR APPROVAL OF THE ENGINEER.
- 3-ALL DIMENSION OF EXISTING CIVIL WORKS SHALL BE VERIFIED BY CONTRACTOR TO CONFIRM THAT HIS OFFERED LIFTS WILL SUIT TO EXISTING CONDITIONS PRIOR TO BIDDING.
- 4-ALL MODIFICATIONS AND REPAIR IN CIVL AND E&M WORKS REQUIRED FOR NEW LIFTS SHALL BE RESPONSIBILITY OF CONTRACTOR.

MACHINE ROOM
SCALE: 1/

N.I.C NOT IN CONTRACT.



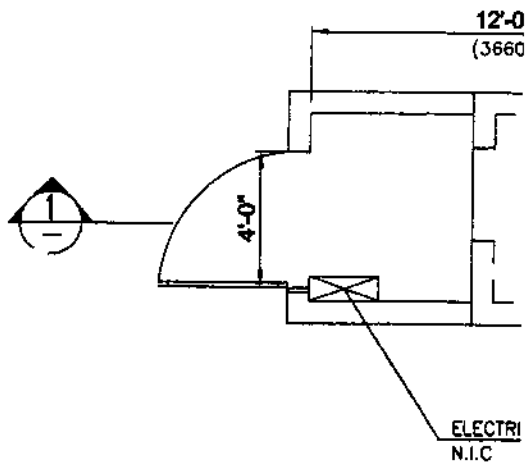
LIFT

LIFT SCHEDULE

QTY.	LIFT ID	DESCRIPTION	CAPACITY (kg.)	SPEED (m/sec)	NO. OF STOPS
1	L-1	MACHINE ROOM TYPE PERMANENT MAGNET GEARLESS VVVF DRIVE	1000	1.0	6

TENDER DRAWING

CLIENT:	JINNAH SINDH MEDICAL UNIVERSITY KARACHI		
PROJECT:	DESIGN, PLANNING, SURVEY AND EVALUATION OF EXISTING INFRASTRUCTURE / FACILITIES OF JINNAH SINDH MEDICAL UNIVERSITY KARACHI		
TITLE:	PASSENGER LIFT #L-1 (PLAN & SECTION)		
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED, KARACHI			
DESIGN BY:	CHKD BY:	RECOMMENDED BY:	MR./GO.:
DRW.:	QA:	NA	ZA
APP.:	DATE:	DRAWING NO.:	SCALE:
	JANUARY - 2015	3687/50J/TD/0001	AS SHOWN



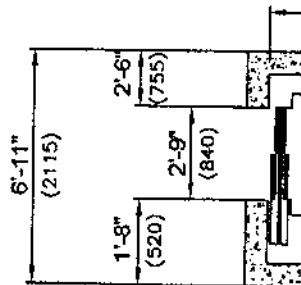
MACHINE F

SCALE: 1

NOTES:-

- 1-ALL DIMENSIONS IN BRACKET ARE IN mm UNLESS OTHERWISE STATED.
- 2-LIFT EQUIPMENT INCLUDING BUFFERS, MACHINERY, ETC. SHOWN IN THIS DRAWING ARE FOR REFERENCE ONLY. THE LIFTS SUPPLIER SHALL SUBMIT DIMENSIONAL LAYOUT OF THE LIFT EQUIPMENT, VENTILATION OPENING REQUIREMENT AND ELECTRICAL WORKS DESIGN LOADS FOR APPROVAL OF THE ENGINEER.
- 3-ALL DIMENSION OF EXISTING CIVIL WORKS SHALL BE VERIFIED BY CONTRACTOR TO CONFIRM THAT HIS OFFERED LIFTS WILL SUIT TO EXISTING CONDITIONS PRIOR TO BIDDING.
- 4-ALL MODIFICATIONS AND REPAIR IN CIVIL AND E&M WORKS REQUIRED FOR NEW LIFTS SHALL BE RESPONSIBILITY OF CONTRACTOR.

N.I.C NOT IN CONTRACT.





LIFT SH/

SCALE: 1

LIFT SCHEDULE

QTY.	LIFT ID	DESCRIPTION	CAPACITY (kg)	SPEED (m/sec)	NO. OF STOPS
1	L-2	MACHINE ROOM TYPE PERMANENT MAGNET GEARLESS VVVF DRIVE	630	1.6	6

TENDER DRAWING

CLIENT:	 JINNAH SINDH MEDICAL UNIVERSITY KARACHI		
PROJECT:	DESIGN, PLANNING, SURVEY AND EVALUATION OF EXISTING INFRASTRUCTURE / FACILITIES OF JINNAH SINDH MEDICAL UNIVERSITY KARACHI		
TITLE:	PASSENGER LIFT # L-2 (PLAN & SECTION)		
	 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED, KARACHI		
DESIGN	DESIGNER	RECOMMENDED BY	REV./COR.
CHKD.	CHKD.	DATE	DATE
APP.	APP.	DATE	DATE
		JANUARY - 2015	3667/50J/TD/M002
			AS SHOWN